

# Community College Moves into Self-Service Model for Students, Faculty with Cisco Application Acceleration Solution

Cisco Application Control Engine (ACE) module provides Harper College with the highest level of application infrastructure security, reliability and end-to-end virtualization capabilities

| EXECUTIVE SUMMARY  |
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| <p><b>HARPER COLLEGE</b></p> <ul style="list-style-type: none"> <li>• Higher Education</li> <li>• Palatine, IL</li> <li>• Number of Faculty/Staff: 2,500</li> <li>• Number of Students: 25,000</li> </ul> <p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Provide a reliable, secure switch-based infrastructure that supports college network initiative to move into a self-service model</li> <li>• Consolidate the network server virtualization and security functions</li> <li>• Maintain robust application acceleration and fluency to accommodate high-traffic periods, such as student registration</li> </ul> |
| <p><b>NETWORK SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Upgraded network foundation to consolidate infrastructure, improve application performance and security</li> </ul>   |
| <p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• Streamlined virtualization, creating an end-to-end virtualization solution through Cisco ACE Module</li> <li>• Ease of use/ hardware management consolidated in one chassis</li> <li>• Secure network connections for transient students and faculty user base</li> <li>• Extreme reliability, high availability during peak traffic periods including student registration</li> </ul>   |

## Business Challenge

Harper College is a community college located in Palatine, Illinois, a northwest suburb of Chicago. Harper offers a full range of career preparation opportunities including more than 100 degree and career certificate programs to help students with short-term training or with earning a degree. The college also offers continuing education options and academic transfer programs for students interested in transferring to a four-year university.

With roughly 25,000 students, 2,500 staff and faculty users, the IT department at Harper College began looking for a way to transition the networking environment into a Web accessible, self-service model for students and faculty. Harper has two data centers, both located on their main campus; one contains a multitude of legacy systems; the second, more robust data center, is located in the new Avante Center for science, health careers and technology building, and houses key administrative systems. Harper also has two load balancers for redundancy, fronting the Oracle 10g portal, which

serves as the student and employee access entry point, and also provides external access to the Oracle eBusiness application that is currently being used for HR and financial information.

As the IT department began exploring the proposed self-service model, Harper’s network security and management became a concern. Harper had one firewall located between the internal administrative network and the college’s demilitarized zone (DMZ) firewall configurations. Up to that point, any multi-tiered applications had to fit around the existing firewalls and network management was becoming a challenge.

“When we began looking into this transition, we met with several vendors and wondered with all the proposed solutions, what it would take to get our environment to work together,” says John

McManus, manager of servers and networks group for, Harper College. “It was almost impossible to incorporate one solution without affecting another. Up to that point, we did not have the ability to isolate traffic or manage and report on it, and that was a must if we were going to move into the Web-accessible, self-service model.”

The Cisco-centric IT environment at Harper is comprised of Cisco 6500 switches at the core for the various networks and a variety of Cisco Catalyst 2900 and Cisco Catalyst 3750 switches. As Harper began the shift into their self-service model, the IT department realized they would also need to address the Oracle portal application. According to Regan Myers, director of technical services for Harper College, there was an internal debate about what to do with the portal and whether or not it would be front-facing, staff only accessible or be accessible to registering students paying online.

Harper already had a well-developed, data intensive intranet. But the community college is a mobile campus and has three to four times more adjunct faculty that are not on campus very often compared to full-time faculty.

“Many of the faculty members don’t necessarily have dedicated offices and equipment,” says Myers. “We needed a way to get a great quantity of information that is on the intranet available both inside and outside of our network, wherever the adjunct faculty might access it, and we needed a way to perform that function securely. We also needed a way to leverage the latest in technological advancements without interfering with what was already in place inside our administrative network.”

### Network Solution

The Harper IT team upgraded to the Cisco® ACE module for the Cisco Catalyst® 6500 Series and the Cisco Supervisor Engine 720 for the core systems to augment three Cisco Catalyst 6509s for distribution, a Cisco Catalyst 6506 for academic distribution and Cisco 4500 routers for the public network. McManus says the staff, especially the adjunct faculty, has responded positively to the new infrastructure.

“The staff is thrilled that they can get to data that they were not able to access before the upgrade, including the ability to access their timesheets from home,” says McManus. “We want our technology to be transparent to staff and students who don’t really care what’s going on behind the scenes from an IT perspective.”

According to McManus, the Cisco ACE module’s ability to maximize the availability, performance and security of the college’s data center applications played a large part in their decision to upgrade to ACE. But the Cisco ACE module’s VirtualACE system, which enables IT managers to configure up to 250 individual virtual systems on a single ACE module, was the deciding factor, as the IT team at Harper runs virtual machines on their servers.

**“The Cisco ACE is secure and gives us the ability to place virtual systems in whatever context we desire. We now have all the switching capabilities we could hope for plus end-to-end virtualization capabilities in one chassis.”**

**—John McManus, Manager of Servers and Networks Group, Harper College**

“We have one VMware server right now that we’ve connected to the Cisco ACE module,” says Myers. “Initially, we were concerned about having multiple VLANs belonging to a different context. But ACE is secure and gives us the ability to place virtual machines in whatever context we desire. We now have all the switching capabilities we could hope for plus end-to-end virtualization capabilities in one chassis.”

The Cisco ACE module’s integrated security features such as the ability to add firewalls, SSL acceleration technology and overall data security, was a key factor in the move to ACE. This was especially important in light of Harper’s increased security requirements as they moved into a self-service model.

“The ability to put in 10 firewalls into the one device was a big factor,” says Myers. “The Cisco ACE module’s firewall services within the chassis give us the ability to see the configurations without having to install 10 separate routers externally to the chassis. The fact that we can monitor all of that in one place was equally appealing.”

### **Business Results**

According to McManus, the Cisco ACE module’s ability to get the portal application up and running securely has helped enable Harper to advance upon the way students authenticate their network access and enroll for classes.

“We would not have successfully been able to create a secure environment for the portal applications had it not been for the Cisco ACE module,” says McManus. “Now that we’re using the portal in front of our older student-facing registration applications, we will be able handle significantly more traffic and perform transactions such as having students authenticate without using their Social Security numbers, make payments, view grades and register for classes. Being a community college, it won’t be the same players accessing the network over and over again. If it weren’t for ACE, I seriously doubt we would be able to have gotten the portal in working order for all our users.”

McManus says much of Harper’s traffic is very cyclical and there will be periods of time, such as registration, when the system will perform 10 times more the amount of work than during the rest of the semester. He and his team expect the Cisco ACE module will help them to load balance at multiple portions of the infrastructure according to the demand.

“Load balancing is going to have to happen at the self-service layer, the portal layer and the e-mail layer to accommodate the high traffic,” says McManus. “We’re starting off small but plan to pass a great deal of data through the ACE in the next 12 to 18 months.”

Down the road, McManus and the IT team are exploring opportunities to create redundancy in their two data center locations and McManus says the flexibility the Cisco ACE module brings Harper College gives him and the IT team confidence in its versatility for future roll-outs.

“At the time we started considering this integration, we maintained completely separate physical networks on campus, one for our administrative side and one for the academic side,” says McManus. “That maintenance can be extraordinarily labor intensive to keep up, but now we can secure traffic from various networks across the Cisco ACE, and consolidate our operations.”

## PRODUCT LIST

### Cisco Application Networking Services

- Cisco® ACE module for the Cisco Catalyst® 6500 Series
- Cisco Catalyst 6500 Series Supervisor Engine 720
- Cisco Catalyst Catalyst 4500 Series Switches

## For More Information

Find out more about Cisco ACE module for the Cisco Catalyst 6500 Series, please visit

<http://www.cisco.com/go/ace>.



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