University Launches Powerful, Integrated Voice and Video Network

University of Kansas deploys next-generation network as high-performance, unified access solution.

EXECUTIVE SUMMARY

Customer Name: University of Kansas (KU)

Industry: Education

Location: Lawrence, Kansas

Number of Employees: 4500; including 2500 faculty members

Number of Students: more than 30,000

CHALLENGE

- Provide secure, unified access to online information and applications campuswide

NETWORK SOLUTION

- Standardize on Cisco solutions for switching, routing, wireless, IP telephony, and video at KU campuses across the state

RESULTS

- Optimized IT resources with efficient, easily managed solution pairing compact switches with wireless access points for cohesive integration with existing network infrastructure
- Expanded network services by deploying compact switches in nontraditional locations
- Enabled smooth access to online services and data from multiple devices, supporting enhanced learning and teaching environments

Challenge

A major public research and teaching institution, the University of Kansas is a diverse, multicampus system, offering the highest quality undergraduate, professional, and graduate programs. KU's central campus is located on 1000 acres of land in Lawrence, Kansas and has more than 30,000 students and 2500 faculty members. The Edwards Campus, located near high-tech manufacturers and laboratories in the suburban Kansas City community of Overland Park, offers courses for adult students, while the School of Pharmacy operates facilities both in Wichita and Lawrence.

Chris Giem, the network manager at the University of Kansas, is responsible for addressing one of the biggest challenges that the university is facing: the need for a unified, high-performance network. The objective is to help ensure a campus network environment that supports advanced learning and teaching activities as students and faculty move between buildings or between KU campuses, as well as look to collaborate with peers worldwide.

Given its existing Cisco environment, the university's IT team wanted to build on its reliable infrastructure to enable a cost-effective and integrated network built on proven technologies. Meeting this goal required deploying a wider network of switches that are quiet and small enough to be placed outside the wiring closet, that offer advanced security and ease of management features, and that deliver Power over Ethernet (PoE) to wireless access point devices. In addition, the infrastructure needed to support the proliferation of personal devices such as iPhones, iPads, laptops, and tablets used by students and faculty, who expect on-demand wireless access anywhere on campus.

"Universities can't control what devices students or visiting researchers use," says Giem. "Yet the expectation from everyone is that they will have easy access to powerful mobile services when and where they want them. Our job is to make sure everything-from core switches to front-line mobility devices, is integrated, so learning and research can be done efficiently from any campus location."

Network Solution

The University of Kansas is deploying a unified network switching and mobile environment built on a Cisco infrastructure. The unified architecture includes 8-port Cisco Catalyst® 3560-C Series Compact Switches with PoE to connect wireless access points to the network, along with Cisco® Catalyst 2960-S Series Switches in newer buildings to support voice communications. Cisco Catalyst 3750-X Series Switches are being deployed in the distribution layer, along with Cisco Catalyst 6500 Series Switches configured using Virtual Switching System (VSS) capabilities. Coupled with Cisco Aironet® 3500 Series Access points, students and faculty are effectively enabled to access critical data anytime, anywhere on campus.

To support the increased demand on the network, including the proliferation of personal mobile devices used by students and faculty, the university's IT team needed to install cost-effective, compact PoE switches in a broader array of locales. The university selected Cisco Catalyst Compact Switches.

Giem says, "The existing switching gear was old and noisy and resided in broom closets next to classrooms. Cisco Compact Switches are unique and were our best choice because they are so small, sleek, and silent and can be placed in nontraditional locations outside of closets. As a result, we can leverage the same robust, fully-managed infrastructure that's in the closet, and do so with a single Ethernet cable. This adds up to improved network services and big savings when looking at deploying 2000 wireless access points across campus."

> "Cisco's switching and mobility solutions with video integration support KU's mission to provide a proven, high-performance network to foster greater opportunities for collaboration and learning among students and faculty and increased research productivity across our world-class facilities."
>
> **— Chris Giem, Network Manager, University of Kansas**

The Cisco Catalyst Switches protect users of the university's network with comprehensive security features at the edge of the network such as Cisco TrustSec® for protecting network data, implementing strict security policies, and blocking malicious activity. Faculty, staff, and students can rely on consistent voice and video quality, even in high network traffic, with the Automatic Quality of Service (AutoQoS) features of the Cisco solutions.

KU has made a considerable investment in Cisco Unified Communications and would like to deploy voice over IP (VoIP) to the Edwards campus as a pilot and eventually replace its existing legacy phone system. The university is already leveraging the efficiencies of video-enabled Cisco Unified IP 8945 Series phones, which faculty use to conference in remote guest speakers.

In addition, with Cisco TelePresence®, KU is excited about the possibilities to further enhance its distance learning and online education initiatives. The aim is to securely deliver rich, engaging learning content to students in as many ways as possible, whether they are in residence halls, at home, or at work.

Results

The unified Cisco network infrastructure provides the University of Kansas with fully integrated, easily managed wired and wireless services anytime, anyplace. “Cisco’s switching and mobility solutions with video integration support KU’s mission to provide a proven, high-performance network to foster greater opportunities for collaboration and learning among students and faculty and increased research productivity across our world-class facilities,” says Giem.

The Cisco solution has transformed how the faculty uses technology in the classroom. “Our faculty across campuses is increasingly embracing technology to provide students with more dynamic, interactive instruction,” says Giem. With Cisco’s video conferencing solution, faculty can easily provide access to remote guest speakers, eliminating speaker travel costs for the university, while providing students with easier access to leaders in their fields of study.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 3560-C Series Compact Switches
- Cisco Catalyst 2960-S Series Switches
- Cisco Catalyst 3750-X Series Switches
- Cisco Catalyst 6500 Series Switches

Voice and IP Communications

- Cisco Unified IP 8945 Series phones
- Cisco TelePresence

Wireless

- Cisco Aironet 3500 Series Access Points

With pervasive wireless now available across multiple campuses, wireless speeds have increased along with Wi-Fi use. “The AutoQoS features are incredibly important as they ensure low latency for voice and video. The ability to prioritize these services is critical for our network,” says Giem.

“In addition, the ability to have PoE on the network has given us much greater flexibility in designing our networks and expanding the range of our services. All things considered, Cisco Catalyst Compact Switches have been very effective for us. We have saved time with the ease of installation and have seen a reduction in our UPS utilization as well,” Giem says.

Having an integrated solution that takes advantage of the university’s existing infrastructure was important to the university, because it meant leveraging the reliability, performance, security, and efficiencies that are the hallmarks of its Cisco network. This circumstance has helped the IT team work together better now that the team has only one solution to support and one vendor to consult if questions arise.

Feedback from students has been positive because they can now be connected with everything from iPads to smartphones and other popular devices. The university is excited about its capability to provide next-generation advanced wireless to students, further strengthening the university’s brand and enhancing learning and teaching all around.

“We didn’t consider this solution a one-time investment. Instead we looked at how Cisco, and the university’s partnership with Cisco, fit into our overall strategy of providing a world-class network and mobile environment. Given the attractive total cost of ownership over five years and the return on investment from deploying these solutions, Cisco was by far the smartest choice,” says Giem.

For More Information

To find out more about Cisco Catalyst Access and Compact Switches for a Campus LAN, go to: http://www.cisco.com/en/US/products/hw/switches/index.html.

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