Next-Generation Network for Historic Buildings in Austria

Medical University of Vienna standardizes on Cisco networking solutions to preserve integrity of historic structures.

EXECUTIVE SUMMARY

Customer Name: Medical University of Vienna
Industry: Higher education
Location: Vienna, Austria
Employees: 5000
Students: 7500

CHALLENGE

- Comply with strict, low-impact IT infrastructure requirements for historic buildings
- Support growing number and types of network devices without compromising security or performance
- Minimize administrative complexity

NETWORK SOLUTION

- Cisco Unified Access solution featuring Cisco Catalyst Compact Switches

RESULTS

- Preserved structural integrity of 18th and 19th century buildings with compact switches
- Simplified administration and minimized costs with unified management of network environment
- Developed network with highly scalable, secure, and powerful end-to-end Borderless Network capabilities

Challenge

Founded in 1365 as a medical branch of the University of Vienna, the Medical University of Vienna is one of the world's most renowned medical universities and the largest medical research institution in Austria. The state-of-the-art facility that includes 31 university departments and clinics and 12 centers of medical theory has operated as an independent institution since 2004.

The medical research institution offers its students and faculty a teaching and learning environment that is rich with history, both academically and architecturally. Most of its buildings were constructed in the 18th and 19th century and are protected to preserve their historical significance.

"Our IT team must follow strict rules around deploying the IT infrastructure with minimal impact to our physical buildings, whether it's how we run network cables or install network devices in the interior of a building," says Thomas Amsüss, team leader, Network & Infrastructure, at the Medical University of Vienna. The IT department is, nonetheless, tasked with providing a state-of-the-art, high-availability network that serves the needs of its students and staff.

For instance, the organization's 1600 physicians travel between buildings and must have secure access to science records from any university facility. At the same time, the number of network devices has skyrocketed, driving the need for many more ports to support 10,000 PCs and other devices used by students and faculty, such as lab measurement equipment, IP telephones, and electronic microscopes.

Given the organization's device growth and need to build out its infrastructure, centralized network management was necessary for IT productivity and cost control. The LAN switching infrastructure had to provide Power over Ethernet (PoE) to support wireless access points without the need for electric outlet installations that would violate historic building preservation mandates. In addition, given the research and instructional activities occurring in buildings across campus, the network switching devices needed to be high performance, yet silent, if they were to be placed outside of a standard wiring closet environment.

Solution

The Medical University of Vienna chose to deploy a Cisco® Borderless Network across its historic campus, providing the superior reliability, security, and high availability that its medical office, laboratory research, and classroom environments demand. The university's secure campus LAN is built on an end-to-end Cisco architecture, including Cisco Catalyst® 3560-C Series Compact Switches, as a key means of extending both wired and wireless access.

The compact switches are small and quiet so they may be deployed outside of a wiring closet, close to where people work, thereby meeting the stringent physical space and noise requirements for the university's IT infrastructure. In an environment where running multiple cables and wires is not only impractical but also impossible, the compact switches provide an ideal solution, creating additional ports for wired access, supporting new wireless access points for broader wireless coverage, and powering end devices with PoE, far from the wiring closet.

> "Cisco provides us a network that day after day supports our rigorous instructional and science needs, and does so in a way that protects the rich history and architecture of our centuries-old university."
>
> **— Thomas Amsüss, Team Leader, Network & Infrastructure, Medical University of Vienna**

Cisco Catalyst Compact Switches deliver the same advanced Cisco TrustSec® security features available on other Cisco Catalyst Switches, such as policy-based access control and identity-aware networking to protect the university's sensitive research data. As with all Cisco Catalyst Switches, superior Layer 2 threat defense capabilities provide integrated security while at the same time allowing flexible collaboration between students, staff, faculty, and approved visitors.

Cisco switches support more than 1000 VLANs that effectively segment the network to provide access to critical university data for teaching, learning, research, and patient care. "We need enormous flexibility to meet the increasingly complex connectivity needs of our students and faculty, and the scalable Cisco Borderless Network enables us to effectively support them," says Herbert Jacubetz, senior network administrator at the Medical University of Vienna.

The university's intelligent and robust network enables a seamless experience for users as they move among buildings and work on an array of devices. From end to end, Cisco reliability and high performance deliver the data, voice, and video capabilities to support the university's rich educational and advanced science programs.

Cisco technology makes it easy for the university's IT staff to be efficient and responsive to quickly growing needs. Networking staff use Cisco Prime LAN Management to simplify the configuration, administration, monitoring, and troubleshooting of the Cisco environment. Cisco Auto Smartports technology provides automatic configuration as campus devices connect to the switch port, allowing auto-detection for "plug and play" of the devices added onto the network. Quality-of-service configurations in the university's voice-over-IP networks, for example, are simplified with global switch commands that detect Cisco IP phones and appropriately prioritize that traffic.

Results

The university's Cisco network supports devices that include 9000 PCs and 2000 printers, along with 25,000 ports used across the Medical University of Vienna campus. The 100 percent Cisco network environment streamlines network management with the ability to centrally administer the entire infrastructure.

"By using Cisco switches to drive the whole network instead of deploying and managing different switches from different vendors, we manage not to increase IT administration time and ultimately costs, even while providing additional services" says Amsüss. "The Cisco switches are easy to implement and manage, and offer us the flexibility and scalability to support the diverse and growing set of devices used in our educational and science environments."

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 3560-C Series Compact Switches
- Cisco Catalyst 3750 Series Switches
- Cisco Catalyst 4500 Series Switches
- Cisco Catalyst 6500 Series Switches
- Cisco Nexus® Switches

Wireless

- Cisco Aironet® 11xx Series Access Points
- Cisco Aironet 12xx Series Access Points

Voice

- Cisco Unified IP Phone 9951

Video

- Cisco Unified Video Advantage

Importantly, the cost-effective, low-impact compact switches multiplied the usability for the already-laid Ethernet cable runs and overcame the hurdle of modifying historic structures, while delivering the same services as larger switches. Notes Amsüss, "Cisco offers compact switches with all of the capabilities needed to deliver a smart, secure, streamlined infrastructure that extends connectivity with just one Ethernet cable."

"Countless educators and physicians from different institutes come to the university to work together to help further our academic mission," says Amsüss. "Regardless of their device, they need immediate connectivity to download presentation files and other important teaching materials. Cisco provides us a network that day after day supports our rigorous instructional and science needs, and does so in a way that protects the rich history and architecture of our centuries-old university."

For More Information

To find out more about the Cisco Catalyst Compact Switches, visit: http://www.cisco.com/en/US/products/ps11527/Products_Sub_Category_Home.html.

To learn more about the Medical University of Vienna, visit: http://www.meduniwien.ac.at/.

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