Transforming Cross-Campus Wireless Experience

Customer Case Study

Swiss university masters bring-your-own-device and mobility, improving IT management and access to learning resources.

EXECUTIVE SUMMARY

Customer Name: École Polytechnique Fédérale de Lausanne

Industry: Education

Location: Switzerland

Number of Employees: 14,000

Challenge

- Improve wireless experience for students, teachers, and guests
- Embrace bring-your-own-device and mobile traffic growth

Solution

- Cisco BYOD Smart Solution, providing self-healing wireless LAN using Cisco CleanAir technology

Results

- Increased availability of educational resources
- Simplified management of wireless users and traffic peaks
- Greater flexibility to support events

Challenge

Set against the spectacular backdrop of Lake Geneva, École Polytechnique Fédérale de Lausanne (EPFL) is one of the world's leading technical institutions. The cosmopolitan campus brings together 14,000 students, professors, and staff from over 120 nationalities.

For the university, nurturing engineering and science talent goes hand-in-hand with being an early adopter of technological innovation. At the heart of this vision is a Cisco® wireless local area network (WLAN), providing a platform for enabling research projects and connected learning across a vast campus that spans 65 buildings and 136 acres. Introducing bring-your-own-device (BYOD) and mobility techniques are key priorities for EPFL.

"We initially created the wireless network to provide access to hard-to-reach places with no wired connections while supporting seminars and conferences," says Yves Despond, head of the network team at EPFL. "And, naturally enough, we had students bringing in their own laptops before the term bring-your-own-device was even born."

With so many more mobile devices including tablets and smartphones now in use, improving WLAN management and performance is a constant challenge. "We have densely crowded areas, lots of people wanting to connect at the same time, and unusual building designs, all of which present unique technical issues," says Despond.

Solution

To overcome these challenges EPFL chose a Cisco Smart BYOD Solution. Designed and implemented by the university's IT team, the solution incorporates over 990 Cisco Aironet® wireless access points, with everything managed through three Cisco 5508 Series Wireless Controllers. A fourth controller manages a wireless test environment, while a Cisco ASA 5500 Series Adaptive Security Appliance keeps everything safe.

"With Cisco CleanAir, we now have dynamic channel and power assignment. Often the system will intervene and take action, but if we need to troubleshoot it's quick and easy to locate problems."

Yves Despond
Head, Network Team
École Polytechnique Fédérale de Lausanne

"In tests we found that the Cisco proposal offered the best integration with our wired network," says Despond.

Equipped with Cisco CleanAir® technology, Cisco Aironet 3500 and 3600 Series Wireless Access Points form a self-healing system that continually monitors the health of the WLAN. If a potential source of interference is discovered, the system automatically switches channels, significantly improving network uptime and the user experience.

The addition of Cisco Prime™ Infrastructure provides single pane-of-glass management and full history reporting tools, enabling the university's IT team to gather greater insight into WLAN performance. "Prime offers a clear roadmap with version 2.0 unifying management of our wired network as well," says Robert Ritter, network engineer for EPFL.

Results

EPFL has improved mobility across the campus. In a typical day, over 8500 devices simultaneously connect to the Cisco WLAN. These devices include Windows, Mac, and Linux-based laptops as well as tablets and smartphones with IOS, Android, and Windows operating systems.

The Cisco Smart BYOD solution has simplified administration by allowing the WLAN to be securely partitioned into four logical zones: EPFL members; the international research and education community (users of the eduroam service); public (guests and partners who authenticate separately); and service provider.

Wireless users enjoy higher network availability. "With Cisco CleanAir, we now have dynamic channel and power assignment," says Despond. "Often the system will intervene and take action, but if we need to troubleshoot it's quick and easy to locate problems." The benefits of this agile BYOD infrastructure were highlighted at the TEDxHelvetia event held at the Rolex Learning Center Forum, a location where wireless deployment had previously proved to be difficult.

Upon arrival, 800 delegates were provided with an iPod, pre-loaded with an app to facilitate audience voting and interaction. Many participants also chose to use their own tablet or smartphone for the Internet and social media. "We temporarily added two access points to meet the extra demand and monitored performance throughout the event. Everything ran fine despite the high number of connections," says Ritter.

Next, the university plans to use its Cisco BYOD platform to optimize the delivery of video and test voice-over-IP and Cisco WebEx®. Clearly innovation never stands still at EPFL.

For More Information

To learn more about the Cisco architectures and solutions featured in this case study, go to: www.cisco.com/go/mobility

Product List

Wireless

- Cisco Aironet 1100, 1200, 3500, and 3600 Series Wireless Access Points
- Cisco 5500 Series Wireless Controller

Security

- Cisco ASA 5500 Series Adaptive Security Appliance

Management

- Cisco Prime Infrastructure

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