

CASE STUDY: UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

Prestigious University provides Internet, Video Conferencing, Telephony and Media Programming Services with Resilient WLAN from Aerohive



FOUNDED IN 1910, THE NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO (UNAM, UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO) is one of the largest one-campus universities in the Americas. With a student population of more than 300,000, the university offers studies in the fine arts, business, the sciences, engineering, medicine, and law. In fact, the UNAM Faculty of Law is the most prestigious Faculty of Law in Latin America, with 1,600 academics and about 15,000 students.

In recognition of the university's 100th anniversary, the Faculty of Law initiated a number of programs, including its Digital Faculty initiative. This initiative aims to digitize and automate the storage and retrieval of all law school documents so students, professors, and researchers have a centralized way in which to store and retrieve documents.

Building the Digital Campus

This initiative will also serve as the communications backbone to support collaboration among students, faculty, and staff anywhere at any time. The network will provide for highly mobile, secure, and ubiquitous access throughout the law school's campus including classrooms, auditoriums, cafeterias, gardens, and parking lots.

For UNAM, that's a considerable amount of ground to cover with wireless access. The campus faculties span about 30,000 square meters. The vast wireless network will be built to provide users a fast and efficient way to connect multiple types of devices including cell phones, laptops, and other Wi-Fi-enabled clients. When fully completed, the Digital Faculty will provide comprehensive Internet access, video conferencing, telephony and videoconferencing capabilities, and other services such as audio programming and an on-campus television station.

The successful implementation of this initiative will require the establishment of an easy-to-manage, powerful, and resilient network to support such a demanding and traffic-intensive environment for hundreds to thousands of concurrent users.

Search for a Powerful, Resilient Wireless LAN Provider

To find the optimal wireless LAN (WLAN), Ruperto Patiño UNAM Faculty of Law director sent requests for proposals to various WLAN equipment providers and integrator Datateam Consulting. "We were sure WLAN technology had improved during the past few years, and we noticed that some technologies required centralized controllers while others had distributed the intelligence.



"We wanted to make certain we made the best decision possible," explains Patiño. Patiño and the four-person IT team also wanted to be sure the manufacturer could provide quality support within Mexico.

The end of the evaluation process left only three manufacturers in the running. "We decided on Aerohive Networks," Patiño says. "The Aerohive network would provide the power we needed and it would be easy to administer with our tight IT resources," he says. Much of that superior performance and manageability is made possible by Aerohive's innovative new class of wireless infrastructure built on its Cooperative Control WLAN architecture.

The technology combines an enterprise-class access point with a suite of cooperative control protocols and functions that deliver the full benefits associated with controller-based WLANs – but

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Ruperto Patiño
Faculty of Law, Director
UNAM

without the additional burden and cost of hardware controllers or an overlay network. Through the Cooperative Control WLAN architecture, the intelligence typically found within wireless network controllers is embedded within what Aerohive calls HiveAPs.

The Aerohive design makes it possible for many HiveAPs to self-organize into groups, dubbed "hives," that share control information to provide functions such as fast layer 2/layer 3 roaming, cooperative RF management, as well as security and mesh networking. That's how Aerohive's Cooperative Control WLAN architecture provides all of the benefits of a controller, yet is easier to deploy and expand. It's also more reliable and easier to deploy – all at a lower cost and with higher performance than traditional WLANs. In addition, unlike controller-based networks that create a single point of failure, HiveAPs work together to automatically recover from hardware and system failures without requiring redundant systems.

"I was pleasantly surprised to see that the installation went smoothly and very quickly," says Patiño. "Part of the reason is the quality of the technology from Aerohive, and part of it was the proficiency of Datateam Consulting," he explains. Within a month, Patiño had roughly 100 access points in place. "From the time we received the equipment to the time the antennas were installed and running we were 15 to 20 days ahead of our schedule. It was very impressive," he adds.

Throughout the buildings, classrooms, cafeterias, and auditoriums UNAM installed Aerohive's HiveAP 120s. For outside coverage the law school deployed the HiveAP 340 with the Aerohive outdoor accessory, which is rated by the National Electrical Manufacturers Association (NEMA) for outdoor enclosures.

Robust WLAN Network

Aerohive's cooperative control architecture with its unique, stateful state-of-the-art high availability and path resiliency and

mesh redundancy ensures that the traffic always flows – without the need or expense associated with deploying a redundant infrastructure. The architecture's distributed intelligence and best-path forwarding ensure that the data path is always optimized for the lowest latency possible. As more HiveAPs are added to the network, coverage, reliability, and backhaul bandwidth of the wireless network increases, so the WLAN is always ready to support new and evolving business requirements.

Maintaining the Aerohive network has also proven straightforward. "We sent a number of consultants to attend Aerohive Networks' training. They then found it easy to administer the network very simply and used the Aerohive management software to administer the network very easily," Patiño says. To better administer and secure the Aerohive network, Patiño created three separate subnets, one for students and faculty, another for university guests, and one for telephony and mobile phone access. The subnets all aim to ensure optimal quality of service.

That robust architecture has made it possible for students and faculty to get the most out of their new WLAN. Today the network supports the fully collaborative communications and sharing of documents initially envisioned. Students and faculty use the document portal daily; they are watching the available TV channels, and utilizing digital communication technologies, such as Skype. "We currently have 1,000 concurrent users during our most demanding times. And, as new programs are rolled out, such as the lending of computers to students, we'll have even more users hitting the network," says Patiño. "Aerohive has handled everything we've thrown at it."

With that success at the School of Law at UNAM, it's no surprise other facilities at the university want the WLAN extended to their networks as well. "The Digital Faculty initiative has been a great success, and the directors of other faculties are now talking about how to extend the use of the wireless network to their facilities," says Patiño.

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