CASE STUDY

Higher Education

Loyola Marymount University Selects AirWave for its Transition to Thin Wireless LAN Architecture

Loyola Marymount University, in Los Angeles, prides itself on providing its students with access to information and technology in a reliable and secure fashion. Responding quickly to students' requests for wireless network access, the school installed wireless hot spots in the main library and two additional buildings several years ago. The wireless LAN quickly grew to cover the entire campus, including all 17 residence halls, more than 30 academic and administrative buildings, and even outdoor areas. While the original wireless infrastructure consisted of Cisco Aironet stand-alone access points, the school decided to migrate to a thin AP architecture with Cisco LWAPP access points and controllers for subsequent installations. To manage this growing, multi-architecture network, Loyola Marymount selected the AirWave Wireless Management Suite™ from Aruba Networks.

Multi-Architecture Management

One important reason Gary Landau, director of network services, and the other members of the Department of Information Technology Services selected AirWave was its ability to manage both Cisco's autonomous IOS-based access points and LWAPP APs and controllers.

"Our plan is to migrate most of our existing IOS-based APs to LWAPP via a software upgrade," said Landau. "With AirWave, we can even migrate roaming data and other information, so we do not lose our historical data and reports as we make the transition. And, while we're migrating most of our access points to LWAPP, some of the devices cannot be converted and need to remain as stand-alone IOS access points. The AirWave Management Platform™ (AMP) gives us one common platform from which to manage all these devices."

Loyola is also realistic enough to know that much of the hardware it installs today will likely need to be replaced with newer equipment within three years, perhaps including 802.11n radios or other enhancements that improve performance, security, and reliability. "AirWave's demonstrated ability to support multiple new architectures while still providing robust legacy support gives us confidence that we'll be able to migrate efficiently to new technology in the future without having to rip and replace our entire network all at once," said Landau.

Visibility and Ease of Use

Loyola's IT department immediately liked AirWave's intuitive web-based user interface that made it easy to see how the network was being used at all times. To provide 24x7 help desk support to the campus community, the IT staff rotate after-hours emergency support responsibilities. When they receive an after-hours wireless-related call, Landau and the other members of the networking group can remotely check AMP's web interface to see whether the issue is an isolated user problem or a true network emergency affecting all users.

Similarly, AMP's reporting feature provides IT with valuable trend reports that allow them to monitor network usage patterns and intelligently plan for growth. "AMP generates reports showing us our most- and least-utilized access points, so we can see that some APs in our graduate facilities have 25 or more users connected to a single device while other APs have much lower usage levels,"

Requirements

- Management of both Cisco Aironet and Cisco Airespace product lines from one console
- Visibility and ease of use for user monitoring and efficient planning
- Enhanced Security through policy enforcement and rogue AP detection

Solution

- AirWave Wireless Management Suite
- RAPIDS Rogue Detection
- VisualRF™ Location and Mapping
- Cisco Aironet wireless access points
- Cisco Airespace 4400 controllers

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Education

Organization Overview

Loyola Marymount University in Los Angeles (www.lmu.edu) balances a challenging liberal arts and sciences curriculum with outstanding professional programs at the graduate and undergraduate levels. The University has more than 8,000 full-time students and 611 faculty members on campus in Los Angeles, California.

Landau said. This information is used to determine where additional coverage may be required – and ultimately will help the IT department assess where to start deploying higher throughput 802.11n radios as they become available. Landau jokingly states that he subscribes to the Field of Dreams school of wireless design: "If you build it, they will come."

Once wireless is in place, students and faculty start to use it in ways and locations that network designers could not anticipate. Even before Loyola Marymount starting installing outdoor wireless APs, for example, Landau observed students sitting outside the Wi-Fi-enabled residence halls, using the signal bleeding out of the buildings to get connected outside. By helping IT understand how and where the wireless network is being used, AMP helps ensure that Loyola Marymount's wireless LAN will continue to evolve to meet the changing needs of its users.

Strong Security

With the rapid expansion of the wireless LAN, Landau is especially concerned to enforce security and eliminate sources of RF interference by managing security policies tightly and enforcing a ban on unauthorized rogue access points on the campus network. The school implemented multiple SSIDs and VLANs for security purposes: one open SSID (authentication required) and two encrypted SSIDs. AirWave allows the university to configure the necessary settings on the network devices, monitors usage on each VLAN, and even automatically audits the infrastructure (APs and controllers) to detect and report and misconfigured devices. "Policy management is critically important for security and performance," said Landau. "AMP's ability to highlight any mismatched configurations is critical. I wish I had a tool like it for my switches on my wired network."

Loyola Marymount uses AirWave's RAPIDS feature to detect and locate any unauthorized rogue devices on the network. Several years ago, before campus-wide Wi-Fi was available, the university allowed students to connect their own wireless APs to the network in areas that had not yet been covered. Now, with campus-wide WiFi in place, unauthorized APs serve only to generate RF interference and create potential security holes to be exploited. As a result, IT now informs all students that they cannot connect their own APs to the campus network. With AirWave's dashboard, Landau always sees a current count of the number of potential rogues connected to the network – and can toggle over to the VisualRF™ Location and Mapping screen to see on a map where those rogue devices are located.

Results

The wireless network installation at Loyola Marymount has been an enormous success from the start. "Students love the wireless network for the flexibility and mobility it provides. AirWave software helps make it possible to deliver a robust, reliable service to our students without overwhelming our IT staff with additional support responsibilities," said Gary Landau.

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Director, Network Services
Loyola Marymount University

ARUBA networks

WWW.ARUBANETWORKS.COM | 1344 Crossman Avenue. Sunnyvale, CA 94089

1-866-55-ARUBA | Tel. +1 408.227.4500 | Fax. +1 408.227.4550 | info@arubanetworks.com

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