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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 its first wireless hotspots more than two years ago, in the main library and two additional buildings. Within a year of that relatively small initial installation, the wireless network quickly expanded to include all eight freshman residence halls. This year, the

wireless LAN will grow to cover the entire campus, including all seventeen residence halls, more than thirty academic and administrative buildings, and even many outdoor areas. While the school's original wireless infrastructure consisted of Cisco Aironet 'stand-alone' access points, they 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™.

Multi-Architecture Management

One important reason Gary Landau, Director of Network Services, and the other members of the Department of Information Technology Services selected the AirWave software 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," he noted. 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 the AirWave Management Platform'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, members of 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

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.

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 Management Platform™ Professional Edition** wireless network management software
- **RAPIDS** rogue access point detection software module
- **VisualRF™** RF visualization and location module
- **Cisco Aironet** wireless access points
- **Cisco Airespace 4400** controllers

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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 module 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," 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 WiFi-enabled residence halls, using the signal 'bleeding' out of the buildings to get connected outside. By helping the IT department understand how and where the wireless network is being used, AMP helps ensure that LMU's WLAN will continue to evolve to meet the changing needs of its users.

Enhanced 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 is now implementing multiple SSIDs and VLANs for security purposes: one 'open' SSID (authentication required) and two encrypted SSIDs. The AMP software allows LMU 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."

LMU uses AirWave's RAPIDS module to detect and locate any unauthorized rogue devices on the network. Several years ago, before campus-wide Wi-Fi was available, LMU 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 AMP'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™ 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. The AirWave Management Platform™ 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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