CASE STUDY

Education

Texas A&M University Gets Efficient and Proactive with AirWave

Texas A&M University, founded in 1876 as the state's first public institution of higher learning, has grown to a bustling 5,000-acre campus with nationally recognized faculty and is one of the few universities with land-, sea- and space-grant designations. Here, more than 38,000 undergraduates and 9,000 graduate students have access to world-class research programs with award-winning faculty.

Networking and Information Security, the networking group at Texas A&M, began deploying wireless networking for students, faculty, and staff in 2001. It was originally envisioned as a supplement to the wired network but has become the primary means of network access for many users. "Because of the costs of physical installations, many departments request wireless-only access for offices with transient occupants such as graduate students. These students now depend on the wireless network's reliability to meet their educational and research goals," said Justin Hao, network engineer at Texas A&M. Wireless networking is a core service, and users expect reliable coverage. Recently, President Obama visited the campus, and the Networking and Information Security set up temporary wireless access for the staff and press participating in this event.

Addressing Operational Challenges

Before deploying the AirWave Wireless Management Suite™ from Aruba Networks, Texas A&M Information Technology struggled to scale support operations to meet the problems posed by the growing wireless user population. At the time, the network consisted entirely of Cisco controllers and APs, with Cisco Wireless Control System (WCS) for management and monitoring. According to Hao, "We needed a more flexible platform with additional monitoring capabilities. AirWave provided immediate benefits in operational efficiency and visibility."

In addition to looking for a network operations solution, Texas A&M was evaluating 802.11n technology. Aruba Networks — with its 6000 series Aruba Chassis with Mark3 Controller modules and Aruba AP-121 and AP-125 access points — came out on top in terms of flexibility, performance, ease of administration, and cost. "Aruba Networks offered the best products for the next generation of our network," said Hao. "Having an operations solution that would support our new and existing technologies in a consistent manner made the Aruba solution even more attractive."

Deploying AirWave

Networking and Information Security conducted its AirWave evaluation in late 2008 and went live within weeks. Three teams within Networking and Information Security have access to the AirWave suite:

- The network engineers, who use it for monitoring, troubleshooting, and planning
- An installation team that uses the AirWave Management Platform™ and AirWave VisualRF™ to perform site surveys and physical installation of APs

Location College Station, Texas

Network Size

- 1,900 APs providing more than 5.8 million square feet of wireless coverage
- 16,000+ daily wireless users

Infrastructure Mixture

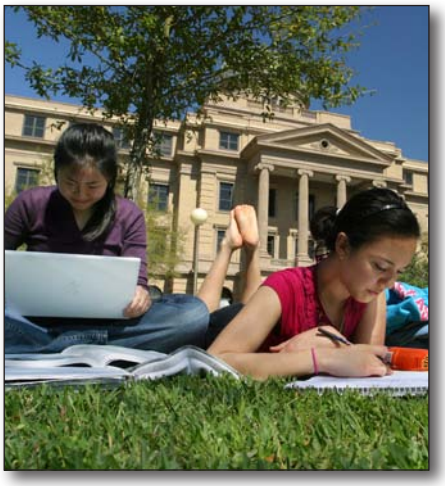
- Aruba 6000/M3 series controllers and Aruba 12x series access points
- Cisco 44xx/WiSM series controllers and 10xx series access points

Aruba Products

- AirWave Wireless Management Suite
- AirWave RAPIDS Rogue Detection
- AirWave VisualRF Location and Mapping

- A field services team that performs advanced troubleshooting on user problems and other on-site activities such as investigating potential unauthorized APs

All three teams have found that they are able to successfully use the system after a basic introductory session. “AirWave is quite intuitive. You can click almost anything and get to the information you need,” Hao says. “The search feature in particular gets rave reviews; our staff can put in little pieces of what they know and find the rest of the pieces they need to solve a problem.”



Efficient Division of Labor, Higher Productivity

AirWave has helped Networking and Information Security to divide tasks more efficiently among network engineering, installation, and field services. For example, the installation team now provisions new APs themselves, in many cases with no involvement from the network engineering team. Hao reports, “It’s a simple, one-stop process for configuring and deploying APs. Regardless of whether it’s Aruba or Cisco equipment, they follow the same steps.” The installation team gets almost instantaneous feedback as they’re performing configuration tasks, so that they know when to call network engineering for help. Since the AirWave Management Platform logs all changes, network engineering has an easy way to review the installation team’s work and make corrections if necessary.

AirWave RAPIDS™, the AirWave feature that automatically detects and locates unauthorized access points, has helped the field service team increase productivity in tracking potential unauthorized APs. “With such a large campus, the list of potential unauthorized APs is in the hundreds,” said Hao. “The filtering capabilities in RAPIDS trim that list to an actionable size so that we can focus on the real threats.”

Proactive Management for Better Network Performance and Reliability

The information and alerts provided by AirWave have allowed network engineering to find problems before they affect network performance or reliability. “Before, we relied on users to tell us that something was wrong,” said Hao. “Now, we have a way to be more proactive.”

One instance of proactive support came from a transient problem where SSIDs unexpectedly disappeared and configurations changed on the University’s APs. Using the information in AirWave, network engineering discovered that the problem was being caused by discrepancies between controller configurations. After setting up global configurations in the AirWave Management Platform and fixing mismatched devices, the network became significantly more reliable.

Effective Management Reporting

Network engineering uses the reporting capabilities in AirWave to provide a variety of status updates to management and to respond to individual departments’ requests for information. “Individual departments want to see what their usage looks like,” Hao says. “It’s easy to set up a report that gets emailed to them monthly. They can really see what they’re getting for their expenditures.” Recently, the team used historical data from AirWave in a presentation to administrators and staff across the University. “It was really valuable for our stakeholders to see where the network is today compared to a year ago. And with AirWave, the picture is very clear.”

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Organization Overview:

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Justin Hao

Network Engineer
Texas A&M University

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