UNIVERSITY OF IOWA USES AIRWAVE 7™ TO MANAGE AN EXPANDING WIRELESS NETWORK WITHOUT ADDING STAFF

The University of Iowa is a major national research university located on a 1,900-acre campus in Iowa City. Iowa is composed of 11 colleges serving more than 30,000 students each year. The total annual operating budget is about $2.8 billion, and Iowa has approximately 15,000 faculty and staff.

"Our wireless network started as an experiment with a single building in 1999,"said Steve Troester, manager of the network services at the university. "By the beginning of the upcoming fall semester, we expect it to cover 98% of indoor spaces."

"Our students want to be able to take their work — and the network — with them wherever they go," Troester added. Every time that we have installed wireless access somewhere, they use it immediately and ask for more. In addition, faculty and staff are increasingly designing curricula that require wireless capabilities."

The Iowa wireless network utilizes Meru Networks controllers and access points. In November 2009, Iowa embarked upon a major WLAN expansion project. The network services group plans to add 1,000 new access points throughout the campus by early September in order to close coverage gaps in the existing network and to extend wireless capabilities to all buildings where classes are held.

THE NEED FOR METRICS

As its wireless network grew, the network services group recognized that it needed to collect metrics and usage data in order to operate its network effectively.

"We knew that we needed both real-time and historical data so that we could troubleshoot and plan efficiently," said network engineer Neil Johnson, who has worked with the WLAN for more than four years. "We wrote some of our own tools and looked at a variety of vendor and open source offerings, but none had all of the data we were looking for. When we evaluated the AirWave solution, the information it delivered fit well with the problems we needed to solve."

CRITICAL COMPLIANCE ISSUES

The emergence of WLAN technologies presented critical compliance issues for Troester's team. With a hospital and a college of medicine located on campus, Iowa needed a comprehensive rogue AP detection process in order to comply with the Health Insurance Portability and Accountability Act (HIPAA).

The network services group's existing process met the requirements but required a significant amount of manual effort. After evaluating AirWave RAPIDS™, the team realized that the labor cost savings from rogue detection alone would justify the purchase of the AirWave software.

NETWORK SIZE:

- 1,200 APs in 140 buildings across a 1,900-acre campus
- Growing to 2,200 APs during 2010
- 10 controllers
- 520 switches, routers, and other networking devices

INFRASTRUCTURE MIXTURE:

- Meru Networks AP208 and AP311

AIRWAVE PRODUCTS:

- AirWave Management Platform™
- AirWave VisualRF™
- AirWave RAPIDS™

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Steve Troester
Network Manager
University of Iowa

STRAIGHTFORWARD IMPLEMENTATION

Iowa purchased the AirWave Management Platform™, AirWave VisualRF™, and AirWave RAPIDS in early 2009 and began its deployment. Training and deployment assistance was provided by the Aruba support team and Aercor Wireless, a value-added reseller. Because the Iowa network services group already had expertise in wireless operations management, they were able to do most of the implementation work themselves.

"The documentation and online help were straightforward, and the system was pretty easy to figure out," said Johnson. "Our existing APs were loaded into the system fairly quickly. Once the AirWave solution was live, we were able to retire a number of scripts and home-grown management tools we had created."

SIGNIFICANT NETWORK GROWTH WITH NO HEADCOUNT INCREASES

The network services group and Iowa's network operations manager use the AirWave Management Platform and AirWave VisualRF on a daily basis to troubleshoot and monitor the health of the network. Both organizations experienced a time savings because the information they need to solve problems is accessible from one common location.

VisualRF has significantly sped up troubleshooting because many of the support calls that the team handles involve RF coverage issues.

"We don't have full coverage in every building, so the information that VisualRF provides is very valuable," said Johnson. "We can determine exactly where the users are and what the RF environment looks like in their area."

More importantly, the network services group has been able to manage the growth of the network without adding any headcount. Troester expects that current team members will be able to manage all of the work from the upcoming expansion, which will almost double the number of APs.

"Using a standard approach to the deployment and tools like AirWave allows us to increase the size of our network without increasing staff," Troester noted.

MORE EFFICIENT ROGUE DETECTION AND MITIGATION

The network services team works in partnership with Iowa's security office to manage rogue detection and mitigation. Troester's team configures AirWave RAPIDS to detect and classify potential rogues more effectively, while the security team has read-only access to the AirWave system to investigate and mitigate potential risks.

According to Johnson, RAPIDS has addressed one of the biggest challenges that the team faces: Neighboring APs.

ORGANIZATION OVERVIEW:

The University of Iowa is a major national research university located on a 1,900-acre campus in Iowa City in southeast Iowa, on the Iowa River near the intersection of U.S. Interstate Highways 80 and 380. Iowa is composed of 11 colleges, the largest of which is the College of Liberal Arts and Sciences, enrolling most of Iowa's undergraduates. The Henry B. Tippie College of Business, the Roy J. and Lucille A. Carver College of Medicine, and the Colleges of Education, Engineering, Law, Nursing, Pharmacy, enroll undergraduates, and with the Colleges of Dentistry and Public Health provide graduate education in conjunction with the Graduate College.

"As a small campus located next to downtown, we see many neighbors," Johnson said. "Even the city buses have wireless capabilities. The wireline analysis that RAPIDS does has been a tremendous help in identifying the real threats. In addition, the security team has been impressed with the level of information they get from RAPIDS."

SMARTER CAPACITY PLANNING

While the university was considering where to focus its network expansion, AirWave provided the information that was needed to make smart, well-informed decisions. The network services team now has a clear picture of how the WLAN is used and what types of devices are accessing it.

For example, when Iowa was making the decision to migrate from 802.11a/b/g APs to 802.11n, AirWave reports confirmed that an adequate number of users were connecting with 802.11n-capable devices. In addition, AirWave alerts immediately notify the team when the user load on an AP is too high. In one case, the team used this information to add APs to certain law school auditoriums.

MULTI-VENDOR SUPPORT PROVIDES FLEXIBILITY

Iowa cites the flexibility that AirWave 7 provides as a key advantage for its network.

"Although we have a non-Aruba WLAN, AirWave 7 supports our infrastructure very well," said Troester. "The Aruba support team has been responsive to our needs as issues have arisen. If we decide in the future to deploy WLAN equipment from another vendor, we'll be able to continue operating efficiently with the knowledge we have built up around AirWave 7."