JOHNSON & WALES UNIVERSITY SWITCHES TO ARUBA FOR INTEGRATED SECURITY AND FLEXIBILITY

The IT department of Johnson & Wales University (J&W) faced serious challenges in its wireless system. After deploying more than 100 conventional 802.11b access points (APs) across its main campus in Providence, Rhode Island, the IT department found the total cost of ownership of the system was higher than expected and management was anything but easy. To upgrade AP firmware, move channel assignments, alter configuration settings or add new security features, the IT staff had to manually change each AP. And troubleshooting in the case of AP failure or user problems was difficult and time-consuming.

Additionally, the J&W IT group needed to see and control the air in its wireless LAN to ensure proper security. RF spectrum management and security was not easily possible with the existing legacy "thick" APs. Consequently, scaling this distributed wireless architecture across other J&W campuses wasn't an option.

"Our previous wireless system was operationally cumbersome and expensive," said James Moskwa, Team Leader, Network and Security for Johnson & Wales University. "We wanted a wireless model that gave us the flexibility to easily add capacity along with the ability to remotely monitor and manage capacity from a central point."

The university had about 30 separate buildings across Providence, including residence halls, academic centers, libraries and administration offices, which required wireless connectivity supporting different classes of users – students, faculty and visitors – each with unique security access. "Our goal was to find a replacement wireless solution that would enable us to make the WLAN secure without requiring individual client configuration," said Moskwa. "With so many different types of wireless devices, operating systems and network interface cards on the market today, not having that control would make it almost impossible for us to implement a unified, easy-to-manage security architecture."

Despite the problems with the existing wireless network, the IT staff found wireless attractive due to its inherent flexibility. "Most of our Providence campus buildings are old; it would be too expensive to pull Ethernet cable everywhere we need to provide network access," said Moskwa. "I can implement wireless for 20 users for less than $500. That is less than half the cost of moving, adding or changing a wired Ethernet port, which can cost up to $250 to install a new Ethernet connection for a single user. Per user, wireless is about one-tenth the cost. In addition, this technology enables us to provide secure wireless hot spots around campus for student and staff use."

REQUIREMENTS:

- Upgrade current distributed Wi-Fi network with easy-to-manage, centralized system
- Add RF security to detect rogue APs and wireless intrusions
- Reduce the cost of deploying Ethernet connections in buildings
- Increase wireless security without touching client devices
- Increase performance with a single 802.11a+b/g infrastructure
- Scale to support dense AP deployments for performance
- Migrate to 802.1X model

SOLUTION:

- Aruba MMC-5000, MC-2400 and MC-800 Mobility Controllers
- More than 100 Aruba AP-52 dual-purpose 802.11a+b/g APs
- ArubaOS, VPN Server, RF Management and Wireless Intrusion Protection applications

BENEFITS:

- Increased control and security from a single point
- Ease of deployment through plug-and-play operations
- Remote RF visibility and monitoring
- Higher bandwidth connections to clients

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To solve these problems and take advantage of the opportunities provided by this technology, J&W chose a centralized wireless solution from Aruba Networks. Aruba's centralized mobility solution gave J&W simultaneous 802.11b/g and 802.11a access from a single infrastructure and added wireless intrusion detection and RF spectrum management on the same system. Ease-of-use came from Aruba's "thin" APs that automatically configure when connected to any Ethernet port. Central management allowed the IT staff to monitor, manage and secure any point of the wireless infrastructure from a central location.

J&W initially deployed dual-mode, dual-purpose Aruba AP-52 access points throughout its Providence campus and has since expanded to other J&W campuses. Aruba AP-52s, connected to Cisco 3500 series wiring closet switches providing 802.3af Power-over-ethernet, logically terminate at an Aruba MMC-5000 modular Mobility Controller. The Aruba MMC-5000 acts as a master controller for Aruba MC-2400 and Aruba MC-800 Mobility Controllers deployed in other locations. This architecture allows J&W to centralize control and management while ensuring that each location operates autonomously in the event of any failure.

For security, J&W is using both Aruba's Web-based captive portal and VPN server. J&W is moving to an 802.1X model to ensure a scalable security architecture that obviates the need to configure the myriad of client laptops and other wireless devices as more students and faculty come online.
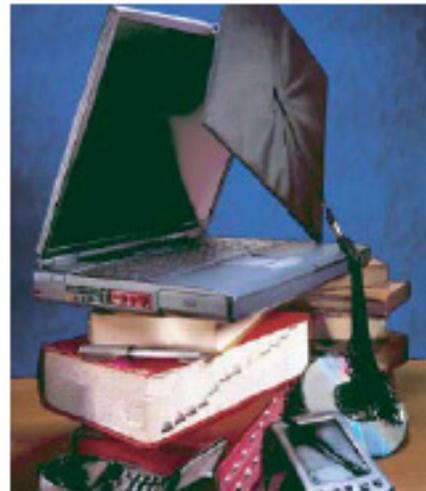
"With the Aruba solution, we're able to provide different levels of security in the air and on the wire without affecting the current client environment," said Moskwa.

Integrated user firewalling with the Aruba controllers lets J&W add value to its existing legacy wireless network. "We can redeploy our existing thick APs into a single virtual LAN (VLAN) that terminates on the Aruba controller," said Moskwa. "By doing this, we can now apply stateful firewall polices by user group. This lets us add important security access controls to third-party APs."

Aruba's system also gives J&W important RF security and spectrum management capabilities its previous wireless system did not have. With Aruba APs as air monitors, IT staff can identify, classify and neutralize unauthorized APs as well as malicious users trying to gain illegal access to J&W's network.

ORGANIZATION OVERVIEW:

Johnson & Wales — America's Career University® — was founded in 1914. It is a private, non-profit, accredited institution that combines career-focused educational programs with a full university experience. Undergraduate and graduate degree programs are offered in business, culinary arts, hospitality and technology. With an enrollment of nearly 16,000 students, Johnson & Wales maintains six campuses.