



Riverside Health Care Systems, Inc.

Four Health Care Facilities, Thousands of Employees, and Hundreds of Doctors, with One Wireless LAN Solution from Aerohive

Challenges

- Resolving RF interference issues common to most medical facilities
- Needed a WLAN that offered high availability, resiliency, scalability and performance and at the right price
- Needed a wireless LAN architecture that would be easy to manage, minimizing the support impact on a small IT staff
- Needed assurances that the new WLAN could meet future needs, such as Quality of Service (QoS) and Voice over IP

Results

- Chose Aerohive because its access points (HiveAPs) running 802.11n technology required no network controllers or overlay networks
- Using Aerohive's Dynamic Airtime Scheduling to eliminate the problem of having slow client performance
- The WLAN supports an SSID for employee access to production applications and a second SSID for the guest network which runs on a separate VLAN
- A single Aerohive HiveManager provides centralized configuration and monitoring and simplifies provisioning for system-wide policy management

Riverside Health Care Systems manages four facilities in Westchester County, just north of New York City. These include St. Johns Riverside Hospital-Andrus Pavilion, Dobbs Ferry Pavilion, Park Care Pavilion, and Michael N. Malotz Skilled Nursing Pavilion with more than 2000 total employees and 400 affiliated physicians.

The health care provider is always looking to state-of-the-art medical technology to increase the productivity of its staff and continually improve the quality of patient care. Riverside recognized IEEE 802.11 wireless as a promising technology that could enable a broad range of new applications.

To date, however, the health care system's wireless experience had been limited to a robot that delivered medications to patient rooms. The robot called elevators via access points adjacent to each elevator.

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—Niall Pariag
Senior Network Administrator, Riverside Health Care System

A new, system-wide wireless LAN could open up the health care facilities to many labor-saving applications including bedside registration, drug administration, and verification, and RFID patient tagging, as well as the convenience of a guest Wi-Fi network for patients and visitors.

The Challenge

Medical facilities often pose challenging environments for WLANs, and those operated by Riverside were no exception, particularly St. Johns Riverside Hospital-Andrus Pavilion. The 12-story building was across the street from a 200-unit apartment complex with many residential access points presenting a potential RF interference problem. In the opposite direction, a medical park with 300 doctors' offices posed an even larger interference issue. Whatever WLAN solution was chosen would have to reliably deal with this problem from an interference and security standpoint.

Other requirements for the new WLAN included high availability, resiliency, scalability, and performance. It would additionally need to be easy to manage, minimizing the support impact on a small IT staff. The health care system also wanted assurances that the new WLAN could meet future needs, such as Quality of Service (QoS) and Voice over IP. And finally, the price had to be right.

Considering the Alternatives

Niall Pariag, senior network administrator at Riverside Health Care System and his team began an in-depth evaluation process in 2007 that would include on-line research, vendor presentations, customer site visits, and numerous discussions.

Four vendors were evaluated—all of which had a controller-based architecture that presented a potential single point of failure. If the controller failed, the WLAN failed. “Several vendors suggested that we could install redundant controllers, but when you fail over to a second controller there is downtime,” says Pariag. “We’re a hospital. We can’t afford downtime.”

Even the most promising solution among the four had a serious vulnerability that concerned Pariag. The single-channel architecture was designed to have all clients on the same channel across the infrastructure. “With the amount of interference we have in our environment, establishing a single, interference-free channel across an entire facility was not going to be viable” says Pariag. “Maybe that would work for other industries, but it was too risky for us.”

Then, late in the evaluation process Bat Blue, a professional services firm offering implementation and integration services for communications and security solutions that Riverside had worked with before, suggested that Pariag evaluate Aerohive.

Cooperative Control Wireless LAN Solution

Aerohive was dramatically different from the other products Pariag evaluated. Aerohive’s cooperative control access points (HiveAPs) running 802.11n technology required no network controllers or overlay networks. Instead, software in the HiveAPs enabled them to self-organize into groups called Hives. The result was enterprise-class network management and security without the cost, performance, and availability issues associated with controller deployments. “Aerohive was the only one that met our requirements 100 percent for depth and reach of APs and RF challenges,” says Pariag.

In addition, Aerohive had a solution to the problem of a slow client, such as a guest, slowing down a fast client. “Aerohive solved that issue with their Dynamic Airtime Scheduling,” says Pariag. “In all we found better density, coverage, and performance with fewer packets blocked on the Aerohive product.”

After careful evaluation of the Aerohive product, Pariag issued his findings. “Aerohive had future-proof technology, central management, built-in security and mobility, better scalability and performance, simpler implementation and management, and lower cost of ownership. It gave us more bang for the buck.”

Deployment

Deployment began at the largest facility, St. Johns Riverside Hospital-Andrus Pavilion, which will eventually house nearly half of the APs. Phase one of the deployment includes implementation of the bedside documentation application, which runs on the Meditech Hospital Information System. The network has performed up to expectations so far. “The roaming capabilities are just amazing,” says Pariag. “A staff member wheels around a computer on a cart to handle patient insurance matters. She’s in the elevators and on different floors, and she’s always connected.”

The WLAN supports an SSID for employee access to production applications and a second SSID for the guest network. The guest network, which presents users with a captive portal, runs on a separate VLAN, isolating it from the production side. In addition to security provided by Aerohive, Riverside is using AirMagnet sensors for monitoring RF.

Centralized Network Management

With a small IT staff, centralized, easy-to-use management was a critical requirement for Pariag and his team. A single Aerohive HiveManager provides centralized configuration and monitoring and simplifies provisioning for system-wide policy management. “I have my policy set up. All I have to do is deploy it to an AP, hang it and I’m done,” says Pariag. “In terms of management, I don’t have to do much, which translates into low operational cost.”

What’s Next?

Once all HiveAPs are deployed at the Andrus Pavilion, implementation will proceed at the Dobbs Ferry Pavilion, Park Care Pavilion, and Malotz Skilled Nursing Pavilion. On the radar for Pariag is the purchase of Aerohive’s Guest Manager appliance, which will allow admissions staff to process keys for guest network users.

Although there are currently no plans to implement VoIP throughout the health care system, Pariag has built a VoIP-capable WLAN infrastructure to support that option.

The decision to deploy Aerohive was further reinforced when, after purchasing the HiveAPs, the local cable company and ISP, began installing what Pariag describes as “Mega Wi-Fi antennas” in the neighborhood surrounding the Andrus Pavilion. “Aerohive handled the additional interference just fine,” says Pariag. “Had we gone with one of the other products, there may have been a serious problem.”



Contact us today to learn how your organization can benefit from an Aerohive wireless LAN architecture.

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