



El Centro Regional Medical Center

California Hospital Turns to Aerohive to Run Electronic Health Record (EHR) Medical Application

Challenges

- Hospital is moving toward a complete Electronic Health Record (EHR) and needed a next-generation wireless LAN
- Needed a wireless LAN architecture that would enable a migration to higher-bandwidth 802.11n equipment
- Hospital needed fast roaming – there was a need to deploy voice over wireless LAN and for nurses and physicians who were seeking to access the network from patients’ bedsides
- Required strong security features to enable the hospital to comply with HIPAA regulations

Results

- Augmented wired access points with mesh access points to overcome issues challenging RF environment
- Eliminating controllers substantially reduces cost, and Aerohive WLANs are more reliable than controller-based networks
- The hospital is running a wide array of applications on its Aerohive wireless LAN, such as a physician order entry, clinical documentation and billing
- Aerohive’s cooperative control architecture and the HiveAPs provide the HIPAA-grade security ECRMC requires, with features including 802.11i (WPA2), 802.1X authentication, rogue detection, and guest access control

El Centro Regional Medical Center (ECRMC) is a 165-bed rural acute-care facility located in the Southeastern California desert. Along with Pioneer Memorial Healthcare District, the facility serves the 150,000 people who reside in California’s Imperial Valley. ECRMC consists of a central hospital and four remote clinics, each requiring wireless network access.

Like many U.S. community hospitals, ECRMC has limited financial resources and IT staff. These constraints are challenging, because community hospitals generally have most of the same IT needs as larger, well-staffed facilities.

Nevertheless, ECRMC is dedicated to providing healthcare excellence to the Imperial Valley using cutting-edge information technology. For example, the hospital is moving toward a complete Electronic Health Record (EHR).

Challenge

ECRMC desired a wireless LAN that would meet its current needs and would also flexibly accommodate future requirements, particularly the migration to higher-bandwidth 802.11n equipment.

ECRMC’s nurses and physicians were seeking to access the network from patients’ bedsides, and the hospital also wanted to deploy voice over wireless LAN (VoWLAN). Both of these applications require secure fast roaming, the ability to remain connected to the WLAN when moving between access points. Roam times must be kept under 50 milliseconds, even across subnet boundaries, and the WLAN must be able to support mission-critical applications. The hospital is also required to comply with HIPAA regulations, which address the security and privacy of health data.

“We found Aerohive’s unique cooperative control wireless LAN equipment compelling enough to select them over vendors with longer histories in the healthcare arena. Our deployment success has proven the wisdom of our decision. Aerohive’s pioneering technology and outstanding customer support have our highest recommendation.”

—John Gaede
Director, Information Systems, El Centro Regional Medical Center

Key Facts:

- ECRMC is a 165-bed acute-care facility located in the southeastern California desert.
- ECRMC found that its existing autonomous-AP wireless LAN could not meet its requirements for bedside connectivity, whole-facility coverage, and network security, resiliency, and reliability.
- ECRMC desired an easy upgrade path to 802.11n technology.
- ECRMC found that its existing autonomous-ap wireless LAN could not meet its requirements for bedside connectivity, whole-facility coverage, and network security, resiliency, and reliability.
- After an in-depth study, Aerohive's cooperative control wireless LAN equipment was selected for its exceptional value and technical superiority.

Because parts of ECRMC's facility consist of older buildings with large concrete walls and without false ceilings, wiring new access points could be difficult and expensive. As a result, the ability to augment wired access points with mesh access points was a highly desirable feature.

Solution

Previously, ECRMC had deployed a wireless LAN comprised of Proxim Orinoco APs. These autonomous, or "fat", access points were unsuitable for ECRMC because they did not support secure fast roaming. Also, each AP required manual monitoring and the coverage density was also a concern. Finally, the access points did not support mesh capability, reducing the network's resiliency and connectivity in ECRMC's hard-to-wire environments.

ECRMC evaluated several wireless LAN solutions that use centralized network controllers to provide the roaming, management ease, and security missing from its existing access points. The cost of the network controllers, especially with the extra capacity needed to support 802.11n bandwidth and to provide resiliency, made the controller-based solutions unattractive.

ECRMC selected cooperative control wireless LAN equipment from Aerohive. The technical superiority of Aerohive's architecture was the main reason for the hospital's choice: Aerohive's HiveAP access points provide secure fast roaming, ease of management, and state-of-the-art security without network controllers or overlay networks. Instead, software in the HiveAPs enables them to self-organize into groups called "hives", to share network control information, and to deliver QoS, identity-based policy enforcement and other advanced functionality.

Eliminating controllers from the network substantially reduces the cost of Aerohive solutions. Aerohive's solution is also more reliable than controller-based networks, because the problem of single points of failure is eliminated. Removing controllers from the network also eliminates the bandwidth bottlenecks, latency, and jitter that result from backhauling traffic through a controller, creating an ideal platform for demanding applications, such as VoWLAN.

ECRMC also found that the RF performance of the Aerohive equipment was superior to the other vendors' RF performance. Even in the hospital's concrete-walled laboratory, connecting to the network was easy.

The Aerohive cooperative control architecture also makes it easy for ECRMC to upgrade its wireless LAN access points to 802.11n on an as-needed basis. Aerohive 802.11n HiveAPs can be seamlessly deployed along with 802.11a/b/g HiveAPs.

Results

ECRMC runs a wide array of applications on its Aerohive wireless LAN. For example, the hospital has implemented Ekahau's Real Time Location System (RTLS) using smart Wi-Fi tags to track IV Pump location and the temperature in lab refrigerators.

As for security, the HiveAPs provide the HIPAA-grade security ECRMC requires, with features such as 802.11i (WPA2), 802.1X authentication, rogue detection, and guest access control. Third-party solutions, such as Microsoft NAP- and TNC-based systems, that enforce endpoint compliance checking, are easily integrated with HiveAPs.

HiveAPs can also connect with one another wirelessly using mesh networking. This has allowed ECRMC to connect HiveAPs on different floors of its information services building without running wires, saving effort and expense. ECRMC's older clinics also have no network drops, so mesh networking is also used there.

In addition to providing deployment flexibility, Aerohive wireless LANs can be configured for dynamic mesh failover, enabling network traffic to be routed around failures in the wired network.

As for management, ECRMC is using Aerohive's HiveManager Network Management System (NMS) appliance to manage the entire wireless network. The medical center was especially pleased with the HiveManager's user-friendly graphical interface, which delivers advanced functionality without unnecessary complexity.

The HiveManager also makes deploying HiveAPs extremely simple. First, un-configured HiveAPs are connected to the network and allowed to discover the HiveManager. Then, configuration data is pushed from the HiveManager to the newly installed HiveAPs, for true plug-and-play installation.

What's Next for El Centro Regional Medical Center and Aerohive?

In the future, the Aerohive wireless LAN will support many more wireless devices and applications. Physicians and clinicians will be issued handheld Symbol devices and tablet PCs for bedside use; VoWLAN will be deployed; and new bedside devices, including a bar code printing system for the hospital's phlebotomists and network-connected I.V. pumps, will be put into service. Secure and convenient guest access to the wireless network will also be provided using Aerohive's GuestManager.

ECRMC also plans to deploy the Vocera Communications System to provide hands-free voice communication throughout the ECRMC facility using the Aerohive wireless LAN.



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

Aerohive Networks, Inc.
330 Gibraltar Drive
Sunnyvale, CA 94089
USA

toll free 1-866-918-9918
phone 408-510-6100
fax 408-510-6199

www.aerohive.com
info365@aerohive.com
CS-HEA-1002209