Memorial Hermann Health System

Aerohive Enables Memorial Hermann Health System to Deliver Secure and Reliable Wireless Network for Mission-Critical Patient Care

Challenges
- Increased throughput to support wireless applications for voice, video and mission-critical medical devices and applications
- Secure and reliable guest network
- Wireless architecture with no single point of failure

Results
- Robust and resilient WiFi network supporting hundreds of applications and thousands of devices and users
- Guest network with options for Private Pre-Shared Key authentication
- Secure and scalable wireless solution for HIPAA compliance and cost-effective options as the organization grows

About Memorial Hermann Health System
Memorial Hermann Health System is the largest not-for-profit healthcare system in Texas, operating 12 hospitals and over 175 clinics, as well as numerous specialty programs and services in the Greater Houston area. The 5,500 affiliated physicians and 21,000 employees practice evidence-based medicine with a relentless focus on quality and patient safety, treating more than 1.4 million patients annually. Memorial Hermann Health System has received national awards and recognition, including being ranked one of the nation’s Top 5 large health systems by Truven Health for patient safety and quality.

From its inception more than 100 years ago, Memorial Hermann Health System continues to evolve to offer the highest level of medical care to its patients, including the greater medical and physician community.

Through the Memorial Hermann Health System Physician Network, the organization acts as an Application Service Provider through its Clinical Integration Program, offering a cost-effective Electronic Medical Record (EMR) solution from eClinicalWorks, allowing smaller providers to avoid cumbersome costs generally incurred from major hardware and software providers. Memorial Hermann Health System also provides training and support for implementation, as well as hosting data on its servers.

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—Ty Hall
Network Architecture and Infrastructure Manager at Memorial Hermann Health System

Memorial Hermann Health System offers comprehensive, integrated health solutions that deliver quality benefits while helping to contain costs. By proudly serving its community for more than 100 years, the organization contributes some $300 million annually through school-based health centers and other programs.

Challenges
Memorial Hermann Health System performs some of the most cutting-edge medical procedures in the nation, including organ transplants, robotic surgery, top-notch rehabilitation, cardiac and burn patient programs. Critical systems and equipment in hospitals and clinics include wireless infusion pumps, laptops in operating rooms for transplant patients, complete digital imaging, voice recognition for physician reports, video integration in operating rooms, bar coding medication and supply chain administration, and computerized physician order entry.

In the fall of 2012, Memorial Hermann Health System began evaluating its needs for its wireless infrastructure. The organization mandated a solution that would provide greater throughput to support voice and video, and provide a stable mobility platform for the numerous mission-critical medical devices and equipment that operate wirelessly. The provider had implemented Cisco and Aruba for five years, and the technology lifecycle was up, compelling the healthcare organization to re-evaluate its needs.

The result of its evaluation was the realization a complete upgrade was needed to support modern applications. In addition, the IT team wanted to move away from its legacy controller-based enterprise Wi-Fi solution to more easily manage the growth of the network and avoid having a single point of failure in the network. To date they had been operating with older 802.11g (54Mbps) connectivity, which was a bottleneck waiting to happen, so the organization urgently mandated moving to a new Wi-Fi solution for greater speeds and quality of service.
In addition, Memorial Hermann Health System needed a solution that was easy to deploy, especially at remote locations, and that would have lower costs, especially as the healthcare provider’s mobility needs continue to grow. No single campus is completely wireless, as some employees do not operate wirelessly to comply with security and HIPAA regulations, so a solution that would provide seamless interaction between wired and wireless systems was key.

The Solution

Memorial Hermann Health System evaluated several vendors and chose Aerohive based on its controller-less solution that provided ease of deployment, a cost-effective scalable network and superior throughput.

As Ty Hall, Network Architecture and Infrastructure Manager at Memorial Hermann Health System explains, “When considering a refresh of the entire network, the cost of upgrading controllers alone proved expensive and cost-prohibitive. With Aerohive, we found an exceptional solution for our wireless network.”

To begin its upgrade, the organization decided to first deploy Aerohive at TIRR Memorial Hermann Health System Hospital, a national leader in rehabilitation and research. Memorial Hermann Health System used Brocade for its wired infrastructure and Aerohive AP330 access points for its wireless solution.

It took special care in mapping out the location of the hundreds of access points at its marquee hospital, placing attention to the layout of the facilities. Access points are positioned in common areas such as the cafeteria and work rooms, and APs are located in patient rooms in a pattern that allowed for maximum coverage. Since many facilities are not simple square buildings and many activities take place in confined spaces located deep within a facility, it was imperative to select the placement of the APs carefully. All future Aerohive deployments are now based on the model of the initial deployment at TIRR Memorial Hermann Health System.

Following a successful deployment at TIRR Memorial Hermann, the organization began upgrading to Aerohive at its smaller hospitals and a refresh will soon begin at Memorial Hermann Texas Medical Center, its largest campus located in the world-renowned Texas Medical Center, the largest medical center in the world.

Memorial Hermann Health System has also implemented Aerohive at its smaller clinics, and utilizes the 5G/4G backhaul support to provide mobile access connectivity. When a new clinic is in the construction and renovation phase, the network is not necessarily the first priority in clinical operations, and so initially Aerohive APs are installed and the 5G/4G backhaul capabilities are used so medical professionals can still access the Internet and communicate with patients.

The Results

Across its network on an average day, Memorial Hermann Health System has 11,000 concurrent users and clients, including approximately 9,000 guest users. The healthcare provider has experienced flawless connectivity on the network, essential for its mission-critical operations. Having no single point of failure with Aerohive solutions is a relief for network administrators.

Memorial Hermann Health System is one of Cerner’s largest customers, using multiple medical applications from the health care information technology provider, with the majority of these applications running on Wi-Fi. The organization relies on a resilient wireless network from Aerohive to perform such operations as laboratory management from PathNet, use of laptops in mobile carts to access EMRs, scanning patient arm bands for dispensing medication, and for registering patients on wireless tablets when arriving for treatment. Memorial Hermann Health System has also successfully used wireless applications from AeroScout to track and manage inventory of medical equipment using RFID, and large Pyxis carts to wirelessly track and manage medication and supplies, such as surgical kits in operating rooms.

Memorial Hermann Health System was able to deploy a secure network from Aerohive for HIPPPA compliancy, as well as patient privacy and protection. With built-in features in the HiveOS and HiveManager, Memorial Hermann Health System could easily manage administration of Citrix-powered internal Web-based applications, prohibiting information to be downloaded onto wireless devices, and thus protecting patient information in case devices were stolen or data was compromised.

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

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