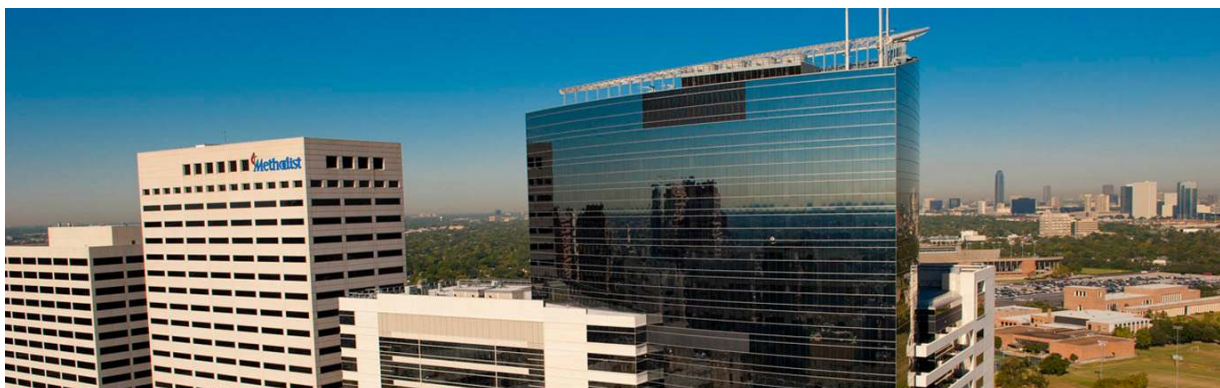


## Healthcare Giant Accelerates into Future of Wireless



Houston Methodist embraces gigabit Wi-Fi to enable proliferating wireless devices and high-bandwidth applications.

### EXECUTIVE SUMMARY

**Customer Name:** Houston Methodist  
**Industry:** Healthcare  
**Location:** Houston, Texas  
**Number of Employees:** 14,800

#### BUSINESS CHALLENGE

- Deliver high-definition still and video imaging applications at bedside
- Efficiently manage growing wireless traffic in high-density environments

#### NETWORK SOLUTION

- Cisco Aironet 3600 Series Access Points
- 802.11ac Radio Module for high-bandwidth and high-density wireless locations

#### BUSINESS RESULTS

- More efficient delivery of diagnostic images and treatment plans to patients and families
- Improved wireless user experiences and prolonged battery life for client devices

### Business Challenge

The Methodist Hospital System, the renowned Texas-based healthcare center, recently changed its name to Houston Methodist. The campus includes a 500,000-square-foot research institute in addition to five hospitals with a total of more than 1600 beds, and is a center for medical discovery and teaching as well as world-class patient care. So, while its name has changed, its well-earned slogan, “Leading Medicine,” remains the same.

Houston Methodist must also be counted among the leaders in IT innovation in the healthcare field. And today, the wireless realm is a major frontier of such innovation.

Like many large institutions, Houston Methodist made its first foray into wireless by creating Wi-Fi hotspots for the simple purpose of providing email and Internet connectivity for patients and visitors. That was in 2002, according to Armand Stansel, director of IT infrastructure services at Houston Methodist. “At that time, very few

of our staff members brought any kind of wireless device, not even a laptop computer, to work,” he says.

But from small beginnings, great things grow, and grow quickly. By 2004, Stansel says, Houston Methodist had a systemwide wireless network in place, and the seemingly exponential proliferation of wireless devices and applications was under way. Today, the institution is host to a wide array of such devices. Wireless phones are used by back office as well as clinical staff. “CoWs,” short for computers on wheels, are a common sight on the wards.

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A growing range of biomedical and lab equipment for diagnostic, monitoring, and other purposes operates wirelessly, including mobile imaging systems, electrocardiogram (EKG) carts, glucose monitors, temperature monitors, infusion pumps, and scanners. Voice- and video-equipped robots allow physicians to make their daily rounds, virtually if not actually face to face with their patients, wherever they or their patients happen to be.

At the same time, of course, the BYOD, or “bring your own device,” movement is also well under way at Houston Methodist as it is at enterprises of every kind. Stansel estimates that 60 to 70 percent of the institution’s clinical staff now use their own wireless devices at work. Tablets are a popular choice, he notes, especially among physicians, who use them for electronic medical record (EMR) access and other applications.

Altogether, it makes for a high-density wireless environment across the Houston Methodist campus of more than 8.5 million square feet. “Today, we can see 10,000 wireless devices on our network at any given time,” says Stansel.

### Network Solution

To service such a volume of wireless traffic, Houston Methodist employs two Cisco® 5508 Wireless Controllers and more than 3,000 Cisco Aironet® 3600 Series Access Points, supporting 802.11g and 802.11n traffic across six Cisco Wireless Service Module 2s (WISM2s) for Cisco Catalyst® 6500 Series Switches. To control and manage the whole network, wired and wireless, Stansel and his IT staff are migrating their infrastructure from Cisco Wireless Control System and Network Control System to the integrated Cisco Prime™ Infrastructure.

“A high-performing Wi-Fi network inspires both more confidence in wireless healthcare tools and broader, more intensive use of those tools. And that, in turn, presents us with new challenges. 802.11ac will enable us to meet those challenges.”

— Armand Stansel, Director of IT Infrastructure Services, Houston Methodist

They are also pioneering the adoption of the new 802.11ac Wi-Fi standard, which provides high throughput on the 5 GHz band. After several months testing the Cisco 802.11ac Radio Module for the 3600 Access Point in a nonproduction environment, Houston Methodist is now deploying production versions of the modules in select locations where the Gigabit capacity of the 802.11ac standard enables the use of very high bandwidth applications or improves the wireless experience in areas with a high density of users and devices.

For example, a patient undergoes a high-definition (HD) cardiac scan under anesthesia. The patient’s physician can analyze the resulting image and prepare a diagnosis and treatment plan for presentation to the patient and family, while the patient is returned to the ward (after some time in the recovery room). In the past, the physician’s presentation would have to wait until the patient and family could be gathered in a room, usually off the ward, equipped with the high-bandwidth optical or Gigabit Ethernet connection needed to display the cardiology images.

“802.11ac gives us Gigabit Ethernet speed without the wire,” says Stansel. “That means the physician can present detailed radiology and CT scans, MRIs, and even 4-dimensional modeling on a laptop or tablet at the patient’s bedside, as soon as the patient is awake and alert.”

The 802.11ac standard also delivers more channels, better traffic balancing, and faster on- and off-the-air times, a level of efficiency that enhances wireless performance and user experiences in high-density environments while optimizing battery life in client devices. For those reasons and more, the director of IT infrastructure services and his staff have started to deploy Cisco Aironet 802.11ac Radio Modules in places that bring many people together, such as cafeterias, conference rooms, and educational areas, at Houston Methodist.

## Business Results

As Stansel describes it, they are taking a “measured approach” in their deployment of 802.11ac. The modular design of the Cisco Aironet 3600 enables such an approach, because it allows any existing Cisco 3600 Series Access Point to be field-upgraded with the 802.11ac Radio Module, expanding available bandwidth and enhancing network efficiency while supporting all traditional wireless devices, such as 802.11a/b/g/n, on the network.

“To start, we’re targeting high-density areas and ‘sprinkling in’ the 802.11ac modules very carefully,” says Stansel. Next, they’re planning to deploy 802.11ac in boardrooms, conference centers, and educational facilities where large file imaging, HD video, and telepresence applications play an important role. That deployment will be followed by an expansion of 802.11ac to emergency departments, with their large populations of diagnostic imaging devices, and then remote offices, back office environments, and IT.

For Houston Methodist, Cisco Aironet 802.11ac Radio Modules accelerate not only current wireless performance but the institution’s entire path to the ever-more-mobilized future of healthcare delivery. The number and variety of wireless-based specialized devices are growing rapidly, as are the number of medical applications for tablets and other consumer-grade devices. Stansel notes that his colleague, wireless architect George Stefanick, and his team evaluate three or four new devices every **week**.

“Most medical device manufacturers don’t have Wi-Fi expertise beyond basic wireless configuration,” he says, “and they tend to use off-the-shelf components. It’s up to us to determine if they comply not only with public standards but with **our** standards as well.”

Given exacting healthcare requirements and today’s regulatory requirements regarding patient privacy and data security, those standards are as rigorous as they come. “We require high performance and reliability in any device we deploy,” Stansel says.

At the same time, of course, the popularity of wireless devices just grows and grows among Houston Methodist’s physicians and other staff. “A high-performing Wi-Fi network inspires both more confidence in wireless healthcare tools and broader, more intensive use of those tools,” says Stansel. “And that, in turn, presents us with new challenges. 802.11ac will enable us to meet those challenges.”

### PRODUCT LIST

- Cisco Unified Computing System™ (UCS®) platform/products
- Cisco Wireless Service Modules 2 (WISM2s) for Cisco Catalyst 6500 Series Switches
- Cisco 5508 Wireless Controllers
- Cisco Aironet 3600 Series Access Points
- Cisco Aironet Access Point Module for 802.11ac
- Cisco Identity Services Engine (ISE)
- Cisco Prime Infrastructure
- Cisco Unified Wireless 7925G IP Phones
- Cisco SMARTnet® Service

## For More Information

To find out more about Cisco Aironet 3600 Series Access Points, please visit: <http://www.cisco.com/go/ap3600>.

To find out more about Cisco wireless products and solutions, please visit: <http://www.cisco.com/go/wireless>.

To find out more about Cisco wireless 802.11ac products and solutions, please visit: <http://www.cisco.com/go/80211ac>.

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To find out more about Cisco Wireless LAN Controller products and solutions, please visit:

[http://www.cisco.com/en/US/products/ps6302/Products\\_Sub\\_Category\\_Home.html](http://www.cisco.com/en/US/products/ps6302/Products_Sub_Category_Home.html).

For More information on the Wireless Service Modules 2 (WISM2s) for Cisco Catalyst 6500 Series Switches, please visit: <http://www.cisco.com/en/US/products/ps11634/index.html>.

For more information on Cisco Identity Service Engine, please visit:

<http://www.cisco.com/en/US/products/ps11640/index.html>.

For more information on Cisco Prime Infrastructure, please visit:

<http://www.cisco.com/en/US/products/ps12239/index.html>.

For more information on Cisco Unified Wireless 7925G IP Phones, please visit:

<http://www.cisco.com/en/US/products/ps9900/index.html>.



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