

CHUNG SHAN  
HOSPITAL

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CASE STUDY  
HEALTHCARE

## OVERVIEW

Chung Shan Hospital is a general teaching hospital staffed with more than 200 clinicians and physicians, and is well-known for the excellent quality of its medical care and the attentive service that it provides.



## REQUIREMENTS

- Prevent unauthorized access to the hospital's wireless network
- Allocate and manage bandwidth based on each user's role to avoid network congestion and maintain service quality
- Seamless and fast roaming between individual APs to ensure uninterrupted Wi-Fi experience
- Centralized AP management to reduce maintenance efforts for hospital IT staff

## SOLUTION

The following were deployed in Chung Shan Hospital:

- **WHG405** Wireless LAN Controller
- **EAP200** Indoor Access Point
- **EAP260** Indoor Access Point

## BENEFITS

- Web-based user authentication supporting all types of mobile devices
- Bandwidth control ensuring that network bandwidth is not consumed by individual clients
- Rogue AP detection and station isolation on each AP prevents malicious activities
- Extensive logging and reporting features for security and troubleshooting purposes

CARING WI-FI AND HEALTHCARE  
IN CHUNG SHAN HOSPITAL

Established in 1976, Chung Shan Hospital is a community-based general teaching hospital located in Taipei, Taiwan. The medical and health services include 31 medical specialties with emphasis on Obstetrics and Gynecology, Orthopedics, and Urology. The hospital has a high doctor/nurse to bed ratio, employing more than 200 medical experts while only containing 217 beds, which ensures a caring and comfortable environment for patients. In order to respond to the recent BYOD trend in the healthcare industry, Chung Shan Hospital decided to deploy a managed WLAN infrastructure to ensure wireless network quality and performance. With Wi-Fi, clinicians are able to obtain patient information in a timelier manner, and visitors can check e-mails or surf the Internet while waiting for their loved ones in the waiting rooms.

The first thing that the hospital had to consider was coverage. The main building stands eight-floors tall, each containing numerous mobile medical carts and nursing stations used by physicians and nurses during rounds. Therefore, it was essential for the solution to support roaming between access points in order to avoid any interruptions when doctors make their way from room to room. In addition, with picture archiving and communication systems (PACS) and electronic health records (EHR) in operation, both of which demand a substantial amount of bandwidth, traffic prioritization and network reliability were a necessity. Finally, due to the confidentiality of patient data and hospital records, security was of the upmost concern for the team at Chung Shan Hospital, whom required that internal and guest networks be separable and manageable.

With these requirements in mind, Chung Shan Hospital began its search for a WLAN solution that could address their needs while being affordable. After surveying multiple vendors, the hospital decided that 4ipnet's solution was the best choice given its comprehensive features and competitive pricing, ultimately deploying a WHG405 Wireless LAN Controller with 41 EAP200 and EAP260 Indoor Access Points. The WHG405 enabled centralized management of all the deployed access points, provided load balancing, and guaranteed fast roaming between neighboring APs. Moreover, it authenticated users, separated them based on their roles (e.g. guests and physicians), and allowed the IT staff to apply role-based policies such as bandwidth limitations.

The team at Chung Shan Hospital found the WHG405's traffic classification feature to be especially beneficial, as it allowed them to define the priority of varying network traffic. When combined with support for data rates up to 300 Mbps and QoS over Wi-Fi (WMM) on the EAP200 and EAP260, the hospital was able to guarantee uninterrupted network service for mission critical applications. The hospital was also pleased to find a wide array of security features, such as station isolation, VLAN tagging, and rogue AP detection. These features helped isolate Wi-Fi users and segment the hospital's network, adding extra layers of security to maintain service quality and prevent the network from being compromised.

By upgrading to 4ipnet's comprehensive and manageable WLAN solution, Chung Shan Hospital was able to provide reliable Internet access to the members of its community. The combination of secure and robust QoS and security features made sure that physicians, staff, and visitors could all use the network without any interruptions. For hospitals, delays and inefficiencies can be the difference between life and death – with 4ipnet, Chung Shan Hospital received a wire-like network, stable and effective, but without the wires.