



# Delivering Seamless and Secure Connectivity for Jeju University Hospital

## Overview

The university hospital in Jeju, Korea has implemented Zyxel Networks' Nebula solution to improve overall satisfaction by providing reliable WiFi service and segmenting the hospital network to meet specific requirements. This includes establishing separate networks for business, patients, and visitors in the main building and medical research facility, ensuring seamless connectivity and cybersecurity protection throughout the hospital. Moreover, the Nebula cloud networking solution allows remote control and monitoring of all hospital network equipment. This empowers administrators to oversee network status and equipment operation in real-time, from any location.

## Challenges

The widespread adoption of mobile electronic medical record (EMR) services, along with the operation of mobile medical equipment and the rise in non-face-to-face education through platforms like Zoom, has led to increased demand for WiFi connectivity. Additionally, inpatients, hospitalized patients, and their caregivers increasingly rely on streaming services like YouTube and Netflix for entertainment. This surge in content consumption has naturally led to an increase in WiFi traffic, highlighting the importance of providing a seamless WiFi service environment within hospitals.

While the hospital had previously offered wireless network services, challenges arose due to the increased WiFi traffic load, aging network equipment, and ineffective network management, resulting in stability issues. Moreover, with an unspecified number of visitors accessing the hospital network, securing the hospital network is increasingly crucial.

### Customer

University hospital

### Industry

Healthcare

### Location

Jeju, Korea

## Customer Background

The newly constructed university hospital in Jeju has six above-ground floors and one underground floor, each spanning around 5,200 pyeong (around 17,200 square meters). Wireless access is needed on the 1st and 3rd floors of the main building for visitors and hospitalized patients respectively. Additionally, the research building requires wireless access for business purposes.



## Solutions

All previous wireless APs have been upgraded to WiFi 6 APs, and additional APs have been installed in shaded areas to ensure comprehensive WiFi coverage throughout the hospital premises. The newly deployed 119 NWA90AX APs boast advanced WiFi 6 features, ensuring optimal network performance even during peak usage times when multiple users access WiFi simultaneously.

The WiFi Quality of Service (QoS) feature ensures fair distribution of network resources, allowing all users to use WiFi more comfortably. Additionally, the network improves reliability through features like Dynamic Channel Selection (DCS), which minimizes interference by automatically switching to less congested channels, and Smart Steering, which seamlessly switches devices between the 2.4GHz and 5GHz bands to maintain optimal connectivity.

The unified WiFi naming via the Nebula cloud platform simplifies hospital-wide connectivity, eliminating the need to search and connect to different WiFi networks. After integrating the WiFi names, the roaming functionality, managed by Nebula, ensures uninterrupted access to online content for patients and enables medical staff to use wireless medical devices seamlessly within the hospital.

## Product List



- NWA90AX WiFi 6 Access Point



- XGS2210-28 Layer 3 Access Switch
- GS1920-24HPv2 Smart Managed PoE Switch



- VPN1000 Firewall

## Results

Nebula automates device connections for seamless streaming and medical service access. If there's a failure, Nebula promptly notifies administrators to minimize disruption. Automatic reports ensure reliable network management. The new, uninterrupted WiFi environment allows hospital staff to efficiently access patient data and transmit X-ray videos, ensuring fair WiFi usage for patients and caregivers. Moreover, separated networks enhance cybersecurity by safeguarding sensitive data across departments and user groups, mitigating risks of unauthorized access or breaches. Overall, the WiFi upgrade improves medical operations and patient care, ensuring seamless connectivity across the hospital.

- Smooth and uninterrupted WiFi usage within the hospital
- Strengthened security through separate networks for staff and guests
- Cloud-managed service enables real-time network control and management

