



Customized Managed Network Solution for Smarter Healthcare

Case Study

A photograph of a hospital room. In the foreground, a white hospital bed with blue accents is positioned. The bed has a blue mattress and a white pillow. On the bed, there are three folded white towels. To the left of the bed, there is a medical stand with various equipment. The wall behind the bed is light-colored with several electrical outlets and switches. A window is visible in the background, showing a view of the outside. The room is brightly lit, likely by overhead lights.

Client Overview

This facility is a classic example of how our Living Network seamlessly integrates customized Wi-Fi and reliable GPON infrastructure to enhance connectivity in specialized environments. Located in Coimbatore, this premier wellness-focused Ayurvedic healthcare facility offers holistic treatments in a retreat-style setting, with independent villas spread across a vast campus. Catering to high-net-worth individuals, international patients, and corporate executives, the center required a robust digital infrastructure to support both medical operations and patient convenience.



However, the facility faced network connectivity issues that impacted operations, patient experience, and internal communication. A seamless digital infrastructure was crucial for:

- Medical professionals relying on access to cloud-based patient records, and telemedicine platforms.
- Administrative staff managing booking systems, digital patient records, and internal communication.
- Guests and patients who expected high-speed internet for personal and professional use.
- Security systems, including CCTV surveillance and IP phones, that needed stable connectivity.

A turning point occurred when a senior executive from a renowned hospitality group visited the facility for treatment and experienced severe Wi-Fi issues. Upon his recommendation, the management approached us to design a customized connectivity solution.





Challenges Faced

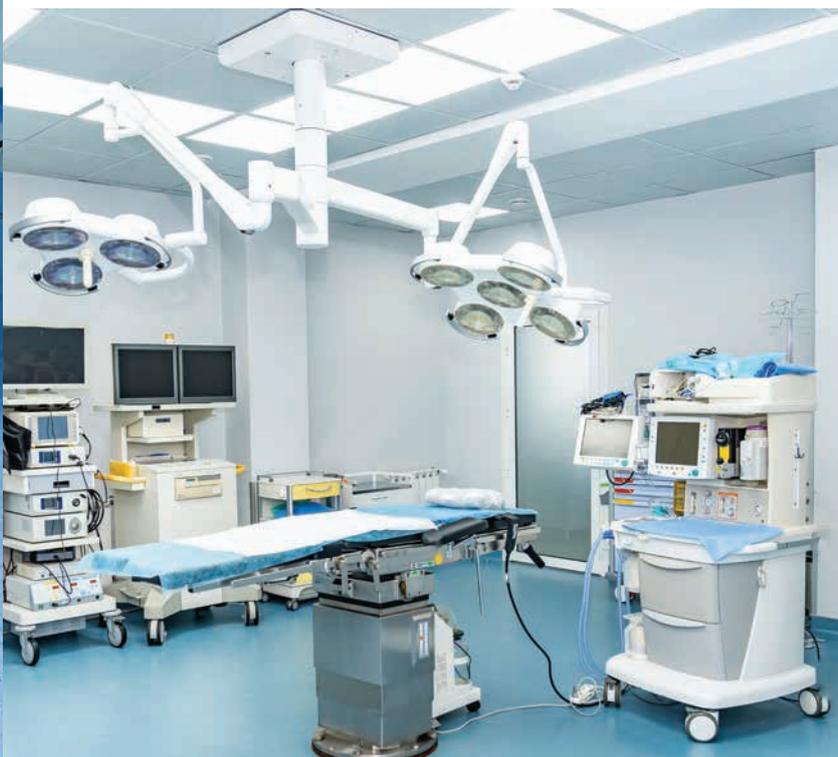
Despite being a top-tier wellness center, the facility faced significant network issues, including:

► Poor Wi-Fi Coverage Across the Facility

- The existing Wi-Fi setup was implemented without proper planning, resulting in dead zones across the campus.
- Patients, permanent residents and staff struggled with inconsistent connectivity.

► Network Congestion & Performance Issues

- A single network handled all users (guests, staff, CCTV, and IP phones), causing latency and frequent disconnections.
- When guest traffic spiked, admin operations slowed down, impacting workflow and patient care.



▶ **Security & Access Control Concerns**

- The absence of a firewall meant no control over which websites or services were accessible.
- Data privacy and internal communication security were at risk.

▶ **Unique Time-Based Internet Restrictions**

- The management sought to limit patient internet access to specific hours each day to encourage relaxation.
- This required automated, role-based access control, a first-of-its-kind requirement for us.

▶ **Inconsistent Internet for Long-Term Residents**

- The facility offered 22 guest houses for permanent residents who needed high-speed, reliable internet for work and daily communication.
- Their existing broadband service was unstable, leading to dissatisfaction.
- Since the residential segment was located separately within the campus, it required a dedicated FTTH (Fiber-to-the-Home) solution using GPON.
- This GPON infrastructure not only provided seamless personal internet access but also supported security cameras for enhanced safety within the residential zone.

▶ **Delayed Implementation Due to Monsoon Season**

- Heavy rains during installation caused delays in the fiber-optic network setup.



The Solution

A Fully Managed, Custom Connectivity Infrastructure

To address these challenges, the team implemented a multi-layered, fully managed connectivity solution tailored to the facility's specific needs.

Comprehensive Wi-Fi Implementation & Network Optimization

▶ Smart Wi-Fi Deployment for Full Coverage

- Conducted a detailed on-site network survey to identify and address connectivity gaps.
- Installed high-performance access points (APs) in strategic locations to ensure seamless Wi-Fi coverage across the facility.

▶ Multi-Network Segregation for Efficiency

- Designed a separate network for each user group:
 - **Guest Wi-Fi:** Secure, time-limited access for patients.
 - **Administrative Network:** Dedicated network for staff and medical operations.
 - **Security & IP Telephony:** Isolated connectivity for CCTV surveillance and VoIP.



- ▶ **Time-Based & Role-Based Internet Access**
- **Integrated a firewall-based access control system, allowing:**
 - **Doctors:** Unrestricted access during working hours.
 - **Therapists:** Limited internet access at designated times.
 - **Staff:** WhatsApp access only; restricted general browsing.
 - **Guests:** Internet only in specific areas and during scheduled hours.
- **Automated scheduling was configured to enable or disable Wi-Fi access dynamically.**

- ▶ **Firewall & Authentication for Enhanced Security**
- **A next-generation firewall was deployed to:**
 - Block unauthorized websites.
 - Regulate bandwidth consumption.
 - Enforce security policies for different user groups.
- **Introduced a centralized authentication system, ensuring only authorized users accessed the network.**

- ▶ **Implementation & Overcoming Challenges**
- **Phase-wise deployment to tackle the monsoon-related delays.**
- **Custom equipment selection to match the specific requirements of time-based restrictions.**
- **Training sessions for staff and administrators to ensure seamless transition.**



GPON _ FTTX IMPLEMENTATION

Secure & High-Speed Connectivity for Long-Term Residents

- ▶ Implemented GPON (Gigabit Passive Optical Network) for the 22 guest houses.
- ▶ This fiber-optic network provided dedicated, uninterrupted connectivity to long-term residents.



Results & Measurable Impact

Post-implementation, the healthcare facility experienced significant improvements in network efficiency and user satisfaction:

▶ Seamless, Campus-Wide Connectivity

- 100% Wi-Fi coverage, eliminating previous dead zones.
- Uninterrupted network access for doctors, staff, and patients.

▶ Optimized Network Performance

- No congestion or slowdown due to separate networks for different user groups.
- Staff and administrative operations ran smoothly without interruptions.

▶ Higher Patient Satisfaction

- Guests no longer faced connectivity disruptions, improving their stay experience.
- Managed, time-based internet helped balance digital access and wellness priorities.

▶ Enhanced Security & Compliance

- Firewall policies ensured compliance with patient data privacy regulations.
- Unauthorized access was blocked, preventing security breaches.

▶ Reliable Connectivity for Long-Term Residents

- GPON deployment provided high-speed fiber-optic internet for 22 guest houses.
- Permanent residents reported a smoother, uninterrupted online experience.

Key Takeaways

- Network segmentation is crucial for healthcare environments to prevent congestion.
- Time-based and role-based internet access can be successfully implemented with firewalls.
- Custom-managed GPON and Wi-Fi solutions improve guest satisfaction and staff efficiency.
- Security and authentication controls enhance data privacy and compliance.





Conclusion: Setting a Benchmark for Healthcare Connectivity

By deploying a customized managed network solution, the team revolutionized the connectivity experience at the wellness healthcare facility. The seamless integration of Wi-Fi, fiber, security, and role-based access control ensured that the right people had the right access at the right time.

This project set a new benchmark for managed connectivity in healthcare facilities, demonstrating how tailored network solutions can drive efficiency, security, and patient satisfaction.