Customized Managed Network Solution for Smarter Healthcare

Case Study

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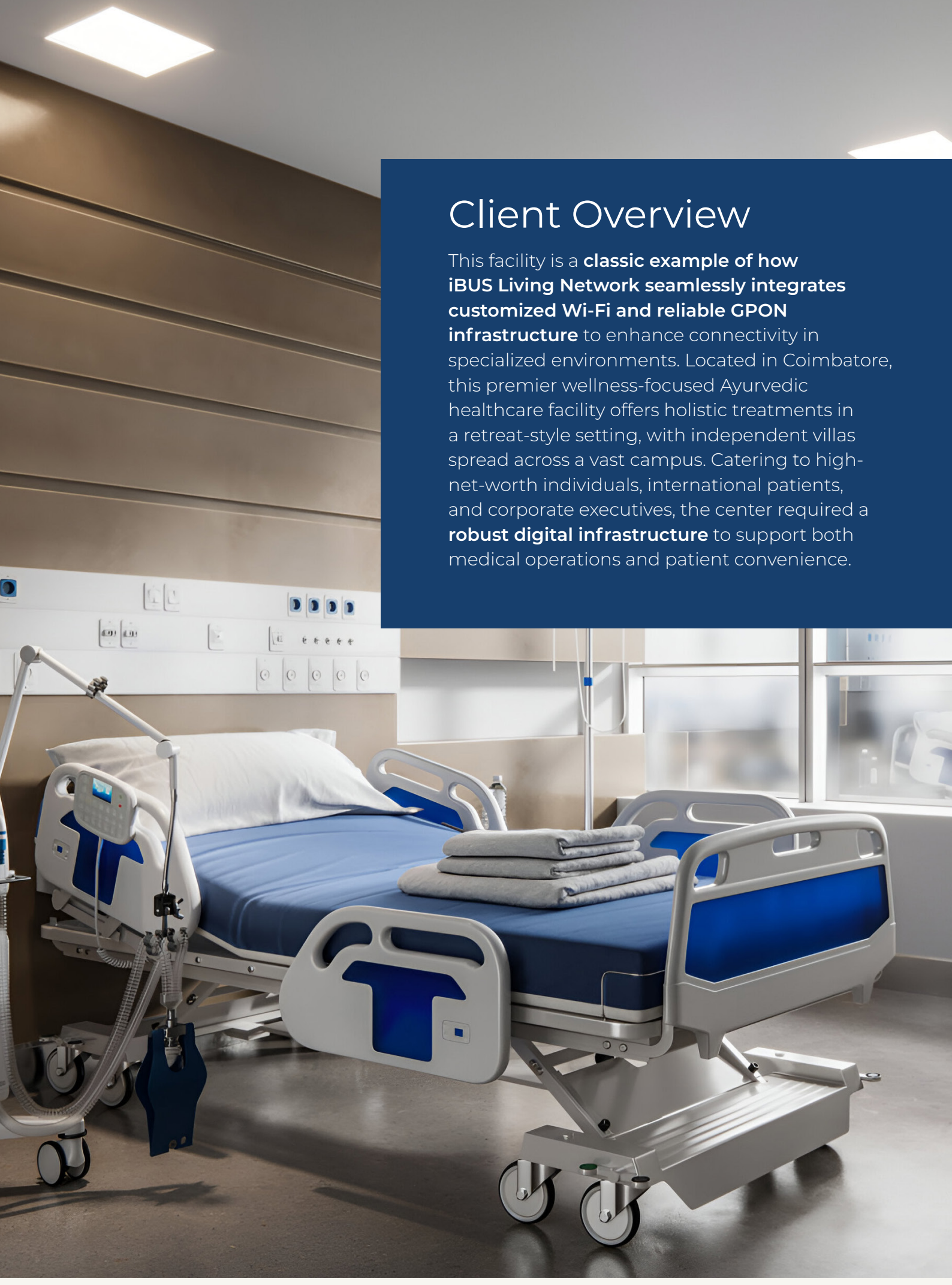

Client Overview

This facility is a **classic example of how iBUS 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 iBUS 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 iBUS.
- **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 iBUS Solution

A Fully Managed, Custom Connectivity Infrastructure

To address these challenges, iBUS 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

Following iBUS's 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, iBUS 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.

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