Seamless High-Speed Networking Deployment in a Major Hospital in Ahmedabad

Overview

In the heart of Ahmedabad, one of the city's most prominent hospitals sought to modernize its internal network to support data-heavy operations across its departments. Focusing on delivering efficient patient care and improving the responsiveness of its administrative systems, the hospital aimed to upgrade its core infrastructure to support seamless data transmission, especially in high-demand areas like diagnostics, patient monitoring, and medical imaging. The project aimed to establish a robust internal network capable of handling large data volumes with high reliability and minimal latency. Zyxel Networks was chosen to spearhead this transformation, deploying a high-performance switching solution tailored to the hospital's environment and needs. The deployment included one XS3800-28 10G Layer 3 aggregation switch, twelve XGS1930-28 Lite-L3 smart managed switches, and 10G SFP+ transceivers for long-distance uplink connectivity. This setup successfully elevated the hospital's data infrastructure without disrupting existing operations, including compatibility with an existing third-party router.

Challenges

The hospital faced a pressing need for a high-throughput internal network to keep pace with modern healthcare applications and digital records. The main challenge was to link multiple access points, departments, and systems to a high-speed backbone while maintaining data integrity and consistent uptime. The infrastructure also had to support bandwidth-hungry systems like PACS (Picture Archiving and Communication System) and real-time data access from centralized servers.

Besides, the deployment had to work within an existing environment, with a pre-installed router from another vendor. Seamlessly integrating Zyxel Networks solution into this hybrid setup required technical finesse and precise configuration to ensure interoperability, avoid bottlenecks, and eliminate potential conflicts between devices.

Customer
Hospital in Ahmedabad

Industry
Healthcare

Location
Gujarat, India

Customer Background

Renowned for its commitment to quality care and modern medical practices, one of Western India's leading healthcare institutions stands out for delivering world-class treatment at affordable rates. Operated by a team of experienced super-specialist doctors, the hospital emphasizes a patient-centric approach and leverages advanced technology and evidence-based medicine across more than 25 medical and surgical specialties.

Solutions

Empowering a modern healthcare facility demands more than just network upgrades. It requires a carefully orchestrated solution that blends high-speed performance with operational resilience. Zyxel Networks stepped in with a powerful, purpose-built setup tailored to the hospital's data-driven environment. At the center of this deployment stood the XS3800-28, a 28-port 10GbE Layer 3 Aggregation Switch, acting as the core switch. This high-performance unit served as the hospital's data hub, capable of handling the enormous volumes of traffic generated by bandwidth-intensive applications such as digital imaging systems, electronic health records, and centralized monitoring tools. With 10G capabilities across the board, the switch enabled lightning-fast aggregation and distribution of data between departments, ensuring zero lag during critical operations. Complementing the core, Zyxel deployed twelve XGS1930-28 switches, each a 24-port GbE Lite-L3 smart managed switch equipped with 4 10G uplinks. These access switches were strategically installed across various hospital zones to serve edge devices including workstations, surveillance systems, and wireless access points. By connecting each of these switches to the XS3800-28 via 10G SFP+ transceivers, the hospital achieved seamless high-speed connectivity throughout the entire facility. This design not only ensured low-latency, uninterrupted data flow but also provided a clean, scalable network architecture. The smart managed XGS1930 switches supported hybrid operations through NebulaFlex, enabling the IT team to manage the network either on-premises or via the cloud. This flexibility reduced configuration time by up to 80% and simplified day-to-day network oversight.

Results

Despite the presence of a pre-existing router from another vendor, Zyxel Networks' solution integrated flawlessly, proving its interoperability and eliminating the need for costly changes or downtime. The hospital now benefits from a dramatically improved IT backbone that supports high-speed, high-volume data transfer across its departments. The new network has enhanced the performance of critical applications, improved internal communication, and laid a strong foundation for future digital healthcare advancements.

- 5X faster internal data transmission improves response time across clinical departments
- Seamless deployment alongside existing router without interoperability issues
- 50% lower maintenance costs and 80% reduction in troubleshooting efforts

Product List

- XS3800-28 L3 Aggregation Switch
- XGS1930-28 Lite-L3 Smart Managed Switch