



Powering Digital Learning Across a Thai Technical College Campus

Overview

Phra Nakhon Si Ayutthaya Technical College set out to modernize its campus network to keep pace with digital-era teaching, learning, and administration. With multiple buildings spread across campus, the college needed efficient connections between them to support day-to-day academic operations, while also handling heavy simultaneous use by students, faculty, and connected devices. Reliability and security were paramount, as everything from classes to internal management systems now depends on connectivity. Scalability was equally important, as the college wanted an infrastructure that could grow alongside future educational technology. Zyxel Networks addressed these needs with a fiber-backed solution tailored to the campus: a high-speed backbone linking every building, distributed switching for heavy daily traffic, and a security gateway protecting the entire network, giving the college a stable, easily managed foundation for future growth.

Challenges

The institution's existing network infrastructure needed an upgrade to properly support digital learning, teaching, and management in the digital era. The network also had to support heavy, simultaneous usage from a large number of students, staff, and connected devices across campus. Connections between buildings required a fiber optic backbone to keep data transmission fast and efficient, while the college needed the overall system to remain stable and secure with enough headroom built in to accommodate future expansion.

Solutions

To solve the inter-building connectivity challenge, Zyxel Networks deployed an XGS4600-32F L3 aggregation fiber switch as the core of the network, paired with SFP-LX-10D fiber transceivers to link buildings across campus over a high-speed fiber optic backbone.

Customer

Phra Nakhon Si Ayutthaya
Technical College

Industry

Education

Location

Ayutthaya, Thailand

Partner

GRAND ATS Co., LTD

Customer Background

Established in 1938, Phra Nakhon Si Ayutthaya Technical College has a history of vocational education in Thailand. Founded as a handicraft school offering carpentry, pottery, and shipbuilding programs, it evolved over the decades to meet changing needs. In 1976, several vocational schools were merged to form Phra Nakhon Si Ayutthaya Vocational College, and the institution was upgraded to a technical college in 1980, becoming Phra Nakhon Si Ayutthaya Technical College.



Solutions

This design let data move between academic buildings without the bottlenecks that copper connections would introduce over longer distances, addressing the college's requirement for efficient inter-building data transmission.

At the building level, GS1920-24HPv2, GS1920-48v2, and GS1915-24EP smart managed switches were placed to distribute connectivity, with PoE-enabled models powering access points and other networked equipment directly over the data cable. These switches give the college enough capacity and PoE support to handle simultaneous connections from students, faculty, and devices without straining any single point of the network.

To protect the network, the USG LITE 60AX security router and USG FLEX 700H firewall were deployed to safeguard access to digital learning resources and internal systems.

Results

Together, the fiber backbone, distributed switching, and security gateway give Phra Nakhon Si Ayutthaya Technical College a unified foundation for digital learning today and continued expansion ahead. The college's IT staff can manage and expand the network through the Nebula cloud networking solution as new buildings, devices, or services are added, supporting the long-term scalability and future-ready network the college was looking for.

- High-performance network infrastructure built for long-term utilization across campus
- Reliable connections delivered for students, faculty, and internal campus devices
- Enhanced network stability and reliability on campus
- Network infrastructure prepared for prospective expansion and ongoing technology upgrades
- Positioning the college as a smart campus through an advanced learning environment

Product List



- XGS4600-32F L3 Aggregation Fiber Switch
- GS1920-48v2/24HPv2 Smart Managed Switch
- GS1915-24EP Smart Managed PoE Switch
- SFP-LX-10D Fiber Transceiver



- USG FLEX 700H Firewall
- USG LITE 60AX WiFi 6 Security Router



- Nebula Cloud Networking Solution

