ZYXEL
NETWORKS

Creating Distraction-Free Learning Space with Secure, Reliable Network

Overview

Zyxel Networks deployed a high-performance 10G network solution for a self-study prep academy to create a distraction-free learning environment. The academy required a stable WiFi network that would allow students to access online lectures seamlessly, while strictly blocking non-learning content such as YouTube, games, and social media.

The USG FLEX 700H firewall was connected to XS1930-12HP switches that powered WiFi 6 access points designed for high-density learning spaces. Centrally managed through the Nebula cloud networking solution, the infrastructure enabled secure network segmentation, real-time monitoring, and consistent performance, supporting heavy concurrent traffic while tightly controlling access to academic content.

Challenges

The academy needed to maintain a stable WiFi environment to support high user density across its reading rooms and lecture halls, where students had experienced connection outages at times while accessing online lectures. In addition, the facility struggled to restrict access to non-educational content such as social media, games, and video streaming platforms. There was also an urgent need to separate student and faculty networks to ensure data security and operational efficiency while maintaining backbone bandwidth.

Solutions

High-density learning areas such as reading rooms and lecture halls were equipped with WiFi 6 WAX650S access points to ensure stable, uninterrupted connectivity during peak usage. Break areas, meanwhile, were fitted with WAX610D access points to separate study traffic from everyday internet use.

At the core of the network, the USG FLEX 700H firewall enabled VLAN separation between student and faculty networks. This ensured the students remained in a distraction-free, whitelist-focused environment, while teachers retained the open access needed for teaching and administrative tasks.

Customer
Self-Study Prep Academy

Industry
Education

Location
Gwangmyeong City, South Korea

Customer Background
The newly opened Self-Study Prep Academy, located in Gwangmyeong City, is a large learning facility with approximately 280 seats, including a 200-seat focused reading room and an 80-seat lecture building. It offers a comprehensive environment for mock exams, admissions counseling, and self-directed learning, where students rely heavily on digital devices.

The firewall provided robust protection through IPS, anti-malware, and advanced web filtering. Its Deep Packet Inspection (DPI) technology effectively blocked non-learning services, including YouTube and social media, even when they used multiple IP addresses. As applications evolved to bypass controls, the USG FLEX 700H synchronized cloud-based signature updates and detected new evasion patterns, maintaining a consistently stable learning environment.

To ensure smooth operation of high-performance access points, the XS1930-12HP Lite-L3 smart managed PoE switch was used to build a robust 10G backbone that connected and powered the access points. This configuration eliminated potential data bottlenecks, ensuring that the large volume of traffic generated by concurrent users flowed seamlessly across the academy.

All network equipment was managed via the Nebula cloud platform, providing centralized oversight and real-time visibility. The **Automatic Network Topology** feature visualized network changes and faults for rapid issue identification. Application-level traffic could be monitored, with non-learning apps blocked by a single setting to ensure stable, efficient operations. Email and mobile notifications allowed IT staff to detect and address issues, minimizing disruptions and maintaining a reliable learning experience.

Product List

- WAX650S WiFi 6 Access Point
- WAX610D WiFi 6 Access Point

- XS1930-12HP Lite-L3 Smart Managed PoE Switch

- USG FLEX 700H Firewall

Results

The implementation delivered an advanced, highly stable learning environment that supported diverse learning needs, while proactive cloud-based detection and push notifications minimized service disruptions. Students could access online educational content without lag, and the academy effectively eliminated digital distractions through strict application and website controls. In addition, centralized cloud network management significantly reduced the burden of manual maintenance and improved overall operational efficiency, regardless of the administrator's physical location.

- Reliable, high-density WiFi connectivity, supported by a high-performance 10G network, for reading rooms, lecture halls, and break areas
- Enhanced cybersecurity through separation of student and faculty wireless networks
- Distraction-free learning enabled by adaptive content control that blocks non-learning websites and applications
- Centralized cloud management with real-time network visibility, automated topology, and rapid issue resolution