



Modernizing Network Infrastructure to Boost Learning Experiences

Overview

Deutsche Schule Bratislava requires a robust network solution to support its advanced educational environment and operational needs across its expansive, multi-functional campus. Zyxel Networks designed a comprehensive 10GbE network, featuring over fifty WAX510D WiFi 6 access points, the XGS4600-32F L3 aggregation fiber switch, the XGS1930-52HP Lite-L3 smart managed PoE switch, and the USG FLEX 700 firewall to ensure efficient local management and enhanced security. The new network offers sufficient capacity for data transfers, including video and multimedia content in lessons, and serves as the backbone for reliable, campus-wide WiFi 6 coverage. Its high throughput supports the simultaneous connection of numerous client devices, an essential feature for educational settings. The centralized infrastructure enhances network reliability, security, and daily operations. It also optimizes performance and scalability to support modern teaching methods and future growth.

Customer

Deutsche Schule Bratislava

Industry

Education

Location

Bratislava, Slovakia

Partner

iServices s.r.o.

Challenges

The new Deutsche Schule Bratislava building is vast and highly segmented, featuring numerous classrooms, offices, study rooms, long corridors, and several computer labs. The project required the construction of a 10GbE central network, with switches providing multiple Ethernet ports to connect traditional computers in offices and classrooms. Additionally, the network needs to supply sufficient power over Ethernet (PoE) to support multiple wireless access points. Like other schools, Deutsche Schule Bratislava also requires having central control over its wireless network.

Solutions

Over fifty WAX510D WiFi 6 access points were installed across the campus. Equipped with OFDMA and MU-MIMO technologies, these access points enable simultaneous connectivity for multiple devices and efficiently manage high-density environments. They delivered uninterrupted connectivity, ensuring a seamless wireless experience for students, staff, and visitors.

Customer Background

Deutsche Schule Bratislava, located in Nové Mesto, is a newly constructed institution offering education from kindergarten through secondary school. Designed to support 21st century learning, the school features a multi-functional playground, dining hall, gym, and classrooms tailored for natural sciences, music, and art education. Each floor includes a school club, creative workshops, and specialized areas for interactive and innovative learning.



Modern teaching relies on advanced technology and a reliable internet connection, essential for both education and school operations. Zyxel Networks' solutions have impressed us with their reliability, performance, and straightforward centralized management, affirming that we made the right choice."

Andrej Dobrovodský, IT Assistant
Deutsche Schule Bratislava

The network backbone was built using the XGS4600-32F, a high-capacity core switch with 10GbE ports to provide the bandwidth needed for data-intensive applications. Complementing this, XGS1930-52HP PoE switches were installed to efficiently connect endpoints, such as access points and classroom computers. These switches deliver up to 30W per port, with a total power budget of 375W, to power devices while conserving energy.

Centralized network management is achieved with the USG FLEX 700 firewall, which serves as both a hardware controller and a robust security solution. This enables local network control while safeguarding the network from external threats.

Results

The upgraded network guarantees reliable WiFi 6 coverage throughout the entire campus. With its high bandwidth, the network enhances multimedia learning and supports seamless real-time collaboration. Simplified management via a hardware controller enables efficient local monitoring and smoother network operations. The new infrastructure equips the school to accommodate future growth and increasing device usage, while confidently adopting modern teaching methods and preparing for continued expansion.

- Reliable network coverage ensures smooth access for students, staff, and visitors across all areas
- Enhanced performance with the 10GbE network supports multimedia learning and real-time collaboration
- Simplified network management allows for easy local monitoring and oversight of the entire network
- Future scalability accommodates future growth and increased device usage

Product List



- WAX510D WiFi 6 Access Point



- USG FLEX 700 Firewall



- XGS4600-32F L3 Aggregation Fiber Switch
- XGS1930-52HP Lite-L3 Smart Managed PoE Switch

