

Background

Malohtinsky College is one of the leading primary vocational educational institutions in the Leningrad Region, St. Petersburg. The college consists of two branches with over 200 staff members and more than 400 students. The college building complex is comprised of two buildings,

one of which buildings needed to build a new wireless network infrastructure during a comprehensive reconstruction. The school turned to the integrator TEKO for a reliable solution that could help them to provide wireless internet access throughout the entire campus.

Challenges

In 2019, the college leadership decided to equip the four-story building with seamless, high-speed wireless internet access during its reconstruction. When it came to the requirements of the equipment, the wireless access points needed to fully cover the premises of the educational institution and work in both 2.4 and 5 GHz bands to ensure stable data transmission without any interruptions. An additional requirement was that the configured network

should be divided into three subnets—administrative, student, and guest. The most challenging part of the implementation was that the system integrator was required to install and configure the equipment within only a week, and run all the systems on the weekend. They also needed to ensure the system was fully operational without any errors or downtime.

Solutions and Benefits

When planning the project and reviewing the hardware vendors, only Zyxel's equipment was considered as the best fit for the goals and objectives of the project.

Dmitry Akimenkov, Project Manager at TECO said, "We know firsthand about the high reliability, the simplicity and ease of installation of Zyxel's equipment." After working with Zyxel, "there were some technical issues that we couldn't solve them by ourselves. Thanks to Zyxel's professional and timely support, we could manage to fix everything together to meet the customer's requirements," he commented.

TECO was required to install wireless gateways, switches and APs in the building and make sure everything was within working order on a tight deadline. Zyxel's wireless solution helped them finish the project within one week and with only three tech specialists. The wireless solution is designed to simplify the configuration, management, and troubleshooting processes, leading to a quick and painless network setup. For example, the NWA5123-AC APs established connections automatically after being installed and powered on. The Power over Ethernet (PoE) design facilitated easy installation of APs without a separate electrical supply. Besides, the devices were powered by the GS2210-24HP switches to ensure they operate at full potential without losing power. This allows for simplified deployment and more effective management of network traffic. The solution successfully streamlined deployment to enable easy and fast installation.

In order to provide sufficient coverage, the technicians installed thirty NWA5123-AC access points throughout the building. The APs, which support the 802.11ac standard,

are ideal for delivering fast, intelligent data transfer in high-density environments.

ZyWALL 1100 VPN Firewalls were chosen because they are able to enable various network access controls and send information to the administrator when detecting inoperative APs. The firewalls connected to GS1100-16 16-Port GbE Unmanaged Switches and GS2210-24HP 24-port Gigabit L2 PoE Switches were used to create three sub-networks for administrators, students and teachers, and guests.

The school was amazed at the implementation after it was accomplished. The seamless WiFi system allows for full coverage throughout the entire premises of the educational institution and works in the dual-frequency 2.4 and 5 GHz. Akimenkov indicated, "In this solution, NWA5123-AC 802.11ac Dual-Radio Unified Access Points, the so-called "Smart Access Points", are mounted to increase the coverage area automatically in case of failure of the intermediate point." The system administrators feel more assured and confident in the system, knowing they will receive a notification in case of any equipment failure anywhere down the line. "The ZyWALL1100, being controllers of access points, sends the administrator messages about the failure of a particular point," he continued,

The school now has a network that's able to provide fast, secure, and reliable wireless connectivity to a large number of client devices in different groups. The Zyxel access points provide wide bandwidth and high connection speeds, enabling many users to connect to the same access point simultaneously and smoothly anywhere on campus.

Products Used

ZyWALL 1100 • VPN Firewall



- Multi-core CPUs deliver up to 6 Gbps firewall throughput and 800 Mbps VPN throughput
- More secure VPN connections with SHA-2 cryptographic
- VPN High Availability (HA) with dual-WAN failover and fallback support
- Auto-provisioned client-to-site IPSec setup with Easy VPN

GS1100-16 • 16-Port GbE Unmanaged Switch



- Non-blocking, wire-speed transmission
- Auto MDI/MDI-X support
- IEEE 802.3az Energy Efficient Ethernet to reduce power consumption
- Fanless design which is ideal for small or quiet office environments

GS2210-24HP • 24-port Gigabit L2 PoE Switch



- High power budget of 375 W
- L2 multicast, IGMP snooping, MVR, and voice VLAN for convergence
- Enhanced network protection with IP source guard, DHCP snooping, ARP inspection, and CPU protection
- L2, L3, and L4 filtering, MAC freeze, port isolation, and guest VLAN for improved isolation and access control

Products Used

NWA5123-AC • 802.11ac Dual-Radio Unified Access Point



- Ceiling- and wall-mountable design with optimized RF performance
- 2-in-1 standalone/managed AP design
- CAPWAP management supported
- Enterprise-class 2x2 802.11ac AP supports combined data rates of up to 1,200 Mbps
- Simple, speedy deployment with APFlex™ and Zyxel One Network utilities

About Zyxel

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for telcos and service providers, business and home users. Zyxel is building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play. Zyxel, Your Networking Ally.

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