



## Success Story

### A Secure, Powerful Wi-Fi Network for Sušice Primary School, Czech Republic

**“Teachers are all equipped with business-class laptops, and it was necessary to install a matching Wi-Fi network to maximize the potential. Now teachers are no longer restricted to use computers in their own offices; they can work at any location on school premises. During classes, they can have access to materials saved on shared disks and use Internet at the same time.”**

#### Mgr. Lenka Kopřivová

Teacher of computer studies,  
Sušice Primary School

## Overview

#### Customer Name

Sušice Primary School, Czech Republic

#### Customer Industry

Education

#### Challenges

- A full Wi-Fi coverage of the entire Sušice Primary School
- Teachers need to access wireless Internet via mobile devices
- Lack of a centralized management mechanism for the network
- To protect users from malicious attacks and to restrict unwanted applications

#### Solutions

- USG 200, NWA3160-N, NWA-3100, ES-2024PWR, GS2200-24

#### Benefits

- Simplified access to materials on school servers for the faculty
- Network monitoring capability and filtering of undesirable Internet contents
- Secured concurrent operation of several segregated networks
- Hassle-free centralized administration of access points and policies for the individual networks

## Challenges

Sušice Primary School recently took part in the “EU Money For Schools” program and it is necessary to build a high-quality wireless network covering pavilion A and pavilion B where classrooms are located. The driving force fueling the initiative was the need of teachers to connect their notebooks to the local network and Internet no matter where on the school premises they are located rather than only in their private offices via LAN connection. Teachers also demanded access to a wireless network from their mobile devices. Taking the security concerns with unrestricted access to school servers into account, another Wi-Fi network with separate SSID and security policy were created for this particular scenario.

## Background

Sušice Primary School employs over 40 instructors and has almost 600 students attending every day. The school also provides language courses for parents with children and the general public, and this means that students occupy the classrooms from time to time. Recently, the school took part in the “EU Money For Schools” program that allowed it to procure laptops for promoting education. In order to provide convenient Internet connections, it was necessary to install a high-quality wireless network with access to internal servers and to provide Wi-Fi signal coverage for the school premises.

## Solutions

As the school infrastructure was evaluated as obsolete, initially all 6 installed switches were replaced by ZyXEL's GS2200-24 24-port GbE L2 Switches to enable deployment of more advanced technologies including VLAN virtual networks. Every school pavilion was subsequently deployed with one ZyXEL ES-2024PWR 24-port FE L2 PoE Switch aso connect the access points. Since the electrical power comes directly from the ES-2024PWR that provides 15.4 Watts per port, the access points do not need external sources.

To achieve full coverage for both school pavilions, 14 ZyXEL NWA-3160 N business-class Wi-Fi access points were deployed to broadcast a broader range of SSID IDs and to provide VLAN support. The NWA-3160 N was selected for its hassle-free, centralized administration features that provide an overall management system for individual access points.

## Benefits

With ZyXEL education solutions, teachers of Sušice Primary School are no longer restricted to use computer only in their private offices. They can work at any location on school premises, and they can access the materials saved on shared disks during sessions and use Internet connection at the same time. Meanwhile, students are able to access public wireless without any restriction.

The network for teachers' notebooks is secured through MAC address controls and a shared WPA2-PSK key. Access to the Internet through this network also involves transfer rate restriction. With such a high number of switches, the network makes good use of ZyXEL's Enterprise Network Center solution for centralized administration to all active segments including access points and the firewall.

Internet access for the entire school premises as a whole is restricted by means of content filtering performed by a ZyWALL USG 200 firewall, with which restriction rules are activated to block or restrict access to social networks, adult sites or other potentially dangerous contents.

To connect students and school visitors to the Internet, the school makes use of a wireless network built with a single NWA-3100 AP installed in the school lobby. This network does not require login but restricts transfer rates to up to 256 Kbit/s and it also applies content filtering controls.

The Wi-Fi network built for teachers can be protected by the ZyWALL USG 200 with content filtering and monitoring.

## Product Used



### USG 200 Unified Security Gateway

- Robust security without sacrificing performance
- Comprehensive support to IPv6
- Robust hybrid VPN (IPSec/SSL/2TP)
- Zero-configuration remote access with EASY VPN
- Supports L2TP VPN on mobile devices (iPhone and Android phones)
- ICSA firewall, IPSec certification
- Content filter stops malware and Web threats
- Powerful email security
- Non-stop Internet access with multiple WAN and 3G backups



## **NWA3160-N** **802.11 a/b/g/n Unified Pro Access Point**

- Higher bandwidth and superior performance with 802.11n
- 3-in-1 hybrid AP WLAN including AP controller mode, managed AP mode and standalone AP mode
- Brand new centralized graphic management interface for up to 24 WLAN APs
- Back-up redundancy supported to provide reliable connection service
- Secured tunnels for communication between controller and managed AP to prevent leaking of configurations
- Enterprise-class AP functionalities with comprehensive configuration interfaces
- Built with Low Smoke, Zero Halogen (LSOH) materials for plenum rating for UL 2043 support



## **NWA-3100** **802.11 a/b/g Wireless Access Point**

- 802.11 a/b/g wireless connectivity
- Wi-Fi Multimedia (WMM) + auto traffic classifier
- Wi-Fi WPA2-certified
- Multiple SSID with predefined VoIP, guest SSID
- Powerful and secure management



## **ES-2024PWR** **24-port FE L2 PoE Switch**

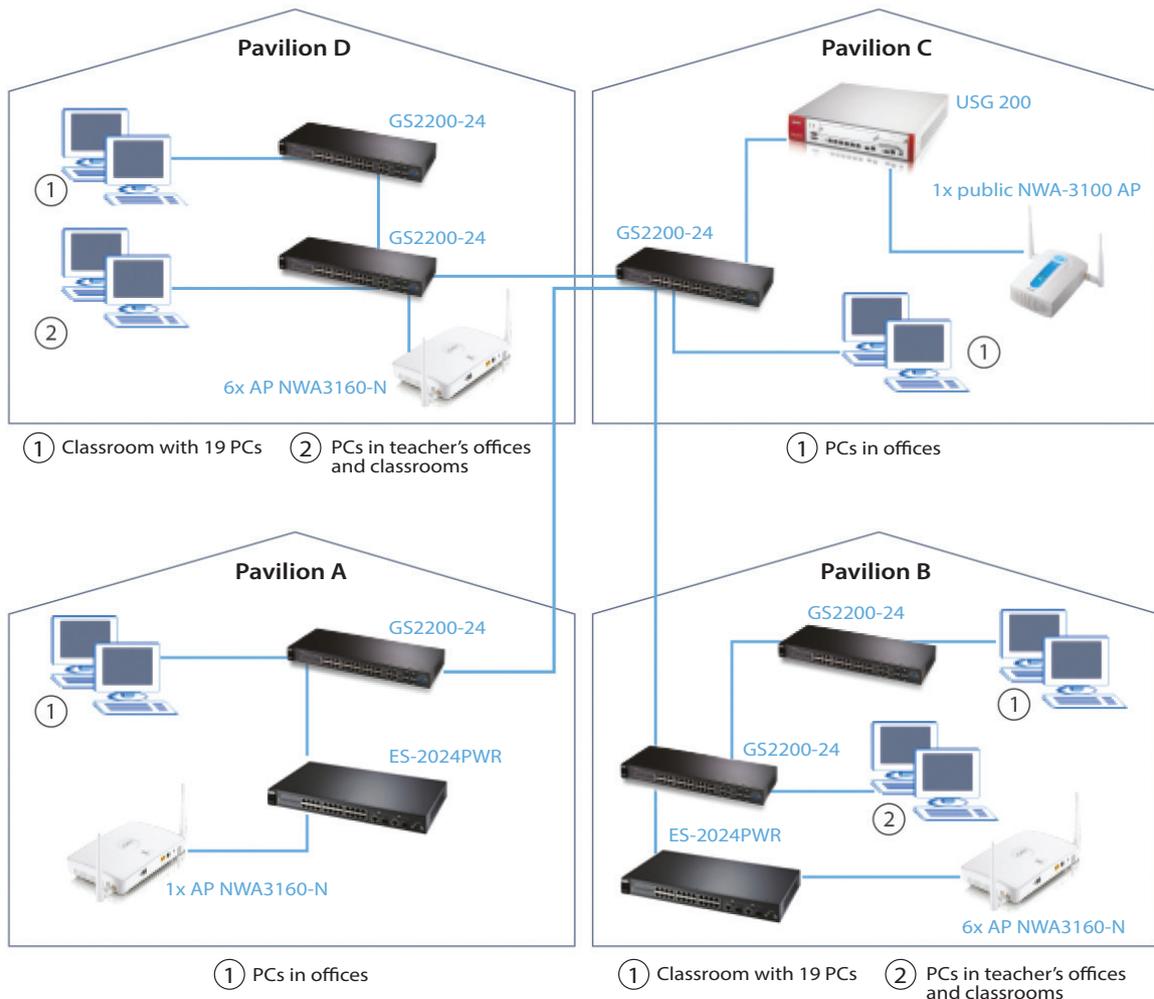
- Covered by limited lifetime warranty
- 8.8 Gbps non-blocking switch fabric
- 802.1x for access authentication
- 4 IEEE 802.1p hardware priority queues
- SPQ and WRR queuing algorithms
- Intrusion lock, MAC freeze, MAC filtering & static MAC forwarding
- IGMP Snooping v1, v2, v3
- ZyXEL iStacking™ technology, one IP management for 24 devices
- IEEE 802.3af Power over Ethernet
- Easy web GUI for intelligent PoE power management



## GS2200-24 24-port GbE L2 Switch

- Comprehensive L2 switching features
- 56 Gbps non-blocking switch fabric
- 4 dual-personality (RJ-45/SFP) GbE interfaces
- Port security and enhanced 802.1X port authentication
- MAC freeze and intrusion lock
- 8 IEEE 802.1p hardware priority queues
- WFQ, WRR and SPQ queuing algorithms
- IPv6 ready Logo approved

## Diagram



### About ZyXEL Communications

ZyXEL Communications Corp., founded in 1989 and headquartered in Taiwan, is the leading provider of complete broadband access solutions. As one of the early modem manufacturers, ZyXEL has undergone many transformations in the fast-paced networking industry. Today, ZyXEL is one of the few companies in the world capable of offering complete networking solutions of Telco, SME/Enterprise, and Digital Home for a wide range of deployment scenarios. Telco solutions include wired and wireless access network equipments, networking customer premises equipments, and Carrier Switches. SME and Enterprise solutions include Unified Security Gateway, LAN Switches, WLAN, and IP telephony. Digital Home solutions include network connectivity devices and multimedia solutions.

The company has 3200 employees and distributors in 70 countries, reaching more than 150 regional markets. The ZyXEL Communications Corp. includes 33 subsidiaries and sales offices and two research and development centers worldwide. For more information, visit the company's Website, <http://www.zyxel.com>.

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