



## Success Story

### Danish Boarding School Upgrades to Future-proof Wireless Network

**"I'm currently satisfied with our new wireless network from ZyXEL. A stable network has become a pre-requisite for a good school and tuition, and I think that is what we now have. It is difficult to future-proof in IT, but I think that we have a user-friendly system which also accommodates unknown possibilities, including extra expansion."**

**Lars S. Hansen**  
IT manager, Nøvlingskov  
Continuation School



#### Overview

##### Customer Name

Nøvlingskov Continuation School

##### Customer Industry

Education

##### Challenges

- Upgrade the school's current network infrastructure
- Provide future-proof solution able to accommodate the increased IT demands faced by a modern educational institution
- Solution must be easy to use and manage for a variety of users - including administrators, teachers and students

##### Solution

- Unified Security Gateway
- Business Wireless LAN Controller
- Managed Switch
- Business Access Point

##### Benefits

- Centralized management of wireless network
- Easily upgradable to meet future challenges
- Ability to compartmentalize and manage different areas of the network for different users
- Administrative controls to manage student usage
- Cost-effective and user-friendly

#### Background

Founded in 1983, Nøvlingskov Continuation School occupies several acres of farmland in the Danish countryside. Today the school served 110 high school age students. While facilities at the school were quite simple at the time of its founding, they have since grown and modernized with the times.

#### Challenges

In terms of area, Nøvlingskov Continuation School is a large academic institution. As such, the existing wireless network did not satisfy the school's needs. The faculty and student body required full wireless coverage – from classrooms to workshops to the hall and the students' private dormitories. As the students are residents at the school, stable network coverage is required 24/7.

The school focuses on a progressive academic structure, offering a wide range of standard and vocational subjects. Students are encouraged to interact with staff and teachers during and after class time.

The school needed a system that was able to cope with varying degrees of load throughout the day. During teaching hours, there are up to 130 users concentrated in a small area around the classrooms, but in the evening the concentration shifts to the students' dorms.

Concurrently, the system needed to be future-proofed so that additional devices could be connected, as many pupils today increasingly acquire more and more wireless technology, like smartphones and tablets.

It was also necessary to be able to manage and regulate various areas of the wireless network for administration, teachers, pupils, guests and, in particular, the examination network.

## Solutions and Benefits

The school's current solution with single-location access points was insufficient and presented many challenges due to poor coverage, resulting in users frequently losing their connections. Because of this, the school decided to deploy ZyXEL's NXC Wireless LAN Controller solution coupled with the business access points, which provided centralized management of the wireless network.

For switches, ZyXEL's smart managed PoE switch and a L3 managed switch as primary VLAN switch were selected because they could administer and support the establishment of additional VLANs for logical network splitting. The school also required automated scheduling on the wireless network so that the wireless student network could be shut down at night.

The school wanted to divide the new network into administrative and academic areas for teachers and pupils, respectively. To achieve this, it was necessary to split the network into several logical VLANs. Again, ZyXEL products were chosen for their combination of affordability and ease of set-up and use, while effectively performing all the necessary tasks and functions in a normal day.

Since deployment, the new solution has proven to be perfect for the school. It meets all of the school's needs, both current and future, allowing the institution to terminate various subscription services with UNI-C, saving additional funds.

A ZyXEL Unified Security Gateway was selected as the new firewall, as it was well-suited to the school's size of approximately 130 simultaneous users.

While the solution presented minor challenges in its early stages, ZyXEL solved these problems in an effective and timely manner without incurring extra costs.



## Suggested Products



### NXC5500 Wireless LAN Controller

- Centralized WLAN management and auto provisioning
- Manages up to 512 APs with granular access control
- ZyMesh simplifies complex, inconvenient cabling Wi-Fi Deployments
- Comprehensive features for WLAN performance optimization and always-on Wi-Fi connectivity
- Wireless LAN performance optimization via dynamic channel selection and load balancing



## GS1900-24HP 24-port GbE Smart Managed Switch

- 10/100/1000 Mbps GbE ports
- Easy browser-based switch management
- Quick and easy set up wizard
- Advanced network error prevention features (loop protection, dual images, storm control, DoS and SSL)
- High-power PoE support IEEE 802.3at



## XGS-4528F 24-port GbE L3 Switch with 10GbE Uplink

- Fully managed Layer 3 switching solution
- High performance switching with 10GbE uplink connectivity
- Resilient networking with RSTP, MSTP, MRSTP, ECMP and VRRP support
- RIP, RIPv2, DVMRP and OSPF for advanced routing applications
- Advanced security with multilayer (L2/L3/L4) ACL, Guest VLAN and CPU protection
- CoS, DSCP, IGMP snooping v1, v2, v3 and MVR for convergence
- Future-proofed with IPv6 support



## USG310 Unified Security Gateway

- High-performance, high-value Next Generation Firewall (NGFW) for small and medium-sized businesses
- Anti-malware protection with firewall, anti-virus, anti-spam, content filtering, IDP, next-generation application intelligence and SSL inspection
- Robust SSL, IPSec and L2TP over IPSec VPN connectivity and VPN high availability (HA)
- Built-in WLAN controller for centralized AP management and effortless WLAN scalability of up to 18 APs
- Comprehensive mobile broadband USB modem compatibility and multi-WAN load-balancing, failover and fall back support



## NWA3160-N 802.11 a/b/g/n Business 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
- Backup redundancy supported to provide reliable connection services
- 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

### 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 gone through transformations in the fast-paced networking industry. Delivering cutting-edge communications innovations to more than 400,000 businesses and more than 100 million consumers throughout the world, today ZyXEL is one of the few companies in the world capable of offering complete networking solutions for Telcos, small to medium-sized businesses, and digital home users for a wide range of deployment scenarios. Telco solutions include Central Office Equipment, Customer Premise Equipment, Wired and Wireless Access Network Devices, and Carrier Switches. SMB and Enterprise solutions include Unified Security Gateways, LAN Switches, WLAN, and IP Telephony. Digital Home solutions include Network Connectivity Devices and Multimedia Solutions.

The company has 1000 employees and distributors in 70 countries, reaching more than 150 regional markets. The ZyXEL Communications Corp. includes 35 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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