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Success Story

Minnesota School Gets a Complete Network Makeover from ZyXEL

Overview

Customer Name
Clearbrook-Gonvick School, USA
Customer Industry
Education
Challenges
Clearbrook-Gonvick school wanted a new network that would be manageable, expandable and provide their students and faculty with the latest technology, connectivity and mobility

Solutions
NWA3550, MS-7206S, NWA-3166, ES-2024PWR
Benefits
ZyXEL served as a trusted technology partner and one-stop solution shop. ZyXEL offered reliable products that were scalable with top Return on Investment (ROI)

Challenges

Clearbrook-Gonvick wanted a network overhaul with the following characteristics:
• Fast, flexible and reliable network infrastructure
• Mobility for access everywhere and on the go
• Outdoor network access in the sports field
• Segmented network; isolating the different departments and user groups
• like faculty, students and guests for secure and authorized access to different resources
• Easy to set-up, expand and manage

Background

Clearbrook-Gonvick School located at Minnesota, USA, is a K-12 (Kindergarten of twelve grades) institution that was facing critical challenges with their network infrastructure. Clearbrook-Gonvick wanted to provide their students and faculty with the latest technology, connectivity and mobility. The network the school had was an Ethernet based wired network that was very difficult to expand and lacked any management capabilities.

Solutions and Benefits

Clearbrook-Gonvick needed a flexible, scalable and mobile network that offered wired and wireless Internet connectivity indoors and out – classrooms, libraries, cafeteria and sports field. The solution comprised of a combination of carrier grade Ethernet switches functioning on both copper and fibre, and wireless indoor and outdoor Access Point (AP) solution—with a combination of 802.11n and 802.11g technologies.

Network Design

A carrier grade chassis based modular switch system MS-7206S formed the heart of the core network. The chassis system was then connected to rack mounted switches in server rooms distributed in four different locations of the building complex. These server rooms had Ethernet switches ES-2024PWR for wired network and they also connected all the 802.11n Access Points NWA-3166 distributed throughout the building for wireless coverage.

Clearbrook-Gonvick also wanted an outdoor wireless network so that students and staff had Internet access while outside and in the sports field. This solution was made possible using two ZyXEL's powerful outdoor Access Points NWA3550. One of which connected the server room closest to the football field and the another bridged with the first. ZyXEL's outdoor APs have dual radio—one provides network access to users and the other can be configured to perform backhaul function—linking back to the core network. Both the outdoor APs at Clearbrook-Gonvick were configured to operate in dual-mode offering maximum coverage and performance.

All the ZyXEL APs were Power over Ethernet (PoE) enabled and were connected to Ethernet switches with built-in PoE injectors- the ES-2024PWR. This functionality allowed the flexibility to position APs in locations for optimum coverage while eliminating any requirement for power outlets. It also reduced cable clutter.

Setting up and managing the entire network was also very efficient. Several virtual networks were built up and were isolated from each other using VLAN features of the switches and APs. This accommodated Clearbrook-Gonvick's need for network segmentation to offer secure access to resources to authorized users only. In this way, different departments, faculty, staff, students and guests had their own private network with appropriate access privileges and restrictions, thus avoiding misuse or compromising resources.

Clearbrook-Gonvick was delighted with the manageability of the new network and also pleasantly surprised on how easy it was to add and expand the network. The Clearbrook-Gonvick solution is a testimonial to what ZyXEL can offer telcos—a compelling package of versatile solutions for their community businesses. With reliable products and responsive technical support at a very affordable price, ZyXEL offers unmatched value and is a great partner to have.

Products Used

NWA3550
Wireless LAN Access Point
- No extra cost converting stand-alone AP architecture into management WLAN architecture
- Simplified management with scalability
- Secure architecture for reliable, scalable Wi-Fi networks
- Enterprise-class Access Point functionality
- Plenum rating with ease of deployment

MS-7206S
Enterprise LAN Switches 7000 Series
- Non-blocking 384G switching performance
- Dual active-active switching fabrics
- Hot-swappable I/O modules
- Six slots (Two for management and four for I/O modules), total of 10U
- Intelligent QoS and traffic control for enhanced availability
- Extended L3 routing and L2 switching functions for highest performance
- Intelligent L2/L3/L4 local switching
- Built-in OSPF, VRRP
- High density wire speed Gigabit
- 802.3af PoE ports

NWA-3166
11n Wireless Access Point

- Dual Mode 802.11n Business AP
- 2x3 MIMO antenna configuration
- 3-in-1 Hybrid AP functions either as a WLAN Controller, Managed AP or Stand-Alone AP
- Secured tunnel for communication between Controller and Managed AP
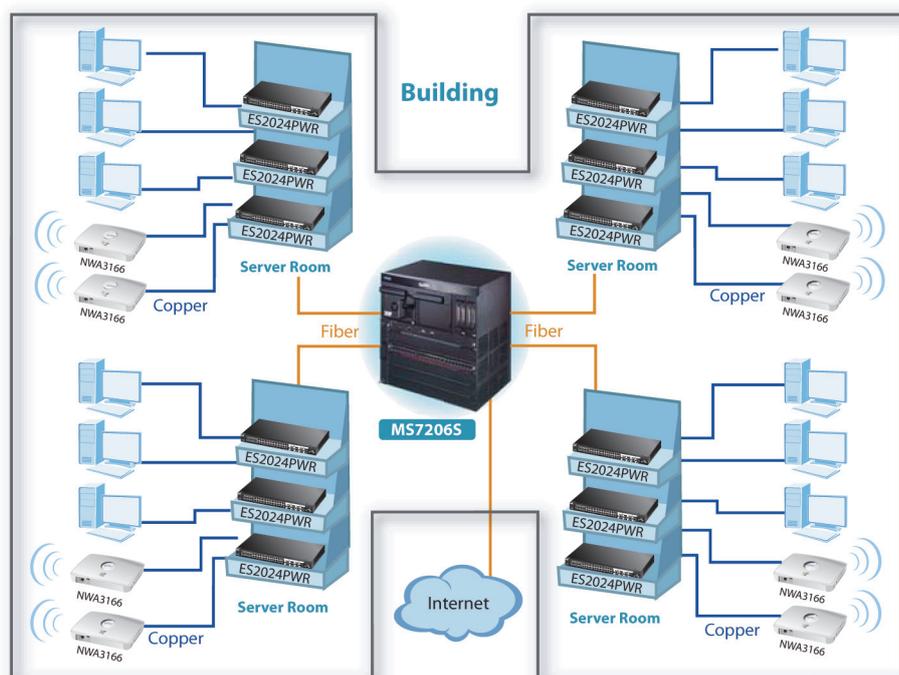- Centralized management for up to 24 WLAN Access Points
- Plenum Rating

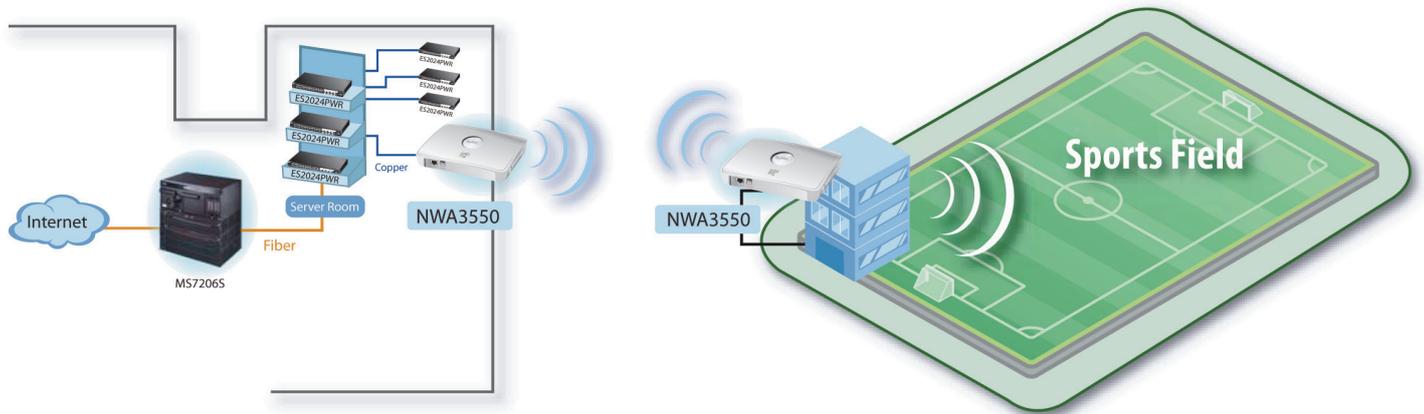## ES-2024PWR
24-Port L2 Managed Switch with PoE

- Max throuput with high performance non-blocking switch fabric
- Enterprise-class security features
- Easily configurable advanced features include ISMP Snooping, MAC filtering & static MAC forwarding
- Performance enhancing QoS features
- PoE capability to power 802.3af enabled devices

Diagram

Indoor Diagram

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Outdoor Diagram