



Success Story

ZyXEL Solution Transforms Wireless Coverage at Czech Ice Rink-Hotel Complex

“The network reconstruction satisfies our requirements to operate a modern ice rink. Another important aspect is the option to easily expand the infrastructure in the future. The implementation of the project proceeded in accordance with all of our requirements and agreements, to the satisfaction of all parties involved.”

Ing. Aleš Kmoníček

General Manager
Mountfield Hockey Club

Overview

Customer Name

Mountfield Hockey Club

Customer Industry

Sport Institute

Challenges

- Establish reliable WAN/LAN infrastructure for entire ice rink complex
- Provide Wi-Fi coverage for player dressing rooms, offices, and on-site hotel
- Ensure robust security to protect all network resources
- Solution must allow for easy, efficient, and affordable expansion

Solutions

- 802.11a/b/g/n Unified Pro Access Point
- 24-port GbE L2 PoE Switch
- 802.11 b/g/n Unified Access Point
- VPN Firewall
- Wireless LAN Controller

Benefits

- Network infrastructure supports all types of mobile devices used by players, hotel guests, and employees
- Wi-Fi coverage extends to entire hall, dressing rooms, offices, and hotel
- Unified network solution includes remote administration capability
- Built for easy upgrade and expansion

Background

Mountfield Hokejový Klub (Mountfield HK), a professional men's ice hockey club based in Hradec Králové, Czech Republic. The club owners are Mountfield, holding 50% of the shares, and the city of Hradec Králové, holding 50% of the

shares. The stadium complex, which opened in 1957, includes an ice rink with capacity for 7,700 spectators in the main hall, as well as player dressing rooms, administrative offices, and a hotel located on the premises.

Challenges

The project was primarily conducted to improve the outdated infrastructure of the ice rink. The hall space did not feature any LAN/Wi-Fi infrastructure. Offices and player cabins were connected via cables that did not comply with modern requirements. Network elements in the original infrastructure consisted of a hodgepodge of non-homogeneous and incompatible devices.

The project was prepared by Computerservice.cz, offering services in IT support, network administration, and IT systems. Mr. Josef Brož was contacted by the General Manager of the club and asked to create a LAN/WAN infrastructure for a network at the ice rink and to provide Wi-Fi coverage. The revamped network needed to cover offices, dressing rooms, and the hotel that is part



of the Hradec Králové ice rink complex.

"After analysis of the current infrastructure, we opted to choose the solution by ZyXEL," commented Josef Brož. "The original cables and network elements of various producers were changed to ZyXEL hardware. The installation of the new infrastructure and the configuration of network elements took us

about a month. We faced some issues mainly when spreading some 2 km of cables among beams of the frame construction of the hall. Next, we set up access points and measured the Wi-Fi signal across the hall. Load tests took place at full operation during the first playoff tournament. Individual problems were solved very quickly thanks to the helpful ZyXEL technical support personnel."

Solutions and Benefits

The stadium complex required a network infrastructure able to deliver superior reliability and a high-level of performance to users located at the main hall, player areas, administrative offices, and a hotel located on site. Before a solution could be selected, a thorough analysis of the infrastructure and the training of employees of the supplier, Computerservice.cz, were necessary.

The solution uses eight ZyXEL NWA3160-N and four ZyXEL NWA5121-N access points to cover the main hall and the hotel. The access points are powered by the ZyXEL GS2200-24P main switch using PoE. A modern ZyXEL NXC2500 device is used as the controller of the access points. Each access point provides several wireless networks for the journalists, spectators of the hockey matches, and hotel guests. A unified gate ZyXEL ZyWALL 310 VPN Firewall secures the whole network.

The network infrastructure of buildings is divided into subnets, and the hall is separated from the internal club network using VLANs. The infrastructure is designed to minimize costs of expansion and addition of new hardware such as camera systems. The network administrator, Computerservice.cz, used a unified solution to achieve the benefits of a centralized setup and allow the remote administration of individual network elements.

One of the main benefits of the revamped network is the improved functionality to support the wide range of employee and player devices including smartphones, tablets, notebooks, PCs, servers, and other types of IP-based equipment. In addition, the Wi-Fi signal coverage of the hall represents a significant step forward in providing comfort to visitors and journalists.

Products Used



NWA3160-N 802.11n Unified Pro AP

- 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



GS2200-24P **24-port GbE L2 PoE Switch**

- Comprehensive L2 switching features
- 56 Gbps non-blocking switch fabric
- 2 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
- IEEE 802.3af PoE support
- PoE power consumption mode for enhanced energy efficiency



ZyWALL 310 **VPN Firewall**

- Multi-core CPUs deliver up to 5 Gbps firewall throughput and 650 Mbps VPN throughput
- Up to 15x faster firewall performance and 4.4x faster VPN performance of preceding models
- More secure VPN connections with SHA-2 encryption
- VPN High Availability (HA) with dual-WAN failover and fallback support
- L2TP support for iOS, Android and Windows mobile devices
- Auto-provisioned client-to-site IPsec setup with Easy VPN



NXC2500 **Wireless LAN Controller**

- Centralized management for up to 64* APs
- ZyMesh mitigates complex, inconvenient cabling Wi-Fi deployments
- Client steering enhances efficiency of wireless spectrum utilization
- Auto healing maximizes Wi-Fi service availability
- Seamless integration with external AD, LDAP, RADIUS authentication
- Best investment protection with built-in RADIUS server

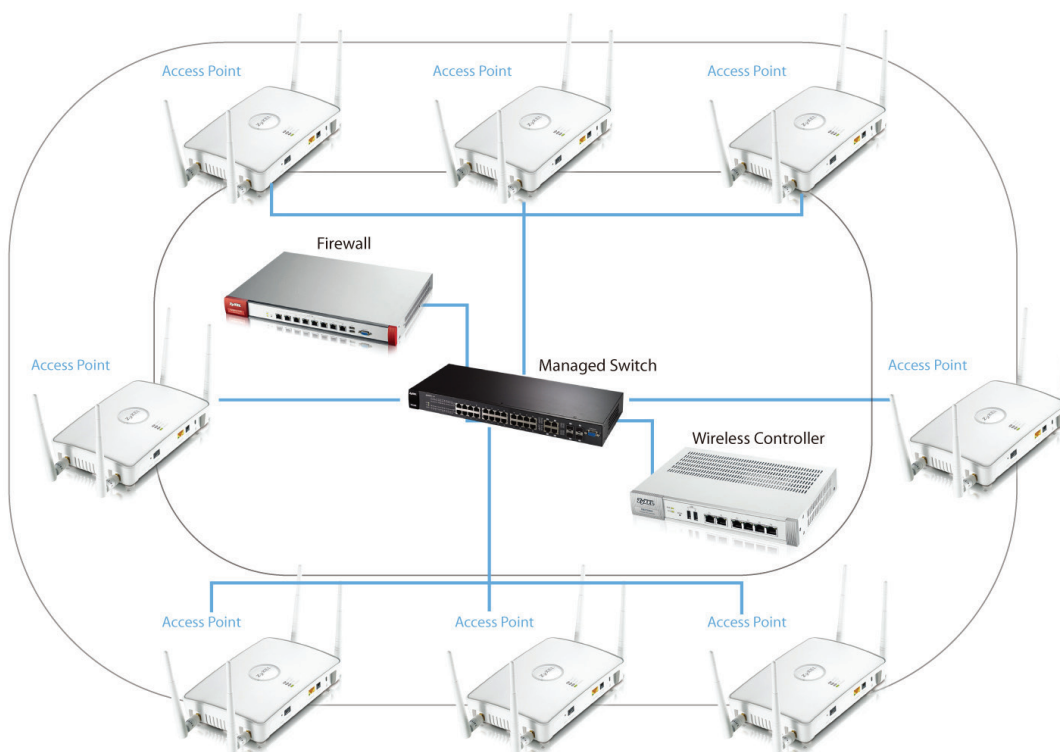
*Management of 64 APs is supported with firmware version V4.10 or above



NWA5121-N 802.11 b/g/n Unified Access Point

- Ceiling and wall mountable
- Plenum rated housing
- 2-in-1 standalone/managed AP design
- CAPWAP management supported
- High-performance RF technology: Tx Beamforming and Rx Maximum Likelihood Demodulation (MLD)

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 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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