



Success Story

Connecting a School Where Every Pupil Has a Tablet



Education



Alemannenschule
Wutöschingen



COUNTRY

Germany



SOLUTIONS

Zyxel
Wireless
Solution

Overview

Challenges

- Provide universal WiFi for a huge, five-building campus
- Utilize and integrate Zyxel networking solutions with existing server infrastructure
- Ensure secure but separate access for students, teachers, and guests

Benefits

- Network safeguarded by a security firewall with integrated antivirus protection
- Smart managed switches comfortably handle school's large number of connections
- Installation process finished from start to finish in less than a week

Solutions

- Zyxel Wireless Solution

"Zyxel has proven its abilities through the consistent positive experiences we've enjoyed while working together. They've quickly become our main provider for network components."

Benjamin Bährle,
AMP's IT system administrator
and technical system consultant

Background

When Alemannenschule Wutöschingen (ASW) was founded in 2012, it was the first publicly funded secondary school in its district. But it also stood out for a different reason: it was determined to give its pupils a tech-driven education.

The school's expansive, five-building campus caters to some 600 students, or "learning partners," and 52 "learning guide" teachers. It plays an exemplary role in southern Germany thanks to its modern teaching methods and equipment, which includes learning studios, PCs, tablets, and digital whiteboards.



Challenges

But, when a school has a student-to-iPad ratio of 1:1, you can guess what happens next. As data usage rose, ASW's network was stretched to breaking point. Groans echoed through the classrooms and hallways as constant connection failures stopped lessons dead in their tracks.

Deploying a network solution with the power and reliability

to cover the entire campus required expertise and experience. The Wutöschingen municipality, which administers the school, turned to APM Communications and Security Technology, the municipality's favored IT and telecommunications provider since 2011 and a Zyxel partner.

Solutions and Benefits

Upgrading ASW's infrastructure was far from easy. The school had previously installed an enterprise-grade wireless solution to satisfy its bandwidth demands. Now, the existing server infrastructure had to be incorporated into the new Zyxel solution. In addition, the network management needed to offer separate access channels for students, teachers, and guests, all while taking great care to ensure privacy and security, particularly as most users would be children.

Considering the network traffic – up to 500 simultaneous users – and the high data volumes expected from video streaming and other data-intensive applications, APM deployed a WLAN solution from Zyxel. This included a ZyWALL Next-Gen Unified Security Gateway, protecting the network via a combination of hardware firewall and integrated antivirus software.

Next, for a seamless WiFi experience covering the

campus's every square inch, smart antenna-equipped Zyxel WAC6500 Series access points were installed inside and outside school buildings, with smart managed switches employed to handle the large volume of connections. Despite its complexity, the whole project was completed to everyone's satisfaction in only six days.

For Benjamin Bährle, AMP's IT system administrator and technical system consultant, it was the latest in a long line of well-received projects with Zyxel. "Over the last seven years, we've worked successfully with Zyxel on many occasions, particularly in the hospitality sector."

It's a relationship that's paying off for Benjamin and his company: the municipality was so satisfied with the outcome at the school that it's already discussing follow-up projects with AMP, such as connecting branch offices and expanding networks at other campuses.

Products Used

ZyWALL USG1100 • Next-Gen Unified Security Gateway Extreme Series



- UTM Firewall for medium- and large-sized businesses and campuses
- Anti-malware protection with Anti-Virus, Anti-Spam, Content Filtering 2.0, IDP, and Application Protocol
- Patrol and SSL inspection
- Robust SSL, IPSec, and L2TP over IPSec VPN connectivity and VPN High Availability (HA)
- Unified security policy
- Device HA Pro ensures smart handover
- Hotspot management supported
- Facebook WiFi for intelligent social media authentication

XGS2210-28HP/52HP • 28/52-port Gigabit L2 Switch with 10GbE Uplink



- Gigabit connectivity plus four SFP+ ports for handling high-bandwidth networks with ease
- Physical stacking up to two units through two standard 10G SFP+ ports
- VLAN static routing for agile, reliable network operations
- Supports sFlow, which analyzes client behavior to discover sources of bandwidth abuse
- Enhanced network protection with IP source guard, DHCP snooping, ARP inspection, and CPU protection
- Supports IEEE 802.3at PoE Plus with 375-W power budget

GS2210-8HP • 8-port Gigabit L2 PoE Switch



- High power budget 180 W
- L2 multicast, IGMP snooping, MVR and voice VLAN for convergence
- Enhanced network protection with IP source guard, DHCP snooping, ARP inspection, CPU protection
- L2, L3, and L4 filtering, MAC freeze, port isolation, and guest VLAN for improved isolation and access control

GS1900-8HP • 8-port Gigabit Smart Managed PoE Switch



- Gigabit connectivity
- High-power PoE support IEEE 802.3at
- Easy browser-based switch management
- Quick and easy setup wizard
- Advanced network error prevention features (loop protection, dual images, storm control, and DoS, SSL)
- Fanless design

WAC6503D-S • 802.11ac Dual Radio Smart Antenna 3x3 Access Point



- Zyxel smart antenna with more than 700 optimized antenna patterns provides breakthrough performance anywhere
- Ideal for high-density and interference-laden indoor environments
- Advanced IEEE 802.11ac offers combined data rates of up to 1.75 Gbps
- Industry-leading Rx sensitivity as low as -102 dBm
- AP Flex™, DCS, and tool-less bracket design for streamlined deployment

WAC6103D-I • 802.11ac Dual Radio Dual-optimized Antenna 3x3 Access Point



- “Dual-optimized” antenna allows pattern optimization adapting to wall- or ceiling-mounted installation
- 3x3 802.11ac supports combined data rates of up to 1.75 Gbps
- Load balancing on both standalone and managed modes
- Dual image supports for reliable WiFi connectivity
- Zyxel One Network for standalone AP management

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

WAC6553D-E • 802.11ac Dual Radio External Antenna 3x3 Outdoor Access Point



- Dual-band 2.4-GHz and 5-GHz 802.11ac Wave 1 Wireless Access Point
- Designed with IP66-rated weather protection which is ideal for harsh outdoor environments
- Advanced IEEE 802.11ac delivers up to 1.75 Gbps combined data rates
- Industry-leading receive sensitivity as low as -102 dBm
- APFlex™ and DCS for streamlined deployment
- Zyxel One Network supported

About Zyxel Communications

Focused on innovation and customer-centricity, Zyxel Communications has been connecting people to the Internet for nearly 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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