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Success Story

Students and Faculty in Turkey Stay Connected Zyxel Wired-Wireless Solution

INDUSTRY	Education	CUSTOMER	Bolu Doğa College	REGION	Turkey	SOLUTIONS	Zyxel wire and wireless solution

Overview

Challenges

- Multiple floors and rooms on the Doğa College Bolu Campus can block and weaken wireless signals
- Solution must comply with local Internet regulations
- Large volume of network traffic may slow connections

Solutions

- 802.11ac Dual Radio Smart Antenna 2x2 Access Point
- 48-port GbE Smart Managed Switch
- 24-port GbE Smart-Managed PoE Switch
- 802.11n Unified Access Point
- Wireless LAN Controller
- Next-Gen Unified Security Gateway Advanced Series

Benefits

- Rapid deployment and trouble-free communication support thanks to easy installation features
- Quick and easy connections anywhere on campus
- Stable and fast Internet access in spite of heavy user traffic
- Comprehensive control and security features that comply with Turkish networking regulations

"The Bolu campus of Doğa College is one of the latest additions to Doğa Schools. The new campus needed a wired/wireless infrastructure that could be used securely by all faculty members and students. We got in touch with Makropol Bilgi-sayar, one of Zyxel's business partners, to purchase Zyxel products we had previously obtained knowledge about.
The project was implemented in less time than we expected, and now we have a secure access infrastructure."

Egemen Tonyali
Bolu Doğa College Representative and Manager

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Background

Bolu Doğa College is a member of Doğa Schools, a private chain of educational institutions serving students from kindergarten through college level. The new college campus began registering students for the 2015-2016 academic year with the mission to provide high-quality interactive education opportunities to students. To achieve this goal, the school utilizes high-tech classrooms as well as physics, chemistry, and biology labs equipped with fiber-optic internet connections and Vestel interactive white boards. Bolu Campus of Doğa Schools comprises an indoor area of 4,000 square meters built on 12,500 square meters of property. The spacious campus allows the school to provide a well-rounded and comprehensive education on a wide range of subjects. Facilities include a Science and Art Street, conference hall with a capacity for 300 people, swimming pool, gym, outdoor activity areas, ecology house, and playgrounds.

Challenges

Access to the Internet goes hand-in-hand with the needs of modern education. Faculty, researchers, library staff, and students all require access to fast, reliable, and secure network connections. However large institutions can face challenges when providing such services. This is particularly true of college campuses. Multiple users often share network bandwidth while making use of resources in a variety of ways: storing and accessing data, communicating with classmates and colleagues, and handling large volumes of confidential personal and professional information. This is often done across several multi-story campus buildings, the floors and walls of which can create barriers to wireless signals, sometimes resulting in dead spots. To overcome these challenges, Doğa turned to Zyxel solutions provided by local partner Makropol Bilgisayar.

Solutions and Benefits

Makropol Bilgisayar began by performing an extensive analysis to assess the data security and indoor Internet roaming requirements of the institution. A cable network would provide the backbone of the wired and wireless solution while access point would carry the wireless signal to mobile users.

Zyxel GS1920-48 and GS1920-24HP smart managed switches would handle management duties over the network. The switches are designed to manage the large volume of connections common to campus networks. With features like the Zyxel ONE network experience, network management is streamlined and simplified. Wireless connections are provided by WAC6502D-S 802.11ac dual radio smart antenna access points. These APs can be installed virtually anywhere, bringing Wi-Fi signals to hard-to-reach spaces. Zyxel NWA5121-NI unified access points were also installed. These PoE APs are specifically designed for large facilities like schools and businesses. These APs were connected to NXC2500 wireless LAN controllers, which can each support up to 64 APs, providing future-proof scalability to the network. Zyxel USG310 gateways deliver the necessary security and traffic monitoring features to ensure that data is safe and that the network is in compliance with local Internet rules.

Makropol Bilgisayar network security projects manager Şeref Temeltaşl explained the relationship his company has built with Zyxel and how it enables him and his colleagues to provide the best solutions to clients like Bolu Doğa College.

"Makropol Bilgisayar has been involved as one of Zyxel's partners for many years," Temeltaşl explained. "We have conducted many successful projects together thus far. This project...is a clear indication of our competence in the field of education. We will also accomplish similar types of projects by working together with Zyxel in the future."

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Products Used

WAC6502D-S • 802.11ac Dual Radio Smart Antenna 2x2 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 up to 1.2 Gbps combined data rates
- Industry-leading Rx sensitivity as low as -102 dBm
- AP Flex™, DCS and tool-less bracket design streamline deployment
- Zyxel One Network is supported

NWA5121-NI • 802.11n Unified Access Point

- 2-in-1 Standalone/Managed AP design
- Ceiling and wall mountable
- CAPWAP management Supported
- Plenum Rated housing
- Tx Beamforming and Rx Maximum Likelihood Demodulation (MLD)

GS1920-48 • 48-port GbE Smart Managed Switch

- Smart managed switch with essential L2 features
- GbE RJ-45, GbE combo (RJ-45/SFP) and fixed GbE SFP connectivity
- Supports ZON Utility, Zyxel Smart Connect and iStacking facilitates easy network initialization and management
- Reliable network availability with Loop Guard, IPSG, and CPU protection
- RADIUS, static MAC forwarding and 802.1X authentication -enhance network security
- Future-proofed with IPv6 support

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GS1920-24HP • 24-port GbE Smart-Managed PoE Switch

- Smart managed switch with essential L2 features
- GbE RJ-45, GbE combo (RJ-45/SFP) and fixed GbE SFP connectivity
- Compliant with IEEE 802.3af PoE and 802.3at PoE Plus
- High 375-watt power budget
- Supports ZON Utility, Zyxel Smart Connect and iStacking facilitates easy network initialization and management
- Reliable network availability with Loop Guard, IPSG, and CPU protection
- RADIUS, static MAC forwarding and 802.1x authentication -enhance network security

NXC2500 • Wireless LAN Controller

- Centralized management for up to 64* APs
- ZyMesh mitigates complex, inconvenient cabling Wi-Fi deployments Comprehensive features for WLAN performance optimization and always-on Wi-Fi connectivity
- Seamless integration with external AD, LDAP, RADIUS authentication
- User-friendly authentication by QR code facilitates keyboard-less mobile devices accessing Internet

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

USG310 • Next-Gen Unified Security Gateway Advanced Series

- High-performance, high-value Next Generation Firewall (NGFW) for small and medium-sized businesses
- Complete network protection with firewall, anti-virus, antispam, 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 34 APs

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.