Success Story

Zyxel Equipment Makes Czech Firm's 'WiFi Pole' Rental Product Successful

Entertainment
INDUSTRY

Compactive
CUSTOMER

Czech Republic
COUNTRY

Zyxel Wireless Solution
SOLUCIÓN

Overview

Challenges

- Use innovative "WiFi poles" to provide stable wireless in difficult environments, including basement levels and across large outdoor areas
- Deliver connections strong enough for high-resolution video streaming
- Enable quick disassembly of the equipment without disrupting operations

Solution

- Zyxel Wireless Solution

Results

- Seamless and reliable connectivity even in harsh conditions and environments, and hard-to-reach places
- System is easy to install and configure, making it suitable for mobile use
- Tough build delivers durability and high-performance service even in demanding weather conditions
- Power-efficient network able to support up to 600 clients in one deployment.

"Covering large areas with a reliable wireless signal is one of the main functions of our Mobile WiFi system. And to this end, Zyxel's network equipment has proven not only to be sufficiently powerful but also to be resistant to even the most demanding weather conditions. We've used their access points to handle hundreds of client devices at once, and thanks to their low power consumption, our autonomous poles can fulfill their purpose without any additional power."

Ing. Lubomír Kuča
CEO, Compactive s.r.o.

Background

Specializing in complex electronic, information, communication, and security systems, Compactive has built a strong reputation and loyal customer base in the Czech Republic for its reliable, high-quality services that meet even the most demanding requirements.

One of the keys to the company's success is its innovative Mobile WiFi solution. Composed of "WiFi poles" complete with network equipment and long-life battery supplies, the Mobile WiFi poles offer wireless connectivity and surveillance services in a variety of difficult-to-service environments.

As well as WiFi transmitters like access points, the poles can also carry equipment such as security cameras and motion sensor LED lighting. In addition, the Mobile WiFi poles' equipment can be combined in various ways and then remotely controlled via a computer, smartphone, or tablet.

Challenges

Compactive recently turned to Zyxel for help in three particularly difficult cases in which it needed to use their solution to provide uninterrupted high-speed wireless service to large numbers of devices in high-density, interference-laden environments.

First was a stand-up comedy show at **the Brno Cultural Club Music Lab**. The performance needed to be live-streamed online – a serious challenge considering the club's location in the basement of a building without the signal of mobile operators.

The existing connectivity in the Music Lab was used for the data transfer. Three cameras, video directories and Zyxel network technologies were used for direct transmission to the YouTube platform. The club also required that the solution was able to be quickly disassembled after the performance so as not to disrupt the club's regular operations.

Second was a large-scale event: **the Future Port Prague festival**. With the event centering on technological innovations and attractions, stable internet connectivity was going to be a necessity for the hundreds of participants and attendees. The organizer had to ensure WiFi connectivity over the large festival area of 8,000 square meters; several different WiFi networks with various transmission speeds and automatic load balancing would be needed. Furthermore, the solution had to handle an average of around 200 devices, with up to 600 at peak times. In addition to wireless connectivity, LAN cable connections were necessary to be provided for select exhibitors.

Finally came **GPtents**: a mobile tent town that travels with the European Formula 1 Grand Prix tour as well as with German Octoberfest events. Although it sounds fun, this case required even more technical expertise and attention to detail. As GPtents General Managed Petr

Bouchal described: "We move our tent town all over Europe, so the mobility of our equipment is absolutely crucial."

For this case, Compactive and Zyxel needed to ensure internet connectivity for the entire tent town via satellite connections and wireless signal propagation by using its access point-equipped WiFi poles. The coverage area had to span approximately 5,000 m2 and hundreds of simultaneous users; in addition, it was also required to limit the number of connections made by single devices and to allow technical support to connect and configure the network remotely.
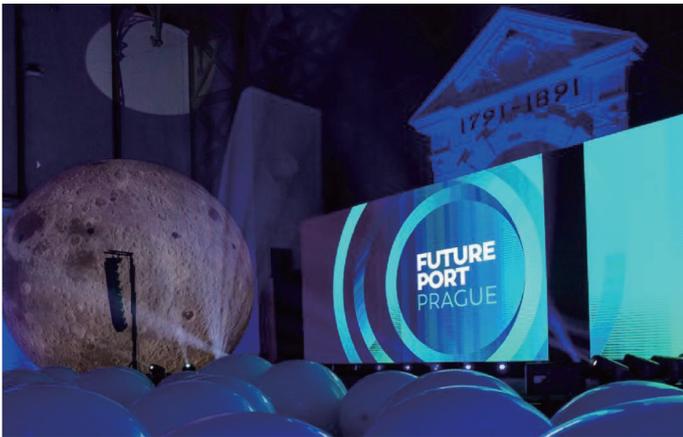
As well as the wireless network equipment, the columns were equipped with photovoltaic panels, LED lighting, CCTV cameras, and batteries. This configuration enabled the system to operate continually with little or no external resources. A 230V connection was required only by the control panel with WiFi controller, firewall, switch, and NVR for storing camera feeds. And, of course, given its mobile nature and the tough weather conditions it will come in contact with, the solution needed to be physically very durable and reliably secured.

Solutions and Benefits

Compactive equips its Mobile Wi-Fi poles with Zyxel's **GS2210-8HP 8-Port Gigabit L2 PoE Switch** along with either the **WAC6553D-E 802.11ac Dual Radio External Antenna 3x3 Outdoor Access Point** or **NWA5123-AC 802.11ac Dual-Radio Unified Access Point**.

The Zyxel GS2210-8HP Manageable L2 switch supports PoE connectivity, with a power supply of up to 30W per port. The rugged switches power WAC6553D-E outdoor access points or NWA5123-AC access points housed in waterproof enclosures. Furthermore, the switches feature QoS and bandwidth management that can be used to set the priority of applications and optimize bandwidth use to ensure smooth data transmission and WiFi quality.

Zyxel WAC6553D-E supports fast 5-GHz band data transfers of up to 1,300 Mbps, with extended temperature resistance to ensure stable outdoor WiFi connectivity. These weather-resistant APs are built tough as nails for use outdoors in any weather, with high resistance to water and dust. Meanwhile, the NWA5123-AC is a compact, high-performance access point designed for large areas and supporting 802.11AC WiFi. When equipped with Zyxel's weather-resistant enclosure, the NWA5123-AC becomes an all-weather outdoor AP that can ensure wireless coverage over wide areas. The durable enclosure is designed to withstand wide temperature ranges and features a certified IPX5 rating and extended lifespan, with UV-stabilized plastic.

It also allows flexible installation, from being mounted on a pole to being installed on a ceiling with clips. The NWA5123AC AP can also monitor the capabilities of each wireless client and steer them to the least-congested band and the AP with the strongest signal. Featuring band-balancing, the AP can detect dual-radio clients and ensure a smooth, consistent, and uninterrupted wireless experience.

The icing on the cake for Compactive is that the AP's low power consumption that Mobile WiFi poles can maintain long-lasting operation without additional power. This

allows the poles to provide a reliable internet connection even in areas that are devoid of infrastructure or as a temporary solution to expand and strengthen existing network infrastructure. In addition, the poles' equipment can be swapped out and expanded according to the needs of each deployment, making them a perfect rental product. The system can also be configured to provide CCTV monitoring of large areas.

Indeed, these advantages translated into successful deployments in each of the three cases mentioned, despite their unique challenges.

The advantage of easy installation was the decisive factor in the first case. As Dominik Drgoň, owner of the Brno Cultural Club Music Lab, said: "Aside from actually dealing with the unavailability of internet connections on our club's premises, we were especially surprised by the speed of assembly of all the equipment needed for the streaming."

Rather than extending connectivity underground, it was expanding it across a large area that got the job done for the Future Port Prague Festival. There, Mobile WiFi poles deployed with nine Zyxel access points ensured every eventgoer had access to a strong wireless connection. "The whole system was easy to install and worked without a hitch during the event," recalled Mgr. Eva Knirschová, CEO of the festival's organizer. "And the system ensured we were able to connect several hundred client devices simultaneously."

In the final case, it was the abilities of the poles to operate independently of power sources and to deliver CCTV coverage that was most surprising and satisfying. "The Mobile WiFi poles work without a connection to the electrical network and, in addition to giving everyone a strong wireless signal, they also help ensure security throughout the complex," said Petr Bouchal, GM of GPtents.

ZYXEL
NETWORKS

Products Used

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

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

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

- NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud-managed modes as needed
- 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

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

About Zyxel Networks

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for business and home users.
We're 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.