ZYXEL NETWORKS

Success Story

Zyxel Networks Makes Smart Rooms, Flawless WiFi Possible for Chinese Hotel

INDUSTRY
Hospitality

CUSTOMER
Dongtaihang Chenxi Hotel

COUNTRY
China

SOLUCIÓN
Zyxel GPON and Wireless Solutions

Overview

Customer's Needs

- Build new network infrastructure that can provide coverage over a wide area
- Guarantee new infrastructure spending is futureproof
- Provide stable, high-bandwidth connectivity to support multiple services
- Avoid inconvenience caused by multiple services from different vendors

Solution

- Zyxel GPON and Wireless Solutions

Results

- Total solution delivers wired and wireless connectivity tailored to the customer's needs and with futureproof network requirement
- Cost savings of 30% compared with traditional network infrastructure
- Stable, high-speed WiFi access across entire hotel improves customer satisfaction and operational efficiency
- Robust data security and connection reliability for staff and guests

"Zyxel's total solution met all of the hotel's needs and made completing the project a breeze. Zyxel's GPON solution is a perfect fit for hotels looking to introduce smart amenities and up their guest satisfaction."

Mr. Jai
CEO, Mowei Technology

Background

The 5-star Dongtaihang Chenxi Hotel is one of the top resorts in Handan, a city of over 9 million people in China's northern Hebei province.

With a floor area of 30,000 square meters, the hotel accommodates 200 deluxe rooms, villas, conference rooms, an outdoor campsite, and a 1,300-square-meter multifunctional banquet hall It attracts both business conferences and vacationing tourists with its full-service amenities and proximity to the picturesque East Taihang Scenic Area.

It was also built with the hope of drawing in young travelers and affluent families in droves with something else: a one-of-a-kind smart hotel experience.

Challenges

To realize this vision, the hotel naturally needed a high-speed network for uninterrupted heavy-bandwidth uses such as voice communication and video streaming accessible from anywhere in the hotel – something that's already an essential part of any vacation experience. This was doubly important for Dongtaihang Chenxi Hotel, however, because of its emphasis on smart amenities in guest rooms, such as connected lights and curtains that can be digitally controlled.

Additionally, with the growing ubiquity of WiFi, wireless quality has become a key index when it comes to evaluating a hotel's facilities.

As such, the hotel's management was also concerned about the data security and ease of network management. They wanted to find a single vendor that could help them build a futureproof network that would be a smart investment.

Solutions and Benefits

The hotel's system integrator suggested Zyxel Networks, citing its experience having helped over 6,200 hotels worldwide with their network deployment. After the site survey, Zyxel Networks and the integrator suggested the hotel install GPON and wireless solutions because of its high performance, easy deployment, cost-effectiveness, and investment protection.

The GPON network included one **OLT1404A 1U 4-port Pizza Box GPON OLT**, with a **PMG5617GA Dual-Band Wireless AC/N GPON HGU with 4-port GbE LAN** unit in each of the 200 guest rooms. The PMG5617GA supports four LAN ports, two phone sockets, and built-in WiFi connectivity to deliver wired and wireless network connectivity, IPTV, VoIP, and

room control services. Guests can control lights and curtains via a smart speaker or share photos and videos online in a flash via the fast and strong WiFi coverage in every room.

Compared with traditional copper-based infrastructure, Zyxel's fiber-optic solution has several key advantages: cost and energy savings, more stable connectivity, and easier installation. Specifically, it requires substantially less equipment, in turn cutting access switch, wiring, and maintenance costs. Zyxel's solution also enables easier cabling; this is because fiber-optic cables are lighter and smaller than copper wires and deliver far more stable data transmission over longer distances. In addition, the

hotel's installation utilized only fiber cables and splitters; it thus required no power, making it many times easier and less expensive – and ideal for a deployment with such long distances.

The hotel wanted to ensure seamless WiFi access in every square foot of its office and public areas, extending to include every nook and cranny of its halls, conference rooms, ballrooms, and restaurants. Also required was highly reliable wired network connectivity for daily business operation and the broadcast of advertisements on the hotel's various digital signage. Zyxel's **NXC5500 Wireless LAN Controller, GS2210 Series 8/24/48-port GbE L2 PoE Switches**, and a total of 70 **WAC6303D-S 802.11ac Wave 2 Dual-Radio Unified Pro Access Points** and **NWA5123-AC HD 802.11ac Wave 2 Dual-Radio Unified Access Points** were deployed to address these needs.

The NWA5123-AC HD and WAC6303D-S access points were selected because they can provide clients with an optimized wireless experience, delivering wider service coverage to more clients and with better connection quality. The APs feature 3x3 802.11ac wave 2 MU-MIMO (Multi-User MIMO) and support 3G/4G interference immunity capabilities. They also feature an optimized radio frequency design and allow simultaneous high-speed data connections with multiple devices, while their built-in filters minimize interference from 3G and 4G cellular networks as well as other WiFi devices.

The NXC5500 Wireless LAN Controller enables the hotel to centrally manage all of the APs with ease and reduces the time required for the initial setup of the APs as well as for subsequent adjustments. The controller can also monitor the APs' status to ensure optimal radio resource allocation and adjust output power automatically so that users experience the best possible wireless network performance.

GS2210 series switches were connected to connect Zyxel access points. This streamlined the installation process and ensures the APs can operate without losing power. Featuring effective traffic management for converged applications like VoIP, video conferencing, IPTV, and IP surveillance, the switches were also connected to the hotel's digital signage to enable smooth, uninterrupted video streaming.

The hospitality industry is among the most vulnerable targets for hackers. To ensure every connection by every guest and staff member is secure, the hotel adopted Zyxel's next-generation firewall **ZyWALL USG1900 Unified Security Gateway**. With exceptional UTM services such as application patrol, content filtering, anti-virus, anti-spam, and IDP, the gateway protects the hotel's network, personal data, and critical resources from internal and external threats.

With the equipment deployment and installation finished in a flash, the hotel's management aren't the only ones pleased with the results. As the high-performance network now handles the traffic of hundreds upon hundreds of users every day with ease, customer satisfaction has hit new heights, with guests indulging in the establishment's surrounding environment as well as its smart features and scintillatingly fast WiFi.

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Products Used

OLT1404A • 1U 4-port Pizza Box GPON OLT

- 4 ITU-T G.984-compliant GPON ports; each port supports up to 128 ONT
- 4 x 10G/2.5G/1G port (SFP+/SFP, fiber)
- 8 x GE 1/2.5G port (SFP, fiber) and 8 x 100/1G port (RJ-45, copper)
- Dual power module plus battery charger
- Temperature-hardened

PMG5617GA • Dual-Band Wireless AC/N GPON HGU with 4-port GbE LAN

- Integrated internet services through fiber optics
- Dual-band 5G Hz 11ac (2x2) & 2.4 GHz 11n (2x2) for superior performance and coverage
- Zyxel OPAL firmware offers better flexibility and faster time to market
- Provisioning and remote management through TR-069 along with OMCI

ZyWALL USG1900 • Unified Security Gateway

- UTM Firewall for medium- and large-sized businesses and campuses
- Complete network protection with firewall, Anti-Virus, AntiSpam, Content Filtering 2.0, IDP, Application Patrol
- Express Mode with advanced Cloud Query technology
- Robust SSL, IPSec, and L2TP over IPSec VPN connectivity as well as VPN High Availability
- SecuReporter, cloud-based intelligent analytics and report service
- Unified security policy
- Device HA Pro ensures smart handover
- Hotspot management supported

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Products Used

NXC5500 • Wireless LAN Controller

- Centralized WLAN management and auto provisioning
- Manages up to 1,024 APs with granular access control
- ZyMesh simplifies complex, inconvenient cable-heavy WiFi deployments
- Comprehensive features for WLAN performance optimization and always-on WiFi connectivity
- Wireless LAN performance optimization via dynamic channel selection and load balancing
- QR code-based guest authentication
- Zyxel One Network supported

GS2210 Series • 8/24/48-port GbE L2 PoE Switch

- High power budget of 375 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
- Supports ZON Utility and Smart Connect for easier, more efficient setup and management

WAC6303D-S • 802.11ac Wave 2 Dual-Radio Unified Pro Access Point

- NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud managed modes as needed
- Excellent wireless coverage and performance with the latest 3x3 Wave 2 802.11ac technology
- Unparalleled high-density performance boosted by Smart antenna, next generation beamforming and MU-MIMO technologies
- Solid state capacitors and advanced heat dissipation ensure high reliability and long life—even in the toughest environments
- Advanced Cellular Coexistence minimizes interference from 3G/4G cellular networks
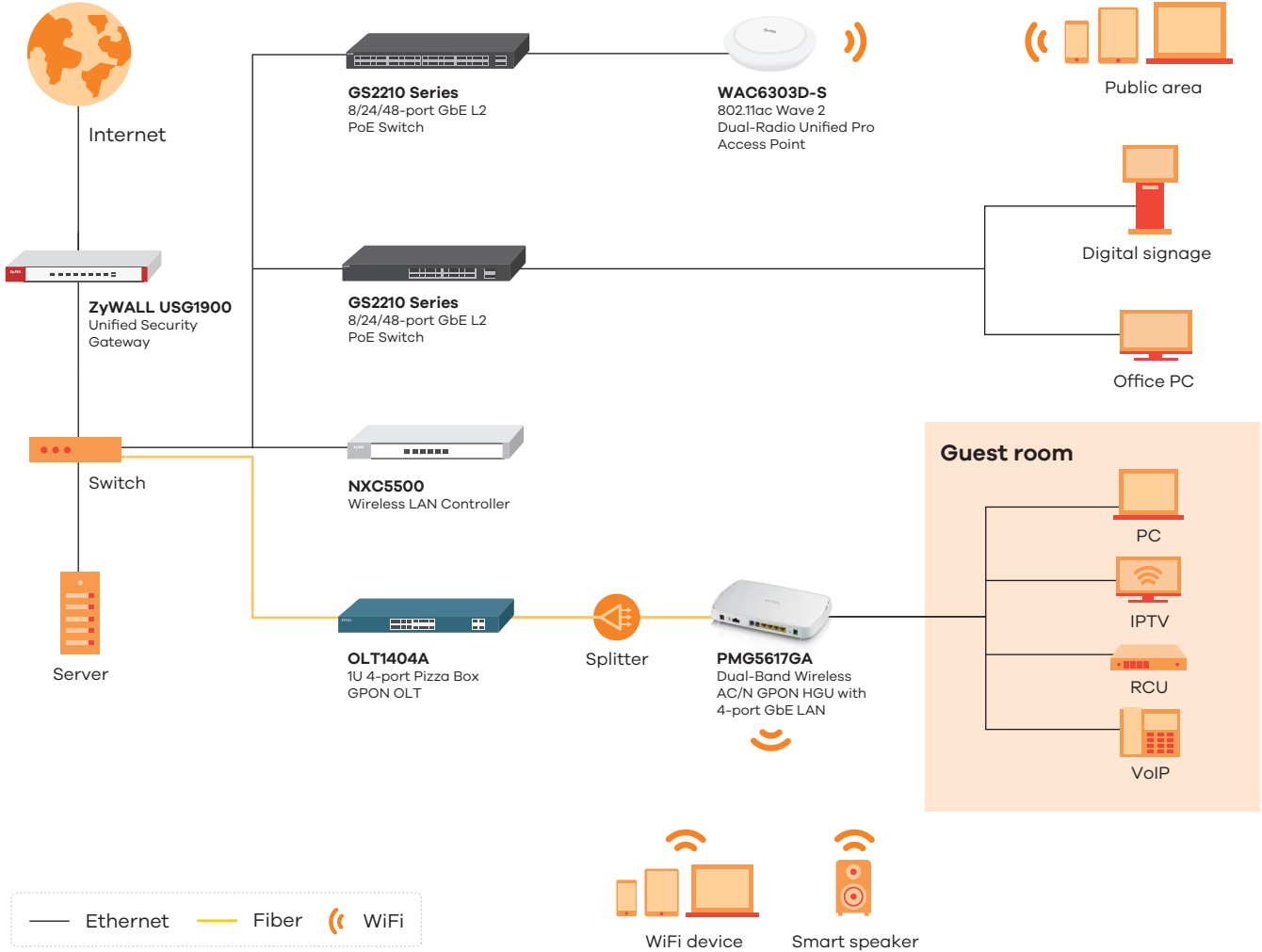
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Products Used

NWA5123-AC HD • 802.11ac Wave 2 Dual-Radio Unified Access Point

- Excellent coverage and performance with 11ac Wave 2 3x3 technology
- Next generation beamforming delivers maximum coverage
- MU-MIMO technology increases downstream throughput
- ACC minimizes interference from 3G/4G cellular networks
- Support NebulaFlexTM Pro to provide triple mode functionality (standalone, hardware controller and Nebula)

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N E T W O R K S

Diagram

Internet

ZyWALL USG1900
Unified Security
Gateway

Switch

Server

GS2210 Series
8/24/48-port GbE L2
PoE Switch

WAC6303D-S
802.11ac Wave 2
Dual-Radio Unified Pro
Access Point

GS2210 Series
8/24/48-port GbE L2
PoE Switch

NXC5500
Wireless LAN Controller

OLT1404A
1U 4-port Pizza Box
GPON OLT

Splitter

PMG5617GA
Dual-Band Wireless
AC/N GPON HGU with
4-port GbE LAN

Public area

Digital signage

Office PC

Guest room

PC

IPTV

RCU

VoIP

WiFi device   Smart speaker

—— Ethernet   —— Fiber   ((WiFi

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.