



## Success Story

Zyxel Wireless Solution Provides Sprawling Indian Exposition Center with Wide-Reaching Connectivity



SMB



India Expo Mart



India



Zyxel wireless solution

## Overview

### Challenges

- Provide secure wireless Internet coverage across 28,000-square-meter indoor space
- Provide seamless wireless roaming for wireless users
- Deal with interference caused by 3G/4G boosters inside the exhibition halls
- Integrate with existing solutions, like AD integration

### Benefits

- Quick return of investment
- Better service delivery
- Achieved project requirements
- Achieve better management with new technology
- Flexible solution that is "future-proof"

### Solutions

- 802.11ac Dual Radio Unified Pro Access Point
- 802.11 a/b/g/n Unified Access Point
- 802.11 a/b/g/n Business Access Point
- Business Wireless LAN Controller
- 24-port Gigabit L2 PoE Switch
- 20-port Gigabit Fiber L2 Switch

"We were thoroughly satisfied with the wireless network provided by Zyxel. Their professional staff was indispensable in identifying the right solution to fit our needs. With their help, we were able to overcome many of the unique challenges we faced with this project. Zyxel's ongoing support and training has given our staff the confidence to manage our new network with relative ease."

Tushar Gupta  
IT Manager, India Exposition Mart

## Background

India Expo Centre and Mart is India's first state-of-the-art international exposition project with the capability of handling more than 50k of footfall in conjunction with international market events. This multi-functional venue offers a rare combination of technology, world-class facilities, and top-tier safety standards. It suitable for hosting international business-to-business exhibitions, conferences, congresses, product launches, promotional events, and — most predominantly — act as a centralized contact point for overseas buyers and the cottage-based manufacturer-exporters to conduct business.

The facility encompasses over 58 acres of land and features a unique blend of trade mart with exhibition and convention facilities, lawn, business center, restaurants, and transportation facilities. The site also offers sufficient parking area for over 4,000 cars and 30 buses/trucks inside the complex. It is well linked to the main ring road of Delhi through an eight-lane expressway.

With telecommunications and high-speed Internet connectivity under one roof, the India Expo Centre and



Mart is the perfect venue for trade fairs, exhibitions, conferences, and other such theme-based international events. Elegant, functional, and flexible, the India Expo Centre and Mart is among the world's best large-scale event venues. The centers 28,000 square meters of indoor exhibition space — as well as its banquet-cum-conference hall, restaurants, meeting rooms — have all been furnished with the most recent in telecommunications, multimedia, and high-speed network connectivity.

## Challenges

Management of the India Expo Centre and Mart wished to provide secure Wi-Fi Internet coverage across the site's 28,000 meter square indoor space so visitors and would have access seamless wireless connectivity. The project faced several challenges due to the large size of the facility and the wide range of activities that it would host. There were also technical and logistical issues to

contend with, including interference caused by the 3G/4G boosters inside the exhibition halls. The new wireless infrastructure would have to integrate with existing solutions, like active directory (AD) integration. Most importantly, the solution would need to provide high bandwidth to support large numbers of users without degrading the speed and stability of their connections

## Solutions and Benefits

From the very beginning of the project, the customer faced an uphill battle to provide seamless, stable wireless connectivity to approximately 100,000 users, including full roaming functionality. After implementation, users would be able to roam freely through the entire exhibition center without losing connections and be able to quickly upload or download images and other media for their businesses.

Zyxel PoE switches were selected to power up the Zyxel wireless AP's, which in turn provided wide wireless signal coverage while handling high user density. The core of the network is a Zyxel XGS3600-26F 20-port GbE Fiber L2 switch with four GbE combo ports and two 10G fiber ports. This effectively eliminated any concerns regarding the provision of adequate bandwidth.

One key issue Zyxel technicians faced at the customer

end was the potential interference caused by the 3G/4G repeater and base station installed in the exhibition halls. To resolve this, the Zyxel R&D team from Taiwan deployed the company's WAC6500 series 802.11ac Dual Radio Unified Pro Access Point, which are equipped with smart antenna technology to mitigate the impact of interference. Zyxel technicians also made some firmware changes to counter the impact of interference on the deployed NWA series access points.

Lastly, multiple training sessions, successful PoC, and carefully planned AP deployment provided the customer with both confidence and peace of mind. They could rest assured that the solution would be up to the task it was designed for. Additional technical support and customer training was provided in several key areas, successfully synching IT staff with the new solution.

## Products Used

### WAC6503D-S • 802.11ac Dual Radio Unified Pro Access Point



- ZyXel smart antenna provides premium performance anywhere
- Advanced IEEE 802.11ac offers up to 1.75Gbps combined data rates
- Industry-leading Rx sensitivity as low as -102 dBm
- AP Flex™, ZyXel ONE Network utilities, DCS and tool-less bracket design streamline deployment
- Load balancing and client steering ensure optimal wireless experience
- ZyMesh easily extends reliable Wi-Fi network

### NWA5120 Series • 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
- 2.4 GHz and 5 GHz concurrent dual-band
- High-performance RF technology: Tx Beamforming and Rx Maximum Likelihood Demodulation (MLD)
- ZyXel One Network is supported

### NWA3160-N • 802.11 a/b/g/n Business Access Point



- 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
- Back-up redundancy supported to provide reliable connection service
- 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

## NXC5200 • Business Wireless LAN Controller



- Centralized WLAN management and auto provisioning
- Manages up to 240 APs with granular access control
- Advanced RF management for optimized Wi-Fi performance
- Secured wireless edge with IDP, anti-virus and firewall
- Flexible traffic forwarding with tunnel and distributed modes
- Comprehensive guest network management features
- User-centric management solution for BYOD trend
- RADIUS, static MAC forwarding and 802.1x authentication-enhance network security
- Future-proofed with IPv6 support

## XGS3600-26F • 20-port GbE Fiber L2 Switch



- 32K MAC addresses table; 4MB Packet Buffer Size
- ITU-T G.8031 Ethernet Linear Protection and ITU-T G.8032 Ethernet Ring Protection Switching
- ITU-T Y.1731 / IEEE 802.3ah MAC Layer OAM and IEEE802.1ag Ethernet CFM
- "Front Access" design; Temperature harden; AC/DC dual power input
- Intelligent fan control for power saving; Fan Tray version available
- IPv6 management and s-Flow support

## GS2200-24P • 24-port GbE L2 PoE Switch



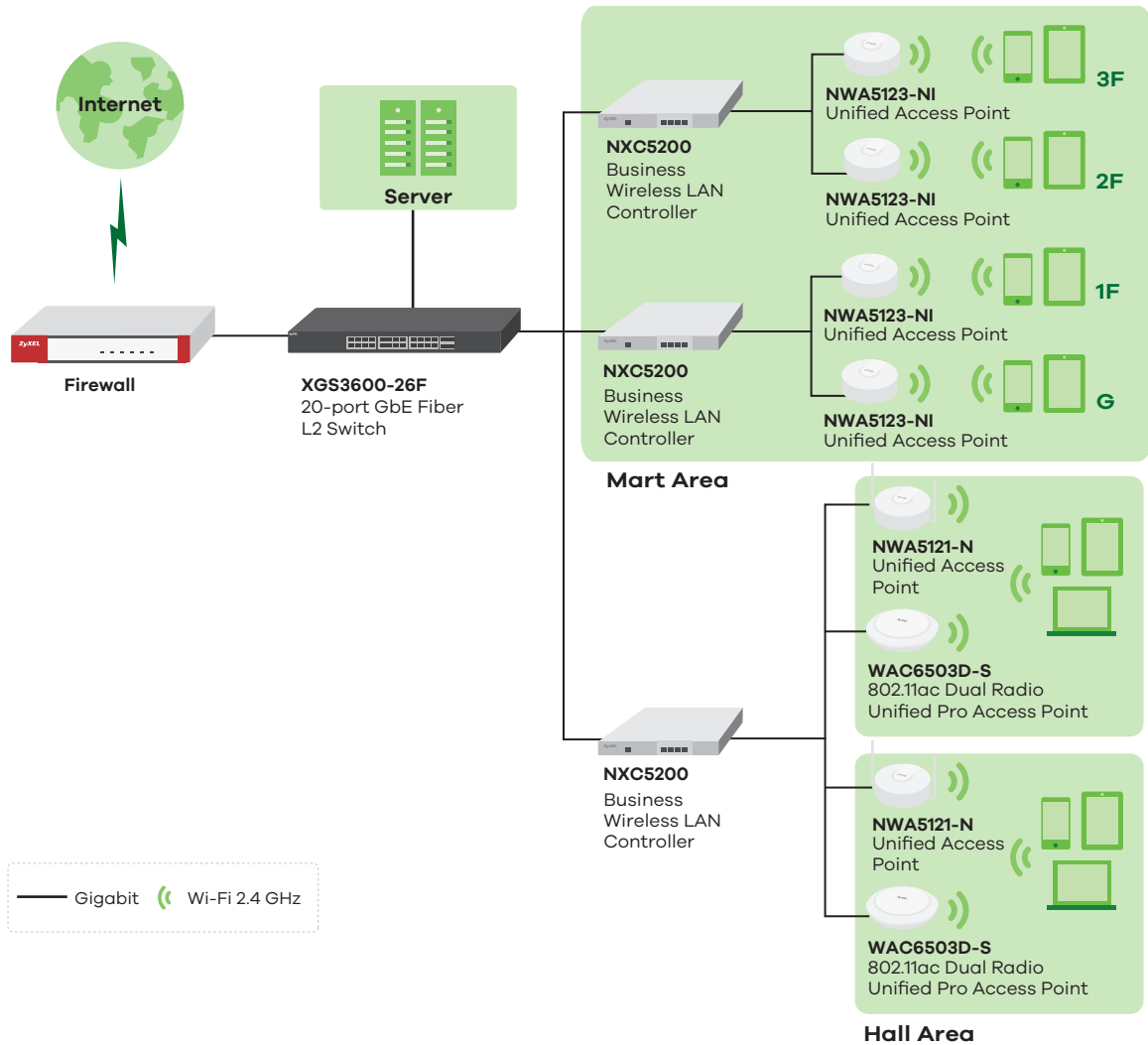
- Comprehensive L2 switching features
- 56 Gbps non-blocking switch fabric
- 2 dual-personality (RJ-45/SFP) GbE interfaces
- Port security and enhanced 802.1X port authentication
- MAC freeze and intrusion lock
- 8 IEEE 802.1p hardware priority queues
- WFQ, WRR and SPQ queuing algorithms
- IPv6 Ready logo approved
- IEEE 802.3af PoE support
- PoE power consumption mode for enhanced energy efficiency

## GS1920 Series • 24-port Gigabit 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

## Diagram



### 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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