



## Success Story

Indian Institute Uses Zyxel GPON End-to-End Solution to Create Tomorrow's Entrepreneurs



Education



CUSTOMER

Indian Institute  
of Management  
at Raipur



COUNTRY

India



SOLUTIONS

GPON  
End-to-End  
Solution

## Overview

### Challenges

- Providing complete network coverage for 200-acre campus
- Centralizing management of hardware and end devices
- Requiring guidance during installation and configuration processes

### Results

- Network has the strength and range for large-campus needs
- Passive, unpowered hardware saves on electricity and maintenance
- Centralized management brings myriad devices to one location

### Solutions

- Zyxel GPON End-to-End Solution

"We needed a network that would be able to handle a high volume of users and support future growth. We're truly satisfied with the plan that Zyxel devised and implemented. With the ability to upgrade our infrastructure at any time, our institute has been propelled into the future."

Mr. Priyank Mitra  
Technical Manager, IIM Raipur

## Background

The Indian Institute of Management at Raipur was established in 2010 by the Government of India. The institute's goal is to foster leaders who are not only well-versed in the ever-changing trends of business and commerce, but also socially conscious and committed to burnishing the country's international image. "At IIM Raipur," states Director Bharat Bhasker, "we strive to achieve excellence in every endeavor."



## Challenges

Since IIT's sprawling, 200-acre campus lacked any previous network infrastructure, the institute required a complete, end-to-end solution. It would need to connect a number of different services: internet, voice and intercom, security cameras, to name only a few. Because of the campus's vast size, IIM didn't want to use a traditional switching

solution, which would make network management and monitoring inefficient. Moreover, its technical team hoped to work with a vendor that could guide them from the beginning to the end of what would be a truly ambitious wired and wireless undertaking.

## Solutions and Benefits

After considering IIM Raipur's network needs, Zyxel worked with local partner Siemens Pvt. Ltd. to install a GPON topology. A GPON network is powerful, cost-effective, and secure. The fiber-optic infrastructure can carry data across much greater distances than traditional Ethernet. Since splitter nodes are unpowered, electricity and maintenance costs are significantly reduced. And with downstream encryption, highly sensitive network data remains protected.

Zyxel's **OLT2406 Series** is the workhorse of IIM's cutting-edge GPON network. The 2-unit, 6-slot GPON chassis delivers symmetrical broadband service with 10G uplink while providing numerous management and security features. Despite the individual power of the OLT, it still needs the help of two edge units: the **PMG5317-T20A** and **PMG1005-T20A**. With advanced QoS and configuration features, both products are ideal for connecting the OLT's high-speed fiber to a range of end-user devices, such as

desktops, VoIP phones, cameras, and access points. The resilient **XGS4600-32 Gigabit L3 Managed Switch** and versatile **NXC5500 Wireless LAN Controller** round out the comprehensive, centrally managed network. The IT team doesn't need to trek around the 200-acre grounds to check each and every access point, IP camera, or intercom unit, when it can do so from the convenience of a computer monitor. Additionally, the extensive use of virtual LAN ensures that issues arising in one area of the network will not spread to other sections.

The Zyxel GPON end-to-end solution doesn't just reduce maintenance costs caused by legacy equipment. WiFi devices and security cameras get a boost from fully scalable PoE switches that are ready to handle anything the future has in store. The institute came to Zyxel because of its stellar reputation, impeccable product design, and reliable customer support; once again, your network ally delivered as promised.

## 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

### XGS4600-32 • 28-Port Gigabit L3 Managed Switch with 4 SFP+ Uplinks



- Four built-in 10-G SFP+ uplinks enable smooth, congestion-free data delivery for high-bandwidth applications
- Provides high bandwidth with true physical stacking of up to four units and 112 Gigabit ports
- New ID design with carbon fiber-style name plate delivers a modern look and feel
- High resiliency with redundant power supply units

### 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

## OLT2406 • 2U Temperature-Hardened 6-slot Chassis GPON OLT



- ITU-T G.984-compliant GPON ports; each port can supports 64 ONT
- Two management and switch cards plus two power modules redundancy
- Four 10 GbE or two GbE uplink ports
- 10 GbE backplane bandwidth per line card slot for non-blocking service
- Four PON or GbE port per line card
- ITU-T G.984.1 type A and type B protection
- Temperature-hardened
- All front-access and hot-swappable

## PMG1005-T20A • GPON Optical Network Unit with 1-port GbE LAN



- Integrated Internet services through fiber
- High-speed data access
- QoS ensures service quality
- OMCI remote management

## PMG5317-T20A • Wireless N GPON HGU with 4-port GbE Switch



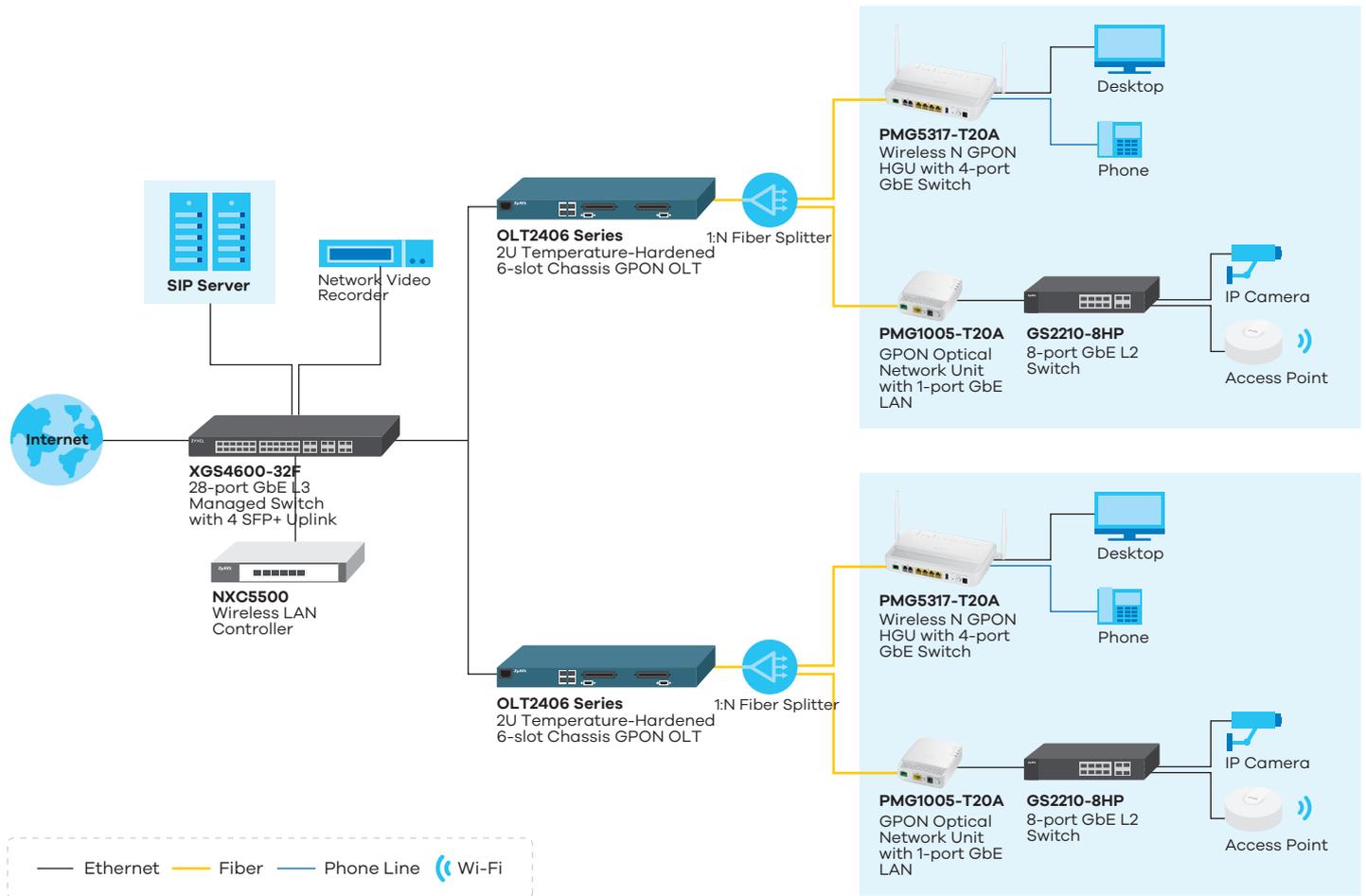
- Integrated Internet services through fiber optics
- 2.4 GHz 11 b/g/n (2x2) for superior performance and coverage
- Advanced QoS ensures quality of triple-play services
- Provisioning and Management

## 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

## 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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