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Success Story

Thai Agricultural College Grows Fiber-Optic Network with Zyxel GPON Solution

INDUSTRY
Education

CUSTOMER
Phichit College of Agriculture and Technology

COUNTRY
Thailand

SOLUTIONS
Zyxel GPON Solution

Overview

Challenges

- Deploying high-quality, reasonably priced network for facilities at 206-acre academic campus
- Solution must come from a reliable vendor with local tech support
- Building durable, scalable infrastructure to support future growth

Solutions

- Zyxel GPON Solution

Results

- Cost-effective, efficiently powered network architecture
- Top-tier quality of service (QoS) for optimal wireless performance
- Quick, intuitive configuration and management to lessen IT load

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Background

The Phichit College of Agriculture and Technology (PCCAT) was founded in 1977. Located in Phichit Province, Thailand, PCCAT shepherds individuals looking to break into agricultural occupations like crop development, animal husbandry, and fish harvesting. Over the years, the vocational institute has expanded to more than 20 buildings and remote offices across 206 acres. However, the growing distance between the main office and furthermost buildings was placing enormous pressure on the college's traditional, UTP-based Ethernet. In July of 2018, PCCAT finally decided that its unreliable, low-bandwidth network architecture had to go.

Challenges

Before overhauling its entire network, PCCAT took a careful look at the high-tech challenges that would need to be overcome. Because the school didn't want to be without connectivity for a lengthy period of time, its legacy network would have to be replaced as efficiently as possible. It also wanted high-quality, durable products at a reasonable price and support from a reliable, local vendor. Most importantly, the incoming technology needed to be scalable, since the college would then have the option of further developing its campus. Ultimately, they chose to work with IT Comscience, a trusted Zyxel partner. The solution? Zyxel's fast, dependable, fiber-optic GPON.

Solutions and Benefits

A GPON (gigabit passive optical network) has several clear-cut advantages when compared with more traditional networks. For starters, it's efficient. It uses an unpowered splitter to divvy up a single fiber-optic signal, so one wire can connect many users. This simplicity is also a money saver. With fewer devices to power and manage, GPONs invariably reduce energy and maintenance costs.

PCCAT's GPON consisted of a single optical line terminal (OLT) and 50 home gateway units (HGUs). Zyxel's **Pizza Box 4-port GPON OLT**, which goes by the "pizza box" moniker due to its modest size, showcases multiple port types for myriad network applications. And because its optical signal can be divided among 128 different HGUs, the OLT is the definition of efficiency. To deliver the powerful fiber-optic signal to the entire campus, PCCAT deployed Zyxel's **Wireless N GPON HGU**. The HGU, a type of optical network terminal, leverages advanced quality-of-service functionality to achieve first-rate performance and coverage. These devices connect to the OLT automatically and can be managed via a handy OMCI (ONT management and control interface), which enables auto-provisioning and remote management.

PCCAT's campus is now connected to the internet via a potent and futureproof fiber-optic network. The school was even able to shore up "last mile" coverage by re-integrating legacy APs and switches. Zyxel's GPON technology has not only made it easier for students and teachers to access and share academic resources, it's given the vocational institute cutting-edge tools to expand and flourish in the years to come.

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Products Used
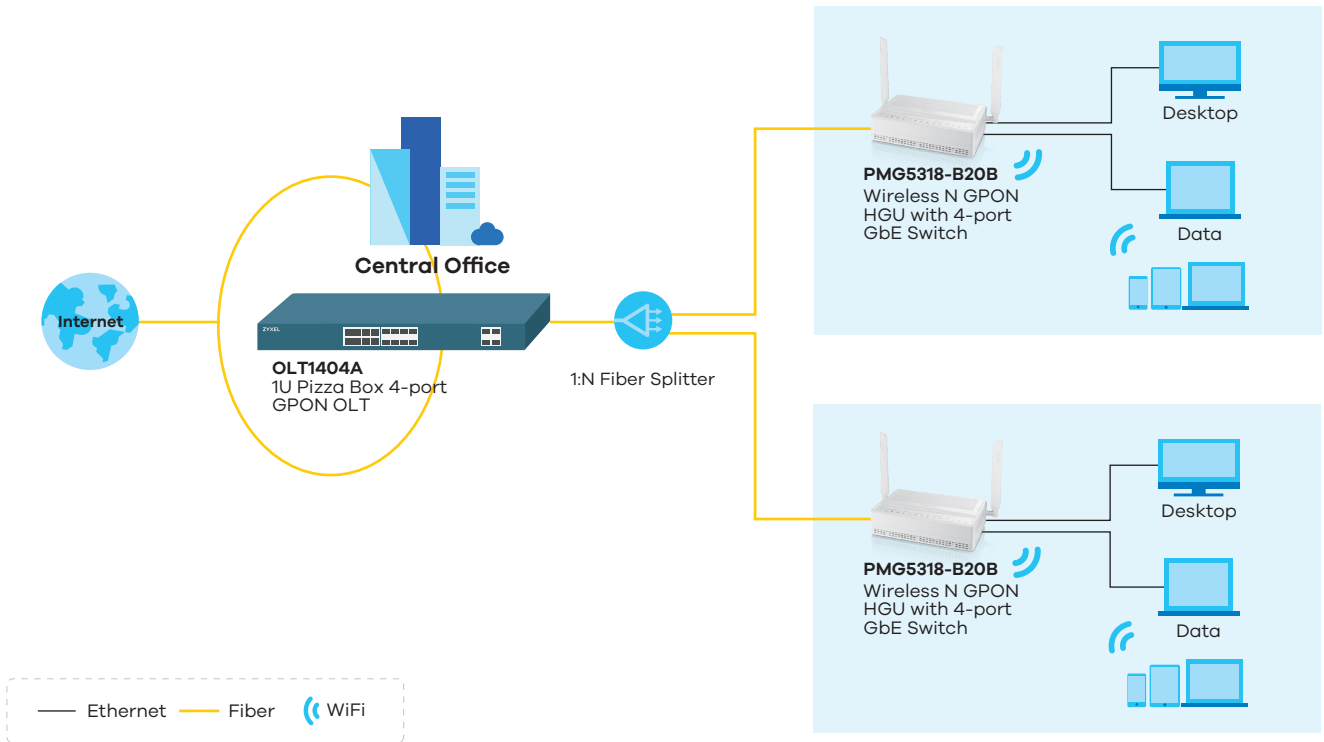
OLT1404A • 1U Pizza Box 4-port GPON OLT

- Cost-effective solution with compact design
- Temperature-hardened for durability
- Comprehensive QoS to enhance users' triple-play experience
- Field-proven IGMP snooping and proxy for IPTV deployments
- Full management capabilities via Zyxel EMS NetAtlas

PMG5318-B20B • Wireless N GPON HGU with 4-port GbE Switch

- Integrated internet services through fiber optics
- 2.4 GHz 11n (2x2) for superior performance and coverage
- Advanced QoS ensures quality of triple-play services

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Diagram

Central Office

Internet

OLT1404A
1U Pizza Box 4-port
GPON OLT

1:N Fiber Splitter

PMG5318-B20B
Wireless N GPON
HGU with 4-port
GbE Switch

Desktop

Data

PMG5318-B20B
Wireless N GPON
HGU with 4-port
GbE Switch

Desktop

Data

—— Ethernet —— Fiber 〔(WiFi

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.