

Work From Home

2020/April/16
V1.00

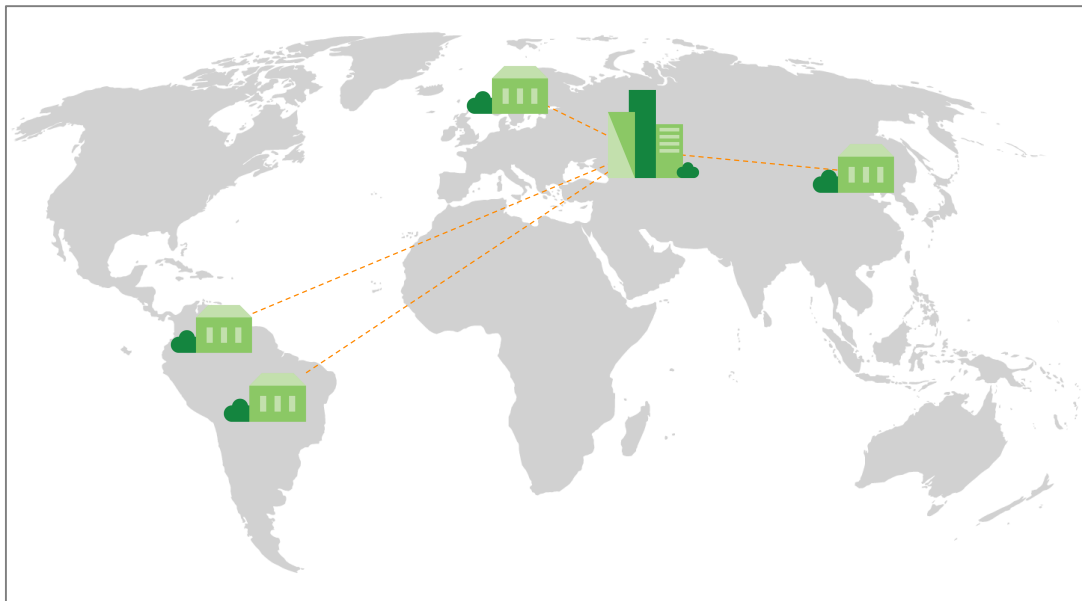
Overview

01



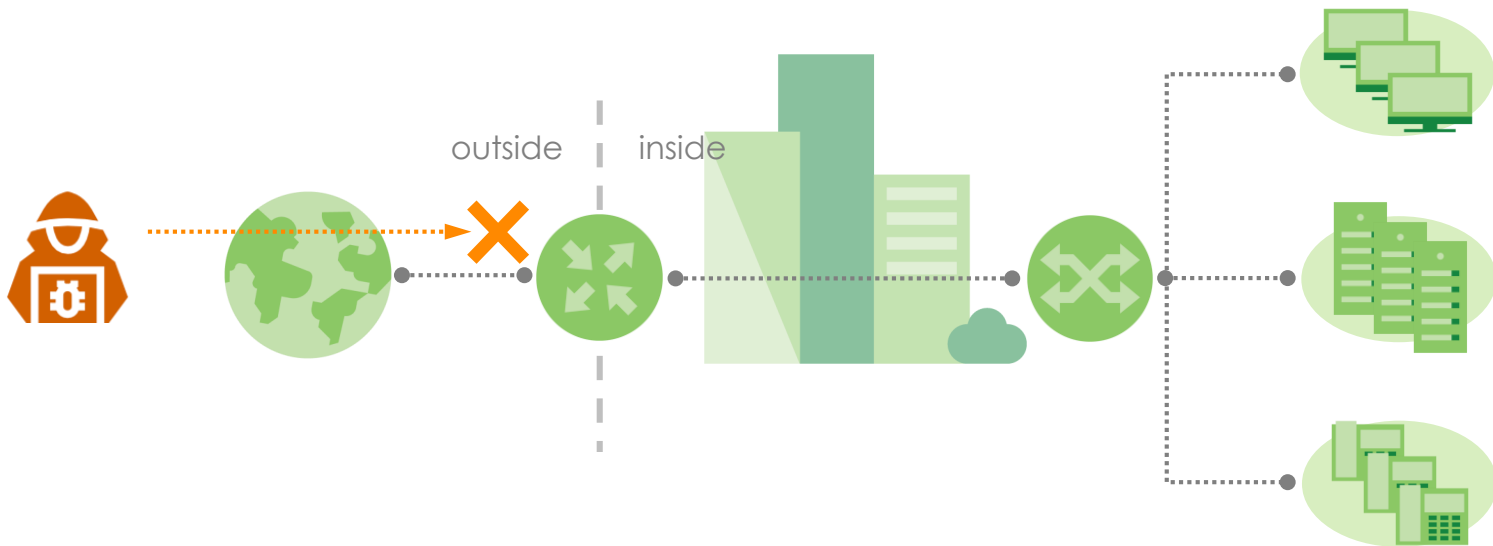
01: Overview

- **A shift in work environment**
 - Companies have resorted to social distancing the workforce in order to address the current situation



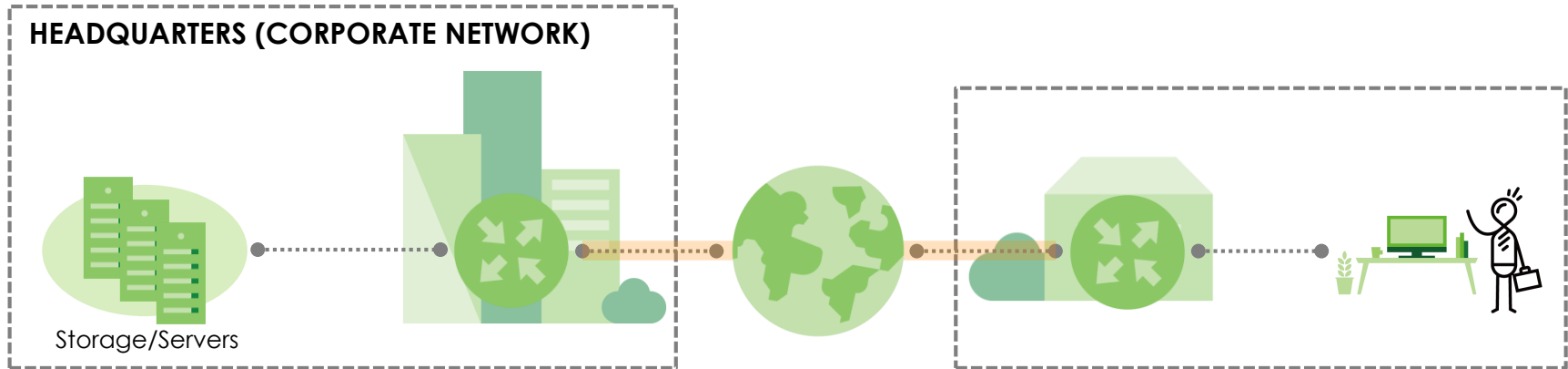
01: Overview

- **A private network is a closed network!**
 - People from the inside **can** access the outside
 - People from the outside **cannot** access the inside

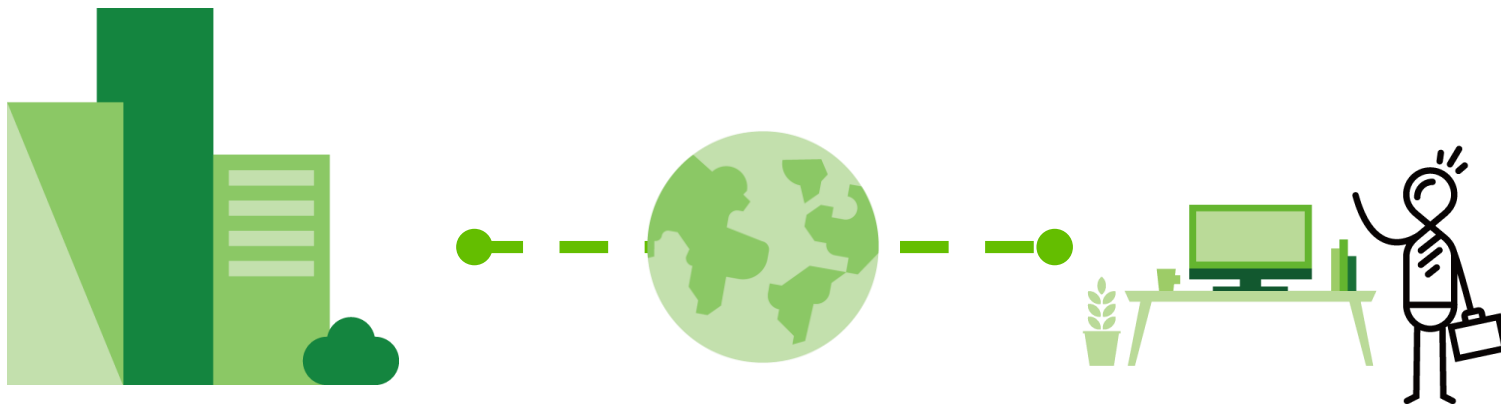


01: Overview

- **Working remotely with Zyxel VPN solutions**
 - Employees access corporate data, information, and resources across the Internet
 - Traffic from employee and headquarters are all encrypted
 - Non-employee cannot access corporate data



01: Overview



HOME



Work from home with VPN

TEMPORARY
OFFICE



Create Site-to-site VPN from
temporary office to HQ

HOME

02



02: HOME

- **Description**

- To prevent further spread of COVID-19, some companies have instructed their employees to **work from home**. But having employees work from home means that companies must provide a method that allows access to their company network with as much **security** as possible. Zyxel offers the advantage of **secured VPN or tunneled access** to the company network with **flexibility** and **convenience**, in mind.

02: HOME

- **Requirements**

- Establish secured and convenient connection between headquarters and home networks
- Protect company network and resources from external threats
- Provide enough Wi-Fi coverage area across all floors and rooms in household
- Prioritize and reserve bandwidth for work-related traffic to prevent impact caused by network congestion

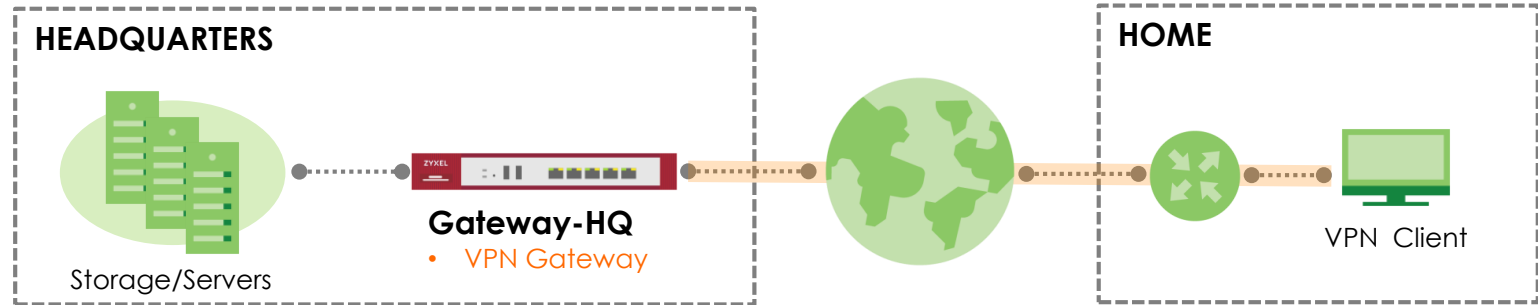
02: HOME

- **02-1: Virtual Private Network (VPN)**
 - VPN Client
- **02-2: Security**
 - Unified Threat Management
- **02-3: Wireless LAN**
 - AP Tunnel Mode
 - Power Line Adapter
 - Power over Ethernet
- **02-4: Quality of Service (QoS)**
 - Bandwidth Management

02-1: VPN

- **VPN Client**

- With a Zyxel security gateway located within the headquarters network acting as a VPN gateway, remote employees working at home can access the company resources (data storage or servers) through **VPN** using **desktops, laptops, or mobile devices**. Zyxel also offers **VPN software** for **easier setup**.



02-1: VPN

- **VPN Client**

- **Benefit(s)**

- Establish secured and convenient connection
- Does not require VPN gateway at remote employee's home
- Solution available for most end devices or platforms

- **Solution**

- [SecuExtender SSL VPN Client](#) (software for Windows and Mac OS*)
- [SecuExtender IPSec VPN Client](#) (software for Windows OS*)

*: [Requires license](#)

02-1: VPN

- **VPN Client**

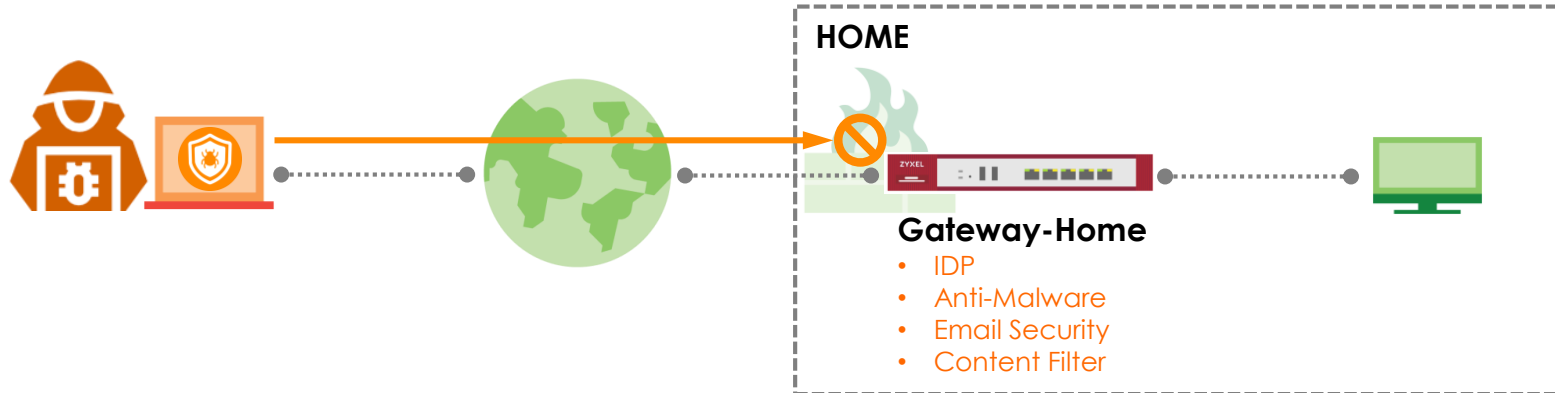
- **Reference Material:**

- [Youtube] [ZyWALL VPN L2TP iOS Setup](#)
- [Youtube] [ZyWALL VPN L2TP Android Setup](#)
- [Youtube] [ZyWALL VPN SecuExtender IPSec Windows Setup](#)
- [Youtube] [ZyWALL VPN SecuExtender SSL MAC Setup](#)
- [Forum] [ZyWALL VPN SecuExtender IPSec Windows10 Setup](#)
- [Forum] [ZyWALL VPN L2TP with Windows 2012AD Setup](#)
- [Handbook] [ZyWALL VPN L2TP MACOS Setup \(page 338\)](#)

02-2: Security

- **Unified Threat Management (UTM)**

- With the COVID-19 pandemic, hackers and cyber scammers have started stealing sensitive information from their victims by **disguising their emails or messages** as instructions by the World Health Organization (WHO). Zyxel **UTM** security service allows your home network to gain **extensive protection** against all types of **malware threats** and/or deny access to **phishing** or **malicious websites**.



02-2: Security

- **Unified Threat Management (UTM)**

- **Benefit(s)**

- [IDP] Prevents theft of credentials or personal information
- [Anti-Malware] Defends against ransomware attacks
- [Email Security] Denies emails that contain links to phishing sites
- [Content Filter] Prevents access to webpages recognized as malicious sites

- **Solution**

- [ATP100\(W\)/200/500](#)
- [Gold Security Pack license for ATP](#) (Sandboxing, Web Security, Application Security, Malware Blocker, Intrusion Prevention, Reputation Filter)
- [USG40\(W\)/60\(W\)/110/210/310](#)
- [UTM services license for USG](#) (IDP/App Patrol, Anti-virus, Anti-Spam, Content Filter)

02-2: Security

- **Unified Threat Management (UTM)**

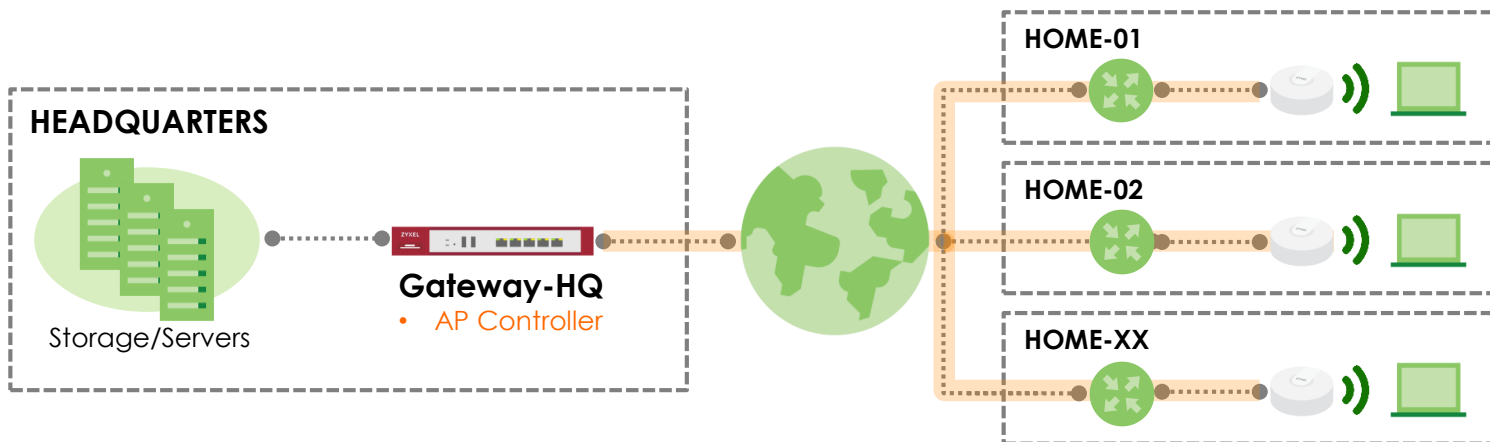
- **Reference Material**

- [Handbook] [How to Block Spotify Streaming Service with IDP \(page 580\)](#)
- [Handbook] [How to Configure Content Filter \(page 426\)](#)
- [Handbook] [How does Anti-Malware Work \(page 584\)](#)
- [Handbook] [How to Configure Email Security Policies \(page 588\)](#)

02-3: Wireless LAN

- **AP Tunnel Mode**

- Besides protecting the company network from outside threats with **UTM**, the Zyxel security gateway can act as an **AP controller**. Zyxel AP that supports **tunnel mode** provides remote employees with the **same working experience** as if they are still in the office. This solution also requires the **least amount of support from network IT** as remote employees need only power-on the AP in their home environment.



02-3: Wireless LAN

- **AP Tunnel Mode**

- **Benefit(s)**

- No configurations required on user's end devices
- Easy deployment on remote employee site (Single-step setup on AP)
- Integrates seamlessly with existing enterprise network

- **Solution**

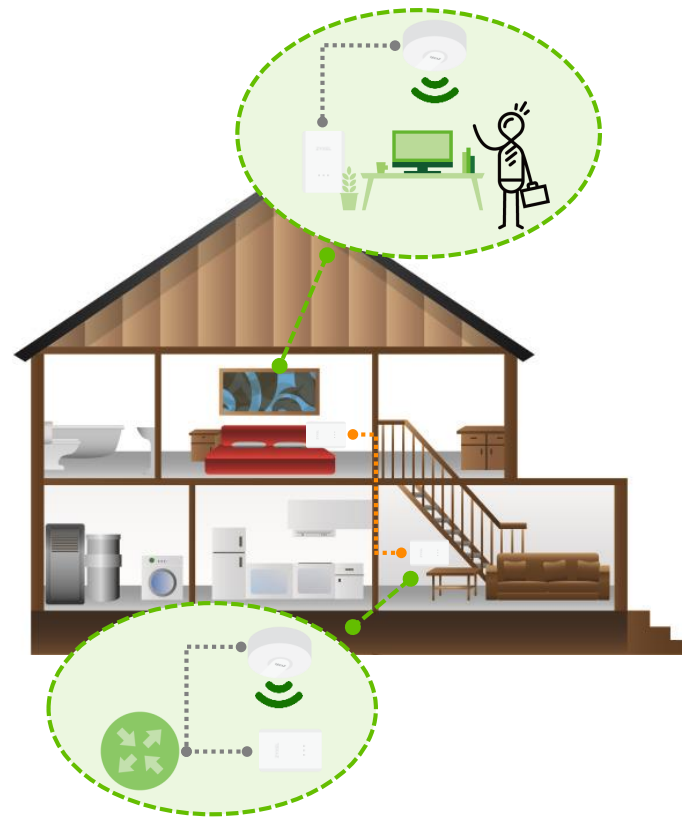
- [Home] [WAC6103D-I, WAC6500 series, NWA5123-AC HD, WAC6303D-S, WAX510D, or WAX650S](#)
- [Headquarters] [USG110/210/310/1100/1900/2200, ATP100/200/500/800, or VPN50/100/300](#)

- **Reference Material**

- [Forum] [How to Utilize AP Tunnel Mode From Home to Office Network](#)

02-4: Wireless LAN

- **Power Line Adapters (PLA)**
 - Zyxel **PLA** transform the power outlets of the remote employees house into a fast network while **extending** the Internet access to different floors or far sections of the house. By **combining the PLA with APs or end devices**, remote employees can access the company network from **anywhere** in the household.



02-4: Wireless LAN

- **Power Line Adapters**

- **Benefit(s)**

- Flexible mounting with existing power outlet
- Easy setup with Zyxel APP guide

- **Solution**

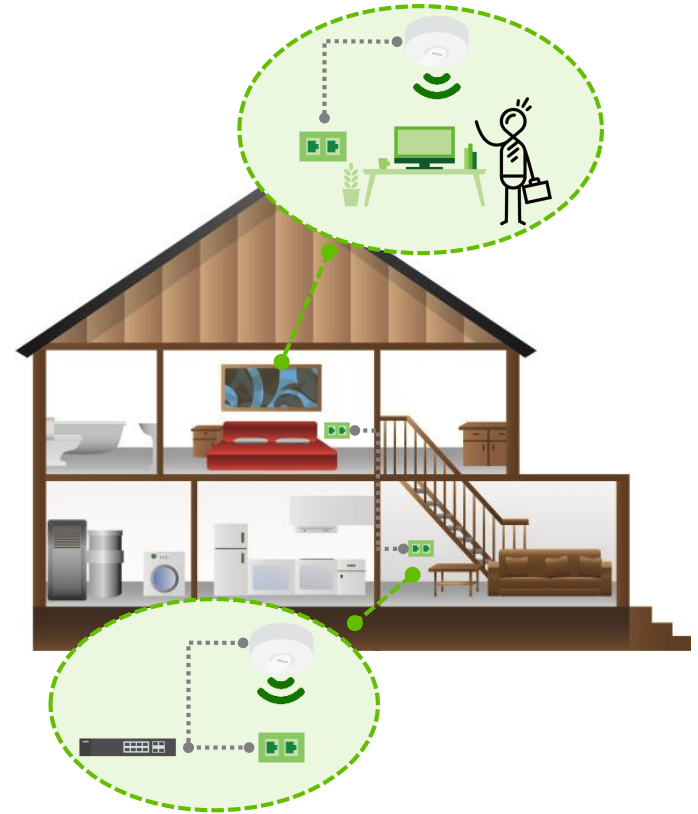
- [PLA5456](#)

- **Reference material**

- [Document] [PLA5456 Quick Start Guide](#)
- [Document] [PLA6456 Quick Start Guide](#)

02-3: Wireless LAN

- **Power over Ethernet (PoE)**
 - **PoE** is a technology that lets employees working from home to **power-on** PoE supported network devices (**AP, IP camera, IP phones, etc.**) using only the Ethernet cable. With a more **flexible AP deployment**, remote employees can access the company network from **anywhere** in the household.



02-3: Wireless LAN

- **Power over Ethernet (PoE)**

- **Benefit**

- More flexible device deployment
- Exposes less cables
- Allows more spaces to access company network via Wi-Fi

- **Solution**

- [GS1005/ES1100/GS1200/GS1300/GS1350/GS1900/GS1920/GS2210 series](#)

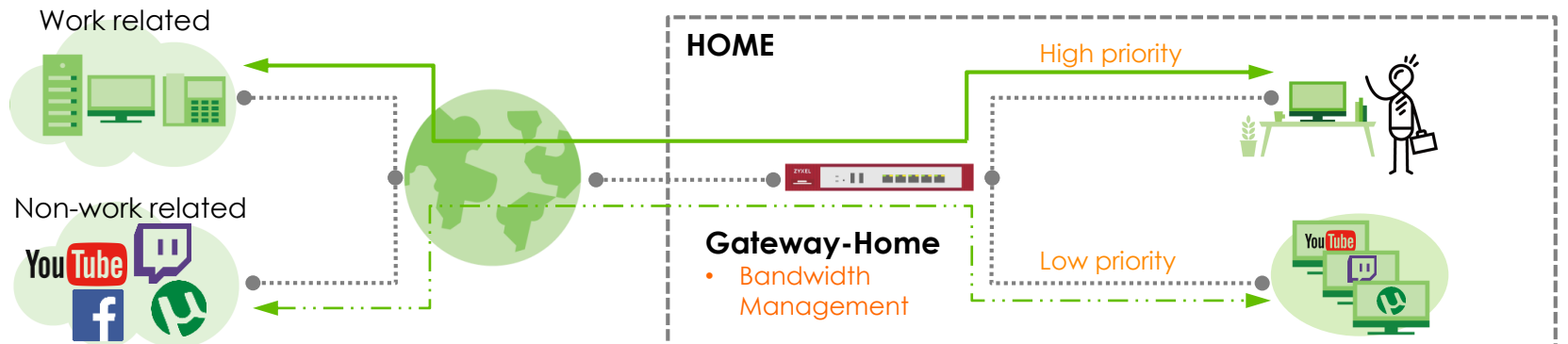
- **Reference Material**

- [Forum] [Quick Introduction of PoE \(Power over Ethernet\)](#)

02-4: Quality of service (QoS)

- **Bandwidth Management**

- With bandwidth as a limited resource, sharing the Wi-Fi or home network with the family can affect work productivity or even the **video/audio** of your **conference calls**. **QoS** allows the Zyxel devices to **prioritize productive traffic** over others. This way, when network congestions starts occurring, the less productive applications or traffic are impacted, first.



02-4: Quality of service (QoS)

- **Bandwidth Management**

- **Benefit(s)**

- Improves stability of VPN
- Improves stability of webinars and real-time streaming
- Improves stability of VOIP and voice traffic

- **Solution**

- [USG40\(W\)/60\(W\), VPN50, ATP100\(W\)](#)

- **Reference Material**

- [Forum] [How to Configure Bandwidth Management for FTP and HTTP Traffic](#)

TEMPORARY OFFICE

03



03: TEMPORARY OFFICE

- **Description**

- To prevent further spread of COVID-19, some companies have started to **physically spread the workforce**. In a short amount of time, companies may **quickly rent-out** small office spaces and strategically place employee clusters within these **temporary offices** (also known as **alternate offices**). With the temporary office's network under the control of the company, the network IT can be instructed to enforce network policies that not only **improves security** but as well as **work productivity**.

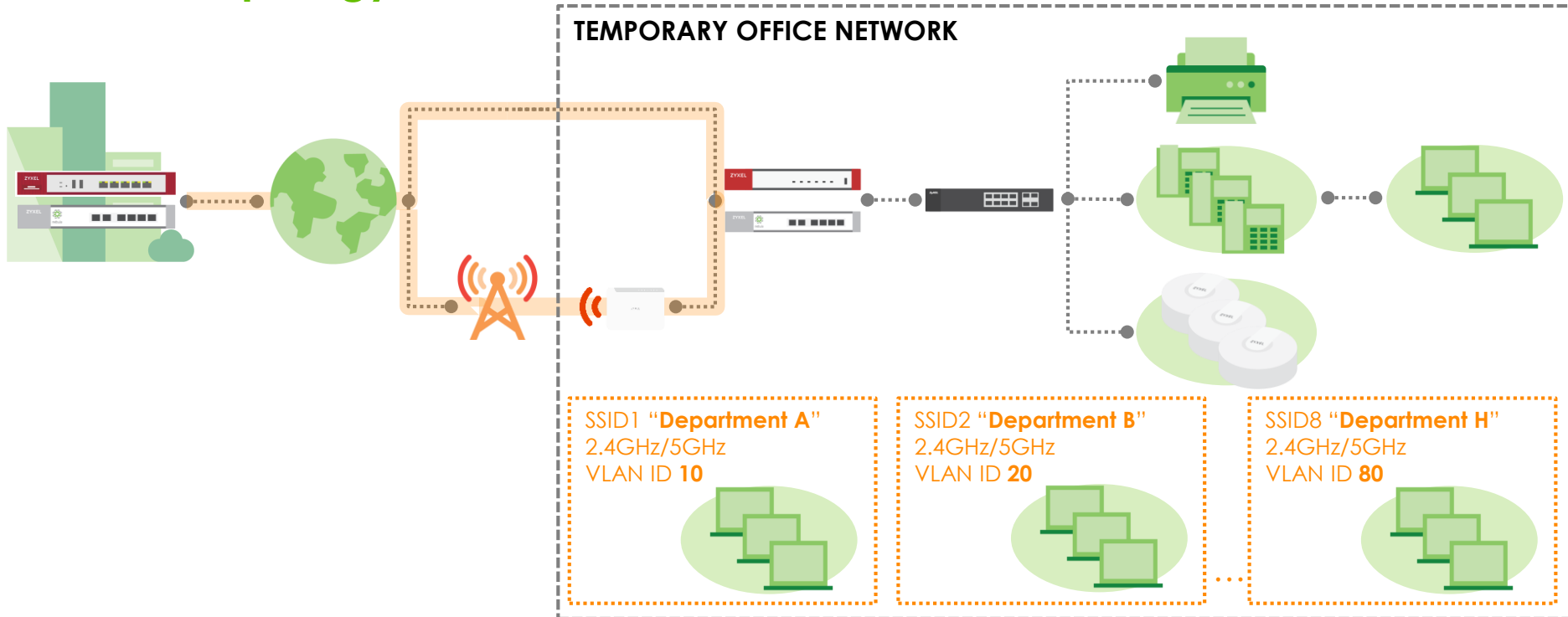
03: TEMPORARY OFFICE

- **Requirements**

- Establish secured and convenient connection between headquarters and temporary office networks
- Reliable Internet connection
- Protect company network and resources from external threats
- Prevent access to non-work related Web content during working hours
- Employees from different departments are allowed to access only their respective resources
- Quick and scalable roll-out

03: TEMPORARY OFFICE

- Topology



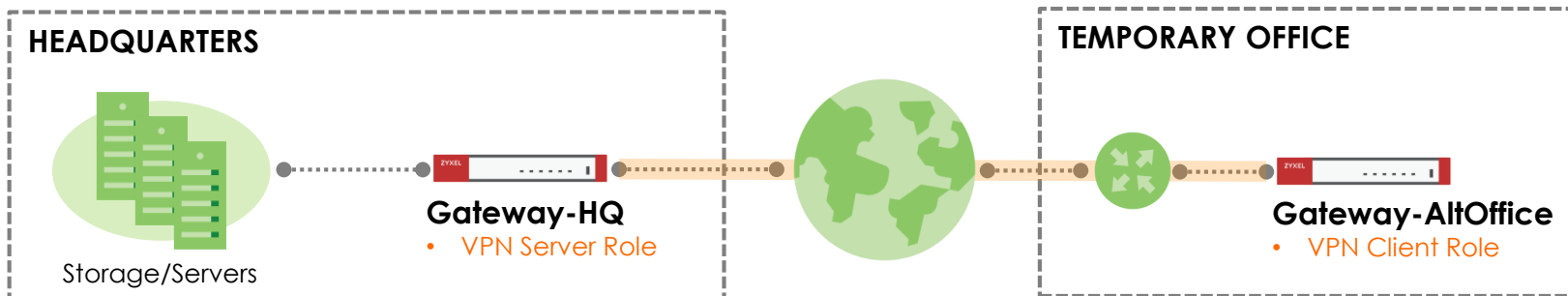
03: TEMPORARY OFFICE

- **03-1: VPN**
 - USG/ATP Hub and Spoke VPN
- **03-2: WAN Management**
 - WAN Optimization
 - Dynamic Path Selection
 - WAN Failover with LTE
- **03-3: Security**
 - Unified Threat Management
 - Virtual Local Area Network
- **03-4: Quality of Service (QoS)**
 - Voice VLAN
 - Bandwidth Management
- **03-5: Wireless LAN**
 - Power over Ethernet (PoE)
- **03-6: Cloud Management**
 - Nebula Control Center

03-1: VPN

- **USG/ATP Hub and Spoke VPN**

- The Zyxel security gateway located in headquarters can be configured with VPN **dynamic peer**. Dynamic peer allows gateways in the temporary office to establish **VPN connection** to headquarters even if connected **behind NAT**. However, the security gateway in headquarters must have a public WAN IP address.



03-1: VPN

- **USG/ATP Hub and Spoke VPN**

- **Benefit(s)**

- Establishes a secured connection for
- Wider range of hardware models for home and enterprise deployment
- Alternate Office gateway can be deployed behind another gateway

- **Solution**

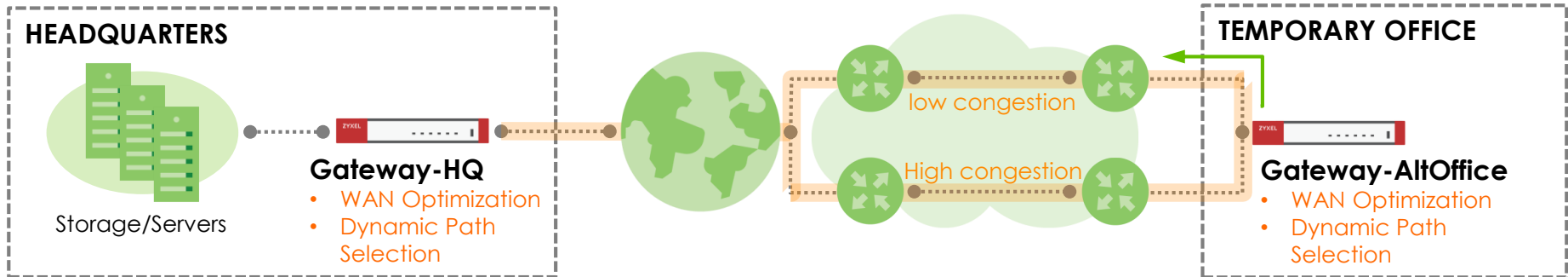
- [Temporary office] [USG40\(W\)/60\(W\)/110/210/310, ATP100\(W\)/200/500, or VPN50/100/300](#)
- [Headquarters] [USG1900/2200, ATP800, or VPN1000](#)

- **Reference Material**

- [Handbook] [How to Configure Hub and Spoke IPsec VPN \(page 97\)](#)

03-2: WAN Management

- **WAN Optimization and Dynamic Path Selection**
 - Zyxel SD-WAN supported security gateways has the benefit of **accelerating** and **stabilizing** the VPN traffic between the headquarters and temporary office network. With **WAN optimization** and **dynamic path selection** enabled, employees in temporary offices experiences **faster and more stable connection** when accessing company resources.



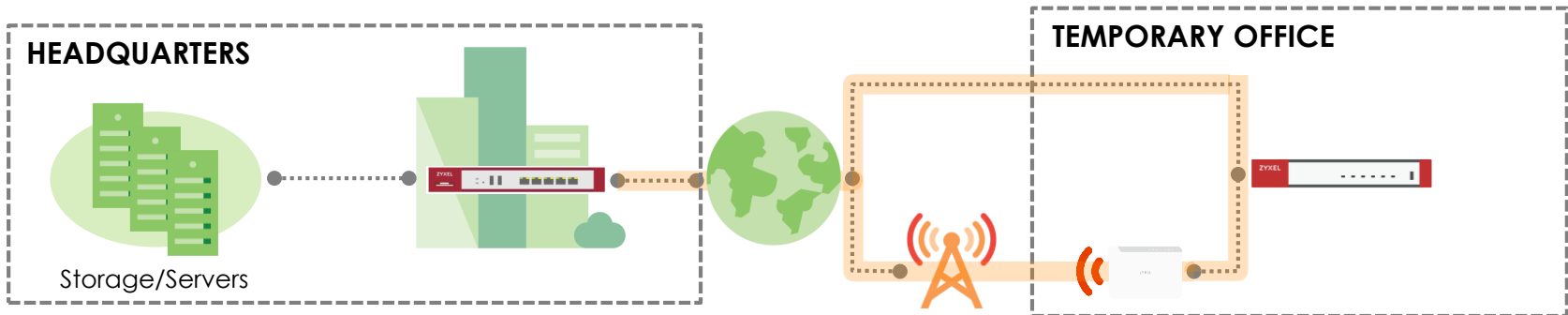
03-2: WAN Management

- **WAN Optimization and Dynamic Path Selection**
 - **Benefit(s)**
 - Faster file transfer rates between VPN sites
 - Improves network stability between VPN sites
 - Boost network performance without the need of additional hardware
 - **Solution**
 - [Temporary office] [VPN50/100/300](#)
 - [Headquarters] [VPN1000](#)
 - [Nebula SD-WAN Orchestrator](#)
 - **Reference Material**
 - [KB] [What is WAN Optimization](#)
 - [KB] [What is Dynamic Path Selection](#)

03-2: WAN Management

- **WAN Failover with LTE**

- Zyxel **LTE routers** provides **lightning-fast** Internet access through the **mobile network**. By combining this technology with the Zyxel security gateway's **WAN failover** feature, we can drastically improve **network robustness** of the temporary office. Zyxel security gateways provides options on whether to normally use the LTE path during normal operations or only when the primary service provider fails. This is especially helpful if the company is under a metered mobile network subscription.



03-2: WAN Management

- **WAN Failover with LTE**

- **Benefit**

- Limitless network connectivity with wide cellular coverage
- Higher robustness by integrating wired and wireless infrastructure in services

- **Solution**

- Mobile Router Outdoor: [LTE7240-M403](#) / [LTE7460-M608](#)
- Mobile Router Indoor: [LTE3301-PLUS](#)
- Mobile WiFi : [LTE2566-M634](#)

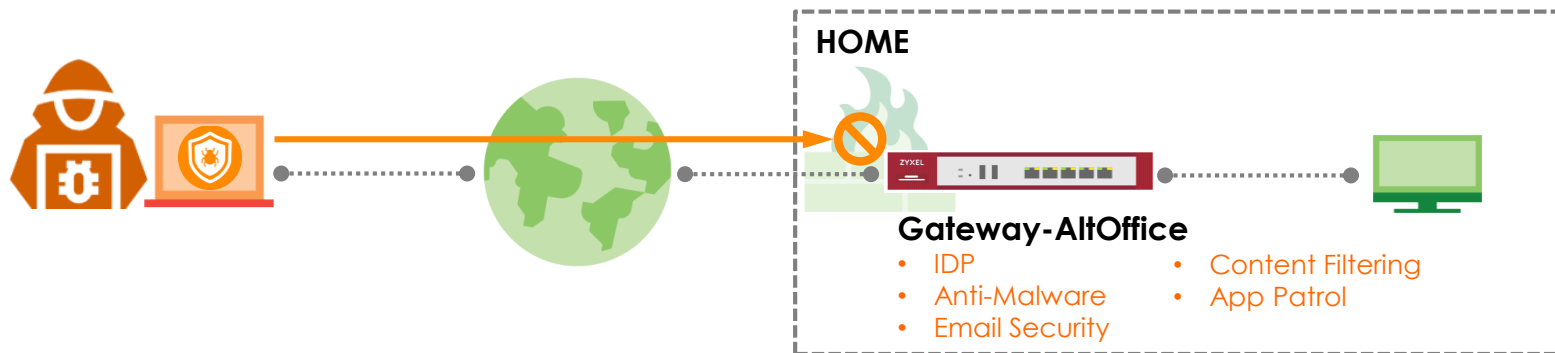
- **Reference Material**

- [KB] [Utilize LTE router for WAN failover](#)

03-3: Security

- **Unified Threat Management (UTM)**

- With the COVID-19 pandemic, hackers and cyber scammers have started stealing sensitive information from their victims by **disguising their emails or messages** as instructions by the World Health Organization (WHO). Zyxel **UTM** security service provides the temporary office not just benefit to security but to productivity, as well. **Anti-malware, IDP, and Anti-Spam** are used to **protect** the office network and employees. **Content Filtering and App Patrol** prevents access to **website content or application** that is **not work-related**.



03-3: Security

- **Unified Threat Management (UTM)**
 - **Benefit(s)**
 - [IDP] Prevents theft of credentials or personal information
 - [Anti-Malware] Defends against ransomware attacks
 - [Email Security] Denies emails that contain links to phishing sites
 - [Web Security] Prevents access to webpages recognized as malicious or not work-related
 - [Application Security] Prevents access to applications that are not work-related
 - [Sandboxing] Performs deeper inspection to detect new or evasive threat designed to hide from traditional prevention measures
 - [Reputation Filter] Blocks traffic from/to malicious URL/IP address

03-3: Security

- **Unified Threat Management (UTM)**
 - **Solution**
 - [ATP100\(W\)/200/500](#)
 - [Gold Security Pack license for ATP](#) (Sandboxing, Web Security, Application Security, Malware Blocker, Intrusion Prevention, Reputation Filter)

03-3: Security

- **Unified Threat Management (UTM)**

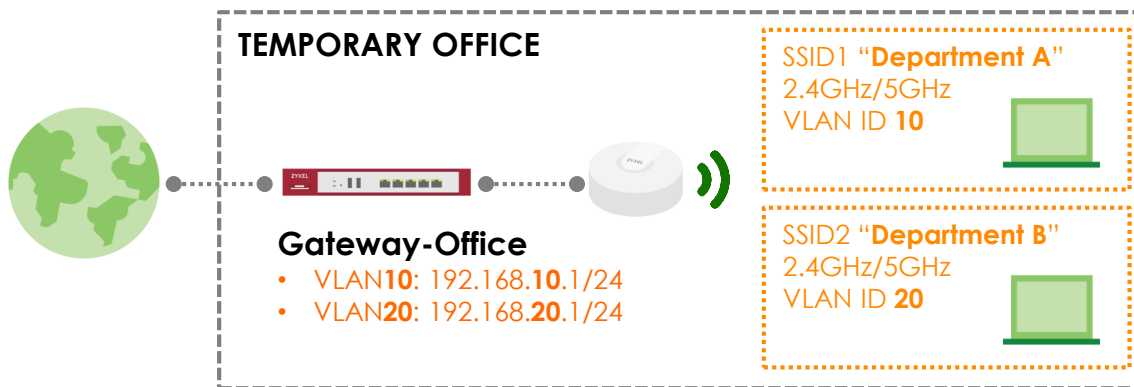
- **Reference Material**

- [Handbook] [How to Block Spotify Streaming Service with IDP \(page 580\)](#)
- [Handbook] [How to Configure Content Filter \(page 426\)](#)
- [Handbook] [How to How to Schedule Youtube Access \(page 504\)](#)
- [Handbook] [How to Control Access to Google Drive \(page 558\)](#)
- [Handbook] [How does Anti-Malware Work \(page 584\)](#)
- [Handbook] [How to Configure Email Security Policies \(page 588\)](#)
- [Application Note] [How to Block TeamViewer \(page 53\)](#)

03-3: Security

- **Virtual Local Area Network (VLAN)**

- With many employees immediately transferred to a temporary office, employees may not all belong to the same department. **VLAN** allows the network to provide **dedicated subnets** for each **departments**. Security policies can then be added on to the subnet to ensure each employee has **access** only to their respective department's resources.



03-3: Security

- **Virtual Local Area Network (VLAN)**

- **Benefit(s)**

- Prevents sharing of data or information between different departments in the company
- Makes it possible to apply security policies for specific departments

- **Solution**

- [GS1920 series](#)

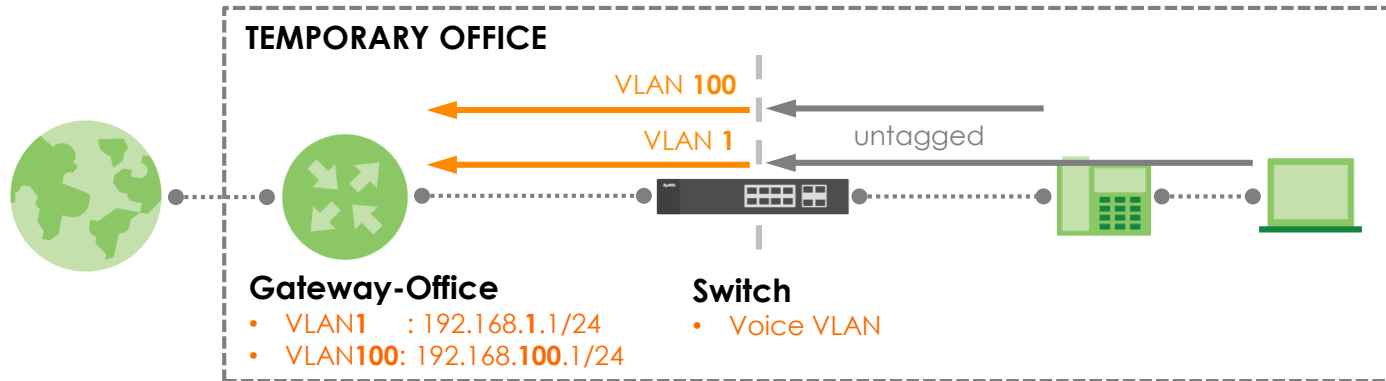
- **Reference Material**

- [Forum] [How to configure the switch to separate traffic between departments using VLAN](#)
- [Handbook] [2.1 How to configure the switch to separate traffic between departments using VLAN \(page 38\)](#)

03-4: Quality of Service (QoS)

- **Voice VLAN**

- **Voice VLAN** allows Zyxel switches to identify traffic coming from IP Phones, and providing it with a higher traffic **priority** in the temporary office during **network congestions**. Adding a higher priority is especially helpful for voice traffic because a single loss of traffic can greatly change the content of a conversation.



03-4: Quality of Service (QoS)

- **Voice VLAN**

- **Benefit(s)**

- Prioritize voice data and separate them from normal data
- Ensure quality of voice service to bring care-free VoIP phone calls experience

- **Solution**

- [GS1920 series](#)

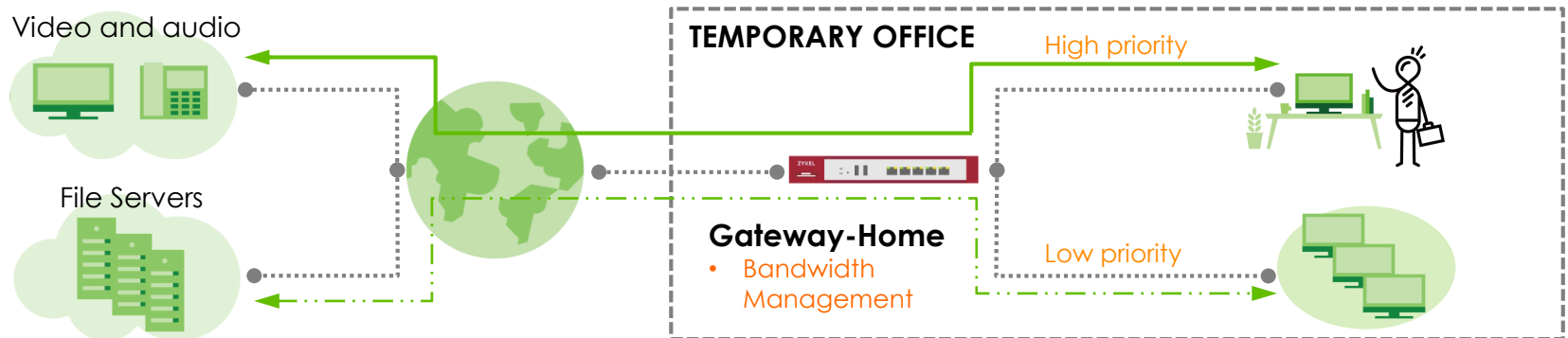
- **Reference Material**

- [Forum] [How to configure Voice VLAN on Zyxel Switch](#)
- [Handbook] [6.2 How to configure the switch to separate VOIP traffic from data traffic \(page 229\)](#)
- [Handbook] [6.3 How to configure the switch to improve Voice traffic quality \(page 234\)](#)
- [Handbook] [6.4 How to Configure Voice VLAN on Zyxel Switch \(page 240\)](#)

03-4: Quality of Service (QoS)

- **Bandwidth Management**

- With bandwidth as a limited resource, sharing the Wi-Fi with coworkers can affect the quality of the **video/audio** of your **conference calls**. **QoS** allows the Zyxel devices to **prioritize video/audio traffic** over **file sharing**. Unlike video or audio calls, the impact of traffic loss or network latency is not as noticeable.



03-4: Quality of service (QoS)

- **Bandwidth Management**

- **Benefit(s)**

- Improves stability of VPN
- Improves stability of webinars and real-time streaming
- Improves stability of VOIP and voice traffic

- **Solution**

- [USG40\(W\)/60\(W\), VPN50, or ATP100\(W\)](#)

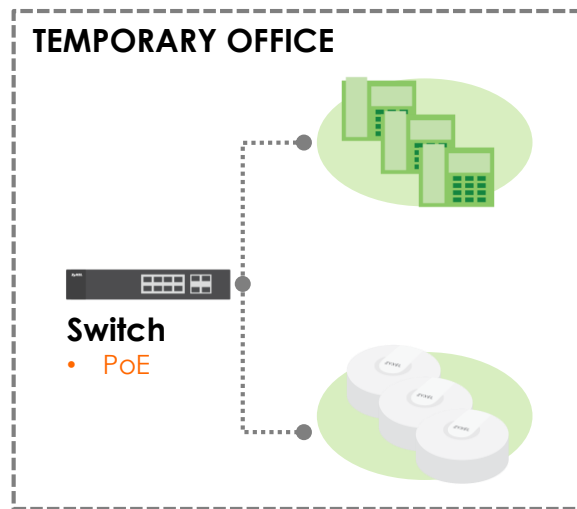
- **Reference Material**

- [Forum] [How to Configure Bandwidth Management for FTP and HTTP Traffic](#)

03-5: Wireless LAN

- **Power over Ethernet (PoE)**

- The temporary office may not be able to accommodate many new devices in such short notice. **PoE switches** can power-on multiple office devices that **supports PoE** with just the **Ethernet cable** alone. But because switches have a limit to how much power it can provide, it is advisable to first survey the number of PoE devices and their requirements before deploying devices.



03-5: Wireless LAN

- **Power over Ethernet (PoE)**

- **Benefit(s)**

- Reduce the amount of exposed power cables

- **Solution**

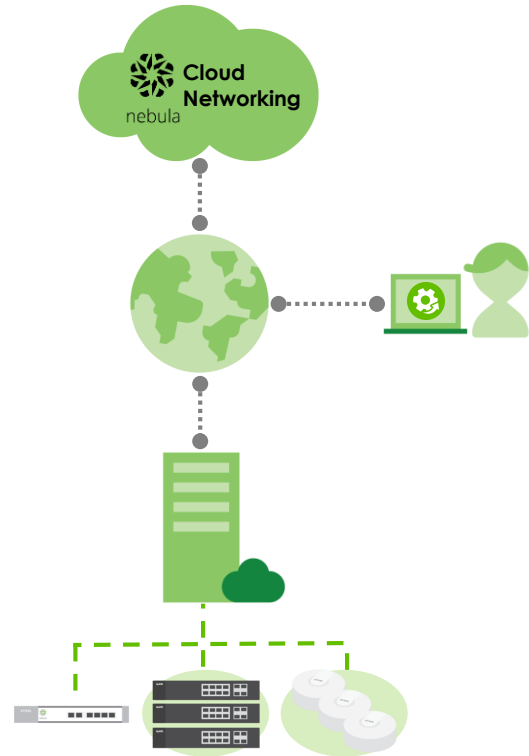
- [GS1920 PoE Series](#)

- **Reference Material**

- [Forum] [Quick Introduction of PoE \(Power over Ethernet\)](#)

03-6: Cloud Management

- **Nebula Control Center (NCC)**
 - Under a **centralized** device management platform, NCC provides a **quick and easy deployment** process. Simply order the extra hardware from your local distributor and deliver them to the temporary office, directly. Zyxel devices that supports **cloud mode** are designed to connect to NCC as soon as it obtains a DHCP IP address. This ensures that a **remote IT** can manage these devices **anytime and anywhere** using NCC **without any prior on-site configurations**.



03-6: Cloud Management

- **Nebula Control Center (NCC)**

- **Benefit(s)**

- Platform includes full set of enterprise-class devices and features (AP, switch, and gateway)
- Plug-and-play style hardware deployment
- Manage remote devices anytime and anywhere
- Utilize cloud database and storage
- Platform designed with user intuitiveness and convenience
- Free Nebula mobile app for Android/IOS devices

03-6: Cloud Management

- **Nebula Control Center (NCC)**
 - **Solution**
 - [Nebula Control Center](#)
 - [NSG series](#)
 - [NSW series](#)
 - [NAP series](#)
 - [All Zyxel devices that support cloud mode](#)
 - **Reference Material**
 - [Youtube] [Introducing Zyxel Nebula Control Center](#)
 - [Forum] [List of Nebula Supported Devices](#)
 - [Forum] [Creating a Nebula Organization/Site](#)
 - [Forum] [Unregistering Nebula Devices](#)
 - [Forum] [Adding Different Types of Nebula Administrators](#)

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