

**QNAP**

10GbE & 2.5GbE SD-WAN Routers

# QHora 321/322

A secure networking experience for NAS  
and IoT environments



10GbE  
2.5GbE

# QHora-321/322 is a router can bring you

- Less default setting for limited the deployment
- Fully user defined WAN/LAN and multiple ports binding, let router fit your network requirement
- Multiple VPN deployment
- Higher port speed gives you much efficiency to data transparent
- The basic port speed is 2.5GbE, and up to 10GbE to QHora-322





**Evolution for  
user experience  
improvement  
on QuRouter**

# Flexible and straight forward QuRouter

- Integrate relate configuration into same function page
- Check status and interface configuration at same page
- Include the design concept of switch
- Increasing more possibility for software define routing

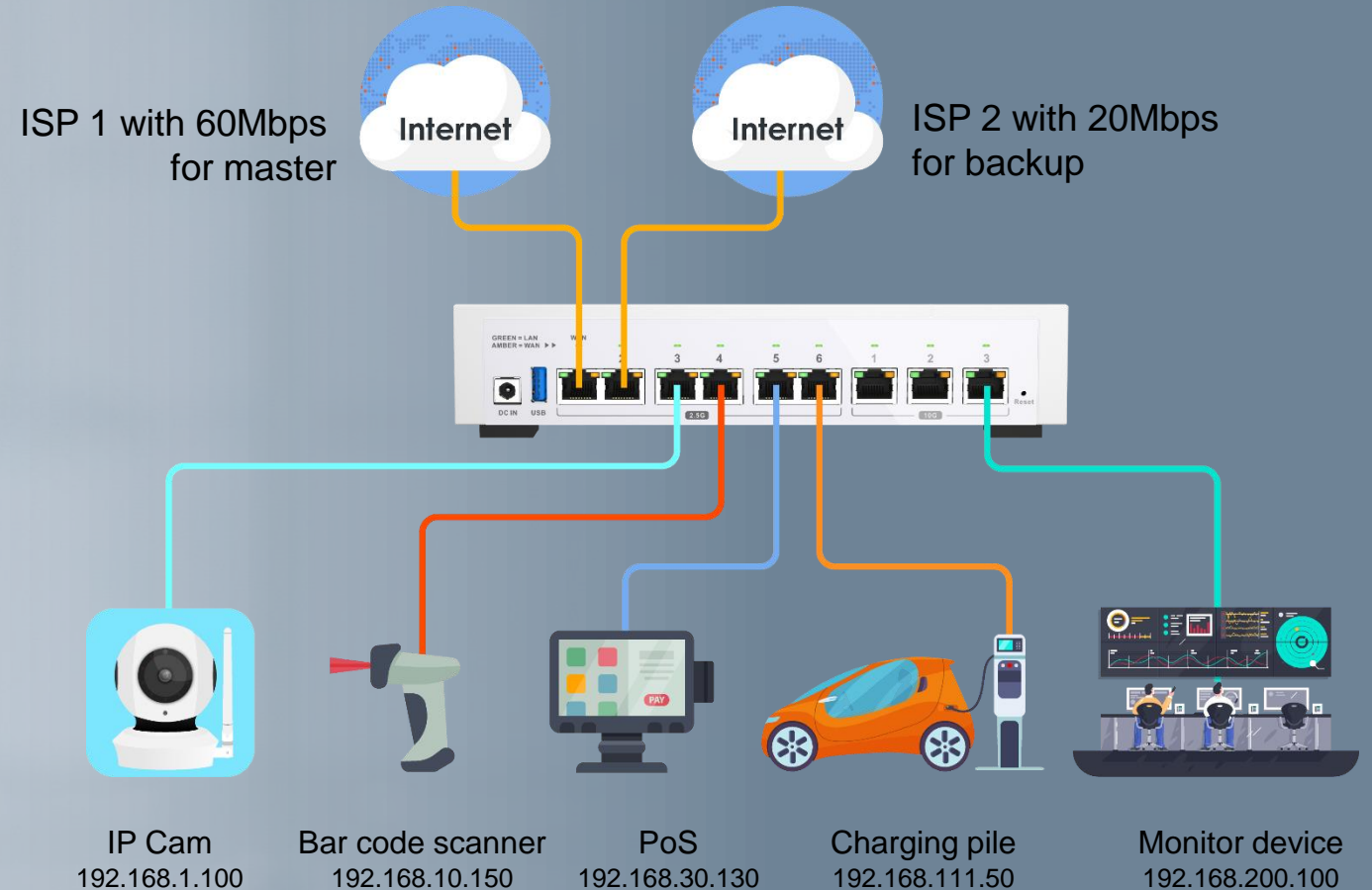


# Diverse used scenarios



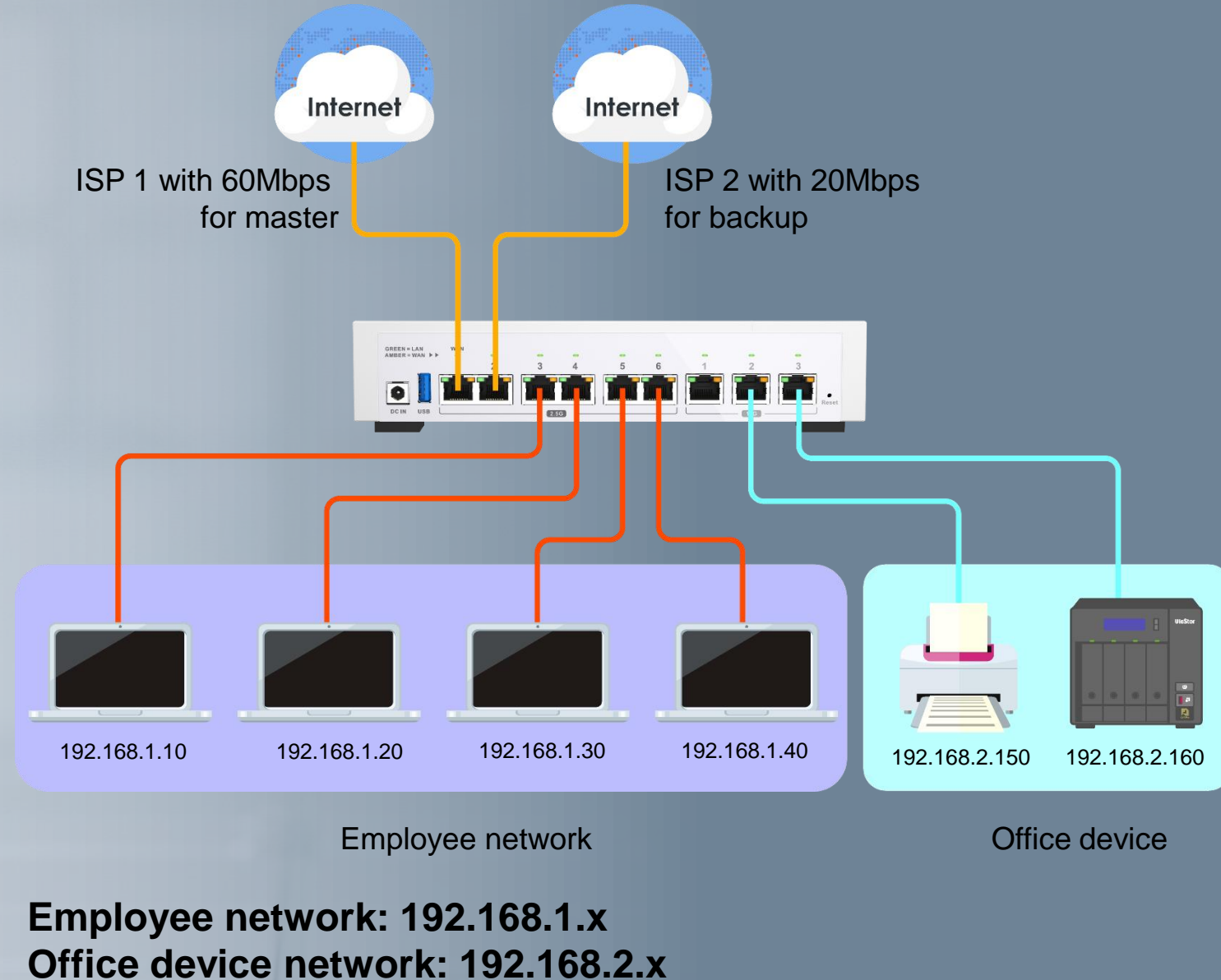
## IoT – edge devices separate in difference networks and independent to each other

- Less edge devices can connect to router directly
- It do have difference purpose for each devices, which means need independent network for each IoT device
- Totally independent network which means no VLAN or Bridge setting request



## SOHO/SB – few edge devices in same subnet, no additional switch and AP request

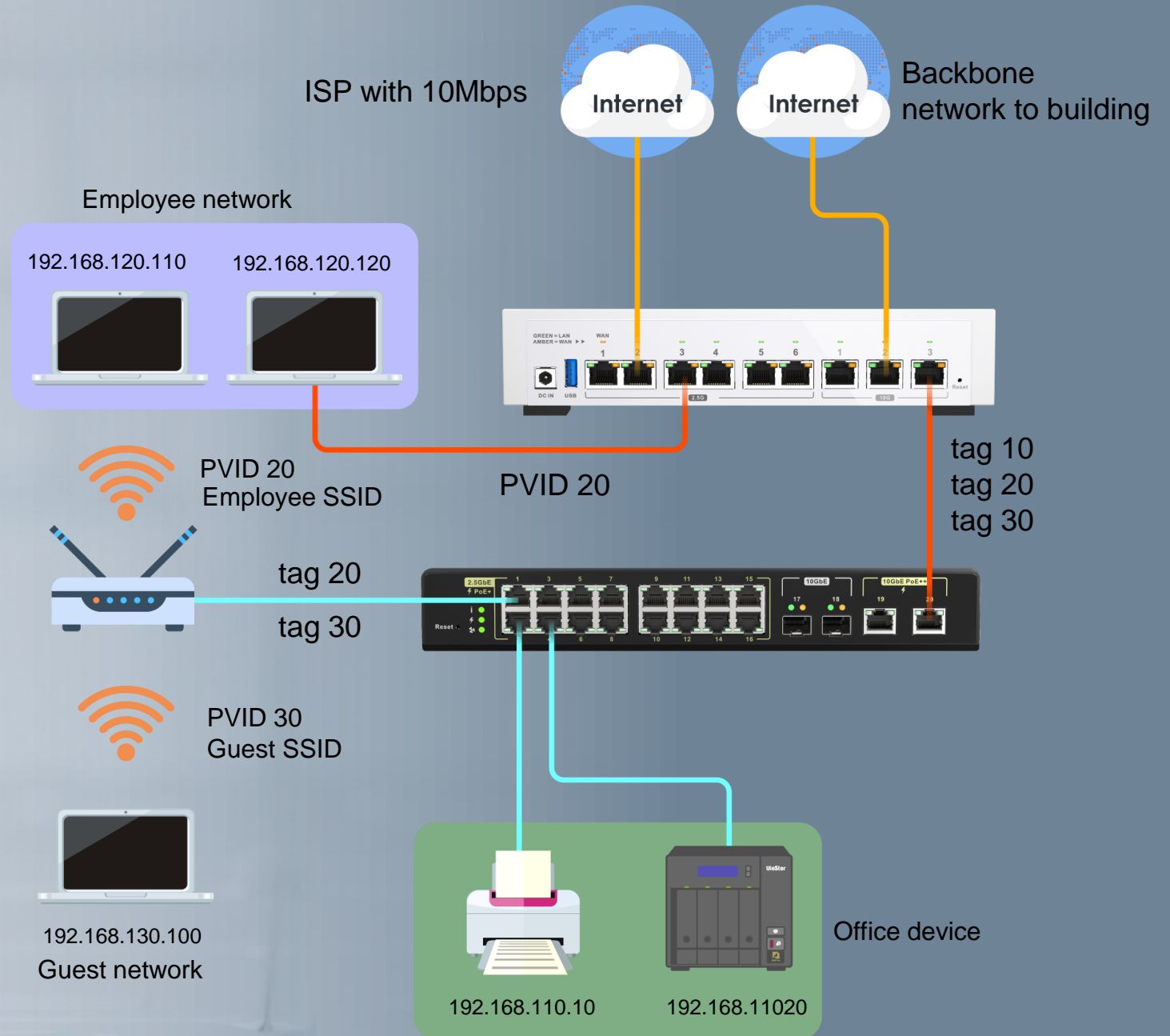
- There are not so much edge devices, which means can connect to router directly
- Need to parallel multiple physical interfaces for assigning same subnet network
- It needs dual WAN for back up usage



# SB – Employee and guest network, need to be independent and wireless requirement

- Using VLAN for separating different network
- For AP deploy to give guest network, which means further PoE switch is needed
- Dual WAN deployment is needed for load balance and backup

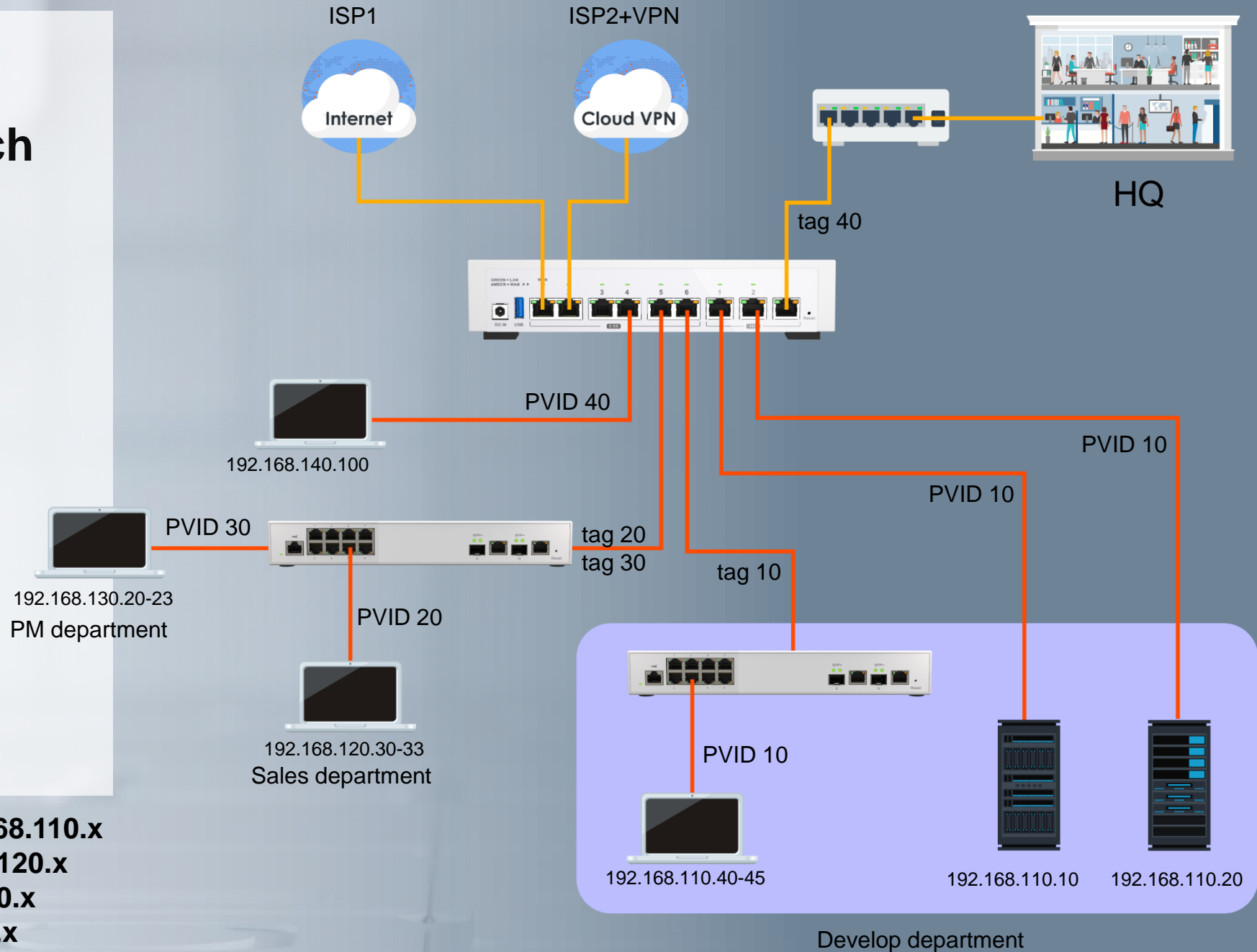
Office device VLAN 10: 192.168.110.x  
Employee network VLAN20: 192.168.120.x  
Guest network VLAN30: 192.168.130.x



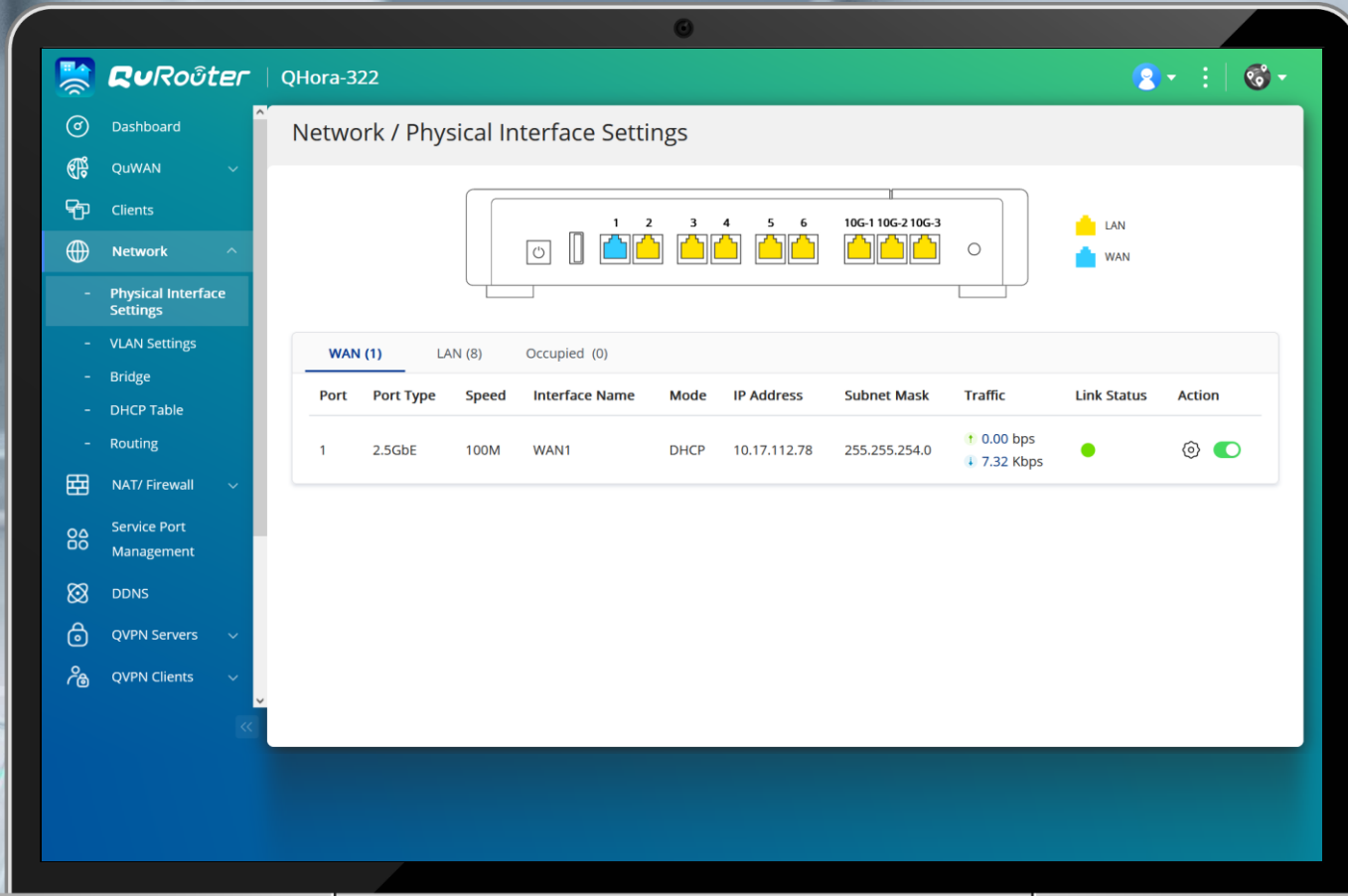


# SMB/MB – Networking between HQ and branch office

- It do have connect/load share/backup requirement between HQ and branch office
- Multiple VLANs deployment need also consider about the network at HQ
- Need to manage the routing for specific service usage



Develop department VLAN10: 192.168.110.x  
Sales department VLAN20: 192.168.120.x  
PM department VLAN30: 192.168.130.x  
IT department VLAN40: 192.168.140.x



# Interface introduction

# Physical interface settings-Dashboard

QuRouter | QHora-322

### Network / Physical Interface Settings

1 2 3 4 5 6 10G-1 10G-2 10G-3

LAN  
WAN

WAN (1) LAN (8) Occupied (0)

Port	Port Type	Speed	Interface Name	Mode	IP Address	Subnet Mask	Traffic	Link Status	Action
1	2.5GbE	100M	WAN1	DHCP	10.17.112.78	255.255.254.0	↑ 0.00 bps ↓ 7.32 Kbps	●	⚙️ <input checked="" type="checkbox"/>

# Physical interface settings-Dashboard(con't)

Network / Physical Interface Settings

WAN (1) LAN (8) Occupied (0)

Port	Port Type	Speed	Interface Name	IP Address	Subnet Mask	Traffic	Link Status	Action
2	2.5GbE	--	LAN1	192.168.100.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
3	2.5GbE	--	LAN2	192.168.101.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
4	2.5GbE	--	LAN3	192.168.102.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
5	2.5GbE	--	LAN4	192.168.103.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
6	2.5GbE	--	LAN5	192.168.104.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
10G-1	10GbE	--	LAN6	192.168.105.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>
10G-2	10GbE	--	LAN7	192.168.106.1	255.255.255.0	--	●	⚙️ <input checked="" type="checkbox"/>

# VLAN setting dashboard

The screenshot displays the QuRouter management interface. A 'VLAN Configuration' dialog box is open, showing settings for a LAN interface. The interface includes a sidebar with navigation options like Dashboard, QuWAN, Clients, Network, Physical Interface Settings, VLAN Settings, Bridge, DHCP Table, Routing, NAT/Firewall, Service Port Management, DDNS, QVPN Servers, and QVPN Clients. The main content area shows the 'VLAN Configuration' window with the following fields:

- Interface: LAN
- VLAN ID: (1-4094)
- Interface Name:
- Description:
- MTU: 1500

Port	1	2	3	4	5	6	10G-1	10G-2	10G-3
Tagged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Untagged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below the table is the 'IP Address Assignment' section, which is currently set to IPv4. It includes fields for 'Fixed IP address' and 'Subnet mask' (255.255.255.0 /24). There are also checkboxes for 'Enable Spanning Tree Protocol (STP)' (checked) and 'Enable DHCP server service' (unchecked). 'Apply' and 'Cancel' buttons are at the bottom right of the dialog.

# Bridge setting dashboard

**Bridge**

Interface Name:

Description:

MTU:

Available Interfaces (8)

- LAN1 - Port 2
- LAN2 - Port 3
- LAN3 - Port 4
- LAN4 - Port 5
- LAN5 - Port 6
- LAN6 - Port 10G-1
- LAN7 - Port 10G-2
- LAN8 - Port 10G-3

Members (0)

No data

**⚠ Creating Bridge interface requires minimum 2 ports.**

**IP Address Assignment**

IPv4 | IPv6

Fixed IP address:

Subnet mask:



**QuWAN makes  
multiple sites  
connection  
much easy**

# It is an important topic for SMB, Chain stores to make secure connections between each other

## SMB

- 1 or 2 offices need communicate as a office intranet
- It has a high-speed NAS storage data in the office
- Remote access requirement for employees for connecting back to office network, and need consider about security of connection
- Need also think about how to let employees who WFH can easily access office network

## Chain store

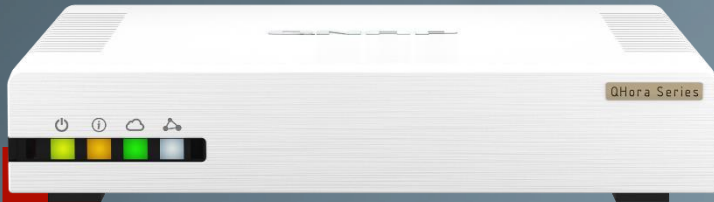
- Multiple stores and need make sure the connection with HQ is always working, security is also a topic
- Less high networking performance needed, usually it only need make sure POS can connect with HQ, do data sync and backup
- It is important to have central management with multiple devices
- To deploy a higher-level device in HQ is required
- It may setup a store become a hub for region, help for load sharing to HQ





# QHora-321/322 enrich the QNAP QuWAN router series

## Multiple SD-WAN high speed router deployment

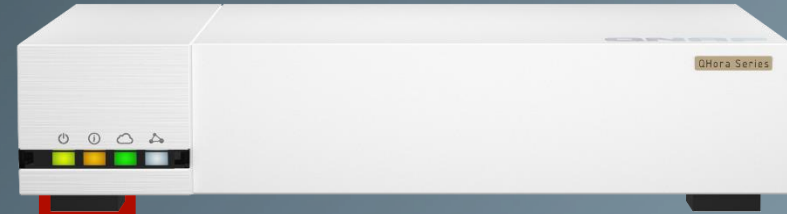


**NEW**

**QHora-321**

6 x 2.5GbE RJ45 + QuWAN solution

## Single SD-WAN high speed router deployment



**NEW**

**QHora-322**

3 x 10GbE + 6 x 2.5GbE RJ45 +  
QuWAN solution

## SD-WAN high speed WiFi 6 deployment

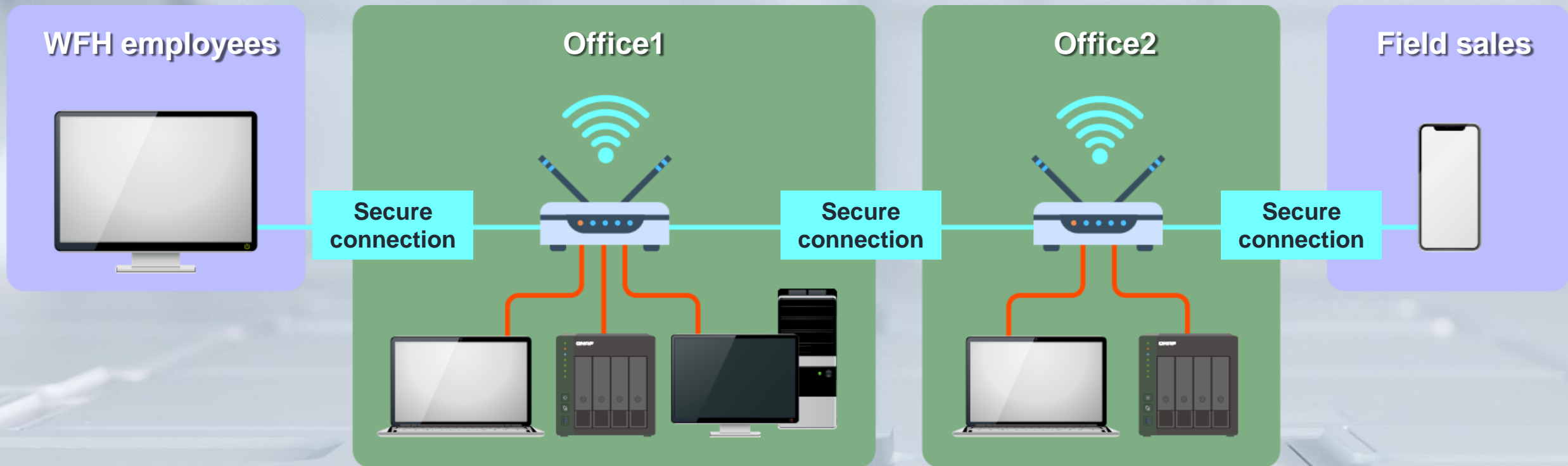


**QHora-301W**

2 x 10GbE + 4 x 1GbE RJ45 +  
QuWAN solution

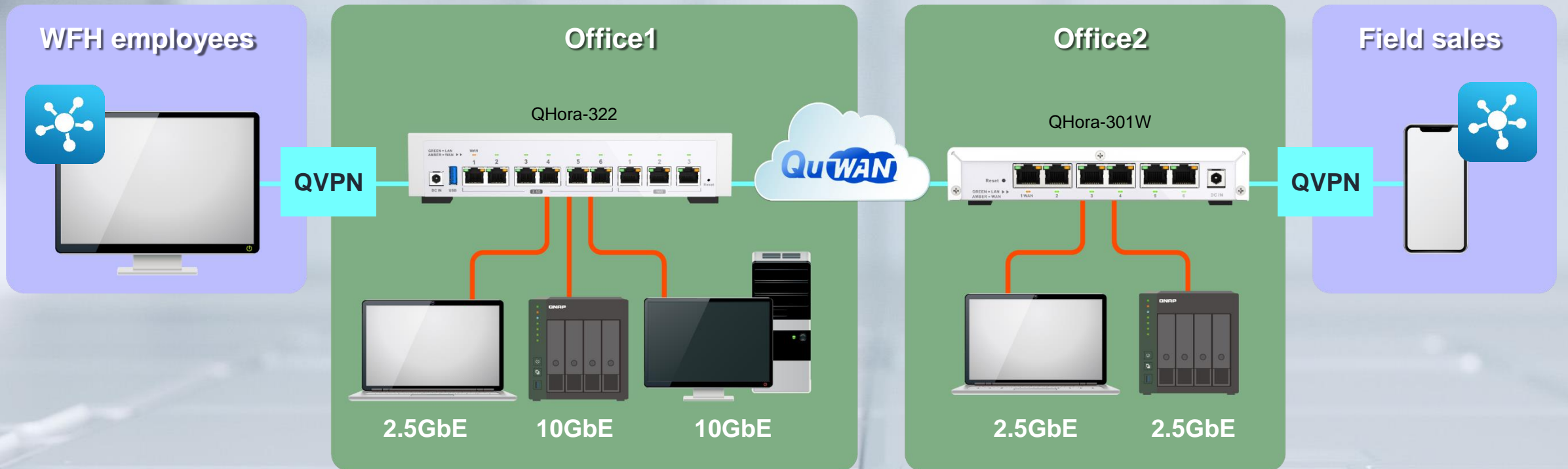
# What requirements are going to need for SMB deployment?

- Secure network connection is needed for communication, no matter the access back to office from outside, or inside between each office network
- Office devices have upgraded their network speed, it must have corresponded router to handle it



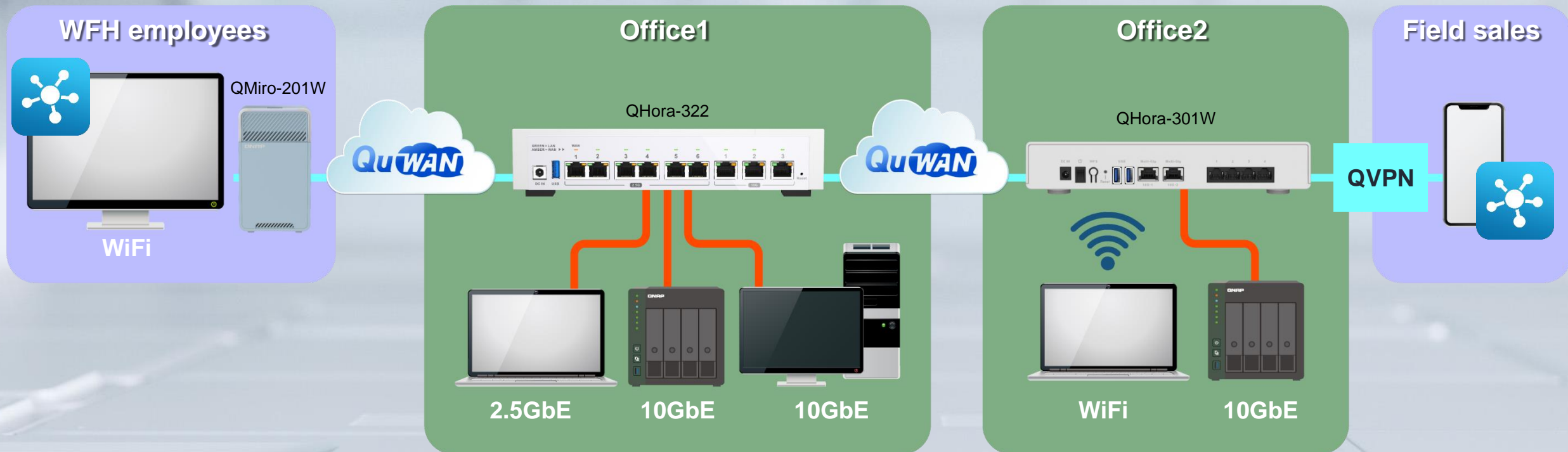
# What is going to change once QHora-321/322 join to SMB network?

- QuWAN can provide auto VPN connection between each office
- QVPN can help to extend to requirement of WFH or remote access needed



# Different QuWAN relate products make more possibility for SMB deployment

- With QHora-301W/QMiro-201W can provide additional WiFi connection
- Can build up QuWAN mesh connections because they are all belong to QuWAN support products



# What requirements are going to need for Chain stores deployment?

- Secure connection connect back to HQ is necessary for each store
- Massive deployment



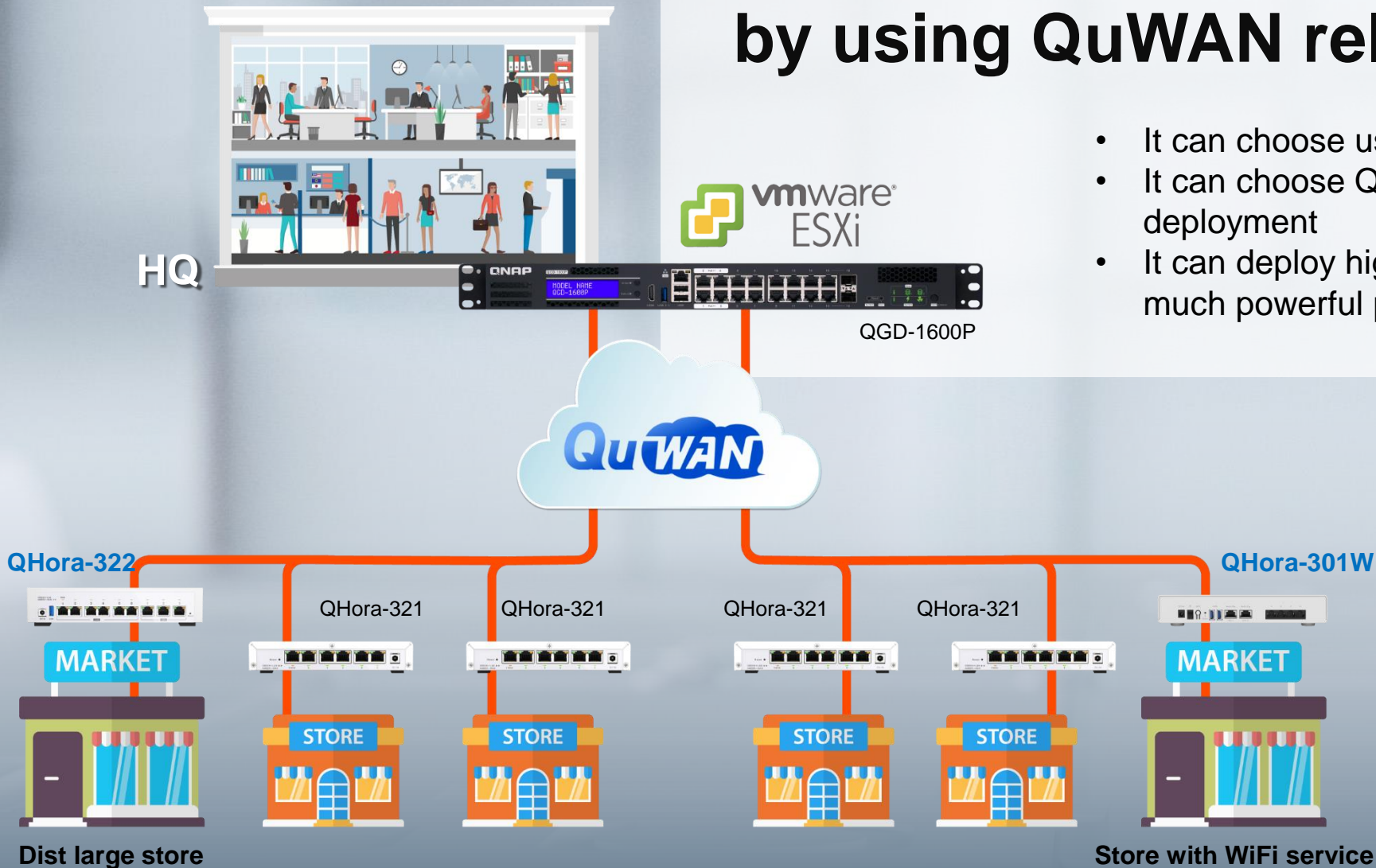
# What is going to change once QHora-321/322 join to Chain stores network?

- QuWAN can make network between HQ and store become a secure and encrypt intranet
- Can manage all QuWAN devices from cloud



# Can have different deployment for specific deployment to dedicate store by using QuWAN relate products

- It can choose using QHora-322 for larger store
- It can choose QHora-301W for the store need WiFi deployment
- It can deploy high-end device at HQ to providing much powerful process



## SMB/SB Router



**NEW**

QHora-321



**NEW**

QHora-322



QHora-301W

It makes QuWAN more possibility now because QHora-321/322 become part of it

## Home WiFi mesh router



QMiroPlus-201W



QMiro-201W

## QuWAN vRouter



## QNAP Products support QuWAN



QNAP NAS series



QNAP QGD smart switch series



QNAP QuCPE Virtualization Equipment



# Massive VPNs



# QHora-321/322 improve the number of VPN tunnel up to enterprise level

	QHora-321	QHora-322
Tunnels of Qbelt	700	1000
Support massive user account generate on QuWAN	V	V



**QuRouter**



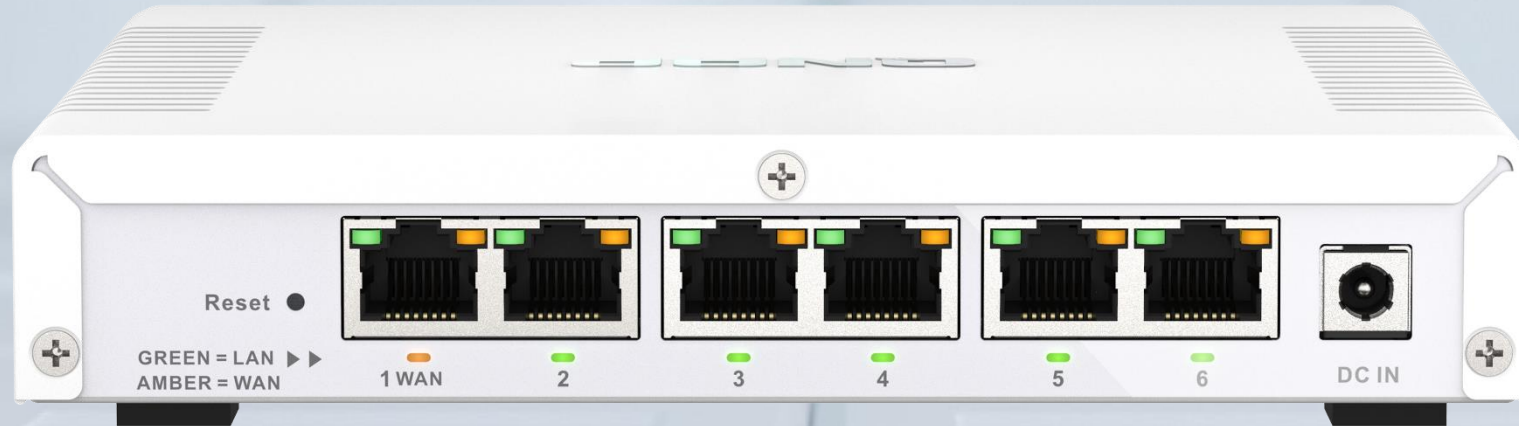
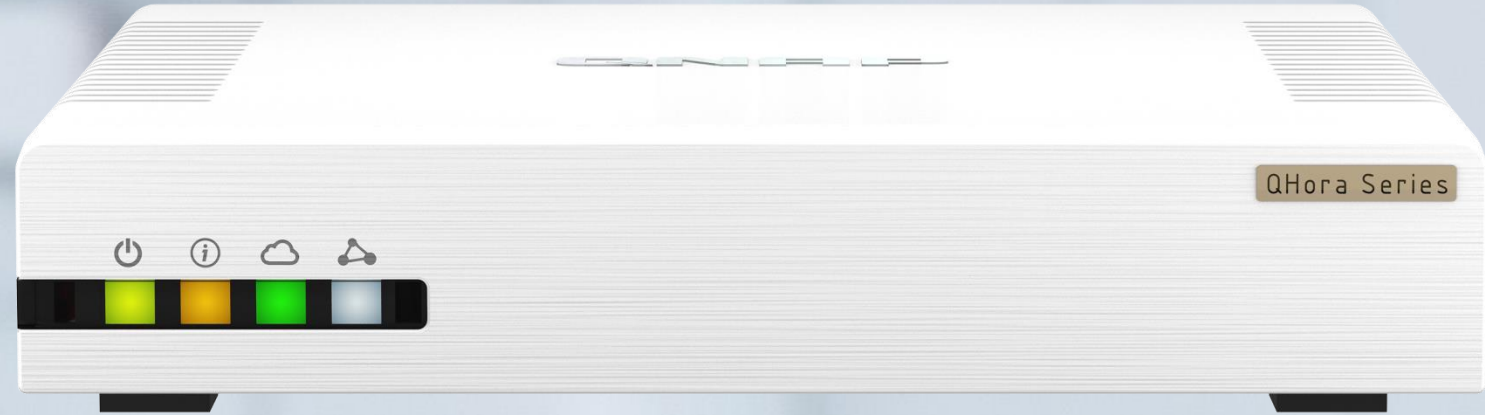
**QVPN**



# HW SPEC

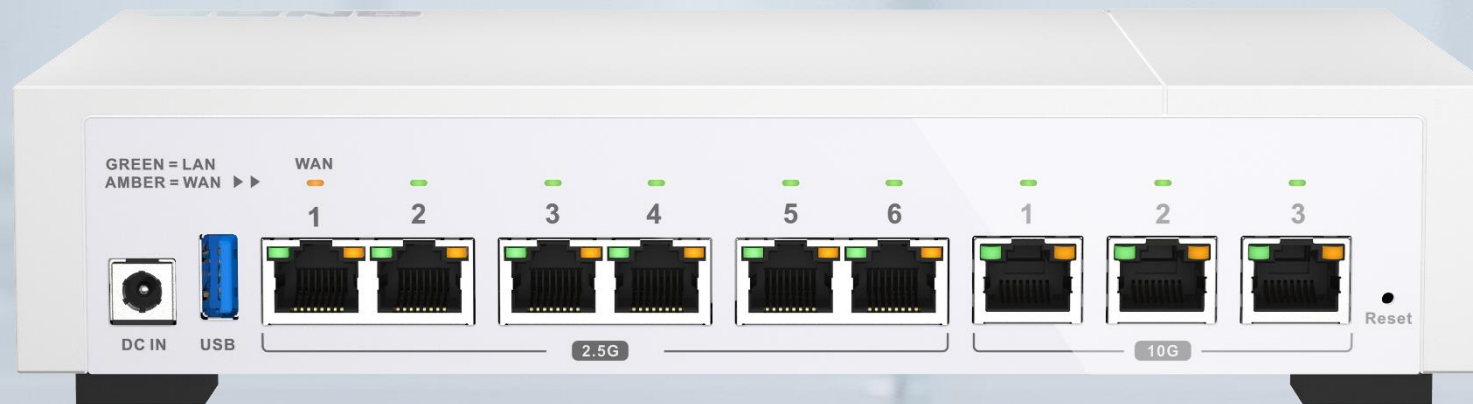
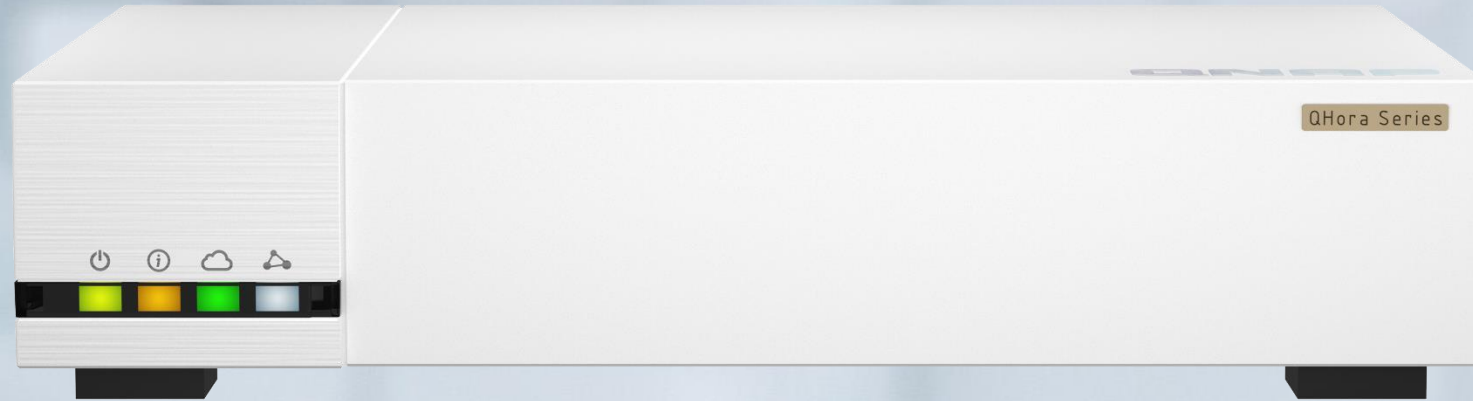


# QHora-321 panel



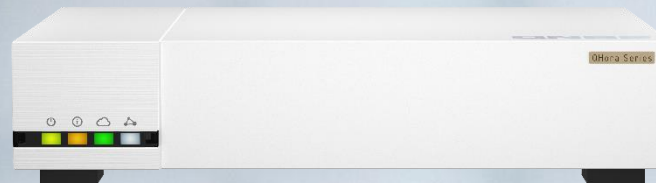
6x2.5 GbE RJ45





# QHora-322 panel



6x2.5GbE RJ45  
3x10GbE RJ45

# LED-Front panel device status



Location	Status	Icon	Description
First from the left (Yellow green)	Device power status		<ul style="list-style-type: none"> <li>•Off: Power OFF</li> <li>•Steady: Power ON</li> <li>•Keep blinking with Device status LED in 1sec on/off period: System Error</li> </ul>
Second from the left (Amber)	Device local status		<ul style="list-style-type: none"> <li>•Off: Device is power off</li> <li>•Steady: Device is booted up and initialized success</li> <li>•Keep blinking with 1sec on/off period: Device is initializing</li> <li>•Keep blinking with 2sec on/off period: Device is being firmware updating</li> <li>•Keep blinking with Power LED with 1sec on/off period: System Error</li> </ul>
Third from the left (Blue green)	Device connection status with QuWAN Orchestrator		<ul style="list-style-type: none"> <li>•Steady: Connected to QuWAN Orchestrator and can be managed.</li> <li>•Keep blinking with 0.5sec on/off period: Device is joining to QuWAN Orchestrator.</li> <li>•Keep blinking with 2sec on/off period: Lost connection to the QuWAN Orchestrator (Device joined to QuWAN before but lost connection now)</li> <li>•Off: Did not join to QuWAN Orchestrator .</li> </ul>
White from the left (White)	Device auto mesh connection status		<ul style="list-style-type: none"> <li>•Steady: All QuWAN mesh VPN tunnels on this device are connected</li> <li>•Keep blinking with 2sec on/off period: All/ Partially of QuWAN mesh VPN tunnels on this device disconnected</li> <li>•Off: Did not join to QuWAN Orchestrator.</li> </ul>

# LED-Interface indicator and port status

## Interface indicator

Port Role	Color of LED
WAN	Amber
LAN	Green



## QHora-321 RJ45 port LED behavior

Port number	Port speed	LED color	Behavior
1-6	2.5GbE	Green(Left)	Link is operating at 2.5 Gbps, flashing: link up, off: no link
		Amber(Right)	Link is operating at 1G/100M bps, flashing: link up, off: no link



## QHora-322 RJ45 port LED behavior

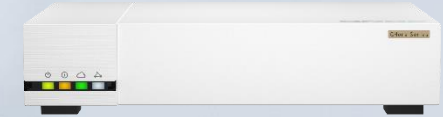
Port number	Port speed	LED color	Behavior
2.5GbE 1-6	2.5GbE	Green(Left)	Link is operating at 2.5 Gbps, flashing: link up, off: no link
		Amber(Right)	Link is operating at 1G/100M bps, flashing: link up, off: no link
10GbE 1-3	10GbE	Green(Left)	Link is operating at 10 Gbps, flashing: link up, off: no link
		Amber(Right)	Link is operating at 5G/1G/100M bps, flashing: link up, off: no link

# QHora selection guide





# Which QHora is suitable for my deployment?



	QHora-301W	QHora-321	QHora-322
10GbE RJ45 port	2	-	3
2.5GbE RJ45 port	-	6	6
WiFi 6	Y	-	-
QuWAN	Y	Y	Y
QuWAN QVPN support	Y	Y	Y
Max QBelt VPN connections	30	700	1000
Max performance of QBelt VPN*	116Mbps	160Mbps	160Mbps
Suggest scenario	<ul style="list-style-type: none"> <li>Multiple sites with SD-WAN deploy request</li> <li>High speed NAS with 10GbE connection request</li> <li>High speed Wifi connection</li> </ul>	<ul style="list-style-type: none"> <li>Multiple sites with SD-WAN deploy request</li> <li>Multiple VPN clients connections request</li> </ul>	<ul style="list-style-type: none"> <li>Multiple sites with SD-WAN deploy request</li> <li>Multiple VPN clients connections request</li> <li>High speed NAS with 10GbE connection request</li> </ul>

Note: based on the lab test with iperf, the result may be different based on real network deploy at your place.

The QNAP logo is located in the top left corner of the image. It consists of the letters 'QNAP' in a bold, white, sans-serif font, with a stylized blue and white wave-like graphic element to the left of the letters.

# QHora 321/322

is your best choice!

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10GbE  
2.5GbE

