ZYXEL EX3301-TO Wireless Gigabit Ethernet Dual Band Router

User Guide

light up your life with gigabit full fibre

LiLA
C O N N E C T

Contents

1. Introduction

1.1. Document Overview

This document provides instructions on how to set up the Zyxel wireless AX1800 Gigabit Ethernet IAD EX3301-T0 (further referred to as the Zyxel device) and how to configure the most common settings.

1.2. Target Audience

This document is intended for subscribers who set up and configure the Zyxel device.

1.3. Admonitions

The following admonition is used in this document.

NOTE	A note provides useful tips or additional information to the reader.

1.4. Revision History

Version	Description
V211109	First version

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2. Overview

The Zyxel device is a dual-band wireless AX1800 Gigabit IAD that provides fast and secure Internet access for wireless devices such as personal computers, laptops, tablets, and smartphones.

It is a dual-band gateway that provides both 2.4G and 5G networks at the same time. You can use the 2.4GHz bandwidth for regular Internet surfing and for downloading, and the 5GHz bandwidth for high-definition video, music, and gaming.

The Zyxel device functions as a wireless access point (AP) for IEEE 802.11b/g/n/a/ac wireless devices. It allows Internet connection without having to rely on Ethernet cables. It also supports WiFi protected setup (WPS) that allows you to set up a wireless network with strong security.

2.1.   Technical Specifications

The following table contains technical information about the Zyxel device:

Product name	Dual-band wireless AX1800 Gigabit Ethernet IAD
WAN interface	GbE RJ45
Ethernet port (10/100/1000)	5 (1 for Ethernet WAN)
POTS FXS port	2
USB port	1 (USB 2.0)
WLAN	2.4GHz 2x2 ax + 5GHz 2x2 ax

2.2.   Package Contents

The Zyxel device package contains the following:

- Zyxel device
- Power cable with a UK converter
- Ethernet cable
- Quick start guide
- Declaration of conformity and safety warnings

2.3.   Front Panel

The LED status indicators are located on the front panel of the Zyxel device.

The following table describes the LED status indicators:

LED	Colour	Status	Description
Power	Green	On	The device is receiving power and it is ready for use.
		Blinking	The device is starting up.
	Red	On	The device detected an error during start-up.
		Blinking	The device is uploading firmware.
Ethernet WAN	Green	On	There is Ethernet connection on the WAN.
		Off	There is no Ethernet connection on the WAN.
Internet	Green	On	The device has an IP connection but no traffic.
		Blinking	The device is sending or receiving IP traffic.
		Off	There is no Internet connection, or the gateway is in bridged mode.
	Red	On	The device attempted to get an IP address, but it failed. Possible causes are no response from the DHCP server, no PPPoE response, or the PPPoE authentication failed.
LAN1-4	Green	On	The Zyxel device has a successful 10/100/1000 Mbps Ethernet connection with a device on the LAN.
		Blinking	The Zyxel device is sending or receiving data to/from the LAN at 10/100/1000 Mbps.
		Off	The Zyxel device does not have an Ethernet connection with the LAN.
2.4G WLAN/WPS	Green	On	The 2.4GHz wireless network is activated.
		Blinking	The Zyxel device is communicating with a 2.4GHz wireless client.
		Off	The link is down or disabled.
	Amber	Blinking	The Zyxel device is setting up a WPS connection with a 2.4GHz wireless client.
5G WLAN/WPS	Green	On	The 5GHz wireless network is activated.
		Blinking	The Zyxel device is communicating with a 5GHz wireless client.
		Off	The 5GHz wireless network is not activated.
	Amber	Blinking	The Zyxel device is setting up a WPS connection with a 5GHz wireless client.
Phone1, Phone2	Green	On	A SIP account is registered for at least one phone port, and there is no voice message in the corresponding SIP account.

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		Blinking	A telephone connected to one of the phone ports has its receiver off the hook, or there is an incoming call. There is no voice message in the corresponding SIP account.
	Amber	On	A SIP account is registered for the phone port, and there is a voice message in the corresponding SIP account.
		Blinking	A telephone connected to the phone ports has its receiver off the hook, or there is an incoming call. There is a voice message in the corresponding SIP account.
		Off	• The Zyxel device is turned off. • The VoIP function is not activated. • The SIP account is not enabled. • The phone port does not have a SIP account registered.

2.4. Rear Panel

The connection parts are located on the rear panel of the Zyxel device.

The following table describes the ports and buttons of the rear panel:

Ports/Buttons	Function
POWER	Connect the power cable here.
ON/OFF	Press the **ON/OFF** button to switch on and off the device.
RESET	If you want to return the device to factory defaults because, for example, you forgot your password or cannot access the Web Configurator, press and hold the **RESET** button until the Power LED starts blinking. The password will be reset to the factory default (see the device label) and the IP address will be 192.168.1.1.
PHONE1 – PHONE2	Connect analogue phones to the phone ports to make phone calls.
USB	Use the USB port for cellular WAN backup, file sharing, media server, and print server.
LAN1 – LAN4	Connect computers or other Ethernet devices to the Ethernet ports for Internet access.
WAN	Connect an Ethernet cable to the Ethernet WAN port for Internet access.
WPS	Press the WPS button for more than one second to quickly set up a secure wireless connection between the device and a WPS-compatible client.
WIFI ON/OFF	Press the WLAN button for more than one second to enable the wireless function.

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3. Connecting the Cables

Perform the following steps to set up the Zyxel device:

1. Use an Ethernet cable to connect your gateway modem to the WAN port.
2. (Optional) Connect a computer to the LAN port using the yellow Ethernet cable. You can skip this step if you want to wirelessly connect to the Internet.
3. Connect the power cable to the Zyxel device and press the **POWER** button. It can take a couple of minutes. When the Power, the 2.4G, and 5G LEDs are solid green, the device is ready to be connected to the wireless network.

4. Connecting to the Wireless Network

Perform the following steps to connect your wireless device to the wireless network:

1. Open the WiFi network list on your wireless device.
2. Select the name, that is the **SSID** of your wireless network that is available on the device label.
3. Enter the password, that is the **Wireless Key** that is available on the device label.
4. Click **Connect**.

5. Configuring the Zyxel Device Using the Web Configurator

5.1. Web Configurator Overview

The Web Configurator is an HTML-based management interface used for setting up and managing the Zyxel device via an Internet browser.

5.2. Software Requirements

The software requirements for using the Web Configurator are the following:

- Internet Explorer 11.0 or later, or Mozilla Firefox 69.0 or later, or Safari 10.14.6 or later
- Pop-up blockers by Zyxel are disabled in your browser
- JavaScript (enabled by default)
- Java permissions (enabled by default)

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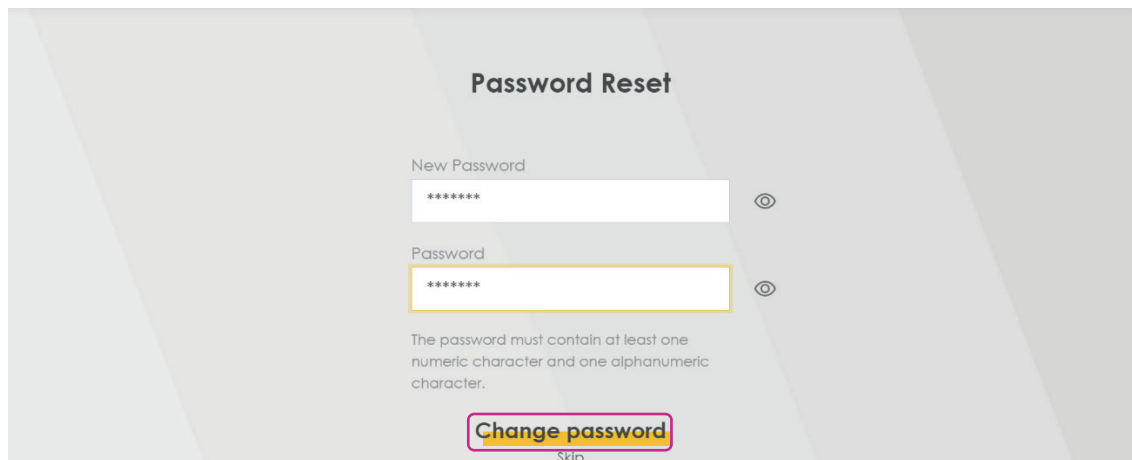## 5.3.   Logging in to the Web Configurator

Perform the following steps to log in to the Web Configurator:

1. Make sure that the Zyxel device is on, the Power LED is solid green, and you are connected to the Zyxel WiFi network.

2. Launch your web browser. If the Zyxel device does not automatically direct you to the login screen, go to http://192.168.1.1.
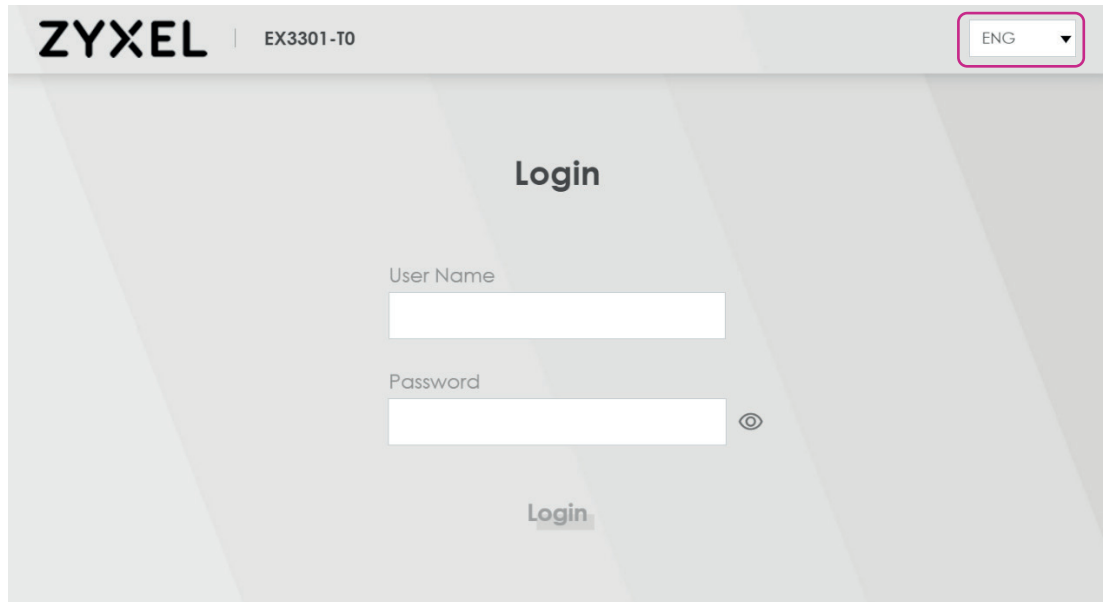
3. On the Login screen, select your preferred language from the drop-down menu in the top right corner.

4. When logging in for the first time, type in the default user name **admin** and the login password that is available on the device label.
If you have already changed your password, enter your new password into the password field.

5. Click **Login**.

   When logging in for the first time, a Password Reset screen comes up. Enter a new password and retype it to confirm. The password must contain at least one numeric character and one alphanumeric character. Then click **Change password**.

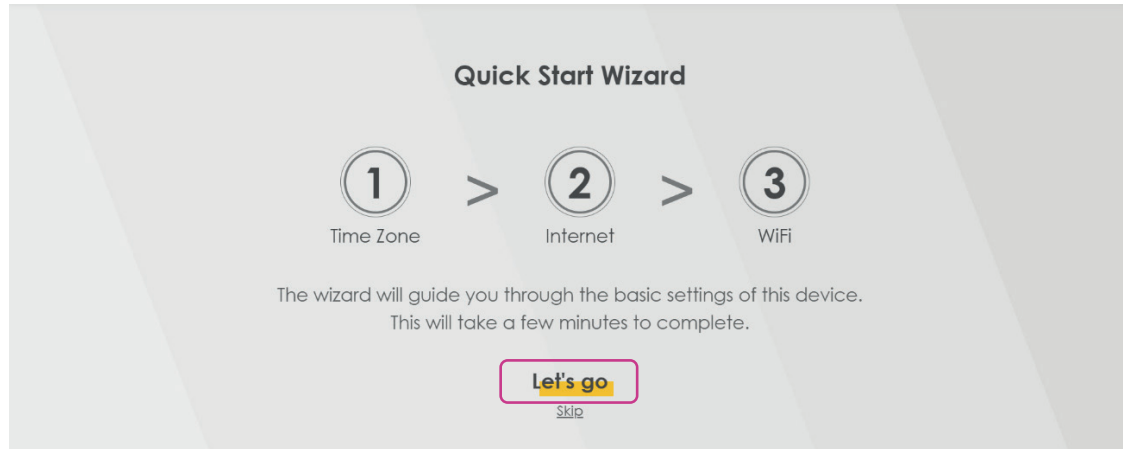| NOTE | You can bypass this step by clicking **Skip**. |

5.4.   Configuring the Zyxel Device Using the Wizard

When logging in the Web Configurator for the first time, the Quick Start Wizard screen automatically pops up, where you can configure basic settings like time zone, Internet, and WiFi.

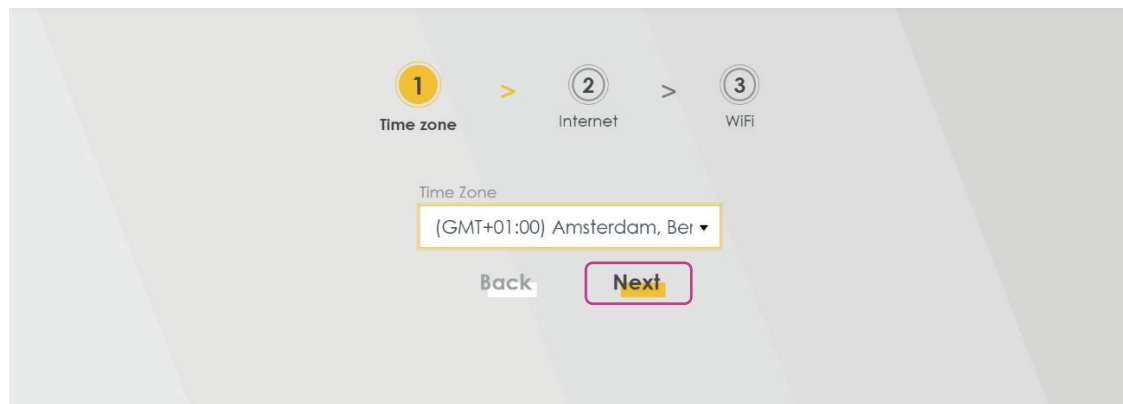If this is not the first time you are logging in, click the Wizard icon on the Navigation panel.

Perform the following steps to configure your device using the Wizard:
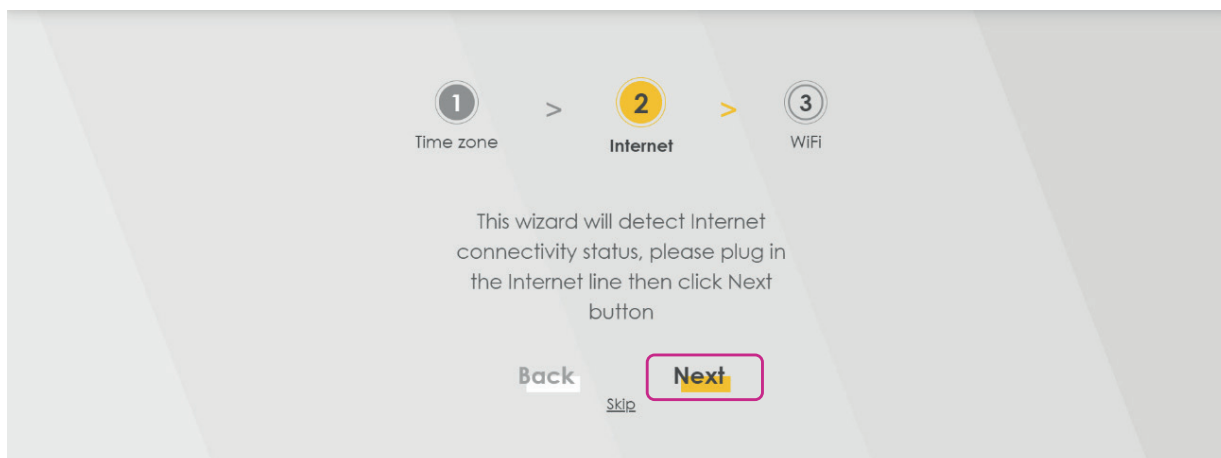
1.   Click **Let's go** on the Quick Start Wizard window.

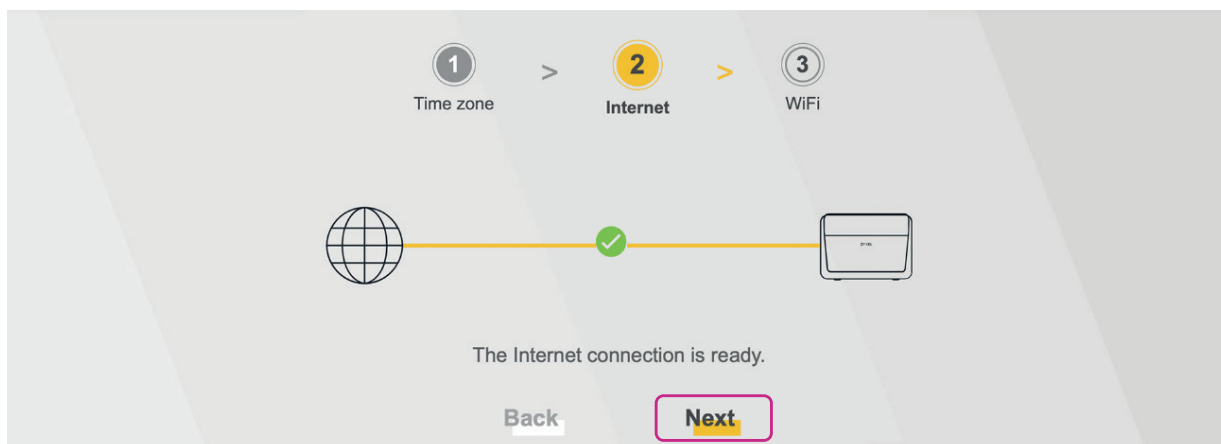| NOTE | You can bypass this step by clicking **Skip**. |

2.   Select the time zone of your location.

3.   Click **Next**.

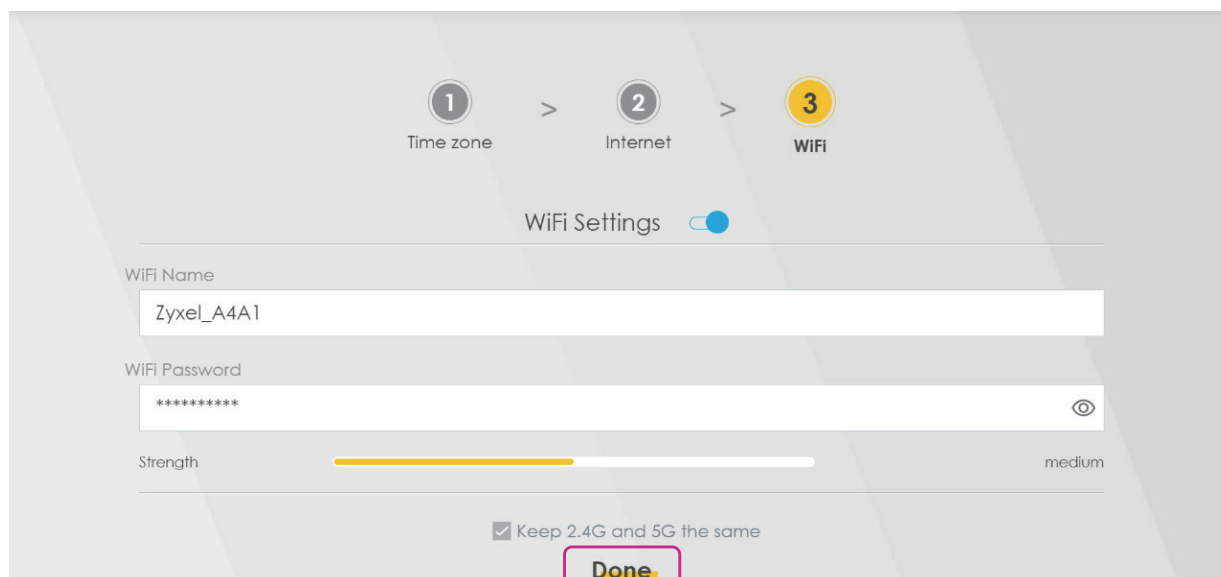4. The Wizard will check the Internet connectivity. Click **Next** to continue.

NOTE	You can bypass this step by clicking **skip**.

5. After the Zyxel device is connected to the Internet, click **Next**.

6. The next screen shows the WiFi Settings. To change the WiFi name and the WiFi password, enter the changes into the respective fields.


1. To use the same WiFi name for both 2.4G and 5G wireless networks, leave the **Keep 2.4GHz and 5GHz the same** checkbox checked.

2. Click **Done** to complete the setup.

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5.5. Layout

The Web Configurator is divided into the following two parts:

- The main window (1) shows basic settings in the form of widgets. For more information, see Main Window.
- The navigation panel (2) contains the configuration menus. For more information, see Navigation Panel.
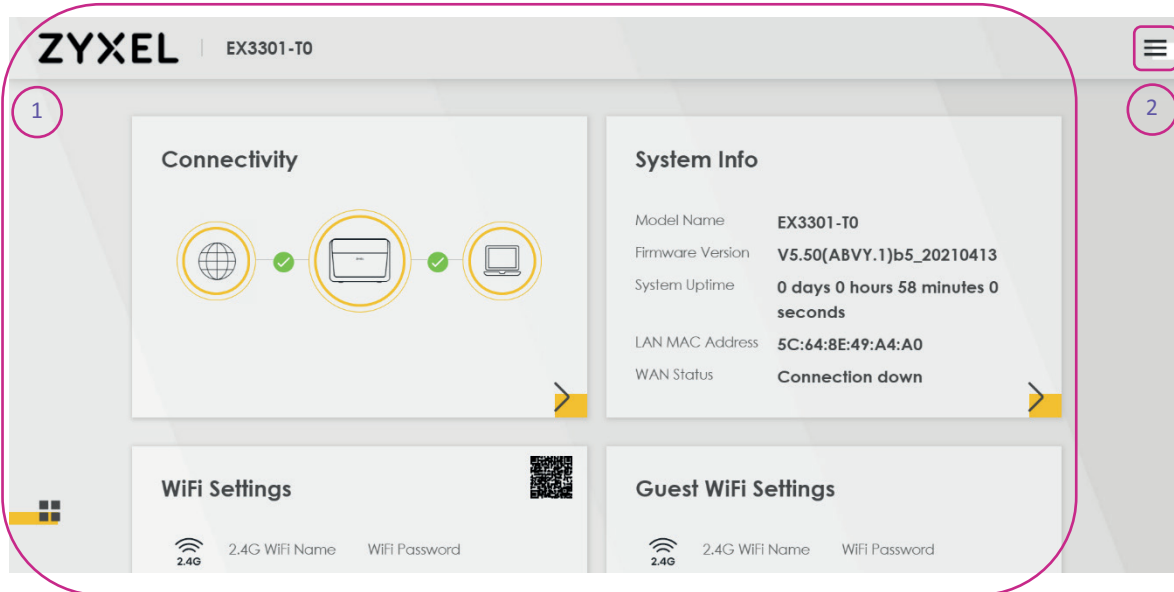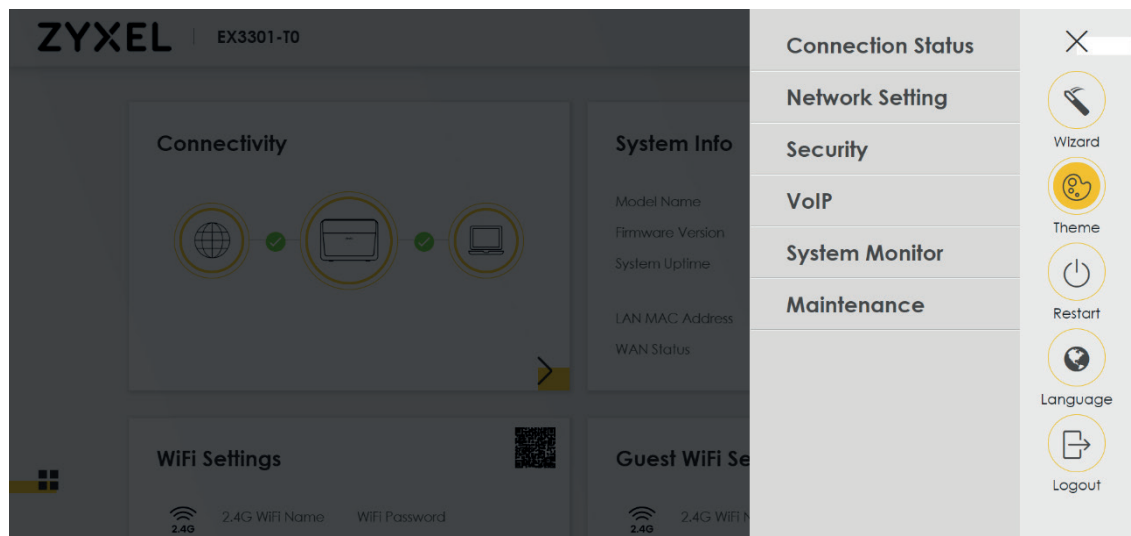

5.5.1. Main Window

The main window contains widgets that provide quick access to the basic settings, such as connectivity, WiFi settings, and parental control.

You can rearrange the order of the widgets by performing the following steps:

1. Click the (▦) icon.
2. Drag and drop the widget to move it to the desired place.
3. Click the checkbox on the lower left corner to save the changes.

5.5.2. Navigation Panel

The navigation panel contains the configuration menus that are used for configuring the Zyxel device. Click the menu icon (☰) in the top right corner to open the navigation panel.

The following table describes the configuration menus:

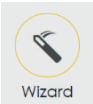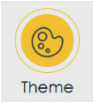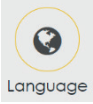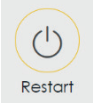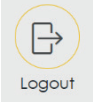| Link	Tab	Function
Connection status		This is the main window of the Web Configurator. Use this screen to configure basic Internet access, wireless settings, and parental controls. This screen also shows the network status of the Zyxel device and your wireless devices connected to it.
Network Settings		
Broadband	**Broadband**	Use this screen to change the Internet access settings. The summary table shows the configured WAN services (connections) on the Zyxel device. Use the information provided by your ISP to configure WAN settings.
	Cellular Backup	The USB port of the Zyxel Device allows you to attach a cellular dongle to wirelessly connect to a cellular network for Internet access.
Wireless	**General**	Use this screen to enable the Wireless LAN, enter the SSID, and select the wireless security mode. We recommend selecting **More Secure** to enable WPA3-SAE/WPA2-PSK data encryption.
	Guest/More AP	Use this screen to configure a guest wireless network that allows access to the Internet only through the Zyxel device.
	MAC Authentication	Use this screen to give exclusive access to specific devices (Allow) or exclude specific devices from accessing the Zyxel device (Deny) based on the MAC address of each device.
	WPS	Use this screen to establish a WPS connection. Your device must support WPS to use this feature. We recommend using Push Button Configuration (PBC) if your device supports it.
	WMM	Use this screen to enable WiFi MultiMedia (WMM) and WMM Automatic Power Save (APSD) in wireless networks for multimedia applications.
	Others	Use this screen to configure advanced wireless settings, such as additional security settings, power saving, and data transmission settings.
	Channel Status	Use this screen to scan for wireless LAN channel noise and view the results.
	MESH	Use this screen to enable or disable MPro Mesh for wireless devices.
Home Networking	**LAN Setup**	Use this screen to set the Local Area Network IP address and subnet mask of the Zyxel Device.
	Static DHCP	User this screen to assign IP addresses on the LAN to individual computers based on their MAC Addresses.
	UPnP	Use this screen to enable or disable UPnP State or UPnP NAT-T State.
	Additional Subnet	Use this screen to configure IP alias and public static IP.
	STB Vendor ID	Use this screen to configure the Vendor IDs of connected Set Top Boxes (STBs) so the Zyxel device can automatically create static DHCP entries for them when they request IP addresses.
	Wake on LAN	Use this screen to remotely turn on a device on the network, such as a computer, storage device, or media server.
	TFTP Server Name	Use this screen to identify a TFTP server for configuration file download using DHCP option 66.
Routing	**Static Route**	Use this screen to view and configure the static route rules on the Zyxel device.
	DNS Route	Use this screen to view and configure DNS routes on the Zyxel device.
	Policy Route	Use this screen to configure policy routing on the Zyxel device.

	RIP	Use this screen to configure Routing Information Protocol (RIP, RFC 1058 and RFC 1389) to exchange routing information with other routers.
QoS	General	Use this screen to enable or disable QoS and set the upstream bandwidth or assign traffic priority.
	Queue Setup	Use this screen to configure QoS queue assignment to decide the priority on WAN/LAN interfaces.
	Classification Setup	Use this screen to add, edit, or delete QoS classifiers.
	Shaper Setup	Use this screen to limit outgoing traffic rate on the selected interface.
	Policer Setup	Use this screen to view QoS policers that allow you to limit the transmission rate of incoming traffic and apply actions, such as drop, pass, or modify, to the DSCP value of matched traffic.
NAT	Port Forwarding	Use this screen to forward incoming service requests from the Internet to the server(s) on your local network. Port forwarding is commonly used when you want to host online gaming, P2P file sharing, or other servers on your network.
	Port Triggering	Use this screen to configure port triggering on the Zyxel device.
	DMZ	Use this screen to specify the IP address of a default server to receive packets from ports not specified on the Port Triggering screen.
	ALG	Use this screen to enable or disable ALG settings.
	Address Mapping	Use this screen to configure address mapping on the Zyxel device.
	Sessions	Use this screen to limit the number of concurrent NAT sessions a client can use to ensure that no single client uses up too many available NAT sessions.
DNS	DNS Entry	Use this screen to view and configure DNS routes on the Zyxel device.
	Dynamic DNS	Use this screen to configure a DDNS service provider on the Zyxel device.
Vlan Group		Use this screen to group and tag VLAN IDs to outgoing traffic from the specified interface.
Interface Grouping		Use this screen to create multiple networks on the Zyxel device.
USB Service	File Sharing	Use this screen to set up file sharing through the Zyxel device.
	Media Server	Use this screen to use the Zyxel device as a media server.
Security		
Firewall	General	Use this screen to set the security level of the firewall on the Zyxel device.
	Protocol	Use this screen to configure customized services and port numbers.
	Access Control	Use this screen to add new Access Control List (ACL) rules and view the list of configured incoming or outgoing filtering rules.
	DoS	Use this screen to activate protection against DoS attacks.
MAC Filter		Use this screen to configure the Zyxel device to permit access to clients based on their MAC addresses in the MAC Filter screen.
Scheduler Rule		Use this screen to configure the days and times when a configured restriction, such as parental control, is enforced.
Certificates	Local Certificates	Use this screen to view the certificate list, generate certification requests, and import signed certificates.
	Trusted CA	Use this screen to view and manage the list of trusted CAs.

VoIP		
SIP	**SIP Account**	Use this screen to set up information about your SIP account and configure audio settings, such as volume levels for the phones connected to the Zyxel device.
	SIP Service Provider	Use this screen to view the SIP service provider information on the Zyxel Device.
Phone	**Phone Device**	Use this screen to view detailed information on phones used for Internet phone calls (SIP). You can define which phone(s) will ring when a specific SIP address receives an incoming call, and which SIP address will be used when an outgoing call is made with a specific phone.
	Region	Use this screen to configure settings that depend on which region of the world the Zyxel Device is located in. Selecting the region improves the quality of phone calls.
Call Rule		Use this screen to add, edit, or remove speed-dial numbers for outgoing calls.
Call History		Use this screen to view the summary of received, dialled, and missed calls and a call history list. You can also see detailed information for each outgoing call you made or each incoming call from someone calling you.
System Monitor		
Log	**System Log**	Use this screen to view the status of events that occurred to the Zyxel device.
	Security Log	Use this screen to see the security-related logs for the categories that you select. You can filter the entries by selecting a severity level and/or category.
Traffic Status	**WAN**	Use this screen to look at the network traffic status and the statistics of the WAN/LAN interfaces and the NAT.
	LAN	This screen allows you to view packet statistics for each LAN or WLAN interface on the Zyxel device.
	NAT	Use this screen to view the list of the devices that have received an IP address from the Zyxel device's LAN or WLAN interface(s) and have ever established a session with the Zyxel device.
VoIP Status		Use this screen to view VoIP registration status, current call status, and other related information for each SIP account.
ARP Table		Use the ARP table to view the IPv4-to-MAC address mappings for each device connected to the Zyxel device. The neighbour table shows the IPv6-to-MAC address mappings of each neighbour.
Routing Table		Use this screen to view the routing table of the Zyxel device.
WLAN Station Status		Use this screen to view the status of the wireless stations that are currently associated to the Zyxel device.
Cellular Statistics		Use this screen to look at cellular Internet connection status.
Maintenance		
System		Use this screen to name the Zyxel device (host name) and give it an associated domain name for identification purposes.
User Account		Use this screen to create and manage user accounts and their privileges on the Zyxel device. For example, you can change the password of the Web Configurator here.
Remote Management	**MGMT Service**	Use this screen to configure the interfaces through which services can access the Zyxel Device. You can also specify service port numbers that computers must use to connect to the Zyxel Device.
	Trust Domain	Use this screen to view a list of public IP addresses that can access the Zyxel device through the services configured in **Maintenance** > **Remote Management**.

SNMP		Use this screen to configure Simple Network Management Protocol (SNMP) settings on the Zyxel device.
Time		Use this screen to change the time and date on the Zyxel device.
Email Notification		Use this screen to view, remove and add e-mail account information.
Log Settings		Use this screen to configure where the Zyxel device sends logs to, and which type of logs the Zyxel device records.
Firmware Upgrade		Use this screen to upload new firmware to the Zyxel device.
Backup/Restore		Use this screen to back up and restore the Zyxel device's configuration settings or reset the factory default settings.
Reboot		Use this screen to reboot the Zyxel device without turning the power off.
Diagnostics	**Ping & Traceroute & Nslookup**	Use this screen to ping, traceroute, or nslookup for troubleshooting the Zyxel device. Ping and traceroute are used to test whether a particular host is reachable. Nslookup is used to find the IP address for a host name and vice versa.
	802.1ag	Use this screen to configure and perform Connectivity Fault Management (CFM) actions as defined by the IEEE 802.1ag standard. CFM protocols include Continuity Check Protocol (CCP), Link Trace (LT), and Loopback (LB).
	802.3ah	Use this screen to configure Link layer Ethernet Operations, Administration and Maintenance (OAM).

5.5.3. Icons

The navigation panel provides additional functions that are displayed with the following icons:

Icon	Description
Wizard	Click this icon to configure the time zone, Internet access, and wireless settings of the Zyxel device. For more information, see Configuring the Zyxel Device Using the Wizard.
Theme	Click this icon to select the colour of the Web Configurator.
Language	Click this icon to select the language of the Web Configurator.
Restart	Click this icon to reboot the Zyxel device.
Logout	Click this icon to log out of the Web Configurator.

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5.6. Configuring the Wireless Network Settings

You can enable your wireless devices, such as laptops, tablets, and smartphones to establish wireless Internet connection.

Perform the following steps to configure the wireless connection:

1. Go to **Network Settings** > **Wireless** > **General**.

2. To change the wireless network name, go to **Wireless Network Settings** and enter the name in the **Wireless Network Name** field.

3. To set the security level, go to **Security Level** and select **More Secure**.

4. Select **WPA2-PSK** from the **Security Mode** drop-down menu.

5. To change the WiFi password, enter a new password into the **Password** field. The password must be 8-63 ASCII characters or 64 hexadecimal digits ("0-9", "A-F"). This password is required when you connect your wireless device to the WiFi.

6. Click **Apply** to save the changes.

7. Go to the **Others** tab and make sure the **802.11b/g/n Mixed** is selected in the **802.11 Mode** drop-down menu.

8. Click **Apply** to save the changes.

5.6.1. Setting up a Secure Wireless Network Using WPS

The Zyxel device supports WiFi Protected Setup (WPS) that allows you to create a wireless network with strong security.

| **NOTE** | Your device must support WPS to use this feature. |

There are two methods for creating a secure connection using WPS:

- **Push-Button Configuration (PBC)**
  It enables you to create a secure wireless network by simply pressing a button.
- **PIN Configuration**
  It enables you to create a secure wireless network by entering a wireless client's PIN in the Web Configurator. This is a more secure method because one device can authenticate the other.

Push-Button Configuration

Perform the following steps to create a push-button configuration:

1. Make sure the Zyxel device is switched on and that your device is within the range of the wireless signal.

2. Enable PBC in one of the following two ways:

a) Press and hold the WPS button on the back panel of the Zyxel device for more than one second.

b) Log into the Web Configurator and go to **Network Settings** > **Wireless** > **WPS**. Then enable the **WPS** function under **General** and **Method 1 PBC** under **Add a new device with WPS Method**. Click **Apply** to save the changes.

Wireless

General   Guest/More AP   MAC Authentication   **WPS**   WMM   Others   Channel Status   MESH

WiFi Protected Setup (WPS) allows you to quickly set up a wireless network with strong security, without having to configure security settings manually. Select one of the WPS methods and follow the instructions to establish a WPS connection. Your device must support WPS to use this feature. We recommend using Push Button Configuration (**PBC**) if your device supports it.

General

WPS

Add a new device with WPS Method

Method 1 PBC

Step1. Click WPS button   WPS

Step2. Press the WPS button on your new wireless client device within 120 seconds

Method 2 PIN

Step1. Enter the PIN of your new wireless client device and then click Register

Register

Step2. Press the WPS button on your new wireless client device within 120 seconds

Method 3

Enter AP's PIN Number in wireless Client
Current state Configured

1 Please release configuration if you want to configure the wireless settings

Release Configuration

2 Enter current PIN number on your wireless client

Generate New PIN

Note

(1) If WPS is Enabled, UPnP will automatically be turned on.

(2) The Zyxel Device applies the security settings of the main SSID (**SSID1**) profile to the WPS wireless connection.

(3) The WPS switch is grayed out when wireless LAN is disabled.

Cancel   Apply

The Zyxel device then sends the proper configuration settings to the wireless client, which may take up to two minutes. The wireless client is then able to communicate with the Zyxel device securely.

PIN Configuration

Perform the following steps to set up a PIN configuration:

1. Turn on the WiFi on your wireless device.
2. Open the WiFi settings and select WPS PIN Entry to get a PIN.
3. In the Web Configurator, select **Network Settings** > **Wireless** > **WPS**.
4. Click the **WPS** toggle button to enable the WPS function.
5. Click **Apply** to save the changes.
6. Under **Method 2**, enter the PIN from your wireless device.
7. Click **Register**.
8. Activate the WPS function on the wireless client utility screen within two minutes.

    Then the Zyxel device authenticates the wireless device and sends the configuration settings to the wireless device, which may take up to two minutes.

    Your wireless device is then able to communicate with the Zyxel device securely.

5.7.   Configuring the Firewall

The firewall protects your devices and network from unauthorized access by hackers on the Internet.

By default, the firewall allows traffic that originates from your LAN computers to go to all other networks, and blocks traffic that originates from other networks.

You can configure the level of security you want to apply to your network. A higher security level means more restrictions to the Internet activities you want to perform.

Perform the following steps to configure the firewall:

1. Go to **Security** > **Firewall** > **General**.

2. Click the **IPv4 Firewall** and/or **IPv6 Firewall** toggle buttons to turn on or off the firewall for IPv4 and/or IPv6 traffic. By default, both are enabled.

3. Select the security level based on the following:

| Security Level	Description
Low	It allows LAN to WAN and WAN to LAN packet directions.
Medium (recommended)	It allows LAN to WAN but denies WAN to LAN packet directions.
High	It denies LAN to WAN and WAN to LAN packet directions. When the security level is set to **High**, Telnet, FTP, HTTP, HTTPS, DNS, IMAP, POP3, SMTP, and/or IPv6 ICMPv6 (Ping) traffic from the LAN are still allowed.

NOTE LAN to WAN is your access to all Internet services. WAN to LAN is the access of other computers on the Internet to devices behind the Zyxel device.

4. Click **Apply** to save the changes.

5.8. Configuring the WiFi Network

Perform the following steps to configure the WiFi network:

1. Go to the **WiFi Settings** widget on the main window. This page shows the WiFi name and passwords. Click the eye icon to show the passwords.
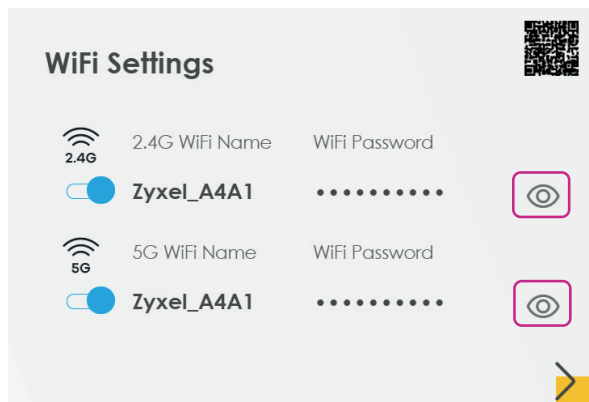
2. Click the toggle buttons to enable or disable the **2.4G** or **5G** wireless networks. Both are enabled by default.

3. Click the arrow at the bottom right corner of the **WiFi Settings** screen to configure the WiFi names and passwords.
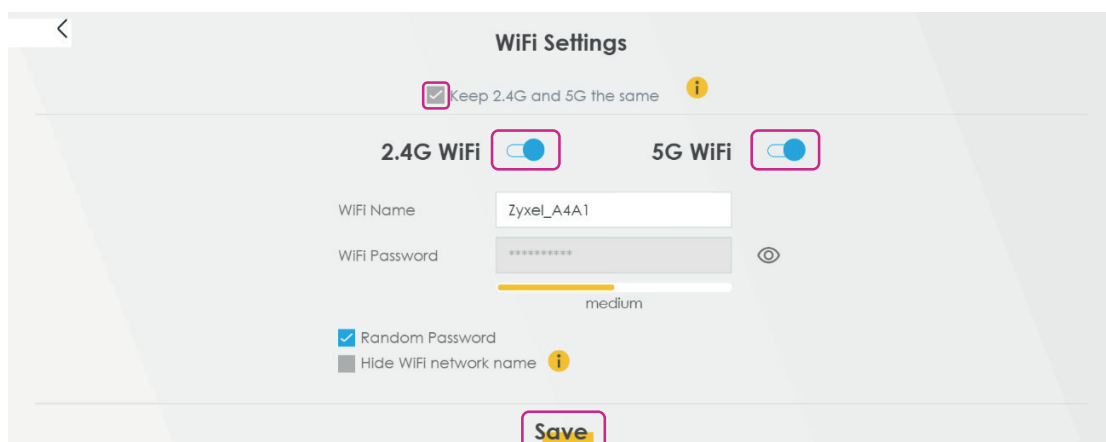
4. To give different names to the 2.4GHz and 5GHz WiFi networks, clear the **Keep 2.4G and 5G the same** checkbox. The **WiFi Settings** screen will change in this case.

NOTE	To be able to clear the **Keep 2.4G and 5G the same** checkbox, disable **MPro MESH** in **Network Settings** > **Wireless** > **MESH**.

5. Click the **2.4G** or **5G WiFi** toggle buttons to enable or disable them.

6. You can configure the following settings:

Field	Description
WiFi Name	Enter a descriptive name for your wireless network, which can be up to 32 characters.
WiFi Password	Enter a password of 8-64 case-sensitive characters.
Random Password	If it is selected, the Zyxel device automatically generates a password. The **WiFi Password** field is not configurable if you select this option.
Hide WiFi Network Name	If it is selected, the WiFi name is hidden in the outgoing beacon frame so a station cannot obtain the WiFi name through scanning using a survey tool.

7. Click **Save** to apply the changes.

5.9. Configuring the Guest WiFi Network

Perform the following steps to configure the guest WiFi network:

1. Go to the **Guest WiFi Settings** widget on the main window. This page shows the WiFi names and passwords of the guest wireless networks. Click the eye icon to show the passwords.
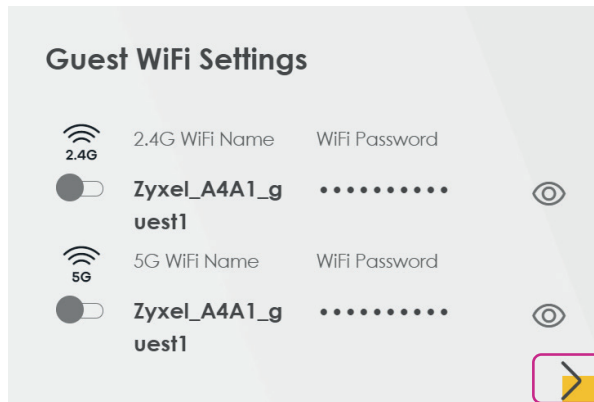
2. Click the **Guest WiFi Settings** toggle button to enable the guest wireless network.

3. Click the arrow at the bottom right corner of the **Guest WiFi Settings** window to change the WiFi names and passwords of the guest WiFi network.
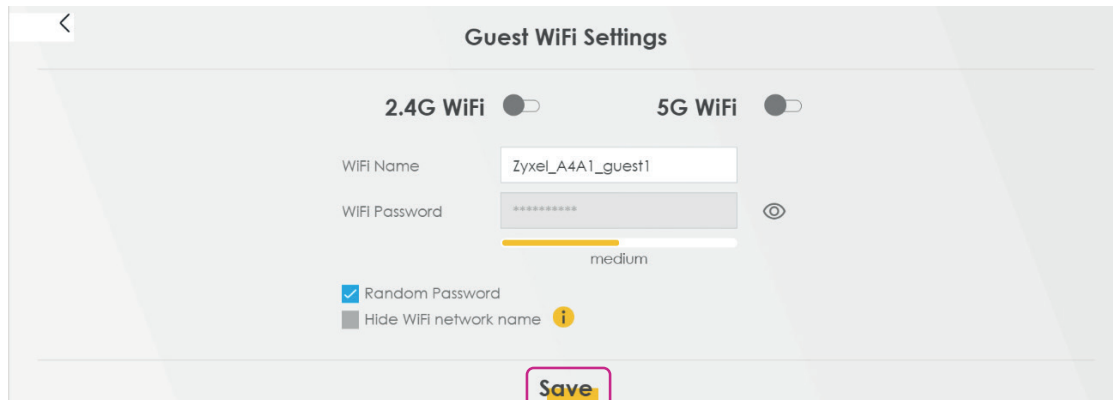
4. Click the **2.4G** and/or **5G WiFi** toggle buttons to enable them.

5. You can configure the following settings:

Field	Description
WiFi Name	Enter a descriptive name for your wireless network, which can be up to 32 characters.
WiFi Password	Enter a password of 8-64 case-sensitive characters.
Random Password	If it is selected, the Zyxel device automatically generates a password. The **WiFi Password** field is not configurable if you select this option.
Hide WiFi Network Name	If it is selected, the WiFi name is hidden in the outgoing beacon frame so a station cannot obtain the WiFi name through scanning using a survey tool.

6. Click **Save** to apply the changes.

5.10. Changing the LAN IP Address

Perform the following steps to change the LAN IP address:

1. Go to the **LAN** widget on the main window.

2. Click the arrow at the bottom right corner of the LAN widget to open the configuration settings.

3. Go to **LAN IP Setup** and in the **IP Address** field enter the IP address you want to assign to your Zyxel device in dotted decimal notation, for example 192.168.1.1 (factory default).

4. Click **Save** to apply the changes.

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5.11. Creating a SIP Account

To be able to make and receive Internet phone calls, you need to create a SIP account and map it to a phone port. The SIP account contains information that allows the Zyxel device to connect to your VoIP service provider.

Perform the following steps to create a SIP account:

1. Go to **VOIP** > **SIP** > **SIP Account**.

2. Click **Add New Account**.

3. Configure the following parameters (for more information, see the table below):

Voice Features

Primary Compression Type	G.711u ▼
Secondary Compression Type	G.711a ▼
Third Compression Type	G.722 ▼
Speaking Volume Control	Middle ▼
Listening Volume Control	Middle ▼

☑ Enable G.168 (Echo Cancellation)

☑ Enable VAD (Voice Active Detector)

Call Features

☑ Send Caller ID

☑ Enable Call Transfer

☑ Enable Call Waiting

Call Waiting Reject Timer	20	(10~60) Second
☐ Enable Unconditional Forward	To Number	
☐ Enable Busy Forward	To Number	
☐ Enable No Answer Forward	To Number	
No Answer Time	20	(10~119) Second

Caution:
If you enable [Unconditional Forward], [Busy Forward] and [No Answer] will be ignored.

☐ Enable Do Not Disturb (DND)

Warning:
If you enable this item, you will not get indication when somebody call you.

☐ Active Incoming Anonymous Call Block

☐ Enable MWI

MWI Subscribe Expiration Time	3600	(120-86400)Second

☐ Hot Line / Warm Line Number

◉ Warm Line   ○ Hot Line

Hot Line / Warm Line Number		
Warm Line Timer	5	(5~300) Second

☐ Enable Missed Call Email Notification

Mail Account	
Send Notification to e-mail	
Missed Call e-mail Title	You have Got 1 Missed Call

Notice:
Please configure mail server in "Maintenance > e-mail Notification" page and select the mail server for this feature.

Cancel   OK

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Parameter	Description
SIP Account Selection	
SIP Account Selection	This field displays **Change Me** if you are creating a new SIP account or the name of the SIP account you are modifying.
SIP Server Provider Association	
SIP Account Associated With	Select the SIP service provider profile to use for this SIP account. This field is read-only when you are modifying a SIP account.
General	
Enable SIP Account	Select it if you want the Zyxel device to use this account. Otherwise, leave it empty.
SIP Account Number	Enter your SIP address. It is the part before the @ sign in the full SIP URI. You can use up to 127 printable ASCII characters.
Authentication	
Username	Enter the username for registering this SIP account exactly as it was provided to you. You can use up to 95 printable ASCII characters.
Password	Enter the password. You can use up to 95 printable ASCII extended set characters.
URL Type	
URL Type	Select whether to include the SIP service domain name when the Zyxel device sends the SIP address. **SIP** – Include the SIP service domain name. **TEL** – Do not include the SIP service domain name.
Voice Features	
Primary Compression Type	Select the type of voice coder/decoder (codec) that you want the Zyxel device to use.
Secondary Compression Type	**G.711** provides high voice quality but requires more bandwidth (64 kbps). **G.711** is the default codec used by phone companies and digital handsets.
Third Compression Type	**G.711a** is typically used in Europe. **G711u** is typically used in North America and Japan. **G.726-24** operates at 24 kbps. **G.726-32** operates at 32 kbps. **G.722** is a 7kHz wideband voice codec that operates at 48, 56 and 64 kbps. By using a sample rate of 16KHz, G.722 can provide higher fidelity and better audio quality that narrowband codecs like G.711, where the voice signal is sampled at 8KHz. The Zyxel device must use the same codec as the peer. When two SIP devices start a SIP session, they must agree on a codec. Select the Zyxel device's first choice for voice coder/decoder. Select the Zyxel device's second choice for voice coder/decoder. Select **None** if you want the Zyxel device to only accept the first choice. Select the Zyxel device's third choice for voice coder/decoder. Select **None** if you want the Zyxel device to only accept the first and second choice.
Speaking Volume Control	Select the loudness that the Zyxel device uses for speech that it sends to the peer device.
Listening Volume Control	Select the loudness that the Zyxel device uses for speech that it receives from the peer device.
Enable G.168 (Echo Cancellation)	Select it if you want to eliminate the echo caused by the sound of your voice reverberating in the telephone receiver while you speak.
Enable VAD (Voice Active Detector)	Select it if the Zyxel device should stop transmitting when you are not speaking. It reduces the bandwidth the Zyxel device uses.
Call Features	

Send Caller ID	Select it if you want to send identification when you make VoIP phone calls. Clear it if you do not want to send identification.
Enable Call Transfer	Select it to enable call transfer on the Zyxel device. It allows you to transfer an incoming call (that you have answered) to another phone.
Enable Call Waiting	Select it to enable call waiting on the Zyxel device. It allows you to place a call on hold while you answer another incoming call on the same telephone number.
Call Waiting Reject Timer	Specify the time in seconds that the Zyxel device should wait before rejecting the second call if you do not want to answer it.
Enable Unconditional Forward	Select it if you want the Zyxel device to forward all incoming calls to the specified phone number. Specify the phone number in the **To Number** field on the right.
Enable Busy Forward	Select it if you want the Zyxel device to forward incoming calls to the specified phone number if the phone port is busy. Specify the phone number in the **To Number** field on the right. If you have call waiting, the incoming call is forwarded to the specified phone number if you reject or ignore the second incoming call.
Enable No Answer Forward	Select it if you want the Zyxel device to forward incoming calls to the specified phone number if the call is unanswered. See **No Answer Time** below. Specify the phone number in the **To Number** field on the right.
No Answer Time	This field is used by the **Active No Answer Forward** feature. Enter the number of seconds the Zyxel device should wait for you to answer an incoming call before it considers the call unanswered.
Enable Do Not Disturb	Select it to set your phone not to ring when someone calls you.
Active Incoming Anonymous Call Block	Select it if you do not want the phone to ring when someone tries to call you with caller ID deactivated.
Enable MWI	Select it if you want to hear a waiting (beeping) dial tone on your phone when you have at least one voice message. Your VoIP service provider must support this feature.
MWI Subscribe Expiration Time	Keep the default value of this field unless the VoIP provider tells you to change it. Enter the number of seconds the SIP server should provide the message waiting service each time the Zyxel device subscribes to the service. Before this time passes, the Zyxel device automatically subscribes again.
Hot Line/Warm Line Number	Select it to enable the hot line or warm line feature on the Zyxel device.
Hot Line	Select it to have the Zyxel device dial the specified hot line number immediately when you pick up the telephone.
Warm Line	Select it to have the Zyxel device dial the specified warm line number after you pick up the telephone and do not press any keys on the keypad for a period.
Hot Line/Warm Line Number	Enter the number of the hot line or warm line you want the Zyxel device to dial.
Warm Line Timer	Enter the number of seconds the Zyxel device should wait before dialling the warm line number if you pick up the telephone and do no press any keys on the keypad.
Enable Missed Call Email Notification	Select it to have the Zyxel device email you a notification when there is a missed call.

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Mail Account	Select a mail account for the email address specified below. If you select **None**, email notifications will not be sent via email. You must already have an email account on the Email notification screen.
Send Notification to Email	Select it to get notifications to the email address specified in this field. If this field is blank, notifications will **not** be sent via email.
Missed Call Email Title	Type a title that you want to have in the subject line of the email notification the Zyxel device sends.

4.   Click **OK** to save the changes.

5.11.1. Editing an Existing SIP Account

Perform the following steps to edit an existing SIP account:

5.   Go to **VoIP** > **SIP** > **SIP Account**.

6.   Select the account you want to edit.

7.   Click the edit icon in the **Modify** column.

8.   Edit the required parameters. For more information, see the parameter description in Creating a SIP Account.

9.   Click **OK** to save the changes.

5.11.2. Deleting an Existing SIP Account

Perform the following steps to delete an existing SIP account:

1. Go to **VoIP** > **SIP** > **SIP Account**.
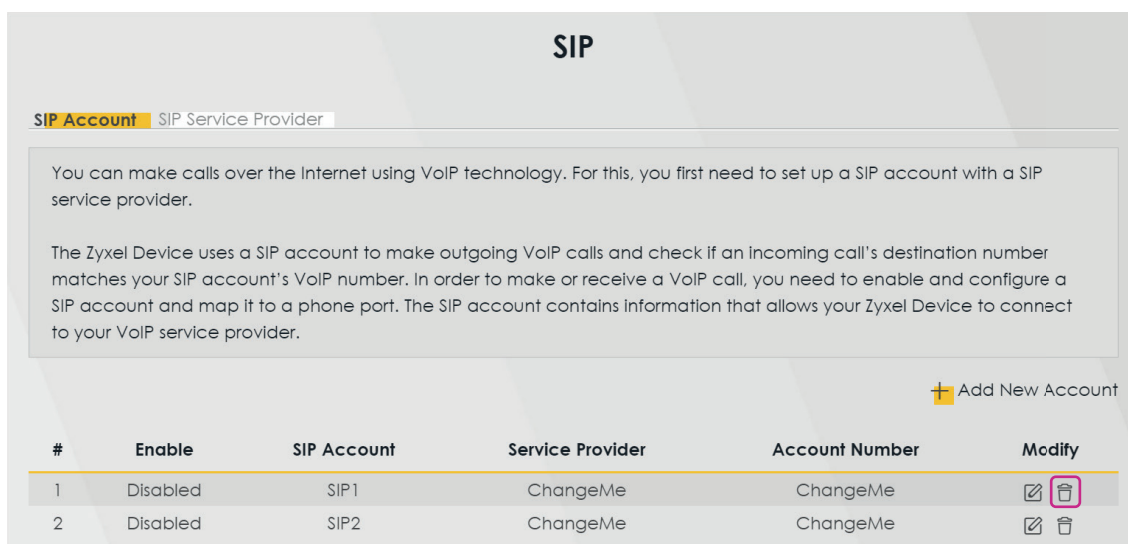
2. Select the account you want to edit.
3. Click the delete icon in the **Modify** column.
4. In the pop-up window, click **OK** to confirm the deletion.
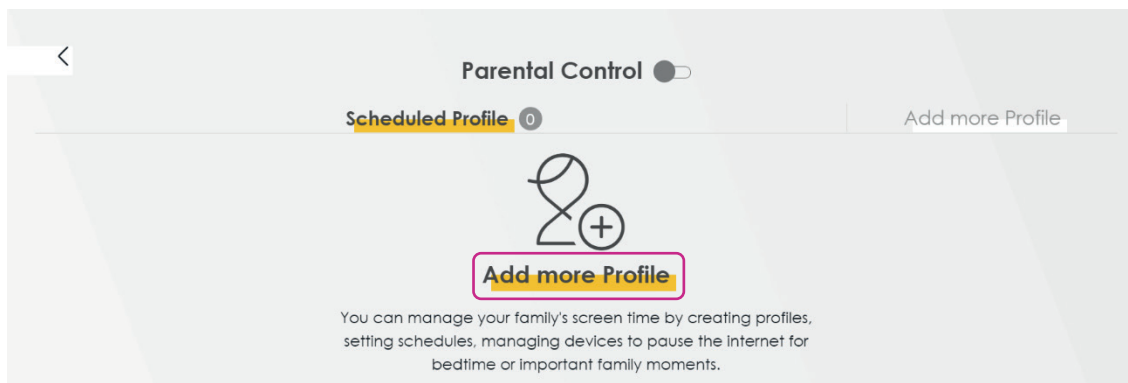
5.12. Configuring Parental Control

Parental control allows you to limit the time a user can access the Internet.

Perform the following steps to create a parental control profile:

1. Go to the **Parental Control** widget on the main window.
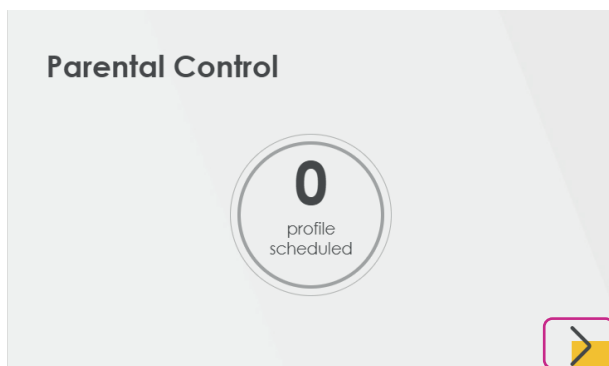
2. Click the arrow icon at the bottom right corner of the **Parental Control** window.

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3. Click **Add more Profile**.

4. On the Select Device page, configure the following parameters:

5. In the **Profile Name** field, enter a name for the profile.

6. Click the **Profile Active** toggle button to enable the parental control profile.

7. Select the device(s) on the right that you want to apply the parental control profile to.

8. Click **Next**.

9. In the **Schedule** section, select the time range when you want to block WiFi access. The **Blocking Schedule** on the left shows the summary of the selected time range. See example below.

10. Click **Save** to apply the changes. Your scheduled profile is now created and active.
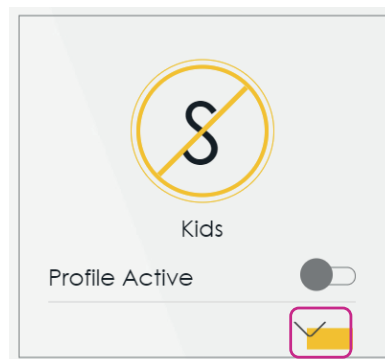
5.12.1. Editing an Existing PCP

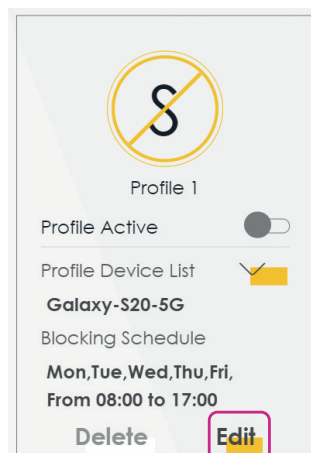Perform the following steps to edit an existing PCP:

1. Go to the **Parental Control** widget on the main window and click the arrow on the bottom right corner.
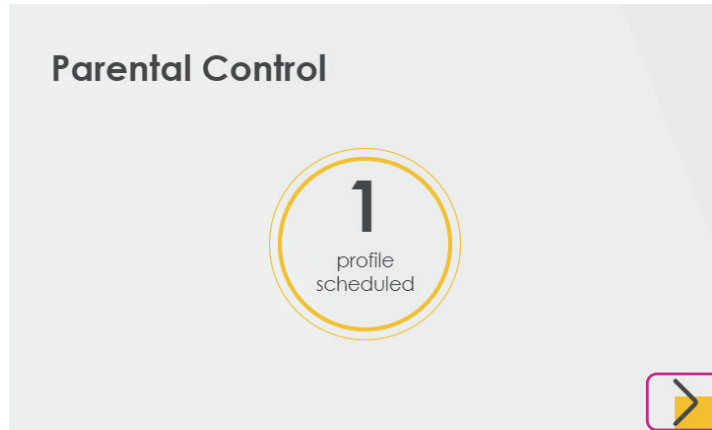
2. Open the PCP you want to edit by clicking the arrow on the bottom right corner.
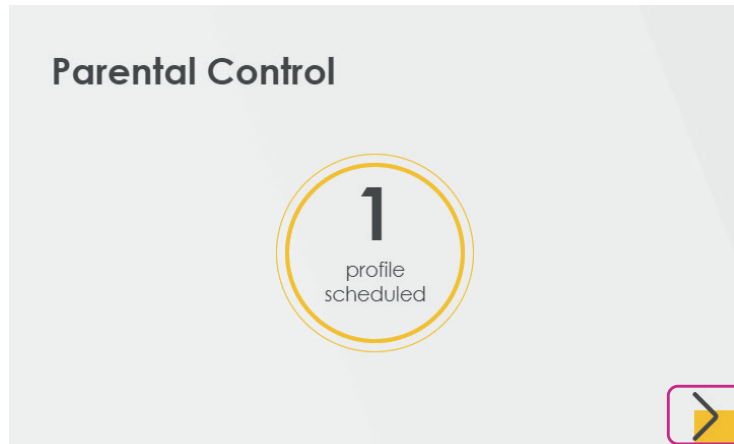

3. Click **Edit**.

4. Edit the required parameters as described in <u>Configuring Parental Control</u>.

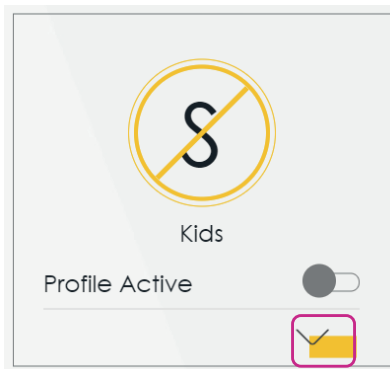5. Click **Save** to apply the changes.

5.12.2. Deleting an Existing PCP

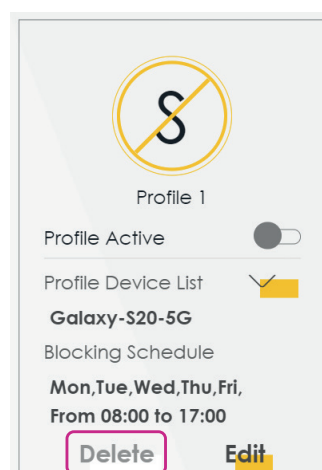Perform the following steps to delete an existing PCP:

1. Go to the **Parental Control** widget on the main window and click the arrow on the bottom right corner.

2. Open the PCP you want to edit by clicking the arrow on the bottom right corner.
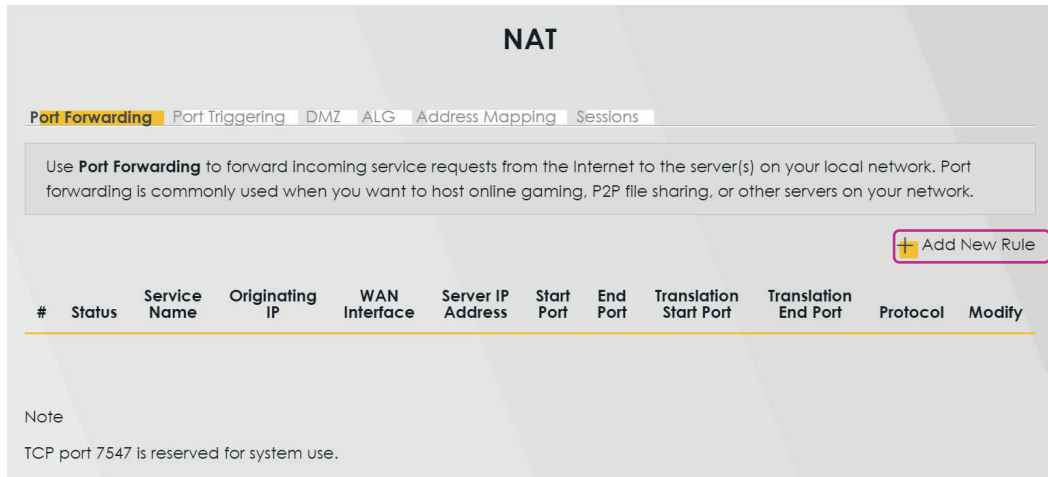

3. Click **Delete**.

5.13. Port Forwarding

Port forwarding is used to forward incoming service requests from the Internet to the server(s) on your local network. Port forwarding is commonly used when you want to host online gaming, P2P file sharing, or other servers on your network.

You may enter a single port number or a range of port numbers to be forwarded, and the local IP address of the desired server. The port number identifies a service, for example web service is on port 80 and FTP is on port 21. In some cases, it is recommended to specify a range of port numbers, for example in case of unknown services or when a server can support more than one service. You can allocate a server IP address that corresponds to a port or a range of ports. For information on port numbers, see RCF 1700.

Perform the following steps to configure servers behind port forwarding:

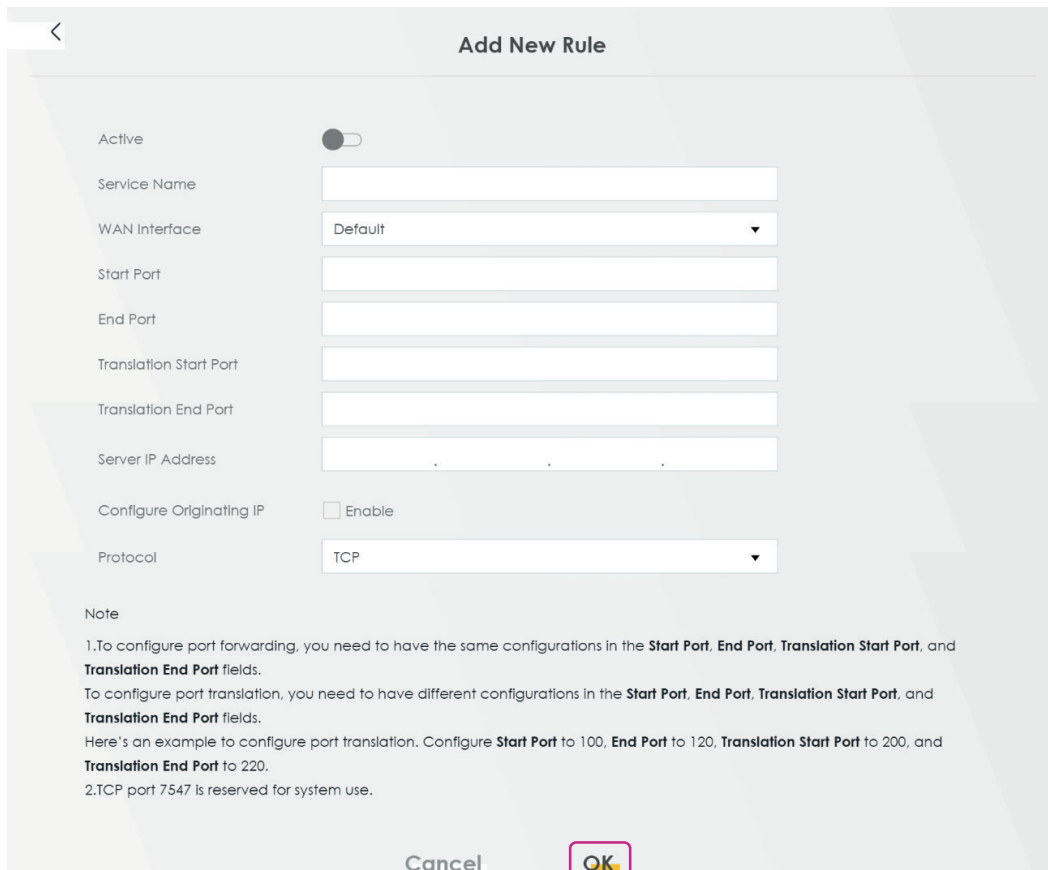1. Go to **Network Settings** > **NAT** > **Port Forwarding**.

2. Click **Add New Rule**.
3. Configure the following parameters:

Parameter	Description
Active	Click the toggle button to enable the rule. When the switch goes to the right, the function is enabled.
Service Name	Enter a name to identify this rule using keyboard characters (A-Z, a-z, 1-2, and so on).
WAN interface	Select the WAN interface through which the service is forwarded. You must have already configured a WAN connection with NAT enabled.
Start Port	Enter the original destination port for the packets. To forward only one port, enter the port number again in the **End Port** field. To forward a series of ports, enter the start port number here and the end port number in the **End Port** field.
End Port	Enter the last port of the original destination port range. To forward only one port, enter the port number in the **Start Port** field above and then enter it again in this field. To forward a series of ports, enter the last port number in a series that begins with the port number in the **Start Port** field.
Translation Start Port	It shows the port number to which you want the Zyxel device to translate the incoming port. For a range of ports, enter the first number of the range to which you want the incoming ports translated.
Translation End Port	It shows the last port of the translated port range.
Server IP Address	Enter the inside IP address of the virtual server here.
Configure Originating IP	Select **Enable** to enter the source IP address of the WAN interface.
Protocol	Select the protocol supported by this virtual server. Choices are **TCP**, **UDP**, or **TCP/UDP**.

4. Click **OK** to save the changes.

6. Technical Support

In case of technical issues, contact LilaConnect Customer Service by emailing help@lilaconnect.co.uk or calling 0800 9556670.

7. Glossary

Terms	Definitions
DNS	Domain Name System Used for mapping a domain name to its corresponding IP address and vice versa.
DoS	Denial of Service They are attacks aimed at devices and networks with a connection to the Internet. Their goal is to disable a device or network, so users do not have access to network resources. The Zyxel device is pre-configured to automatically detect and prevent all known DoS attacks.
Firewall	The firewall protects your devices and network from unauthorized access by hackers on the Internet.
FTP	File Transfer Protocol It is a communications protocol used for transferring files from a server to a client on a computer network.
HTTP	Hypertext Transfer Protocol It is an application layer protocol used for transferring data over the World Wide Web.
HTTPS	Hypertext Transfer Protocol Secure It is the combination of HTTP and SSL/TLS used for establishing an encrypted connection over the World Wide Web.
IAD	Integrated Access Device It is a device at the subscriber premises that is used for providing access to the Internet.
IMAP	Internet Message Access Protocol It is an Internet protocol used by e-mail clients to retrieve messages from a mail server.
IPv4	Internet Protocol version 4 An Internet protocol that is used for assigning 32-bit numeric IP addresses to devices on a computer network.
IPv6	Internet Protocol version 6 A newer version of IPv4. It is used for assigning 128-bit IP alphanumeric addresses to devices on a computer network.
ICMPv6	Internet Control Message Protocol for IPv6 It is an implementation of ICMP for IPv6. Used for performing error reporting.
LAN	Local Area Network A computer network that connects computers or other devices in a limited area such as homes or offices.
PBC	Push-button configuration
PIN	Personal Identification Number
POP3	Post Office Protocol An Internet protocol used by e-mail clients to retrieve email from a mail server.
PPPoE	Point-to-Point Protocol over Ethernet It is a network protocol used for managing how data is transmitted over Ethernet networks.
PTM	Packet transfer mode Supported by the VDSL2 standard. In PTM, packets are encapsulated directly in the HDLC frames.
SIP	Session Initiation Protocol A signalling standard that lets a network device, such as a computer or IAD, communicate with another device.

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SIP account	It is a type of VoIP account that allows you to make phone calls over the Internet in accordance with your service provider.
SMTP	Simple Mail Transfer Protocol It is an Internet standard used for mail transmission.
SSID	Service Set Identifier A unique identifier that is used for naming wireless networks.
TCP	Transmission Control Protocol A communications standard that allows application programs and computing devices to communicate in a network.
Telnet	Telnet is an application protocol used for accessing a remote computer using a virtual terminal connection.
UDP	User Datagram Protocol An Internet protocol used for establishing low-latency and loss-tolerating connections between computer applications.
UPnP	Universal Plug and Play (UPnP) is an open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between networking devices or software applications which have UPnP enabled.
VLAN	Virtual LAN A computer network that acts like a physical LAN where the devices are connected in the same broadcast domain despite their geographical distribution.
VoIP	Voice over IP A protocol that allows you to make voice calls using the Internet.
WAN	Wide Area Network A computer network that connects computers or other devices in a larger geographic area, such as towns or cities.
Web Configurator	The Web Configurator is an HTML-based management interface used for configuring the Zyxel device via an Internet browser.
Wireless device	A client device such as a computer, laptop, tablet, or smartphone that can be connected to the Internet wirelessly.
WLAN	Wireless LAN A wireless computer network that connects a set of devices with wireless adapters to form a LAN.
WPS	WiFi Protected Setup It allows you to quickly set up a wireless network with strong security without having to configure security settings manually.

Notes

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