GL·iNet



User Manual

GL-B3000 / Marble

Wi-Fi 6 Dual-Band Home Router

Firmware Version 4.5.22

About This Manual

This manual is your go-to resource for getting started with your device, covering basic product information, hardware connections, web management interface login, initial setup, and detailed instructions for all software features in the web admin panel.

With this guide, you will be able to:

- Understand key product details
- Choose a suitable location for the device
- Complete hardware connections via step-by-step guidance
- Log into the web management interface with ease
- Configure initial settings and master all software features in the web admin panel

Format Conventions

These symbols/colors help you follow steps faster.

Convention	What It Means
Underlined teal text	Clickable link which can open a web page or a specific section
Bold text	Emphasize or mark some key information in this document, such as titles, hyperlinks, and exact menu/item names on the device's web interface
>	The path to load the corresponding page (e.g., System > Firmware)
Note	Key information for setup, operations, and safety. Ignoring this might result in setup failure, device malfunction or damage
Tips	Advice to help you use your device better

Note:

- Device features may vary by model and firmware version.
- Product availability is subject to regional differences or ISP specifications.
- All images, procedures, and descriptions in this guide are for illustrative purposes only and may differ from your actual usage experience.

Need More Help or Info?

- Firmware Update: GL.iNet Firmware Download Center | Router
- Community: Discuss our products and share insights at GL.iNet Community Forum
- Technical Support: Contact our Technical Support at Contact page

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Chapter 1

Get To Know Your Router

This chapter covers the router overview, specifications, and package contents.

1.1 Product Overview

The Marble (GL-B3000) router is an art of its own, cleverly displayed as a photo frame to house your favorite art piece and elevate your living space. Not just a visual delight to the eye, the Marble (GL-B3000) router delivers top-notch performance by featuring Wi-Fi 6 and supporting VPN capabilities.

1.1.1 Appearance

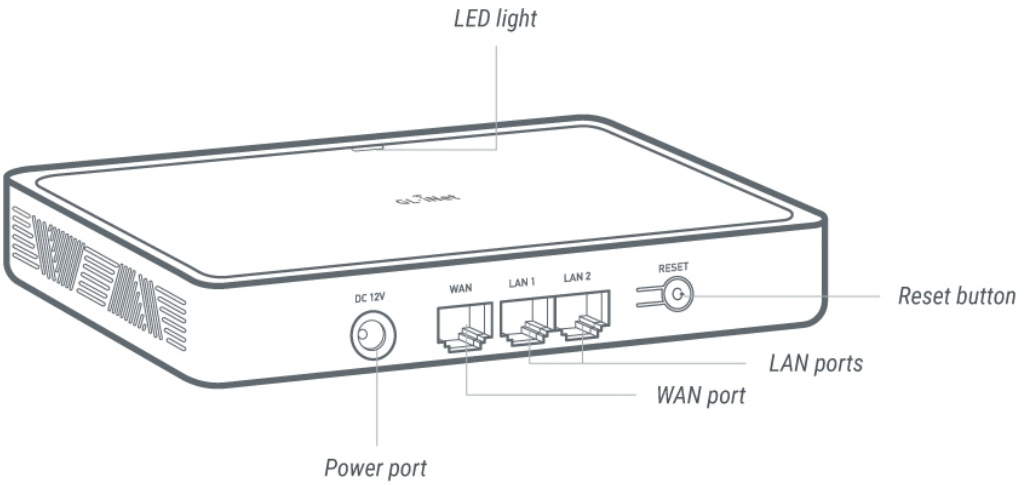








1.1.2 Interface and Button



Item	Description
Power Port	Connects to the power adapter.
WAN Port	Connects to a modem or an Ethernet outlet for Internet.
LAN Port	Connects to wired devices if needed.
Reset Button	Press and hold for **4 seconds** to repair your network; Press and hold for **10 seconds** and then release to reset the router to factory default.

1.1.3 LED

Status	Indication
Solid Blue	System boot up
Flashing Blue Slowly	Searching network
Flashing Blue Rapidly	Upgrading firmware
Solid White	Working normally

1.2 Specifications

Interface	1 x WAN Ethernet port 2 x LAN Ethernet port 1 x 12V/1.5A DC Input 1 x Reset button
CPU	Qualcomm Dual-core, @1GHz
Memory / Storage	DDR3L 512MB / NAND Flash 128MB
Protocol	IEEE 802.11a/b/g/n/ac/ax
Wi-Fi Speed	574Mbps (2.4GHz), 2402Mbps (5GHz)
Antennas	4 x Internal Antennas
Ethernet Speed	10/100/1000Mbps
Power Input	DC5521, 12V/1.5A (5.5*2.1mm)
Power Consumption	< 13W
Operating Temperature	0 ~ 40°C (32 ~ 104°F)
Storage Temperature	-20 ~ 70°C (-4 ~ 158°F)
Dimension / Weight	Router: 155 x 120 x 23mm / 275g Photo Frame: 235 x 197 x 32mm (Fits an 8-Inch Photo)
Other Tools	Datasheet / Firmware / App / Unboxing / Tutorials

*Wireless speeds are based on IEEE 802.11 standards (e.g., 802.11ax for Wi-Fi 6). Actual throughput and range may be lower due to environmental obstacles (walls, metal), network congestion, or client device capabilities.

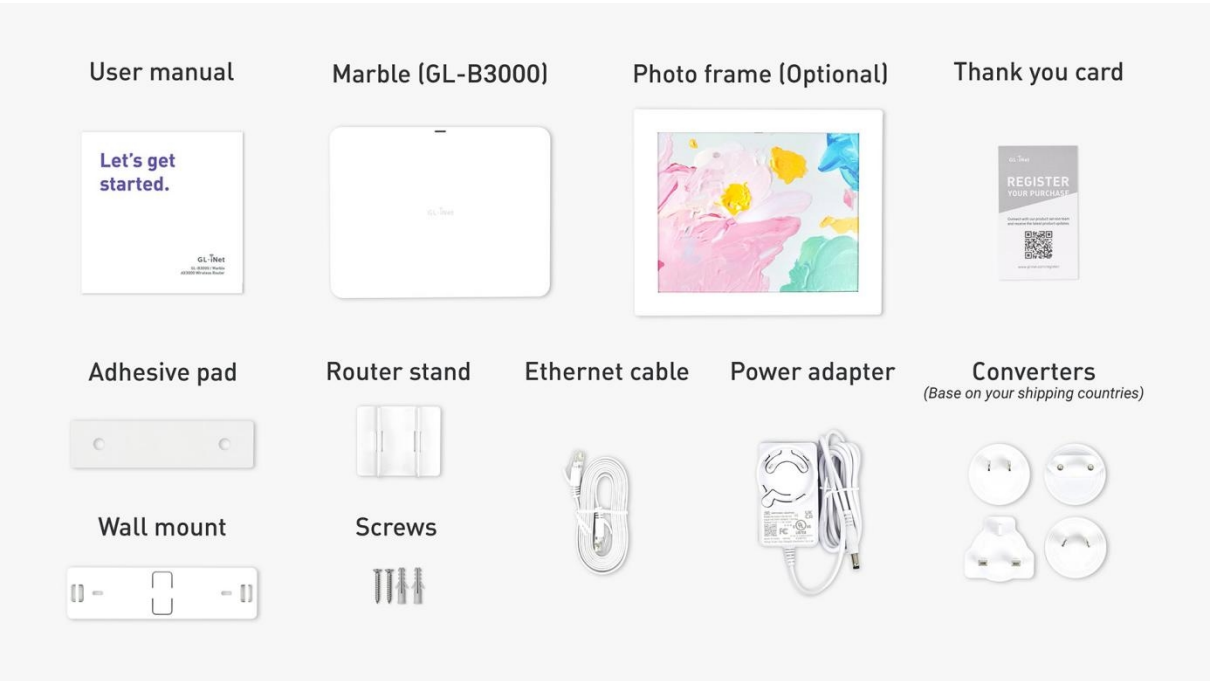
*Use of Wi-Fi 6 (802.11ax) and its features (OFDMA, MU-MIMO, 1024-QAM, HT160) requires client devices to support the corresponding technologies.

1.3 Package Contents

Please note that the adapter within the package depends on your shipping country.

The package includes:

- 1 x Marble (GL-B3000)
- 1 x User manual
- 1 x Thank you card
- 1 x Ethernet cable
- 1 x Wall mount kit
- 1 x Adhesive pad
- 1 x Router stand
- 1 x Photo frame (Optional)
- 1 x Power adapter
- 1 x Converter (Based on your shipping countries)



Chapter 2

Hardware Connection

This chapter covers router location selection and connection steps.

2.1 Choosing a Location

Follow these tips to choose a location for best performance.

- **Avoid moisture and heat**: Do not place the router in areas exposed to water, humidity, or high temperatures (e.g., sinks, radiators).
- **Ventilation and cooling**: Place the router in a cool, well- ventilated area for proper heat dissipation.
- **Central placement**: Position the router where it can connect to power and multiple devices easily (e.g., living room central zone).
- **Cable convenience**: Route cables and the power cord safely to prevent tripping hazards.
- **Placement**: Place the router on a flat, stable surface (shelf, desktop), or mount it on the wall using the included wall mount kit.
- **EMI avoidance**: Keep the router away from electromagnetic interference sources (Bluetooth devices, microwaves) to minimize signal interference.

2.2 Connecting the Router

1. **Power on**

   Put the two-piece power adapter together. Connect it to the router and plug it into an outlet. It will start up automatically.

2. **Connect a device to the router**

   Connect a device (e.g., laptop or smartphone) to the router via Wi-Fi or an Ethernet cable.

   - **Wi-Fi**: On your device, go to Settings > WLAN, locate the router's Wi-Fi network name in the available networks list and enter the password. You can find the default network name and password printed on your router's label.
   - **Ethernet**: Connect your device to the router's LAN port via an Ethernet cable.

3. **Log in to the router**

   The Internet is unavailable when connecting to the router for the first time. Please log in to the router as instructed in Chapter 3 to complete the initial setup before accessing the Internet.

Chapter 3

Log In To Your Router

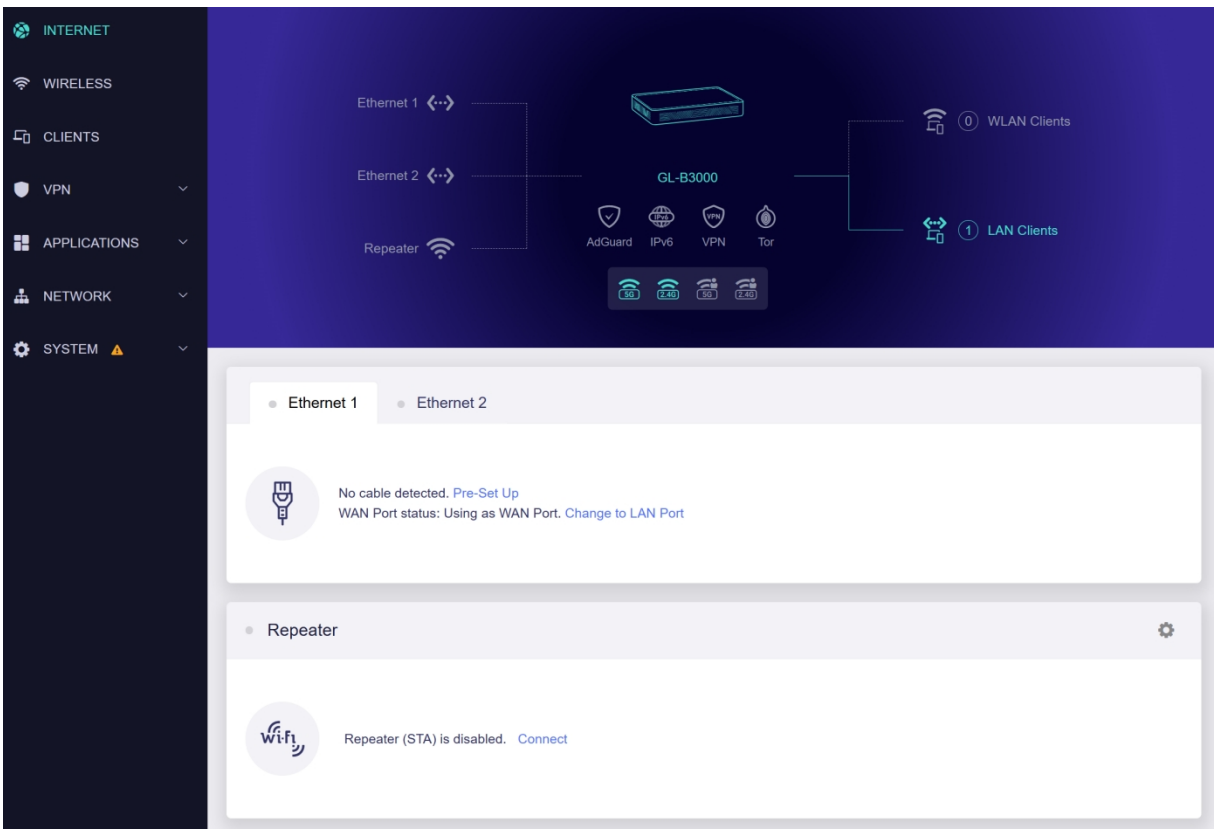
This chapter guides you to log in to your router via web admin panel.

Configure and manage your router through a web-based management interface, which can be accessed on any Windows, Mac OS or Linux OS with a web browser, such as Microsoft Edge, Google Chrome, Mozilla Firefox or Apple Safari.

Note: If you prefer using the GL.iNet app instead of the web admin panel, download the app and follow the on-screen prompts.

Follow the steps below to log in to your router via the web admin panel.

1. Connect a device (e.g., a computer or laptop) to the router via Wi-Fi or an Ethernet cable.
2. Open a web browser (Chrome and Edge are recommended) and visit http://192.168.8.1. You will be directed to the login page of the web admin panel. If you fail to access the web admin panel, see here for troubleshooting.
3. Set up your admin password. A strong password is recommended for security. Then click **Next** to continue.
4. You will then enter the router's web admin panel.



Chapter 4

Set Up Internet Connection

This chapter introduces multiple Internet connection methods for the router to adapt to diverse network environments.

Marble supports two internet connection methods: Ethernet, and Repeater, Choose the appropriate method based on your usage needs.

1. **Ethernet**: Connect the router to a broadband network using an Ethernet cable plugged into the WAN port. The router typically obtains an IP address automatically via DHCP. Users can also manually configure a static IP or PPPoE settings. This method delivers high stability and fast speed, making it ideal for home and office environments with fixed broadband access.

2. **Repeater**: This mode enables the router to connect to an existing Wi-Fi network to extend the Wi-Fi signal and create a separate, secure local network. Note that transmission speeds may be reduced to some extent. It is ideal for Wi-Fi dead zones that require signal extension, or public locations where enhanced network security is needed.

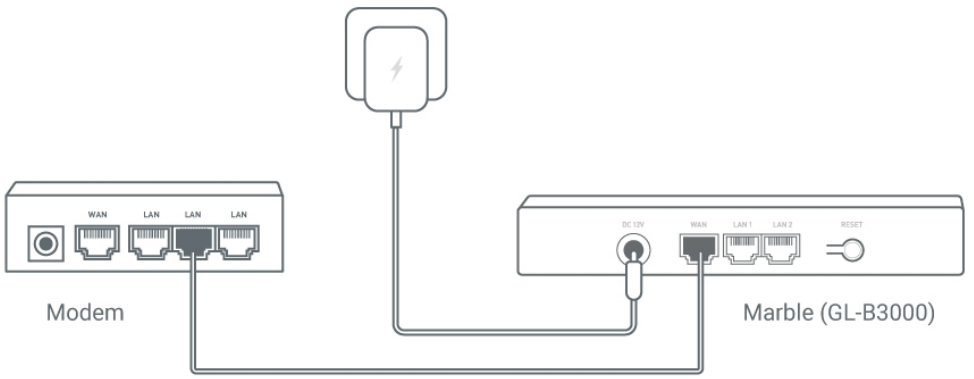
4.1 Connect to the Internet via Ethernet Cable

Connect the router to a broadband network using an Ethernet cable plugged into the WAN port. The router typically obtains an IP address automatically via DHCP. Users can also manually configure a static IP or PPPoE settings. This method delivers high stability and fast speed, making it ideal for home and office environments with fixed broadband access.

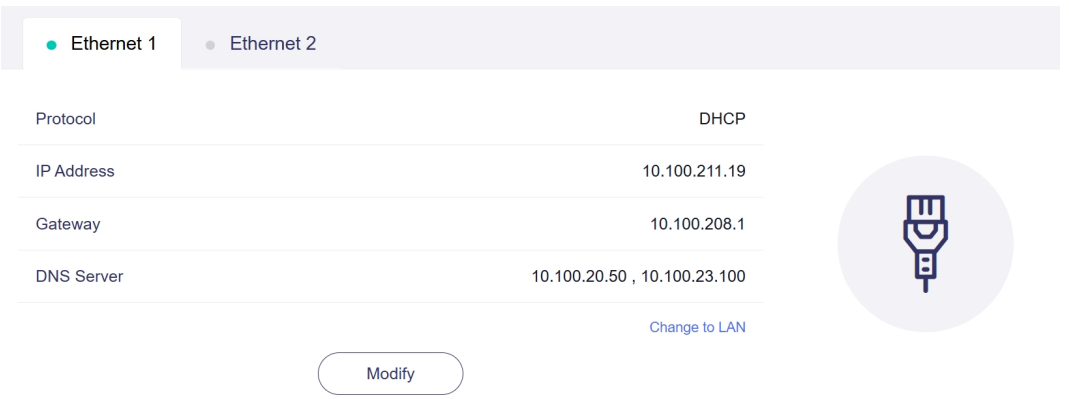
4.1.1 Basic Setup

Follow the steps below to connect your router to the Internet via an Ethernet cable.

1. Connect the **WAN** port of your router to the upstream device (e.g., an ISP modem, primary router, network switch or an Ethernet jack) via an Ethernet cable.

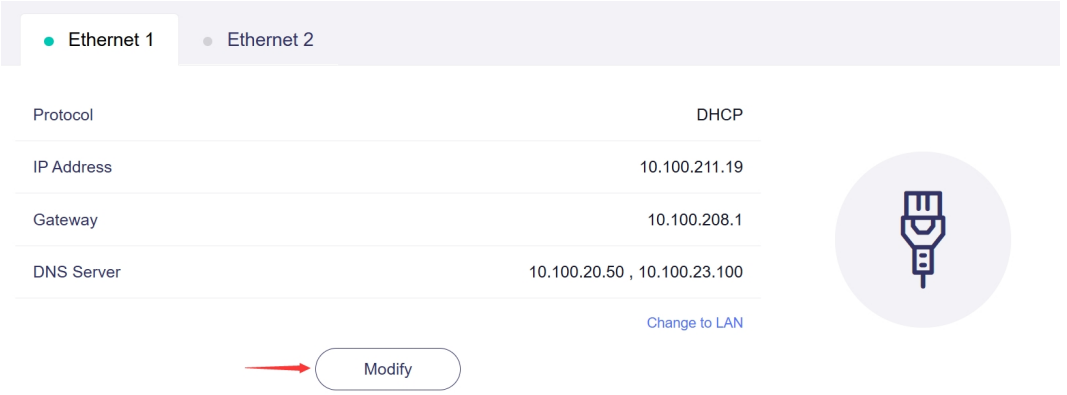


2. Log in to the router's web admin panel and navigate to **INTERNET** > **Ethernet**. If the connection is successful, the Ethernet section will display network details, including Protocol, IP Address, Gateway, and DNS Server.



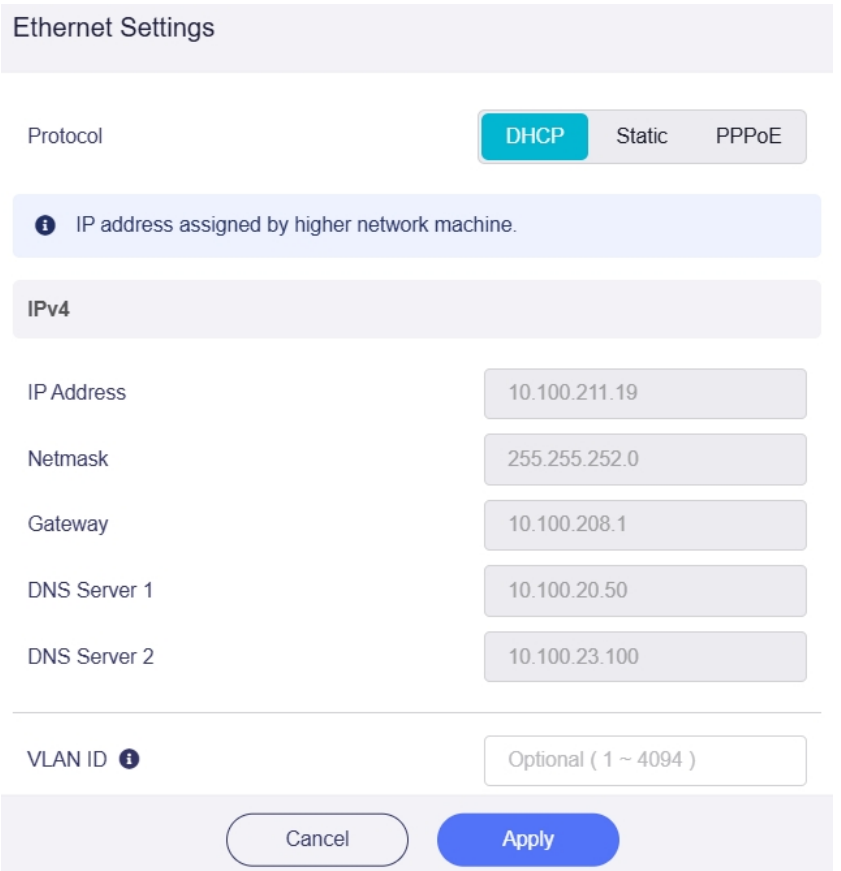
4.1.2 Protocol

There are three types of protocols: DHCP, Static and PPPoE. Click **Modify** to change.



- **DHCP**

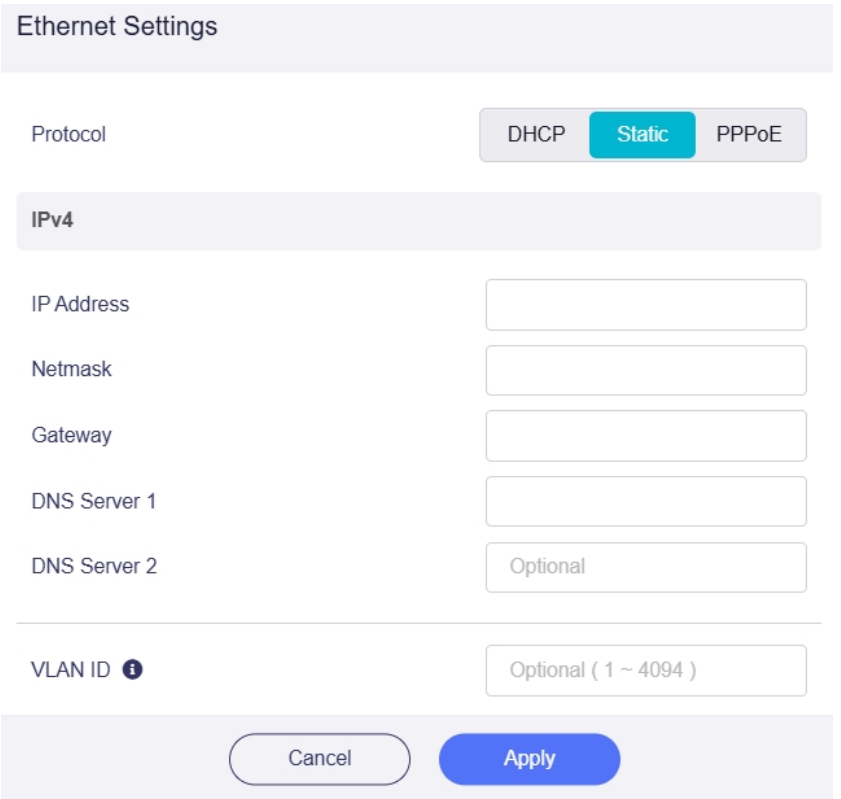
  DHCP is the default and most common network protocol, which automatically assigns IP addresses and other network configuration parameters to devices on an IP network via a client-server model.



  You can configure a **VLAN ID** if your service provider requires the interface to use a specific tagged VLAN ID.

- **Static**

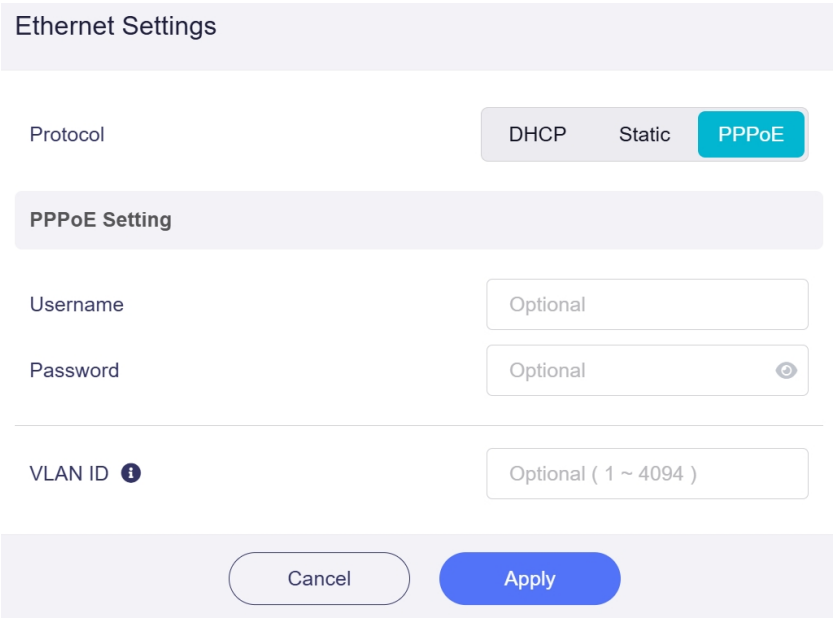
  A static IP address is required if your ISP (Internet Service Provider) assigns a fixed public IP address, or if you need to manually configure network parameters (e.g., IP address, gateway, subnet mask).



  You can configure a **VLAN ID** if your service provider requires the interface to use a specific tagged VLAN ID.

- **PPPoE**

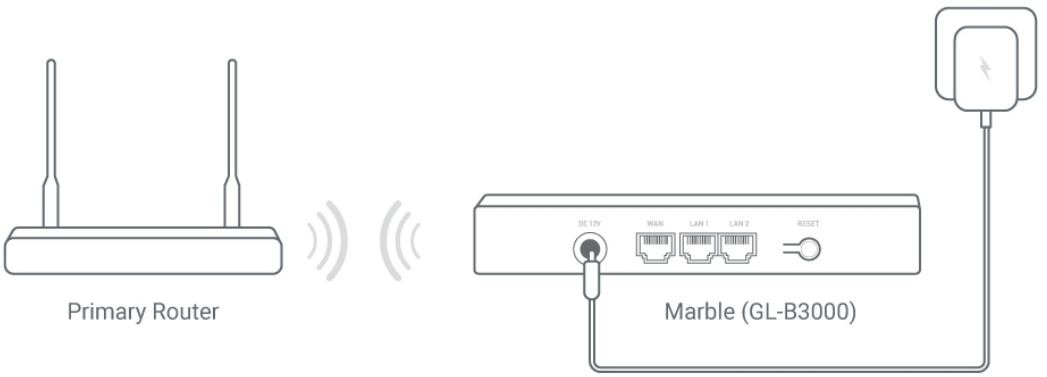
  PPPoE (Point-to-Point Protocol over Ethernet) is a network protocol widely used by ISPs. Typically, they will provide a modem along with a unique username and password, which are required to set up an internet connection.



You can configure a **VLAN ID** if your service provider requires the interface to use a specific tagged VLAN ID.

4.2 Connect to the Internet via an Existing Wi-Fi

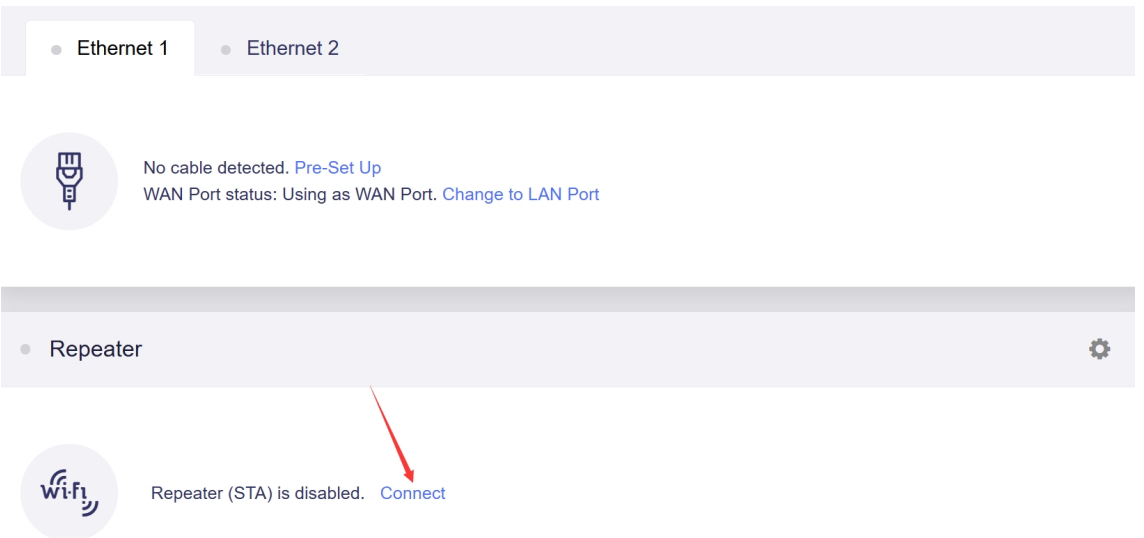
Connect the router as a repeater to the existing wireless network to boost Wi-Fi signals and create a local network isolated from the primary network. When in hotels or cafes with free public hotspots, using a repeater not only strengthens Wi-Fi signals, but also provides wired and wireless access for multiple devices, and safeguards your network security.



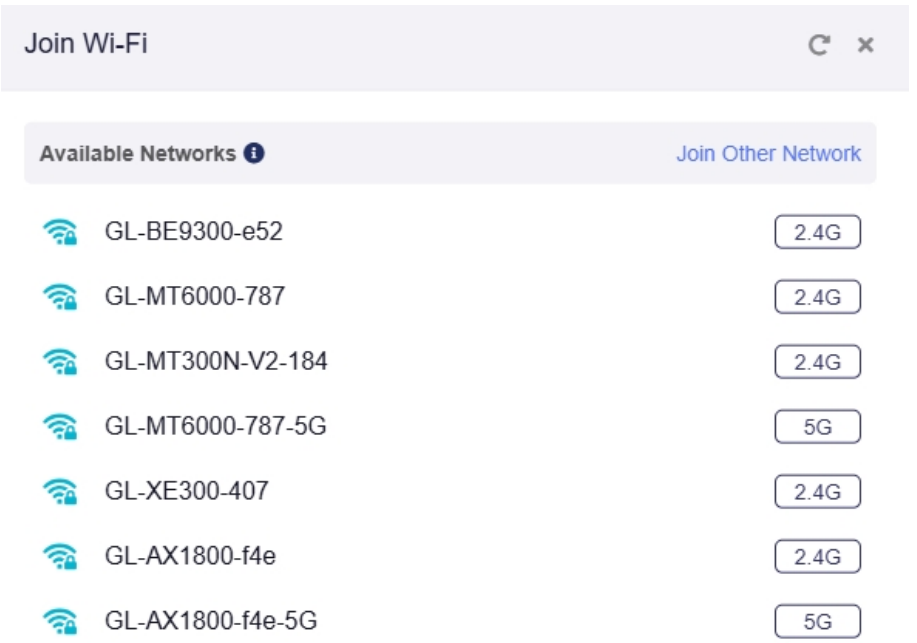
GL.iNet repeater feature works in WISP (Wireless Internet Service Provider) mode by default, which means that the router will create its own subnet and act as a firewall to protect you from the public network.

4.2.1 Basic Setup

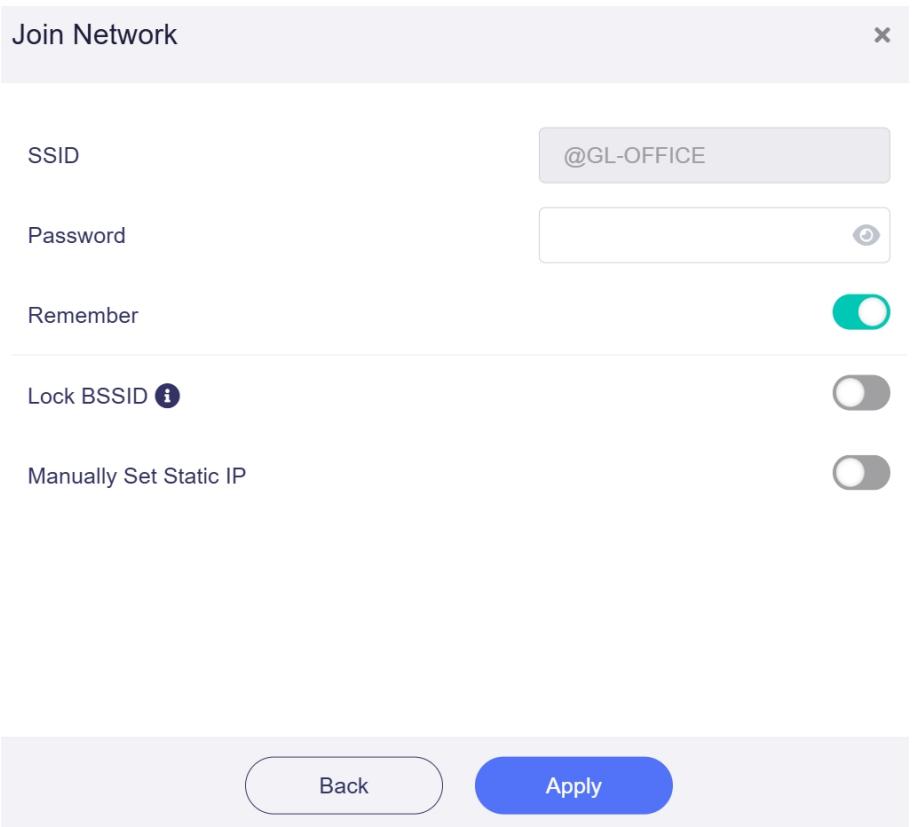
1. Log in to the router's web admin panel and navigate to **INTERNET** > **Repeater**. Click **Connect**.



2. In the pop-up window, choose the Wi-Fi network you want to connect from the available network list.



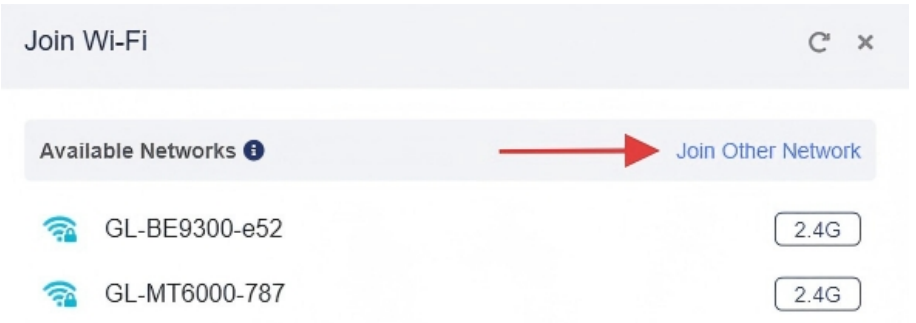
3. Enter the correct Wi-Fi password and click **Apply**.



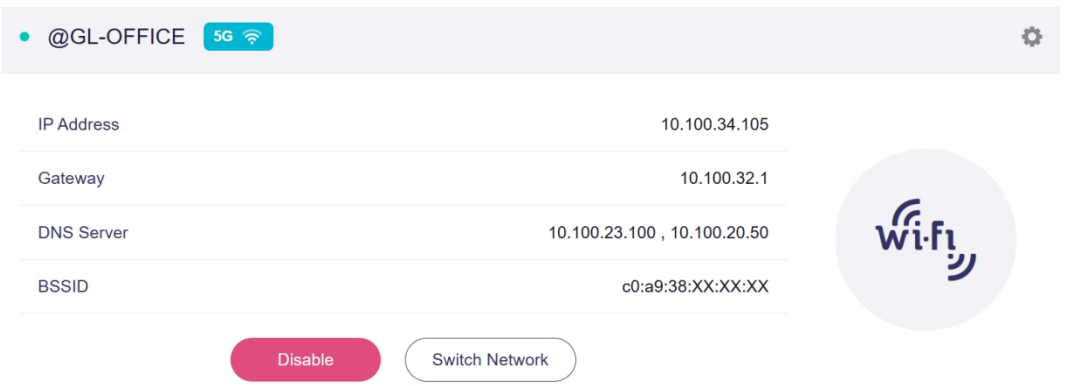
- **Remember**: Enable this to remember the current repeated Wi-Fi network.

- **Lock BSSID**: When enabled, the router will connect only to the specific access point (AP) corresponding to the selected BSSID, even when other APs share the same SSID.
- **Manually Set Static IP**: If enabled, you may manually configure IP address, subnet mask, gateway and DNS servers, instead of obtaining IP settings automatically via DHCP.

4. If the target Wi-Fi SSID is not in the Available Network list, click **Join Other Network** in the top right corner, manually input the Wi-Fi SSID and other info required, and click **Apply**.

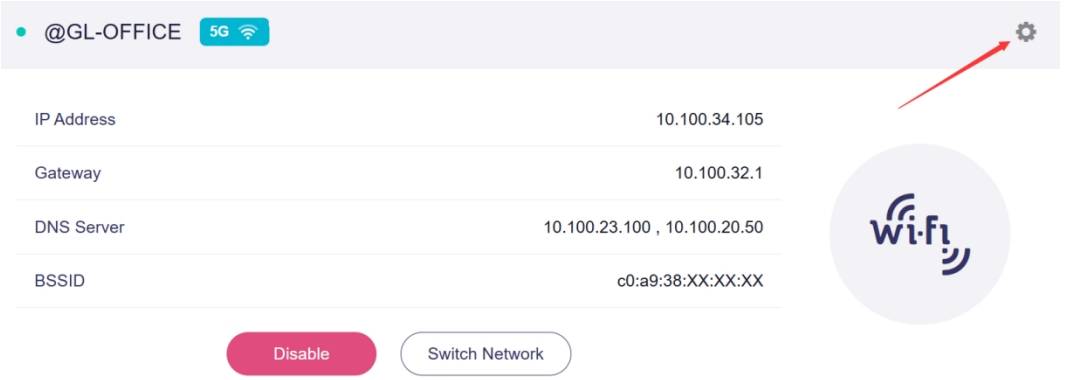


5. Wait a minute for the router to connect. Once connected, the page displays as below.

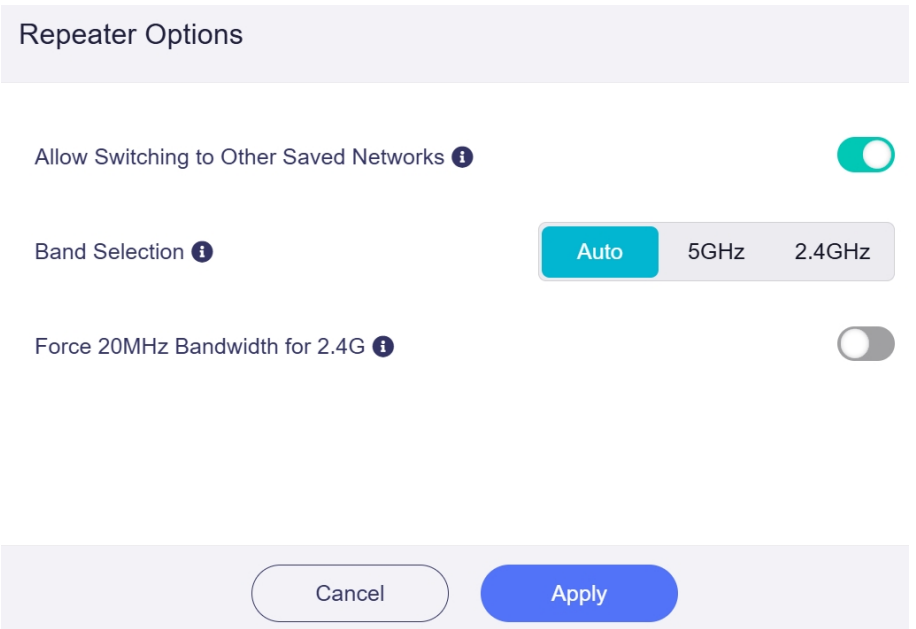


4.2.2 Repeater Options

Click the gear icon in the upper-right corner to configure Repeater options.



The page may vary due to different firmware versions.



- **Allow Switching to Other Saved Networks**: If the option is enabled, the router will automatically connect to other saved networks when it is unable to connect to the current Wi-Fi network.
- **Band Selection**: If you manually select a band, the router will not scan or connect to any Wi-Fi that is using another band.
- **Force 20MHz Bandwidth for 2.4G**: If this option is enabled, the device will improve the stability of the connection by reducing the connection rate.
  Note: It only works when repeating 2.4G Wi-Fi.

Chapter 5

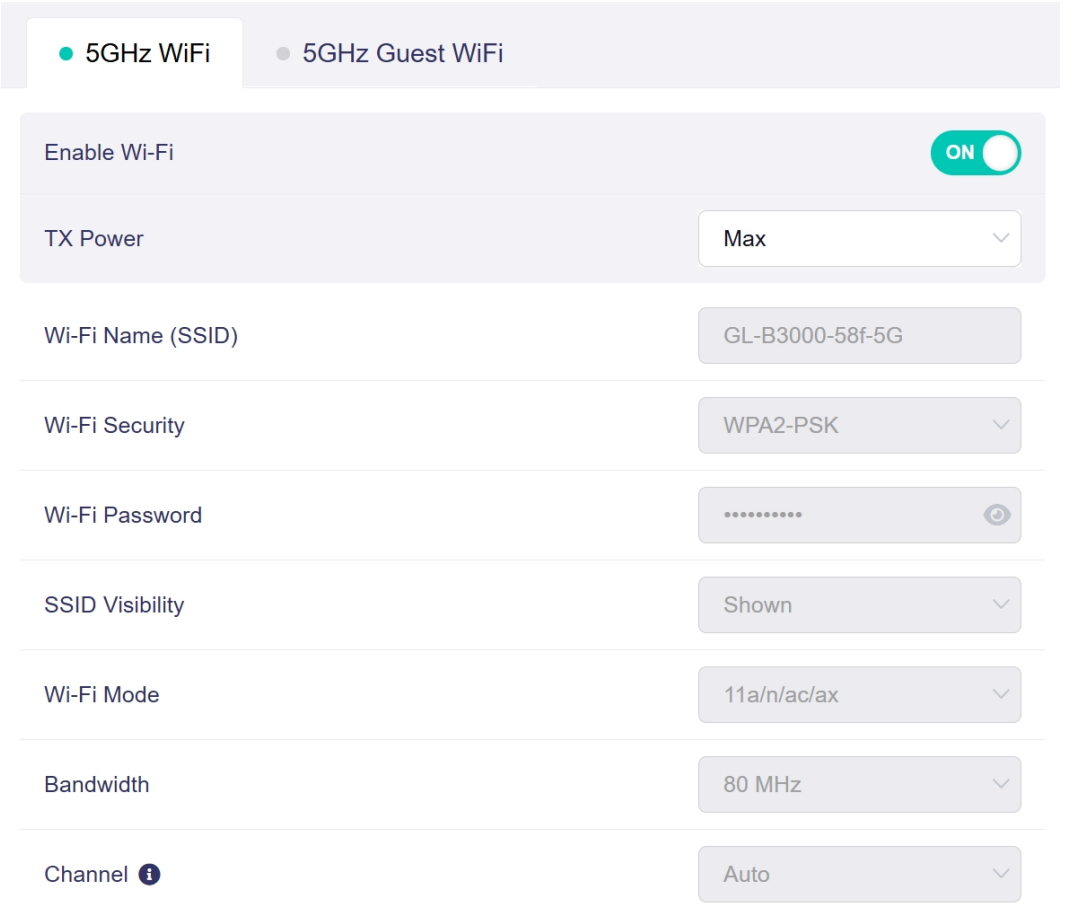
Wireless

This chapter guides you to check Wi-Fi status and configure wireless settings.

Log in to the router's web admin panel and navigate to **WIRELESS**.
The wireless page displays the router's 5GHz and 2.4 GHz Wi-Fi settings, with each further divided into main Wi-Fi and guest Wi-Fi networks for flexible management.

5.1 5 GHz Wi-Fi

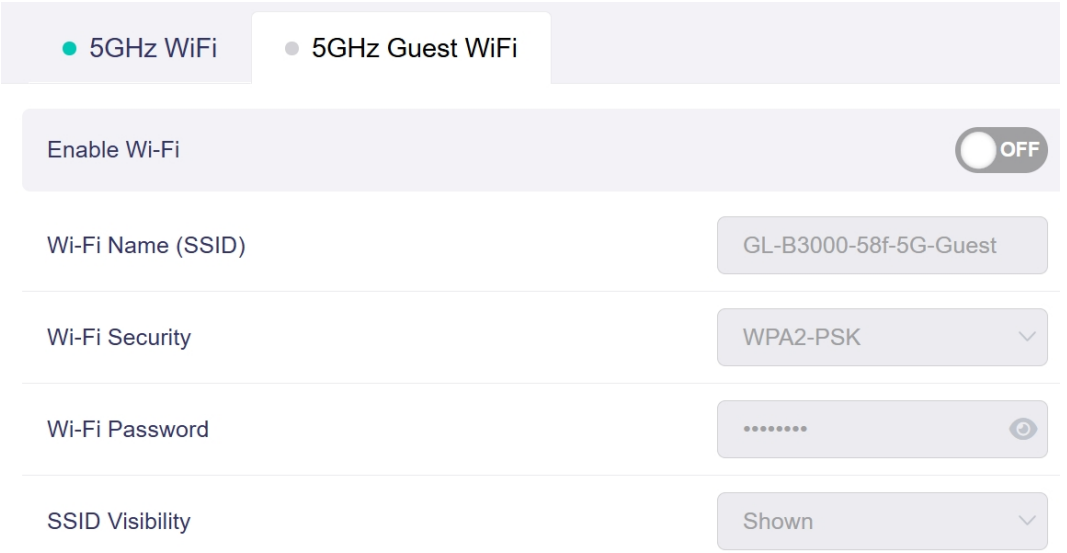
The 5 GHz Main Wi-Fi allows you to configure multiple settings, including enabling/disabling Wi-Fi, setting TX power, setting Wi-Fi name (SSID), security, password, SSID visibility, mode, bandwidth, and channel.



Note:

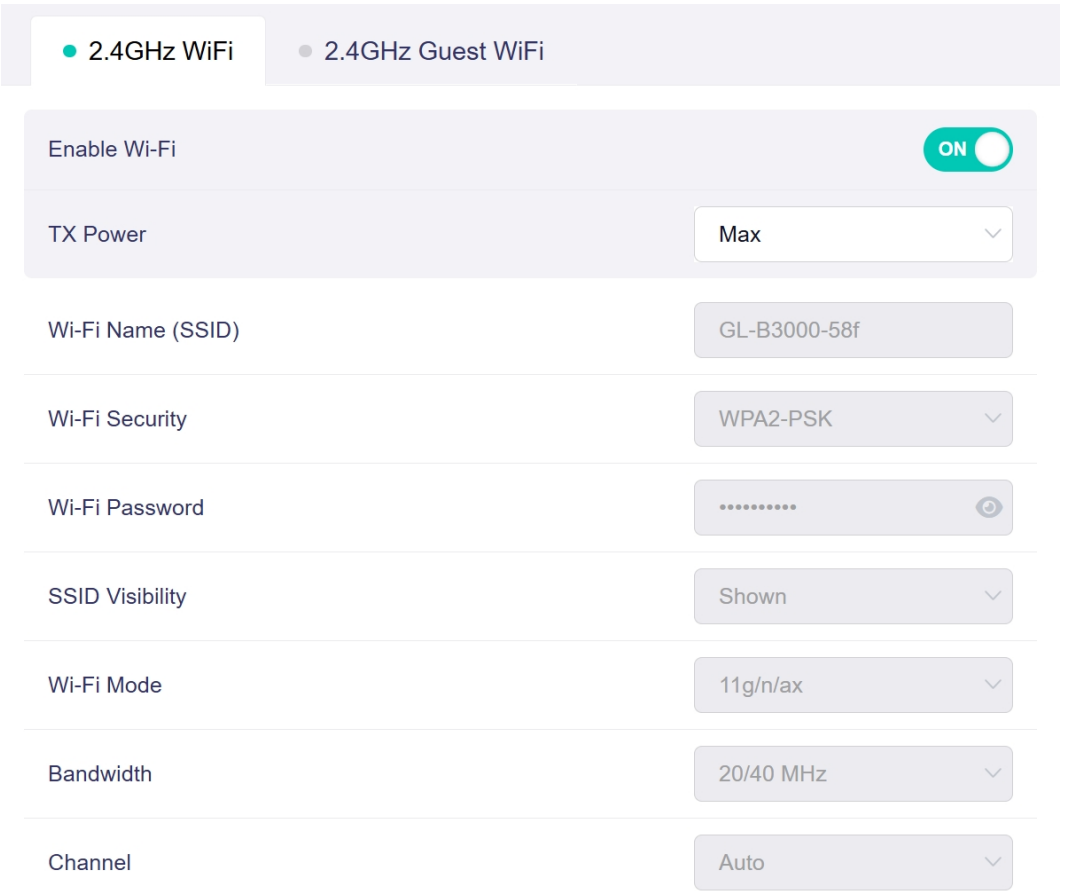
1. The **Bandwidth** and **Channel** cannot be modified when the router is configured as a repeater, as they follow that of the repeated network.
2. When **Channel** is set to **Auto**, the router's Wi-Fi will not automatically switch to the DFS channel.
3. When the **Bandwidth** is set to **160 MHz** (Only available on some models), the Wi-Fi will always use the DFS channel, even if you select a non-DFS channel or set it to Auto.

The 5 GHz Guest Wi-Fi allows you to configure simplified settings, including enabling/disabling Wi-Fi, setting Wi-Fi name (SSID), security, password, and SSID visibility.



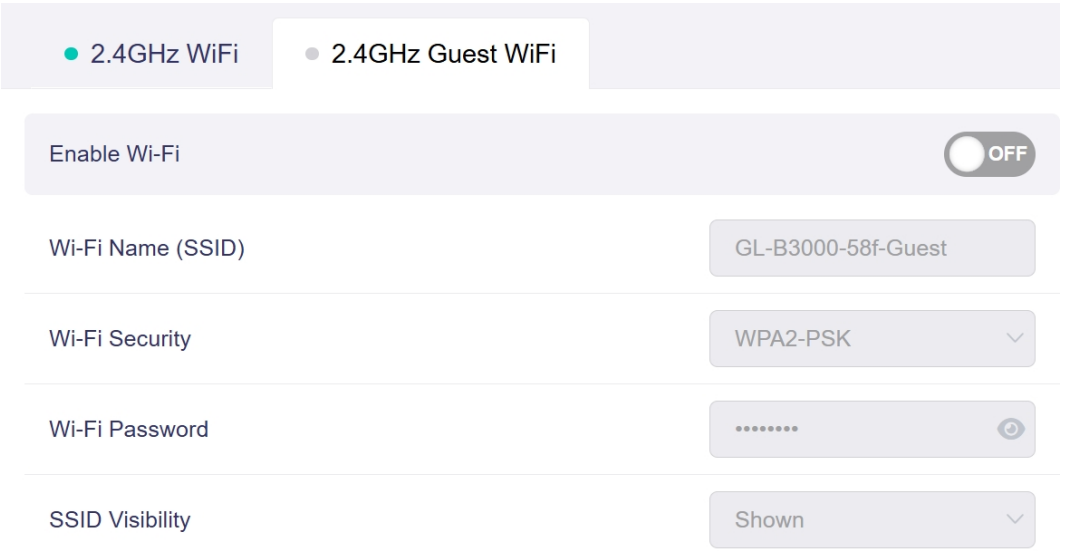
5.2 2.4 GHz Wi-Fi

The 2.4 GHz Main Wi-Fi allows you to configure multiple settings, including enabling/disabling Wi-Fi, setting TX power, setting Wi-Fi name (SSID), security, password, SSID visibility, mode, bandwidth, and channel.



Note: The **Bandwidth** and **Channel** cannot be modified when the router is configured as a repeater, as they follow that of the repeated network.

The 2.4 GHz Guest Wi-Fi allows you to configure simplified settings, including enabling/disabling Wi-Fi, setting Wi-Fi name (SSID), security, password, and SSID visibility.


2.4GHz WiFi
2.4GHz Guest WiFi
Enable Wi-Fi
OFF
Wi-Fi Name (SSID)
GL-B3000-58f-Guest
Wi-Fi Security
WPA2-PSK
Wi-Fi Password
SSID Visibility
Shown

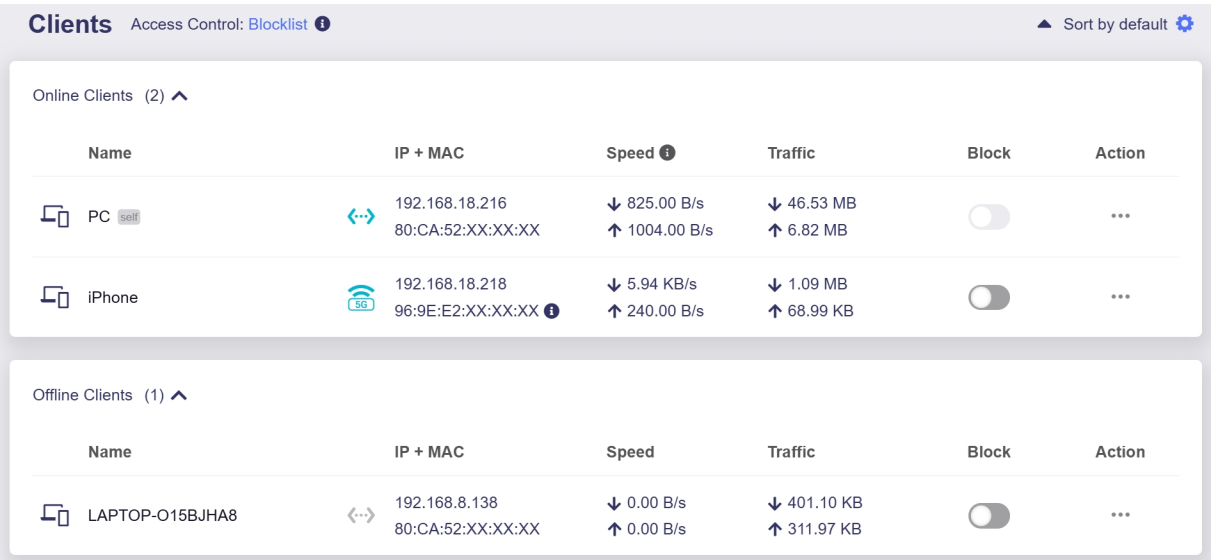
Chapter 6

Clients

This chapter guides you to view details of connected devices and manage their connections.

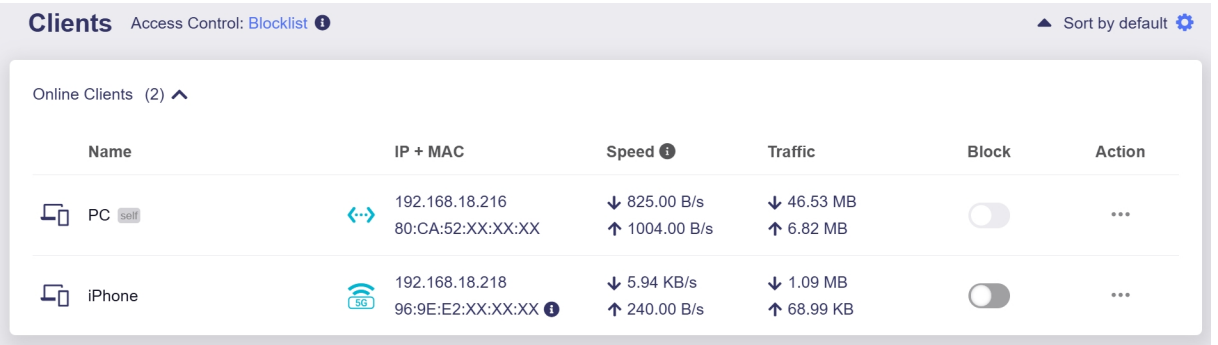
Log in to the router’s web admin panel and navigate to **CLIENTS**.

The Clients page displays information about connected devices, including device name, connection type, IP and MAC address, speed, and traffic, arranged left to right. It also provides quick access to reserve IP, block client or perform other actions.



- **Online Clients**: It refers to devices currently connected to the router's network.
- **Offline Clients**: It refers to devices that have previously connected to the router but are now disconnected from the network.

6.1 Device Details



1. **Device Name**

   The first column displays the device name and type, which depends on the hostname of the device operator. The blue icon next to the device name represents the connection method, indicating that the device is connected to the router via an Ethernet cable.

2. **IP and MAC Address**

   The second column lists the IP and MAC addresses of the connected device. If the connected devices use randomized MAC addresses, a prompt will appear, indicating that this is a randomized MAC address.



   If the second character of the MAC address is 2, 6, A or E (Ignore case), it is considered as a randomized MAC address. However, some devices may use a different rule to generate a randomized MAC address, so this detection method may not be accurate.

3. **Speed**

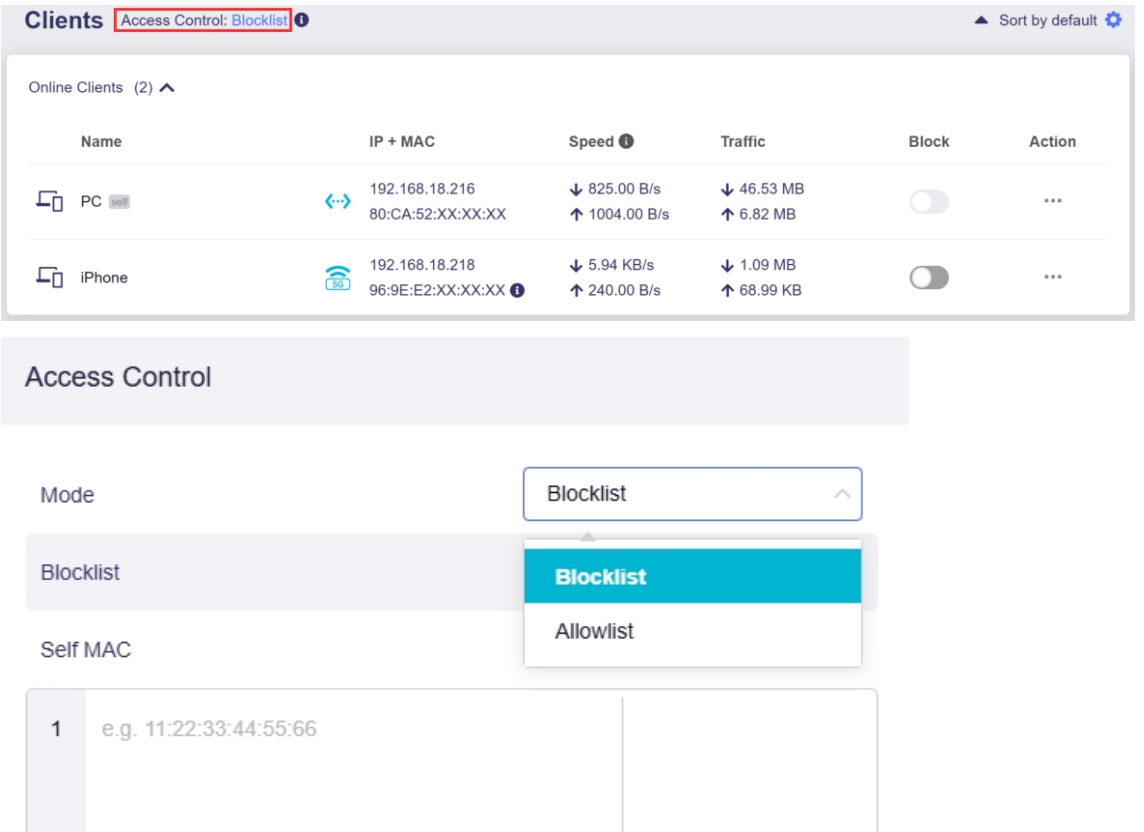
   The third column displays the internet speed of the connected device. This speed represents the average speed over the past 3 minutes. The system starts calculating the average speed when this page is opened (e.g., if the page has only been open for 10 seconds, the average speed will be based on just 10 seconds of data).

4. **Traffic**: The fourth column displays the internet traffic of the connected device.

5. **Blocklist**

   In the fifth column, you can block specific connected devices with one click.

   The Access Control rule is Blocklist by default, and you can switch it to Allowlist from the top if needed.

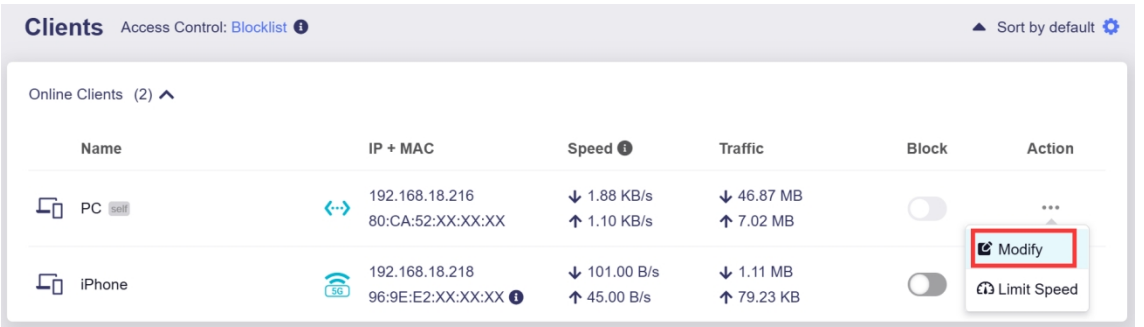


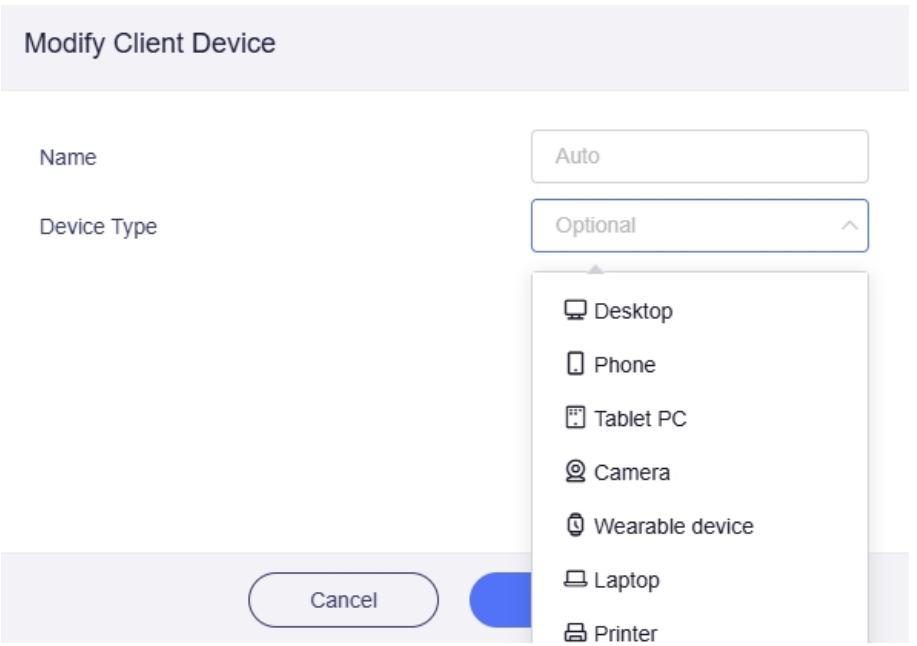
- **Blacklist**: Devices with MAC addresses in the blacklist are not allowed to connect to this router. Please note that blocking client is based on the MAC address of the device. If the blocked device uses different MAC address next time, it can still be able to connect to router.
- **Allowlist**: Only devices with specific MAC addresses are allowed to connect to this router, suitable for IoT devices and enterprise network management.

6.2 Action

1. **Modify**

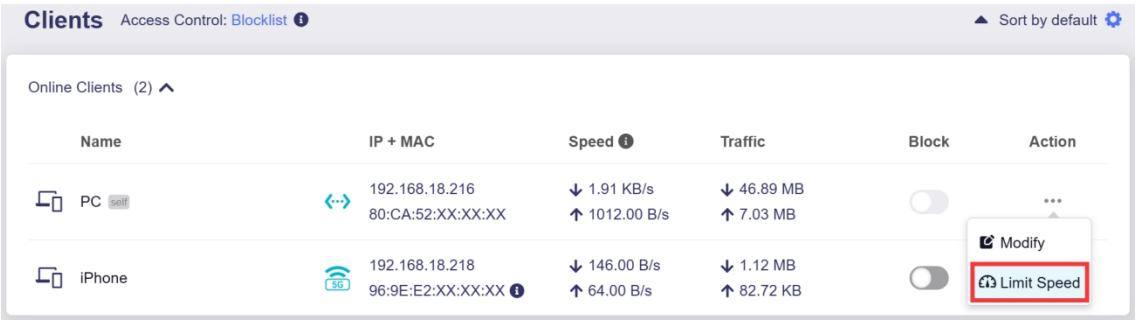
   Click the three-dot icon in the **Action** column, and click **Modify** from the drop-down menu to modify the device name and type.



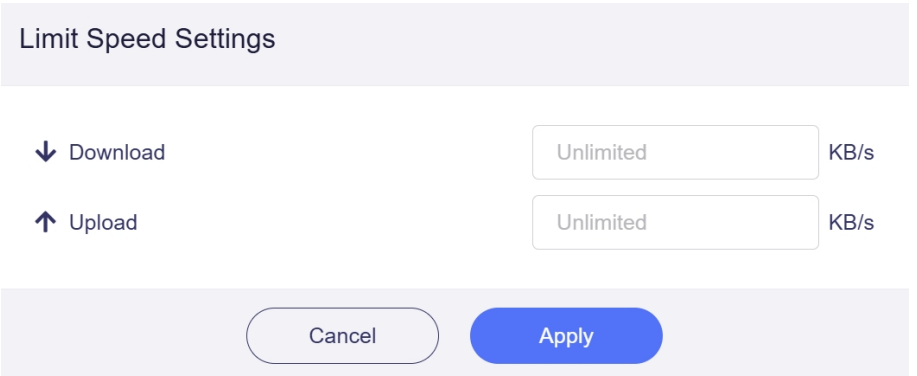


2. **Limit Speed**

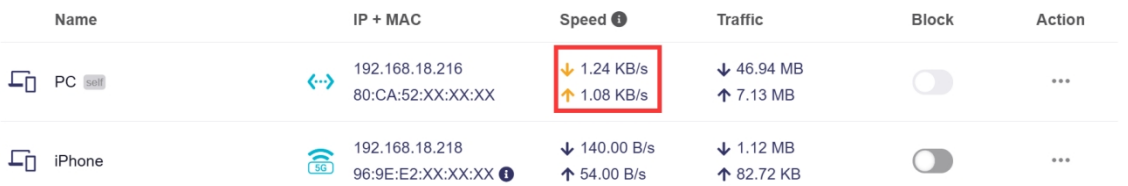
Click the three-dot icon in the **Action** column, and click **Limit Speed** from the drop-down menu.



You will be able to limit the speed of a connected device, with the unit set to KB/s.

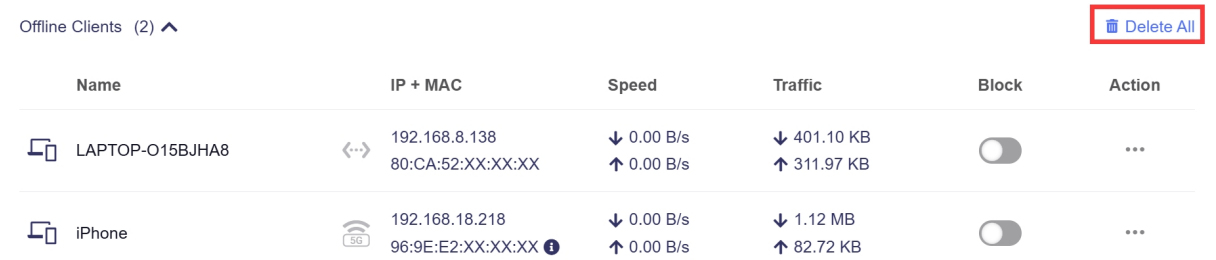


If speed limitation has been applied to a device, the upload/download speed arrows will turn yellow.

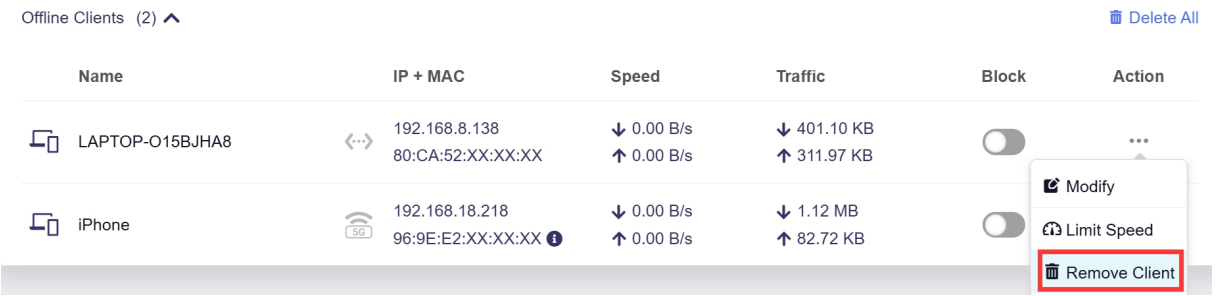


6.3 Remove Clients

In the **Offline Clients** section, you can click **Delete All** in the top right corner to delete all offline clients.

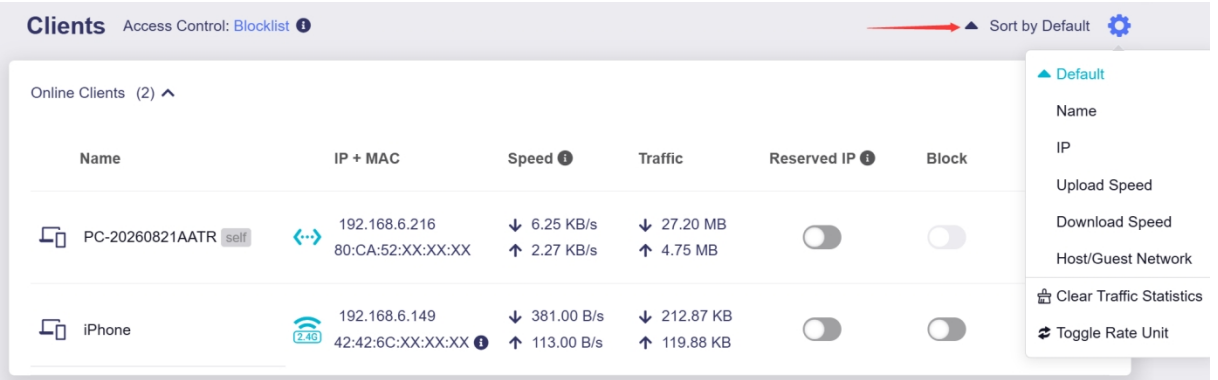


If you want to remove a specific client, click the three-dot icon in the **Action** column, then click **Remove Client** from the drop-down menu.



6.4 Sort

You can set the device sorting rule for the Client page in the top right corner.



The default sorting order is as follows:

- The self-device (i.e., the device you are using to access the router's Admin Panel) always appears at the top.
- In the **Online Clients** section, devices are listed higher if they connected earlier.
- In the **Offline Clients** section, devices are listed higher if they disconnected earlier.

In addition to sorting rules, the dropdown menu also provides the following functions:

- **Clear Traffic Statistics**: Clear traffic statistics for all online clients with one click. Once applied, the traffic statistics column will be reset to zero and then restart the statistics.



- **Toggle Rate Unit**: Switch the rate unit for the speed column between **KB/s** and **Kbps**.

Chapter 7

Get To Know VPN

This chapter introduces VPN concepts and common use scenarios.

7.1 Introduction

VPN

VPN, short for Virtual Private Network, establishes an encrypted and private tunnel between a device and a remote server, protecting data transmission and enabling secure access to private or restricted networks.

VPN Router

A VPN router features preinstalled VPN functionality, protecting all connected devices via VPN. Unlike setting up VPN on individual devices, configuring the router as a VPN client routes all traffic through an encrypted tunnel, with no separate setup needed per device. This secures multiple devices at once, saves time, and ensures consistent VPN configurations, reducing risks from improper individual settings.

GL.iNet routers support over 30 popular commercial OpenVPN and WireGuard VPN services. Upload your VPN configuration files to activate the VPN connection for secure networking. See here for the full list of third-party VPN providers.

OpenVPN

OpenVPN is an open-source VPN protocol using SSL/TLS-based security for point-to-site or site-to-site connections. It supports multiple encryption methods, TCP/UDP, and easy firewall/NAT bypass.

WireGuard

WireGuard is a lightweight, fast VPN protocol simpler and more efficient than OpenVPN. It features modern cryptography for efficiency, a small codebase for easier auditing and security, and state-of-the-art algorithms (ChaCha20/Poly1305) for encryption and data integrity.

7.2 Application Scenarios

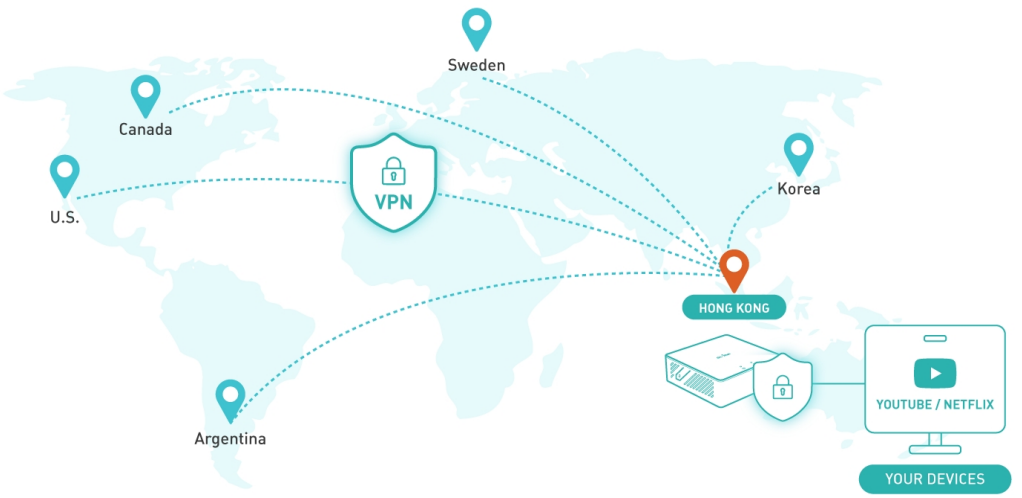
1. **Personal Data Privacy**

   The VPN service is compatible with a wide range of devices via our router, including not just laptops, phones and tablets, but also gaming consoles, TVs, and streaming devices. Your data will be protected whether over wireless or wired connections. You can even customize VPN policies to achieve flexible protection for certain devices.



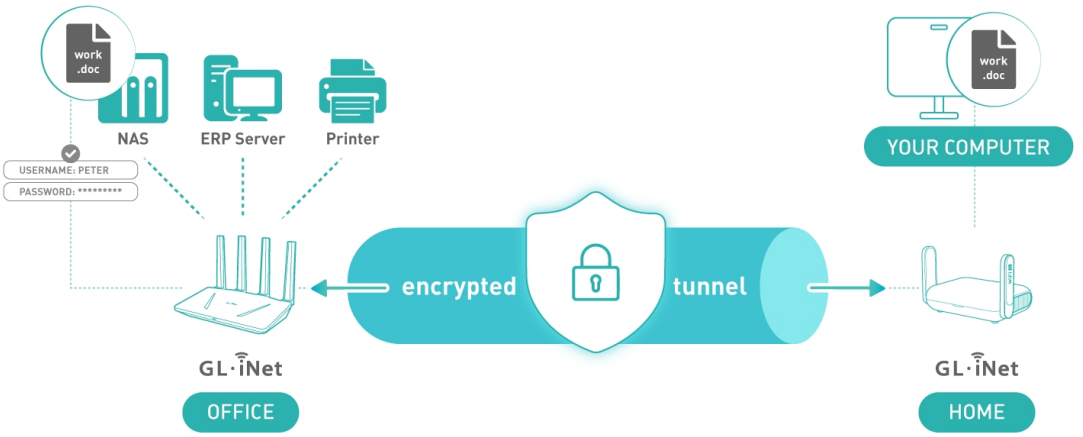
2. **Unrestricted Access Worldwide**

   Accessing some sites may be restricted by location. With VPN enabled, you can unblock any sites when necessary. By connecting to different third-party servers, you will be assigned different IP addresses for surfing or accessing region-blocked sites.



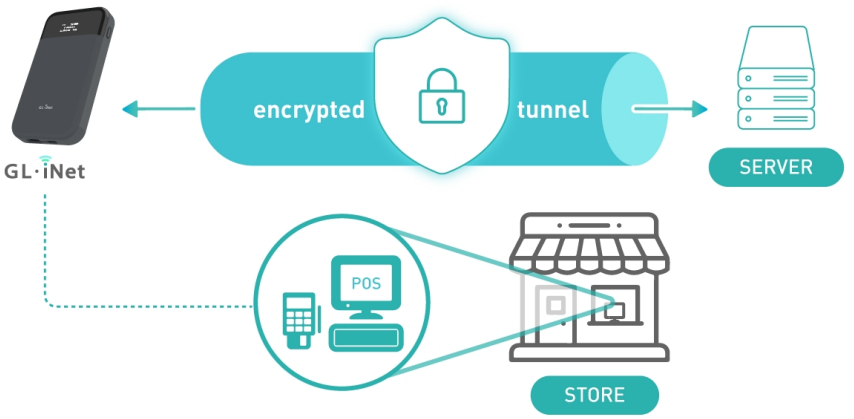
3. Small Business Data Security

Many people work in co-working spaces or cafes and rely on free public Wi- Fi. Such networks are vulnerable to cybercriminal attacks. By configuring your travel router as a VPN client, you can enjoy secure connectivity for work anywhere.



4. Secure Payment Infrastructure

Small retail owners need to handle customers' payment credentials when conducting on-site business. Using a VPN router, their POS machines can upload credit card information via an encrypted VPN tunnel to ensure payment security.



Chapter 8

VPN Dashboard

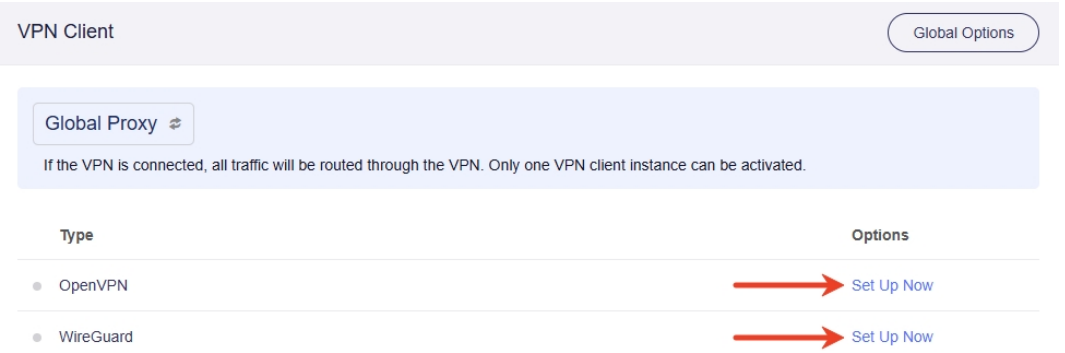
This chapter introduces how to manage VPN connections via the web admin panel.

Log in to the router's web admin panel and navigate to **VPN** > **VPN Dashboard**.

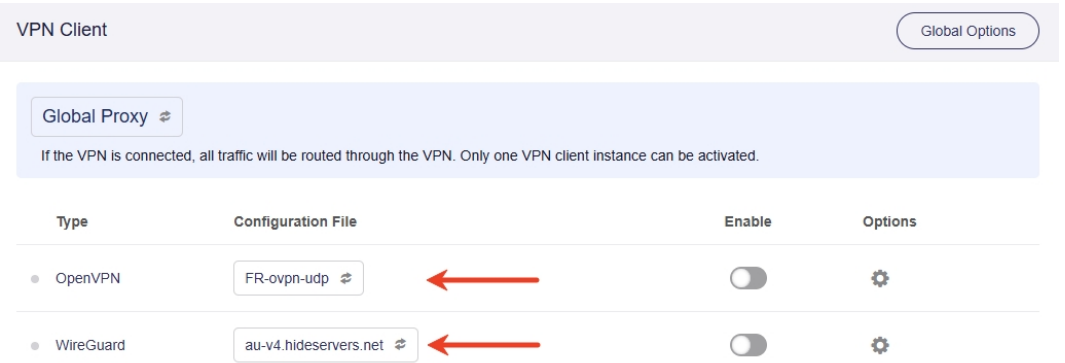
When the router is set as an active VPN client, the VPN dashboard displays VPN connection details, such as server address, traffic statistics, client virtual IP, and connection log. It also allows you to configure advanced settings such as the Block non-VPN traffic, Allow Access WAN, and Services from GL.iNet Use VPN.

8.1 VPN Client

When you enter the **VPN Dashboard** for the first time and no OpenVPN or WireGuard configuration files are available, the page displays as follows. Click **Set Up Now** and you will be directed to the **OpenVPN Client** or **WireGuard Client** page to upload your VPN configuration files.

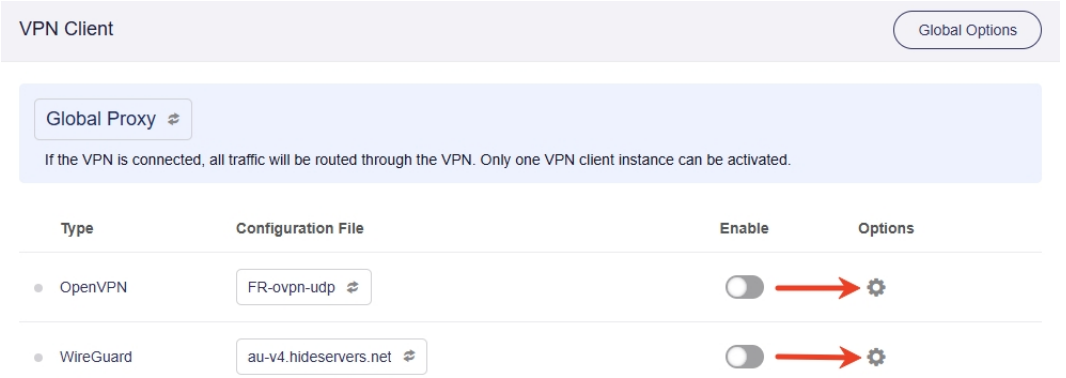


Once uploaded, your configuration will be shown in the **Configuration File** column. If you have multiple configuration files uploaded, you can switch files by clicking on the box.

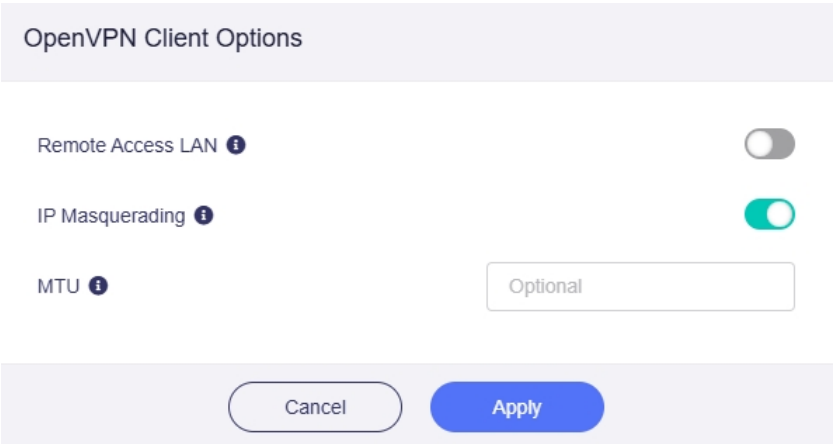


8.1.1 Client Options

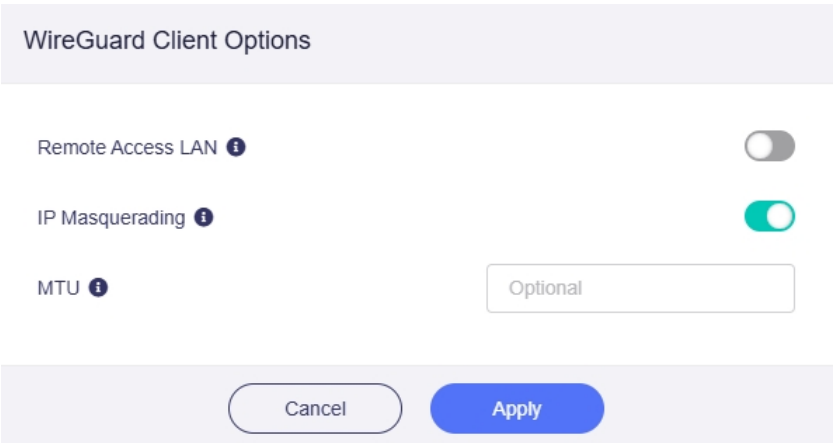
Click the gear icon on the right to access OpenVPN or WireGuard client options.



The OpenVPN Client Options displays as follows.

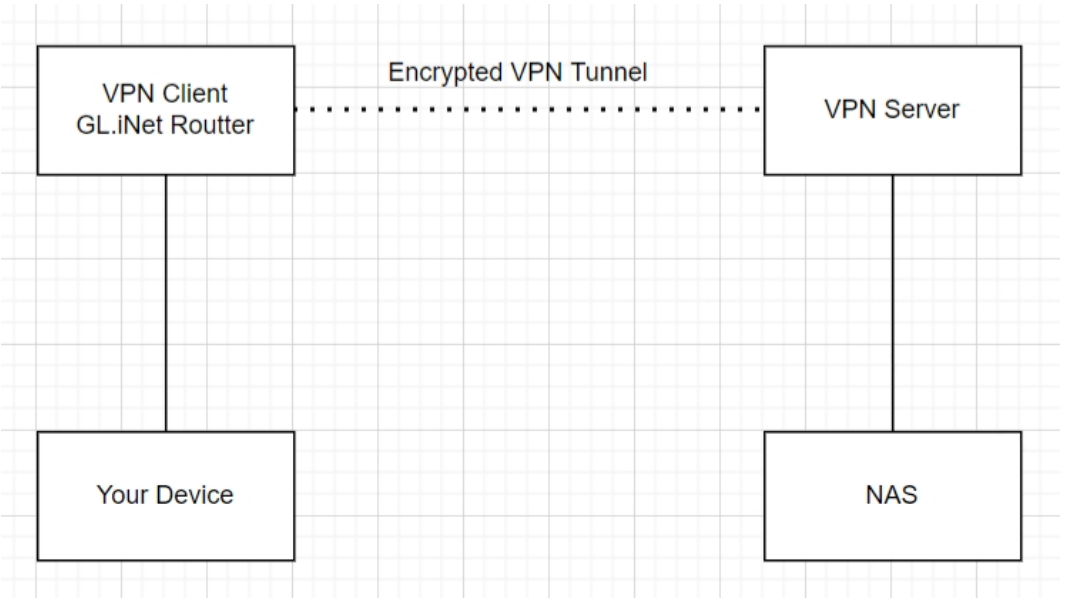


The WireGuard Client Options displays as follows.



- **Remote Access LAN**: If enabled, remote access to this router and its LAN devices via VPN will be allowed. The VPN server must advertise a route to the LAN subnet of this router.

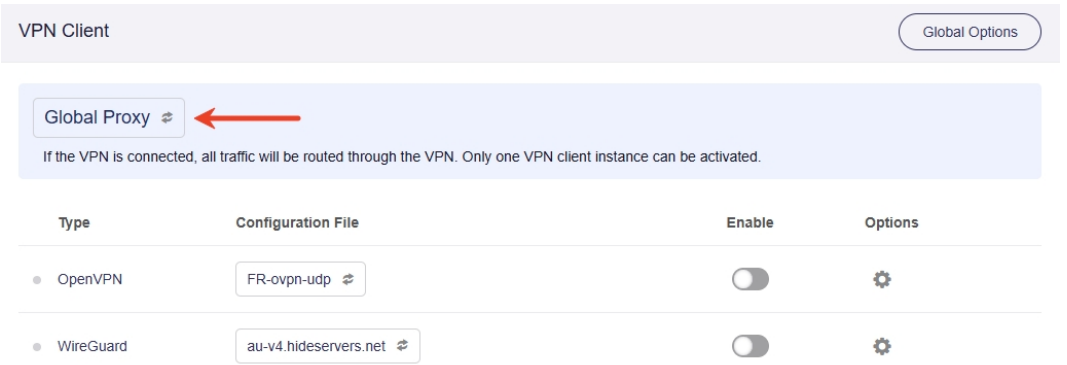
For example, as shown in the diagram below, the GL.iNet router runs as a VPN client and connects to a VPN server over the VPN tunnel. When this option is enabled, both the GL.iNet router and its LAN-side devices can be accessed by devices on the VPN server side (e.g. NAS). This requires you to add a routing rule on the VPN server to reach the LAN subnet of the GL.iNet router.



- **IP Masquerading**: If enabled, the source IP addresses of LAN clients will be rewritten to the router's VPN tunnel IP. Disable this only for Site-to-Site setups where the remote peer knows your LAN subnets.
- **MTU**: Short for Maximum Transmission Unit. This optional setting lets you customize the VPN tunnel MTU, which overrides the value defined in the configuration file.

8.1.2 Policy Mode

The default proxy mode for VPN connection is **Global Proxy**. You can click the box in the upper right to switch to other proxy modes.



Three proxy modes are available: Global Proxy, Policy Mode and Route Mode.

1. **Global Proxy**

   In this mode, all traffic will be routed through the VPN. Only one VPN client instance can be activated.

2. **Policy Mode**

   This mode can be further divided into three policies.

   - **Based on the Target Domain or IP**

     In this mode, only the traffic of certain websites identified by IP address or domain name will be routed through VPN. Only one VPN client instance can be activated.

   - **Based on the Client Device**

     In this mode, only the traffic of certain LAN devices identified by MAC addresses will be routed through VPN. Only one VPN client instance can be activated.

   - **Based on the VLAN**

     In this mode, only the traffic of certain VLAN will be routed through VPN. Only one VPN client instance can be activated.

3. **Route Mode**

   - **Auto Detect**

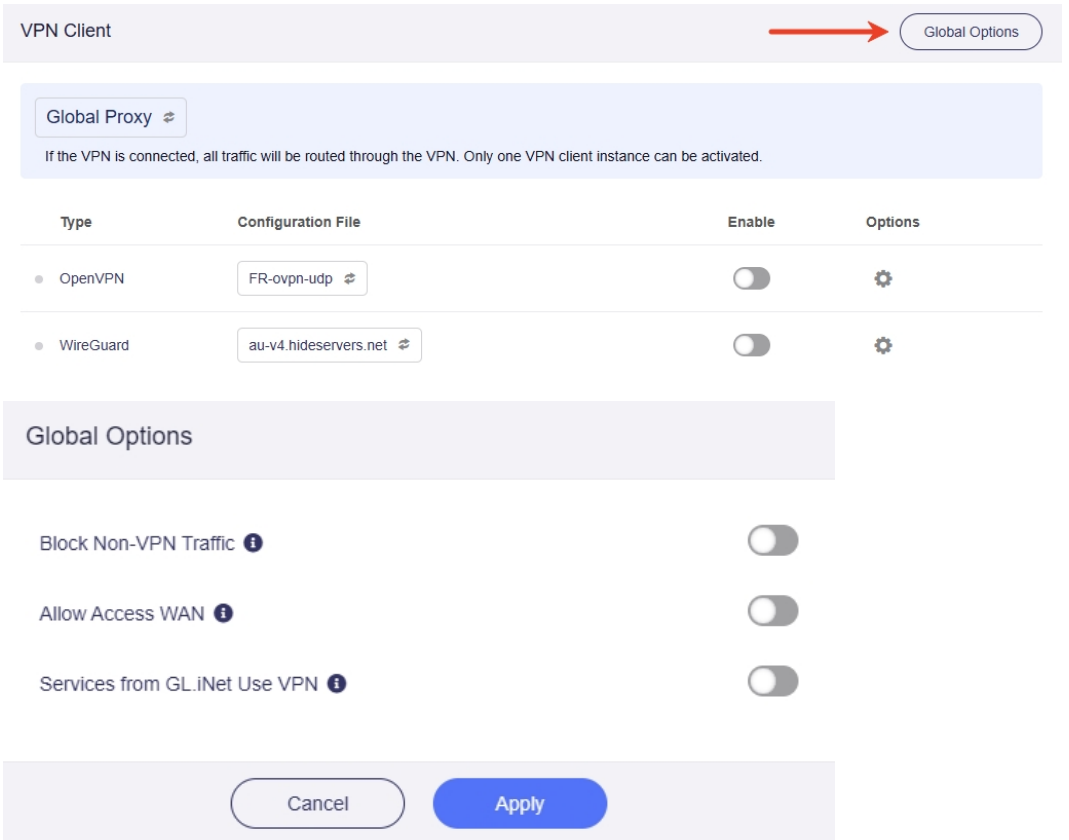
     The routing rules defined in each VPN client configuration file or issued by the VPN server will be used.

   - **Customize Routing Rules**

     You can manually configure routing rules for each VPN client instance.

8.1.3 Global Options

Click **Global Options** in the upper right corner to configure advanced settings for your VPN client.



- **Block Non-VPN Traffic**: If enabled, all internet traffic is forced to pass exclusively through the VPN tunnel and cannot be routed via other interfaces such as the local ISP WAN. If the VPN connection drops unexpectedly, all internet traffic is fully blocked to prevent fallback to the regular WAN. This avoids VPN leaks caused by VPN failures, incorrect client DNS settings, and similar issues.

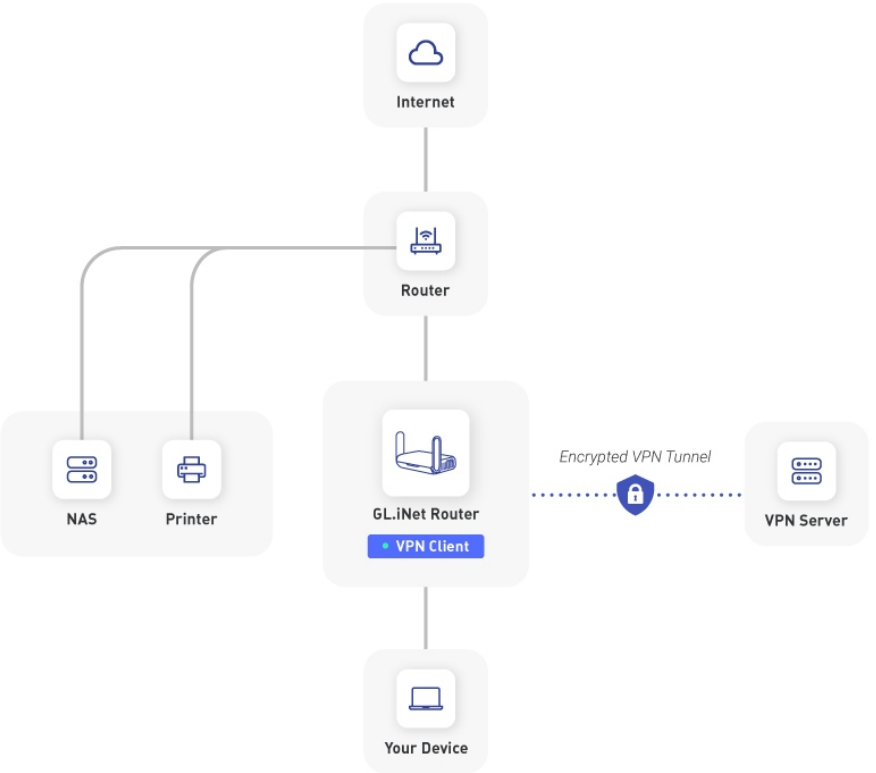
  This feature is also known as VPN Kill Switch. It prevents user data from being exposed online. A typical Kill Switch automatically cuts off internet access when the VPN connection fails. The Block Non-VPN Traffic feature on GL.iNet routers provides broader leak protection and covers the following scenarios:

  a. DNS Leak
  b. IPv6 Leak
  c. WebRTC Leak
  d. VPN Connection Drop

e. Applications Launched Before VPN Establishment

f. Per-Application Traffic Leaks

- **Allow Access WAN**: If enabled, local client devices can still access WAN-side services (e.g., printers, NAS and other devices in the upstream subnet) while the VPN is active.



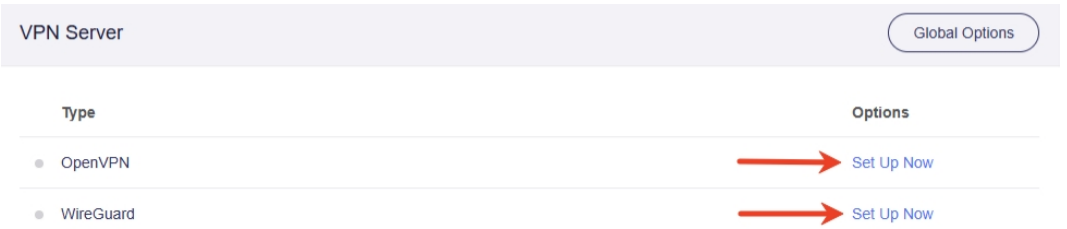
As shown in the diagram above, enabling this feature allows your local devices to reach hosts on the upstream subnet, such as printers and NAS.

This option is primarily designed to let clients access devices within the upstream subnet. However, the router cannot distinguish upstream subnet traffic from regular Internet traffic. If client devices access resources directly via public IPs, there is a potential traffic leakage risk. For this reason, **Allow Access WAN** and **Block Non-VPN Traffic** are mutually exclusive and cannot be enabled simultaneously.

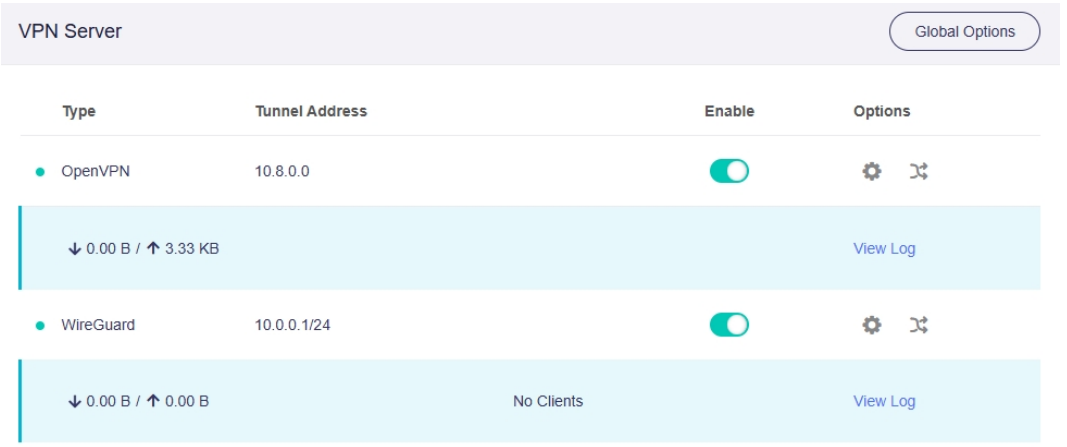
- **Services From GL.iNet Use VPN**: If enabled, GoodCloud, DDNS, and rtty services will transmit packets through VPN tunnels. This option is disabled by default, as these services normally require the device's real IP address to work properly.

8.2 VPN Server

If the router has never been configured as an OpenVPN or WireGuard server, the page will appear as shown below. Click **Set Up Now** and you will be directed to the **OpenVPN Server** or **WireGuard Server** page to initialize your VPN server.

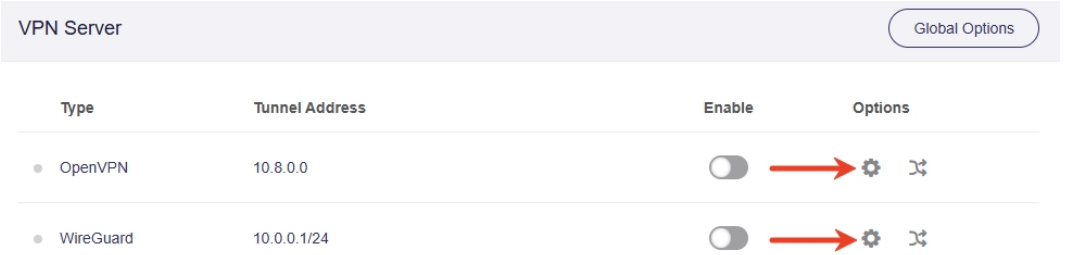


After the OpenVPN Server or WireGuard Server is enabled, the page will display the server status as follows.

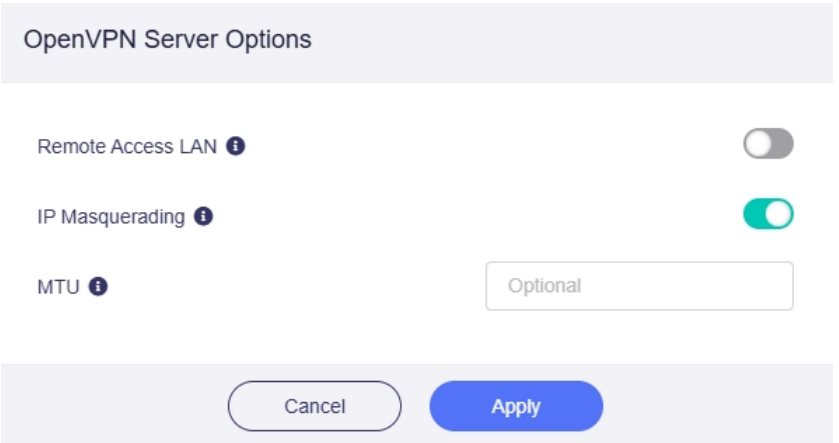


8.2.1 Server Options

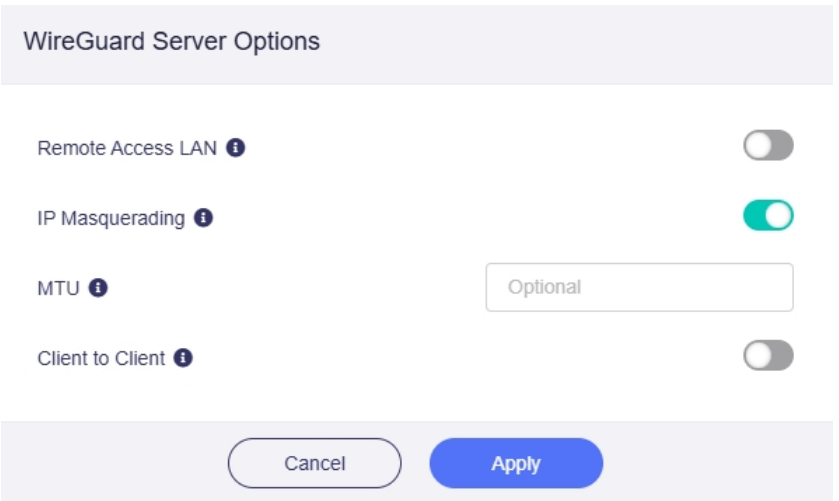
Click the gear icon on the right to access OpenVPN or WireGuard server options.



The OpenVPN Server Options displays as follows.



The WireGuard Server Options displays as follows.

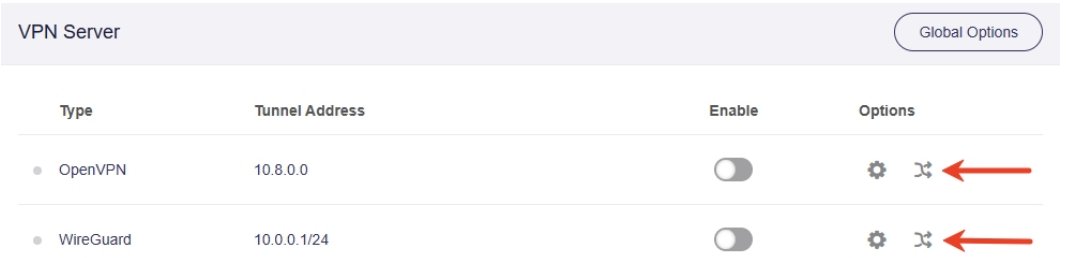


- **Remote Access LAN**: If enabled, resources inside the server's LAN subnet can be accessed through the VPN tunnel.
- **IP Masquerading**: If enabled, the source IP addresses of LAN clients will be rewritten to the router's VPN tunnel IP. Disable this only for Site-to-Site setups where the remote peer knows your LAN subnets.

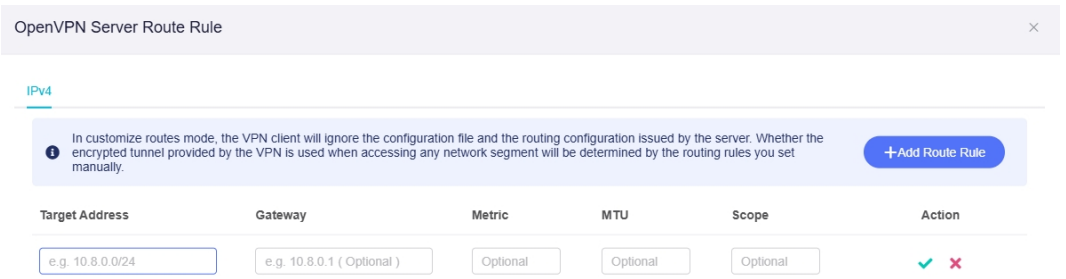
- **MTU**: Short for Maximum Transmission Unit. The MTU value you set for the tunnel will override the MTU settings in the configuration file.
- **Client to Client**: If enabled, VPN clients connected to this server can access each other via their VPN tunnel IPs. If you want to allow clients to also access one another's LAN subnets, you need to add routing rules on the VPN server to advertise those remote LAN subnets.

8.2.2 Server Route Rule

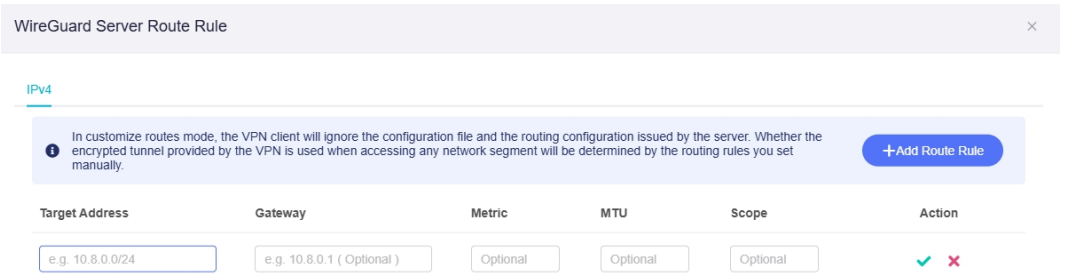
Click the route icon on the right to customize OpenVPN or WireGuard route rules as needed.



The OpenVPN Server Route Rule displays as follows. Click **Add Route Rule**, enter the **Target Address** and **Gateway**, then click the green check icon to apply.



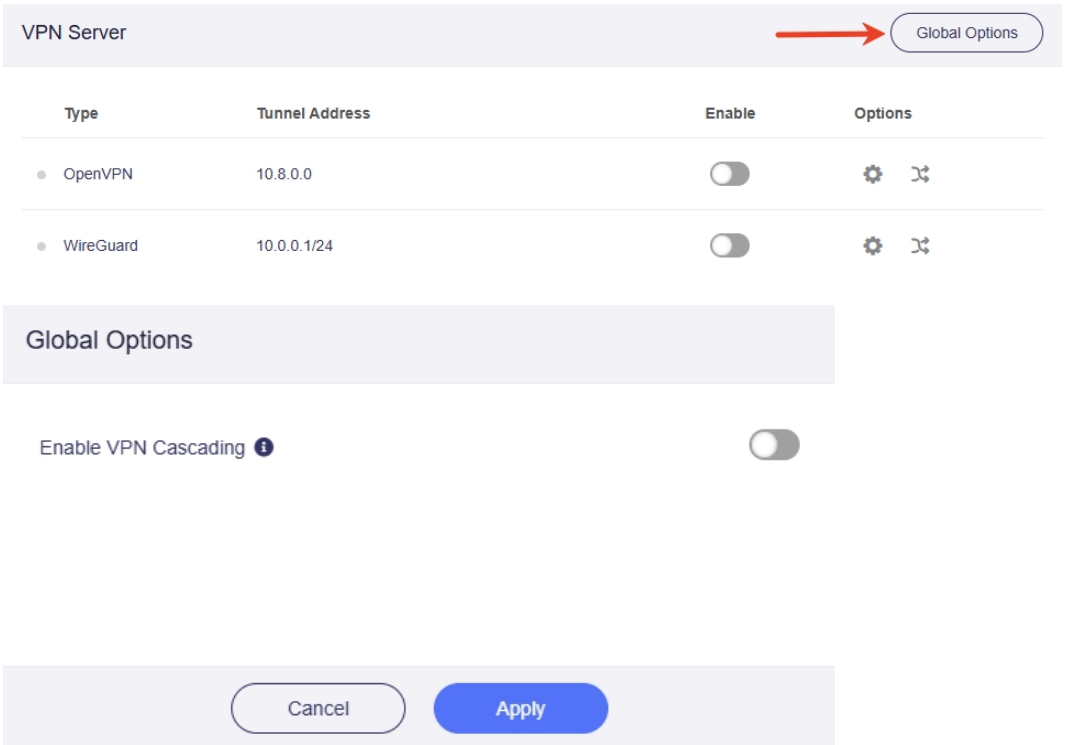
The WireGuard Server Route Rule displays as follows. Click **Add Route Rule**, enter the **Target Address** and **Gateway**, then click the green check icon to apply.



Note: In customize routes mode, the VPN client will ignore the configuration file and the routing configuration issued by the server. Whether to use the VPN encrypted tunnel when accessing any network segment is determined by the routing rules you manually set.

8.2.3 Global Options

Click **Global Options** in the upper right corner to configure advanced settings for your VPN server.



If **VPN Cascading** is enabled, when this router acts as a VPN server and a VPN client simultaneously, remote VPN clients connected to this router's VPN server will have their traffic routed through the upstream VPN tunnel that this router is using as a VPN client. Learn more about VPN Cascading.

Chapter 9

Set Up VPN Server

This chapter introduces how to set up a GL.iNet router as OpenVPN or WireGuard server.

9.1 Set Up OpenVPN Server

OpenVPN is an open-source VPN protocol that utilizes SSL/TLS encryption for secure point-to-point and site-to-site connections. To set up OpenVPN server on a GL.iNet router, watch this video or refer to the steps below.

9.1.1 Preparation

1. **Make sure you have a public IP address**

   Click here to verify if your Internet Service Provider (ISP) assigns you a public IP address. If not, your router cannot be set as an OpenVPN server.

   Alternative methods:

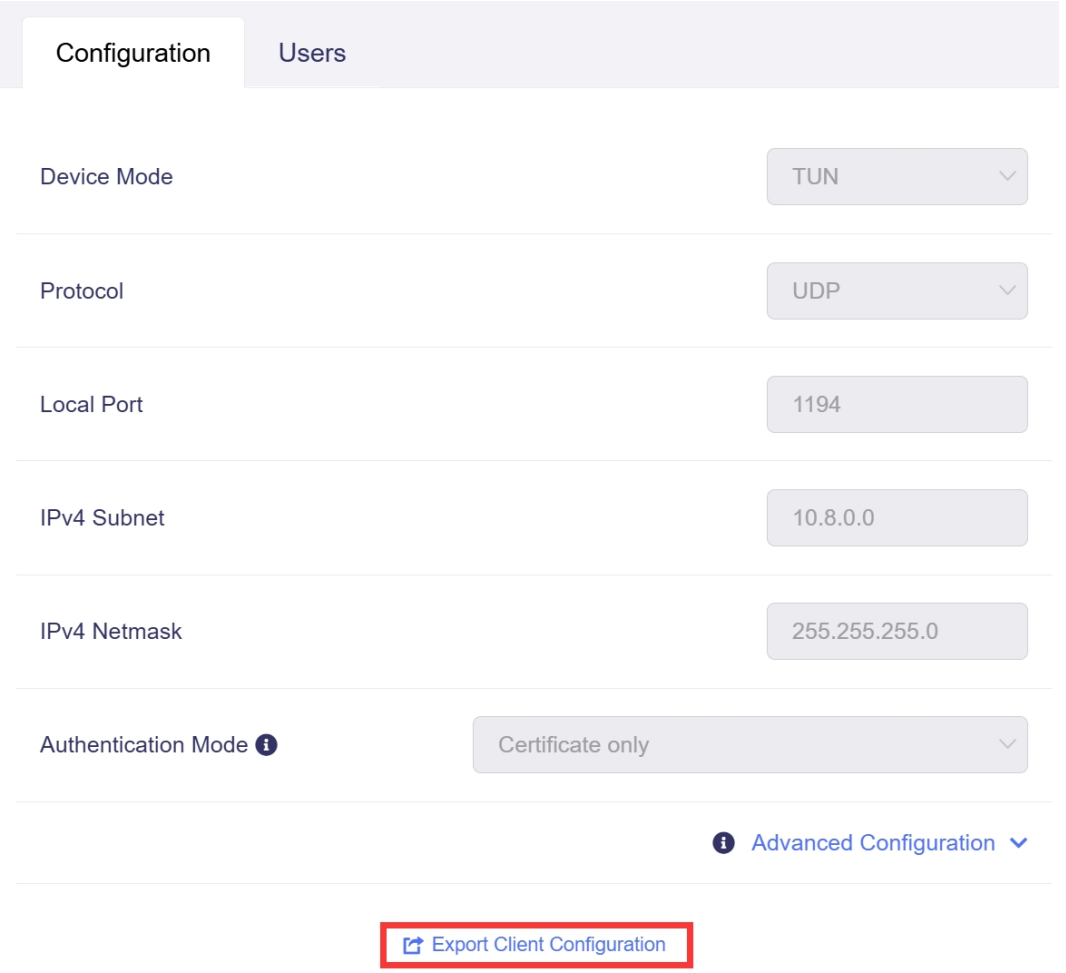
   - If you have a primary router upstream of your GL.iNet router, log in to it and verify it has a public IP address assigned by your ISP.
   - Ask your ISP for a public IP address. This may incur an extra fee.

2. **Confirm if Port Forwarding is required**

   - If your GL.iNet router is the primary router in your network, no port forwarding setup is required. Proceed to the next step.
   - If a primary router is already in use and your GL.iNet router is configured as a secondary router, you will need to configure port forwarding on the primary router.
   - If your GL.iNet router is multiple levels downstream from the primary router, configure port forwarding on each intermediate device.

9.1.2 Setup Steps

1. Log in to the router's web admin panel, navigate to **VPN** > **OpenVPN Server**, then click **Generate Configuration** (for VPN server initial setup only).
2. Apply the configuration.
   The default configuration works for most cases. Click **Export Client Configuration** at the bottom and proceed to step 3. If you have modified the configuration, click **Apply** before exporting it.



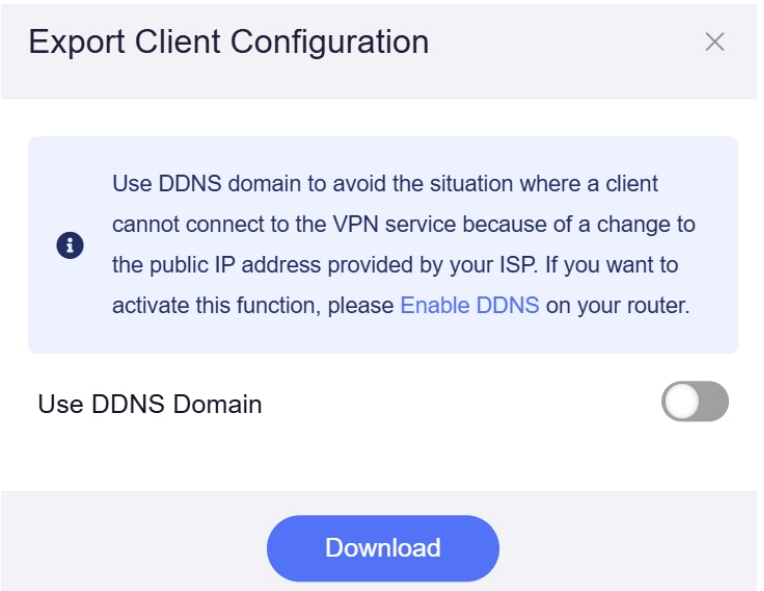
- **Device Mode**: TAP-S2S or Tun. See here for the differences.
- **Protocol**: UDP or TCP. See here for the differences.
- **Authentication Mode**: This determines the authentication method used when the client connects to the server. There are three options:
  - **Certificate Only**: If selected, the router will automatically generate a server and client certificate keys and embed them in the configuration file. When you upload the configuration to the client, no additional credentials are required.

- **Username/Password Only**: If selected, the router will generate client configuration without certificate keys. You need to first add a username and password in the **Users** tab before exporting the client configuration. When uploading the configuration to the client, enter these credentials for authentication.
- **Username/Password and Certificate**: If selected, you need to first add a username and password in the **Users** tab before exporting the client configuration; second, the router will automatically generate server and client certificate keys and embed them in the configuration file. When uploading the configuration to the client, the certificate-key will be verified first, followed by username/password authentication for 2FA security.

- **Advanced Configuration**: Customize more server settings if needed.

3. Export Client Configuration.

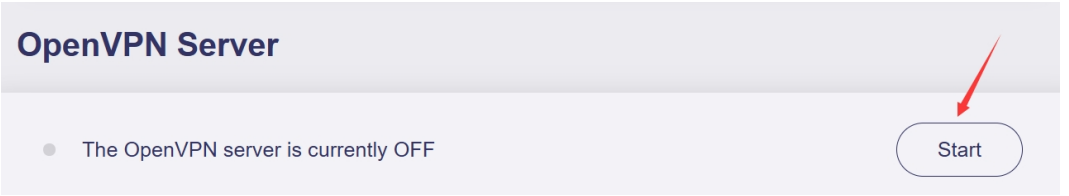
   After clicking **Export Client Configuration** at the bottom of the Configuration tab (or applying the modified configuration), a window will pop up as follows. Click **Download** to export the configuration.



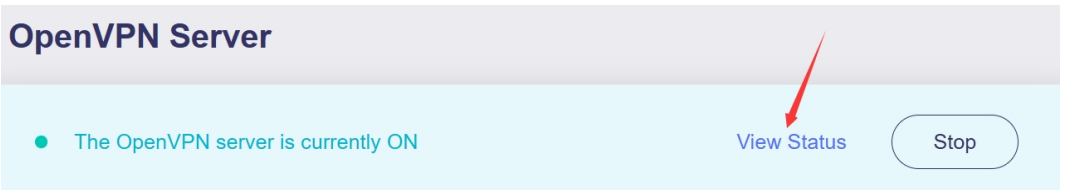
   Tip: If your public IP address changes frequently, go to **APPLICATIONS** > **Dynamic DNS** and enable DDNS. You can then use the DDNS domain as your server address.

4. Start OpenVPN server.

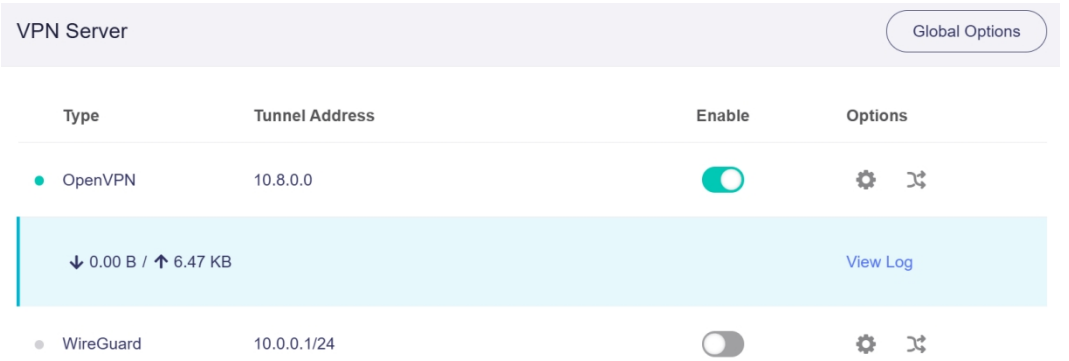
   On the **OpenVPN Server** page, click the **Start** button in the upper right corner to start the server.



If you want to view the server connection status, click **View Status**.



You will be redirected to the VPN Dashboard. If theupload and download traffic statistics are displayed in this page, the OpenVPN server is running.



9.1.3 Troubleshooting

If the connection fails, there are several common reasons:

- The VPN server does not have a public IP address. See here for troubleshooting.
- You may need to set up port forwarding. See here for troubleshooting.
- The port used for the OpenVPN Server is blocked by your Internet Service Provider. Change to another port, or contact your ISP for assistance.
- The VPN connection may be blocked in certain countries or regions.

9.2 Set Up WireGuard Server

WireGuard® is a simple yet fast and modern VPN that utilizes state-of-the-art cryptography. It aims to be faster, simpler, and more useful than IPSec, while avoiding the massive headache. It intends to be considerably more performant than OpenVPN. To set up WireGuard server on a GL.iNet router, watch this video or refer to the steps below.

9.2.1 Preparation

1. **Make sure you have a public IP address**

   Click here to verify if your Internet Service Provider assigns you a public IP address.
   If not, your router cannot be set as a WireGuard Server.

   Alternative methods:

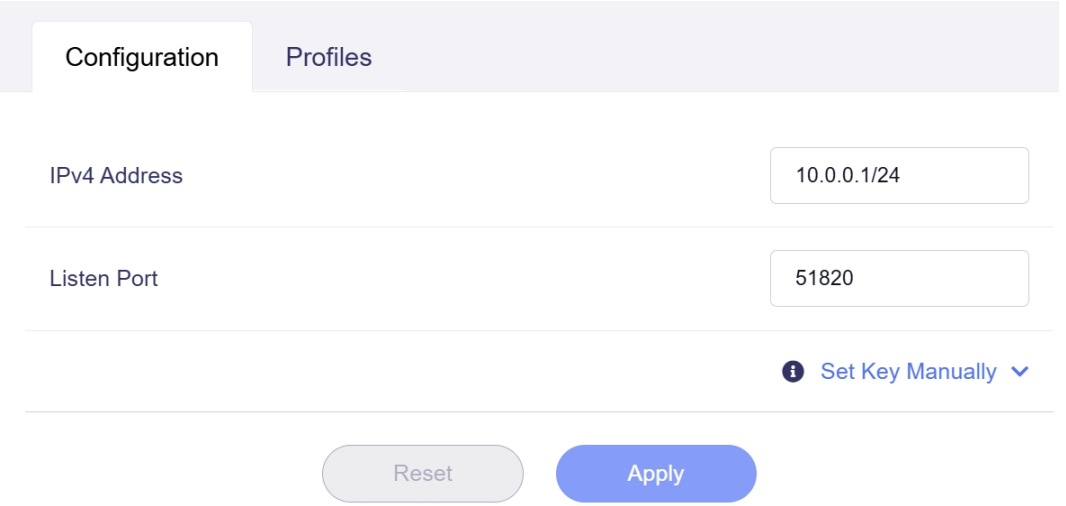
   - If you have a primary router upstream of your GL.iNet router, log in to it and verify it has a public IP address assigned by your ISP.
   - Ask your ISP for a public IP address. This may incur an extra fee.

2. **Confirm if Port Forwarding is required**

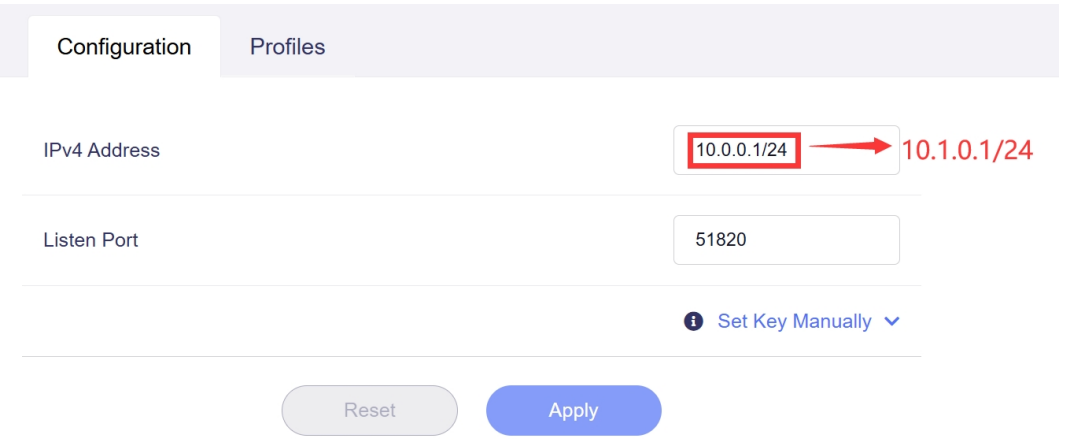
   - If your GL.iNet router is the primary router in your network, no port forwarding setup is required. Proceed to the next step.
   - If a primary router is already in use and your GL.iNet router is configured as a secondary router, you will need to configure port forwarding on the primary router.
   - If your GL.iNet router is multiple levels downstream from the primary router, configure port forwarding on each intermediate device.

9.2.2 Setup Steps

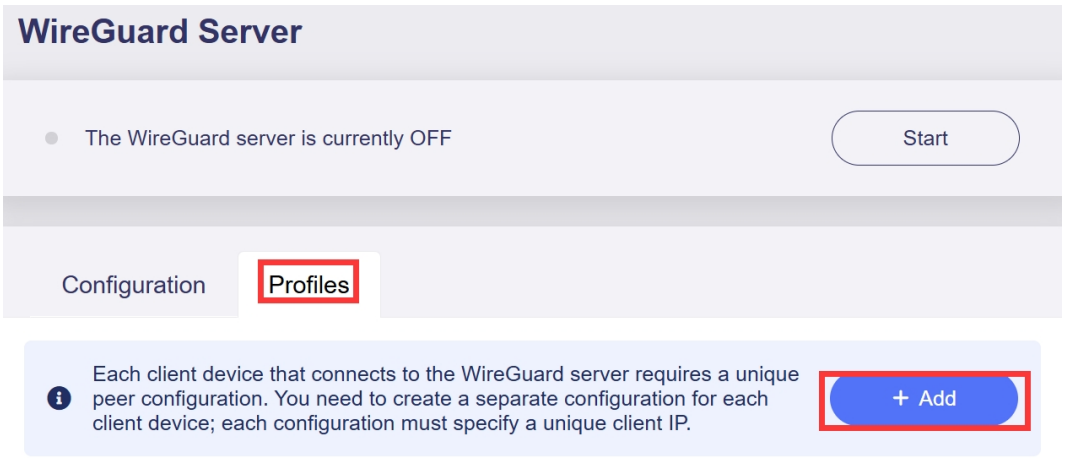
1. Log in to the router's web admin panel, navigate to **VPN** > **WireGuard Server**, then click **Generate Configuration** (for VPN server initial setup only).
2. Apply the configuration.
   The default configuration works for most cases. No need to modify the IPv4 address unless it conflicts with your upstream router's gateway.



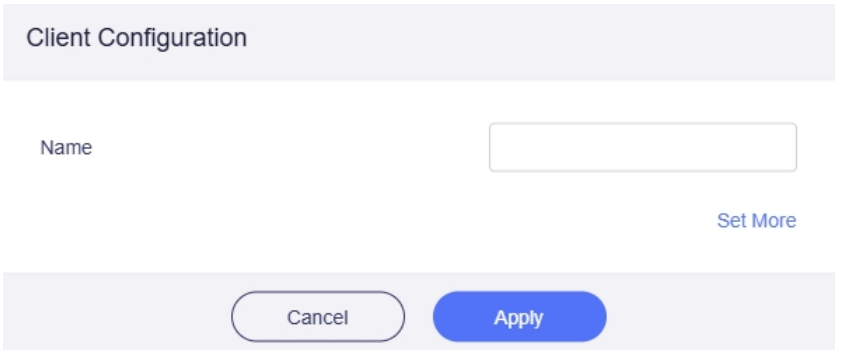
   If the IPv4 address conflicts with your upstream router's gateway, modify the IPv4 address to another one (e.g., **10.1.0.1/24**) and click **Apply**. Ensure the "/24" CIDR notation is included to avoid connectivity issues.



3. Add a profile.
   Switch to **Profiles** tab, click the **Add** button to generate a profile for your device.



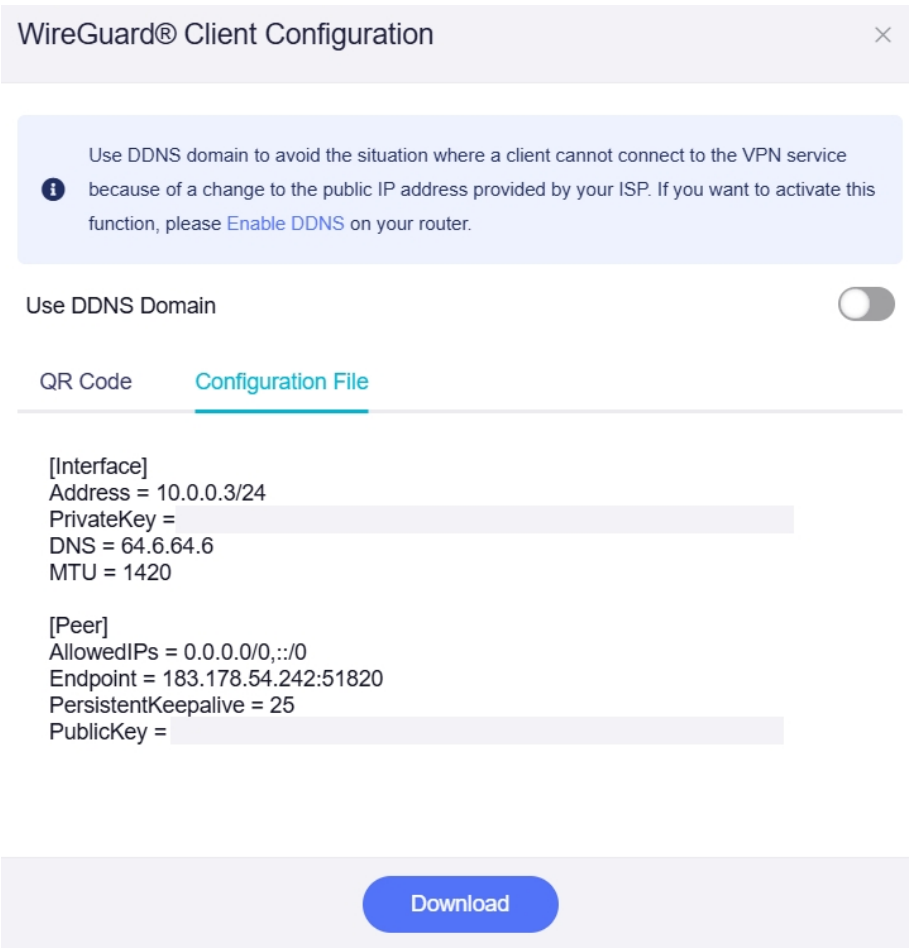
Set a descriptive name and click **Apply** to continue.



4. Download configuration.

   After adding a profile, the router will generate a configuration file in three formats: QR code, plain text, and .conf file. Choose your preferred method to obtain the configuration file.

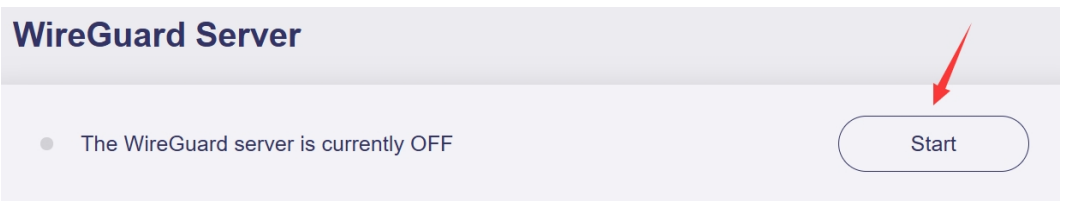
   - **QR code**: Suitable for devices (e.g., smartphones, tablets, laptops) with the WireGuard App installed. If you want to set a specific device as a WireGuard client, simply open the WireGuard App and scan the QR code to import a configuration file.
   - **Plain text**: In plain text format, you can review configuration details and conveniently copy-paste them elsewhere for manual configuration, such as the WireGuard App or a GL.iNet router.
   - **.conf file**: Click the **Download** button to save the .conf file to your local device. It is also convenient and can be directly uploaded to the WireGuard app or a GL.iNet router.



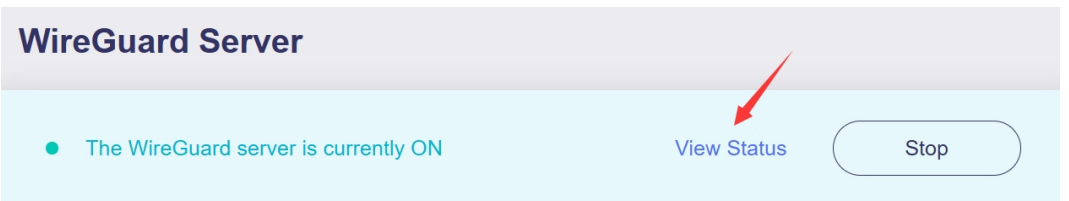
Tip: If your public IP address changes frequently, go to **APPLICATIONS** > **Dynamic DNS** and enable DDNS. You can then use the DDNS domain as your server address.

5. Start WireGuard server.

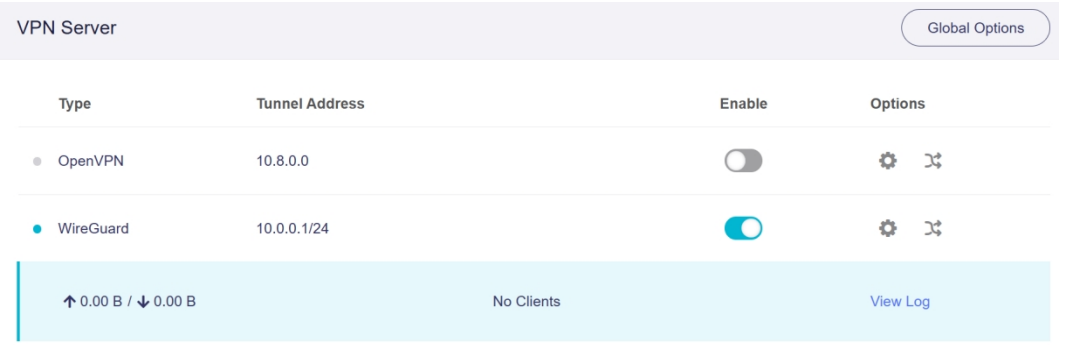
   On the **WireGuard Server** page, click the **Start** button in the upper right corner to start the server.



If you want to view the server connection status, click **View Status**.



You will be redirected to the VPN Dashboard. If theupload and download traffic statistics are displayed in this page, the OpenVPN server is running.



9.2.3 Troubleshooting

If the connection fails, there are several common reasons:

- The VPN server does not have a public IP address. See here for troubleshooting.
- You may need to set up port forwarding. See here for troubleshooting.
- The port used for the WireGuard Server is blocked by your Internet Service Provider. Change to another port, or contact your ISP for assistance.
- The VPN connection may be blocked in certain countries or regions.

Chapter 10

Set Up VPN Client

This chapter introduces how to set up a GL.iNet router as OpenVPN or WireGuard client.

10.1 Set Up OpenVPN Client

10.1.1 Preparation

First, ensure you have an active subscription with a VPN service provider that supports manual OpenVPN configuration. See here for the OpenVPN providers compatible with GL.iNet.

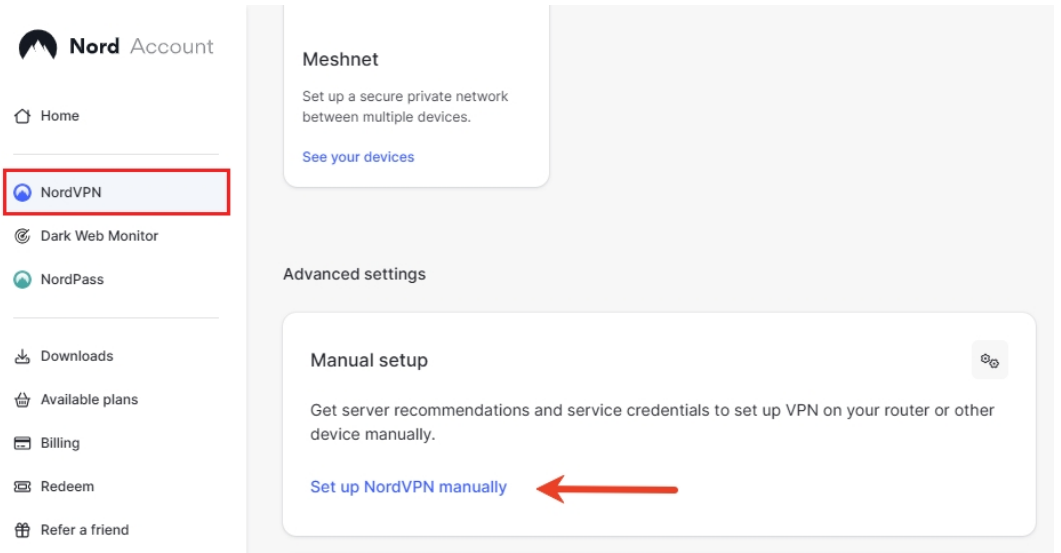
Next, visit the official website of the VPN service provider you subscribed and obtain service credentials or configuration file. If you don't know how to get the configuration file, refer to this link or contact their support.

10.1.2 Set Up NordVPN

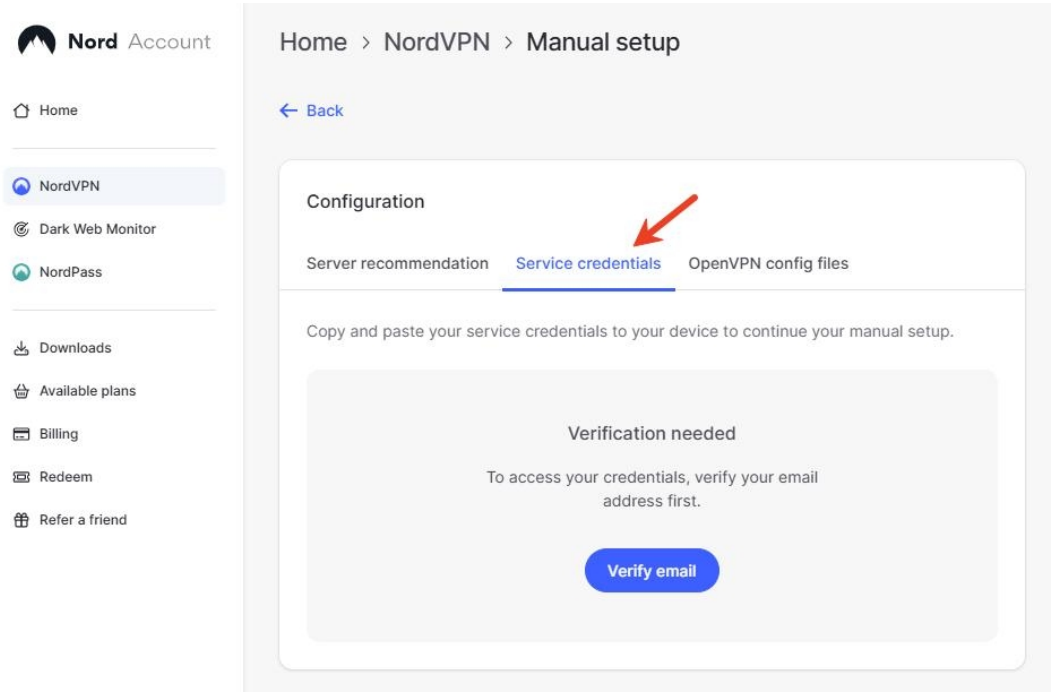
NordVPN is integrated into the GL.iNet web admin panel. You can acquire configuration files for all NordVPN servers by entering your account credentials (obtained from the NordVPN Dashboard) in the router's web admin panel or GL.iNet mobile app, eliminating the need for manual file uploads.

Follow the steps below to set your router as a NordVPN client.

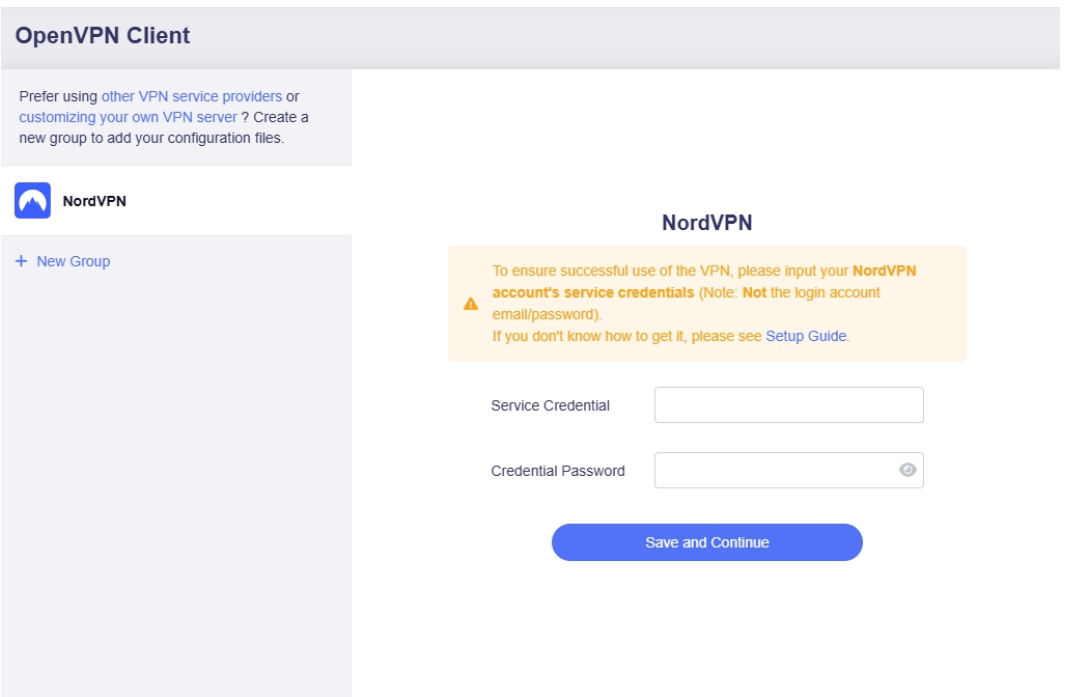
1. Log in to your NordVPN web account here.
2. On the Nord Dashboard, click **NordVPN**, then click **Set up NordVPN manually**.



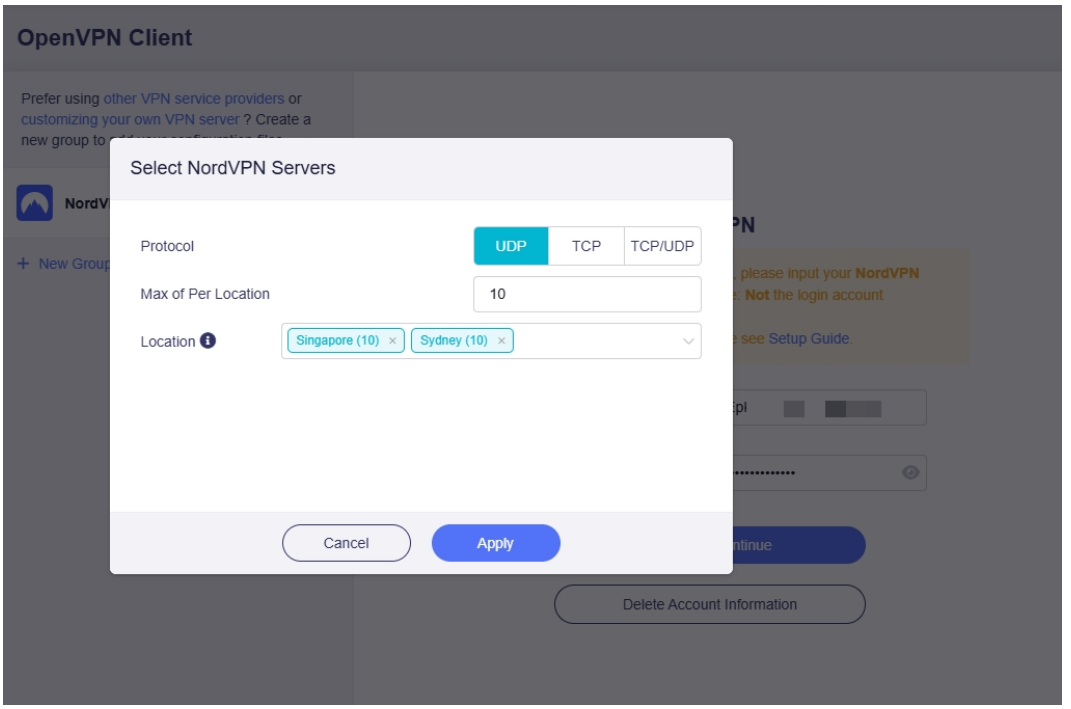
You will find the **service credentials**. Copy them for later use.



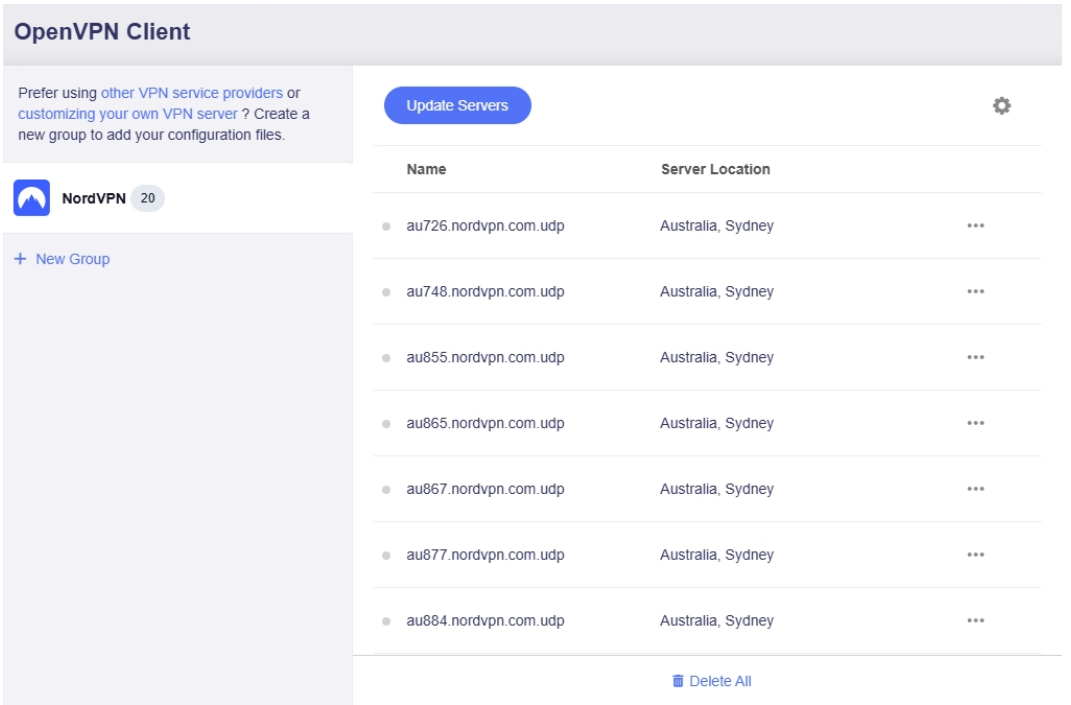
3. Log in to your router's web admin panel and navigate to **VPN** > **OpenVPN Client** > **NordVPN**. Input the service credentials (Note: It is NOT the login account email/password), then click **Save and Continue**.



4. Select protocol, max server count of each location and locations, then click **Apply**.

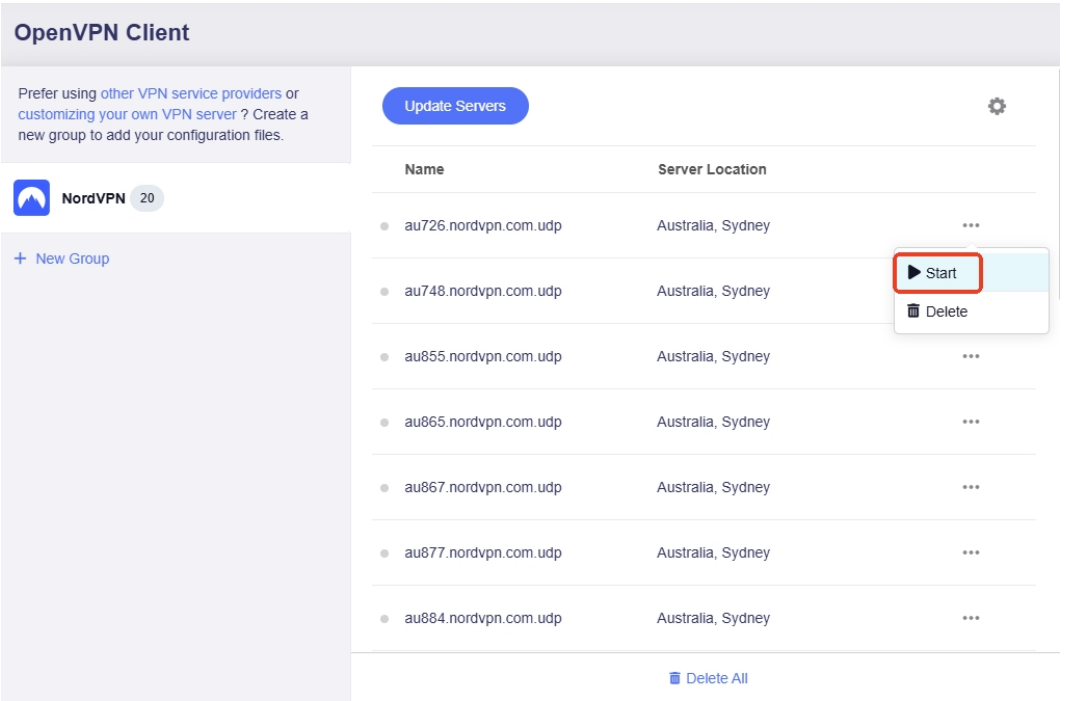


It will download configuration files.

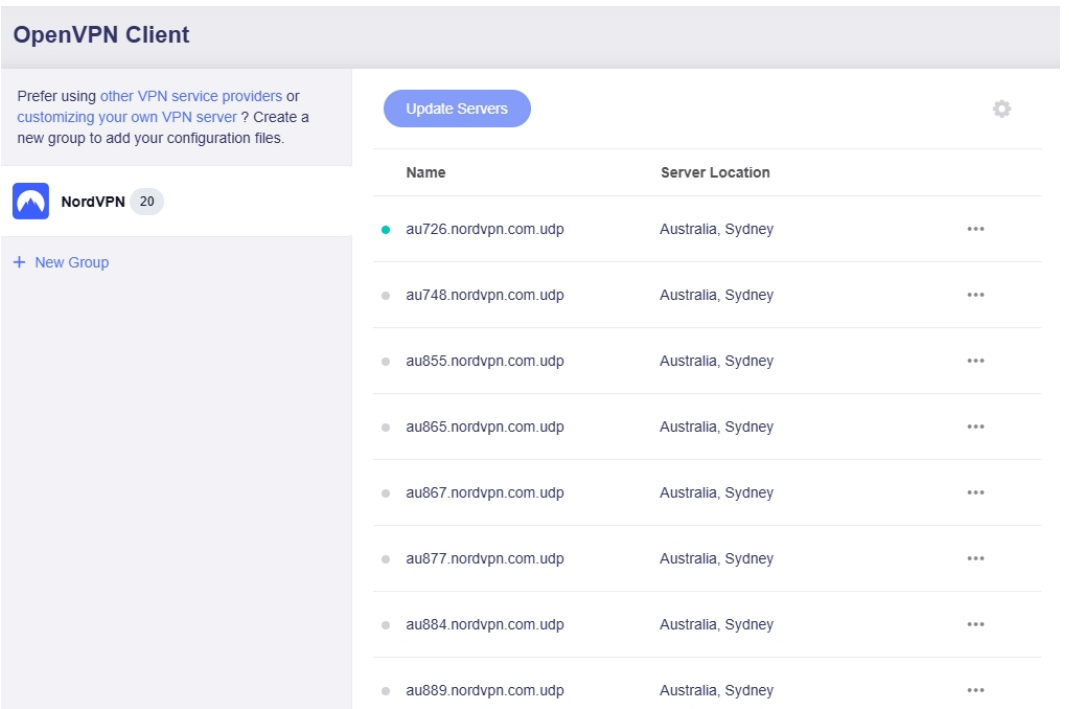


5. Start a connection.

   Select a server, and click the three-dot icon on the right to start a connection.



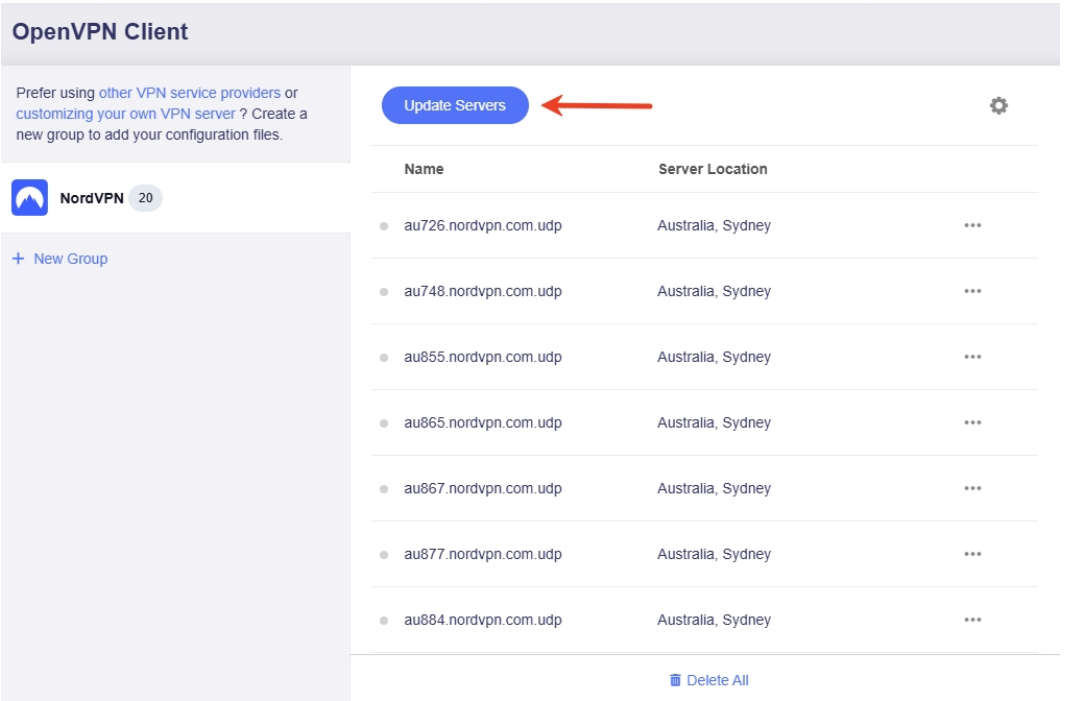
6. Once connected, a green dot will appear next to the configuration file.



You can also check the VPN connection details on the **VPN Dashboard**.

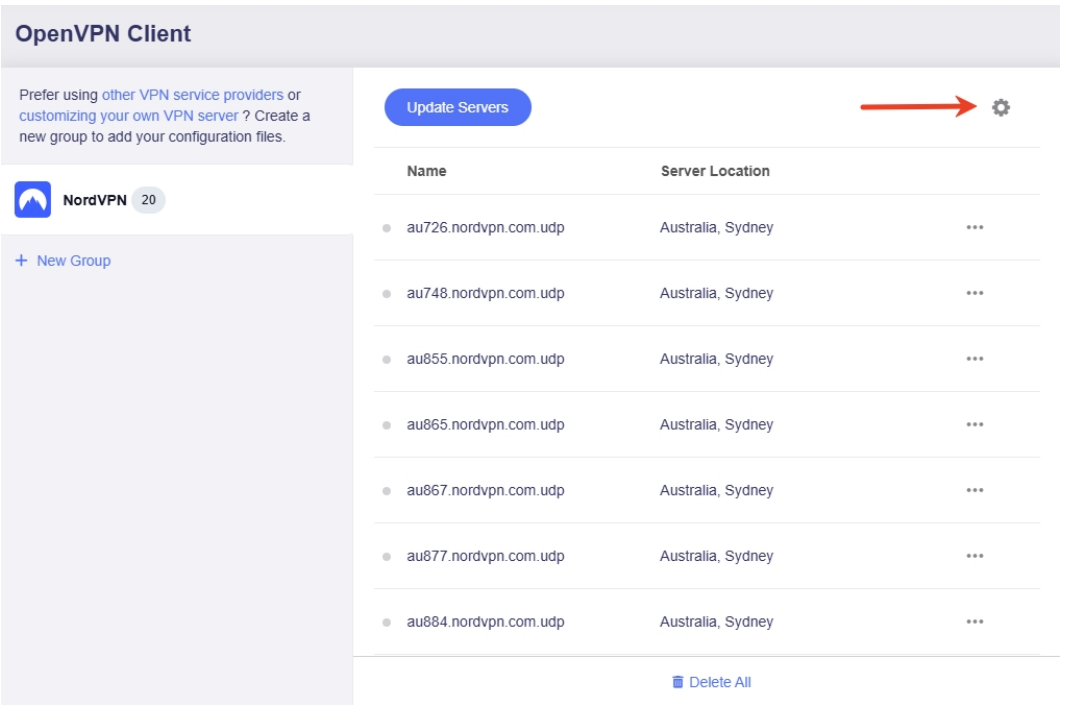
7. Update servers.

   You can click **Update Servers** to obtain the latest available server list, avoiding connection failures caused by server maintenance or shutdown.



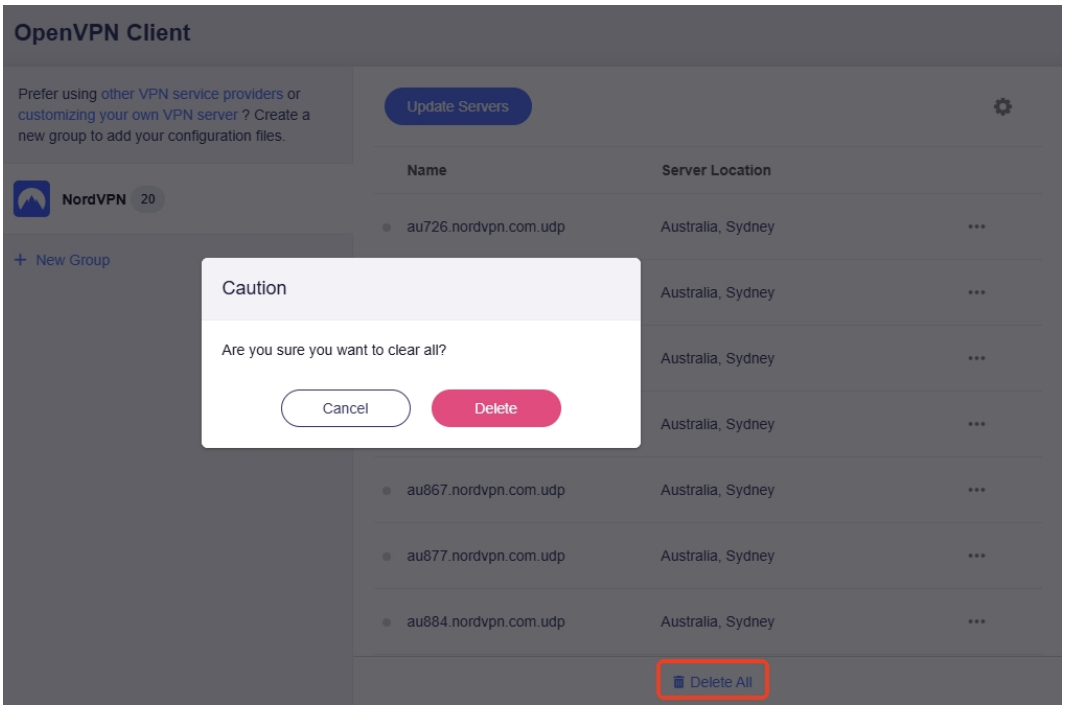
8. Edit credentials.

   Click the gear icon to edit your login credentials.



9. Delete all files.

   You can click **Delete All** to delete all configuration files with one click.

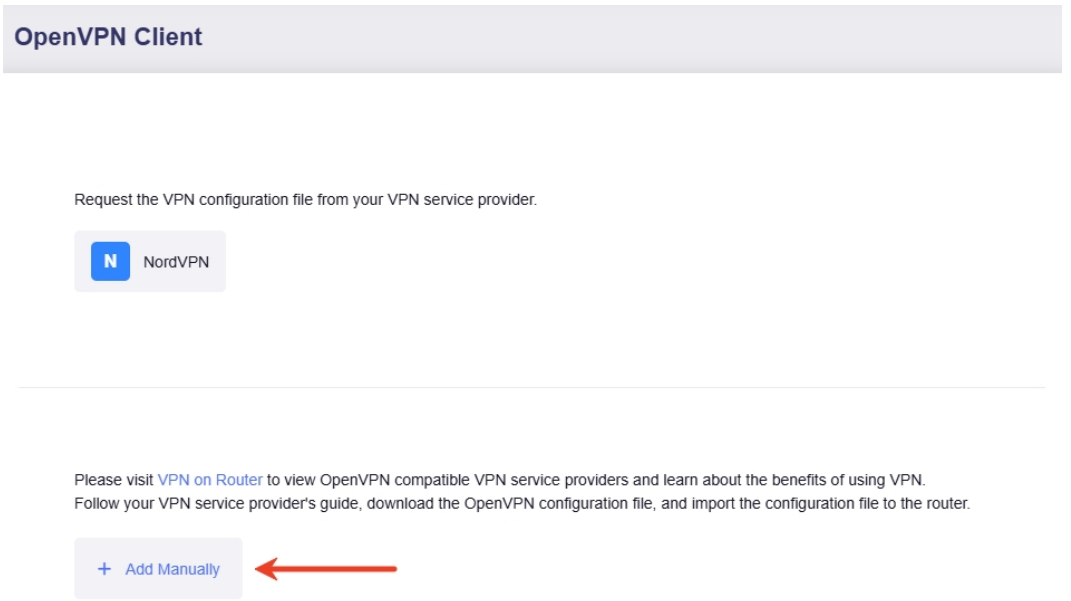

OpenVPN Client
Prefer using other VPN service providers or customizing your own VPN server ? Create a new group to add your configuration files.
NordVPN 20
+ New Group
Update Servers
Name
Server Location
au726.nordvpn.com.udp
Australia, Sydney
Australia, Sydney
Australia, Sydney
Australia, Sydney
au867.nordvpn.com.udp
Australia, Sydney
au877.nordvpn.com.udp
Australia, Sydney
au884.nordvpn.com.udp
Australia, Sydney
Delete All
Caution
Are you sure you want to clear all?
Cancel
Delete

10.1.3 Set Up OpenVPN Client Manually (for other providers)

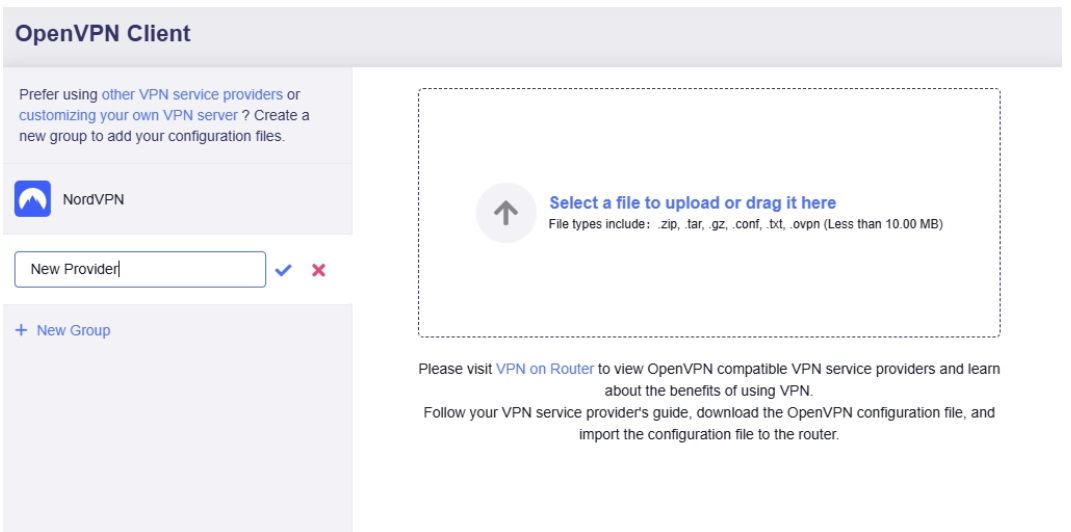
If your OpenVPN service provider is not integrated into our admin panel, please first visit the official website of your subscribed service provider to obtain the configuration file. Then upload it to the router to set up an OpenVPN client.

In the following steps, we will use PIA (Private Internet Access) as an example.

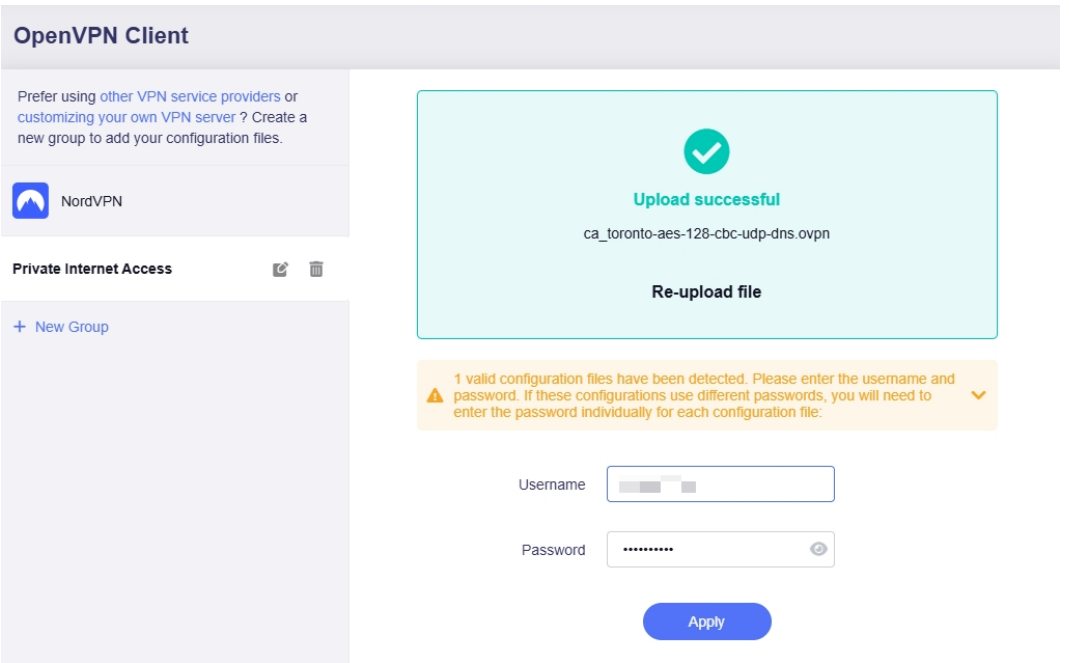
1. Download a configuration file from Private Internet Access official website.
2. Log in to your router's web admin panel, navigate to **VPN** > **OpenVPN Client**, and click **Add Manually**.



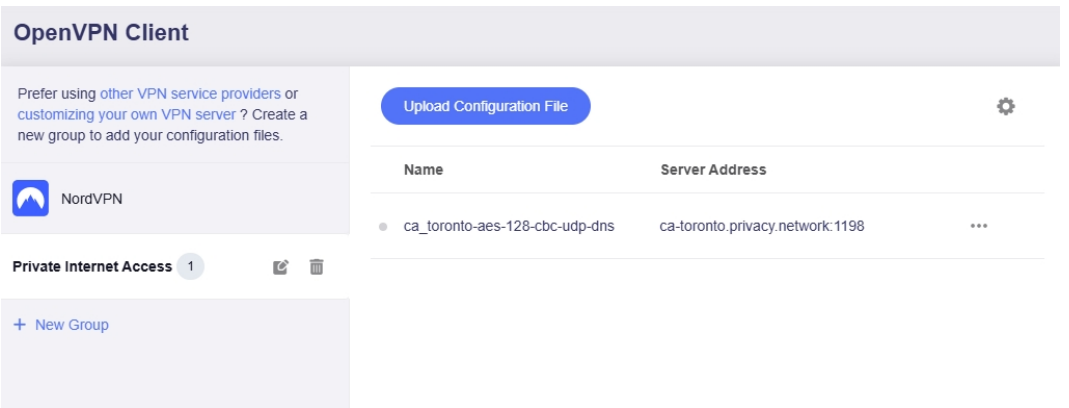
3. It will create a group on the left sidebar. Set a descriptive name for the group.



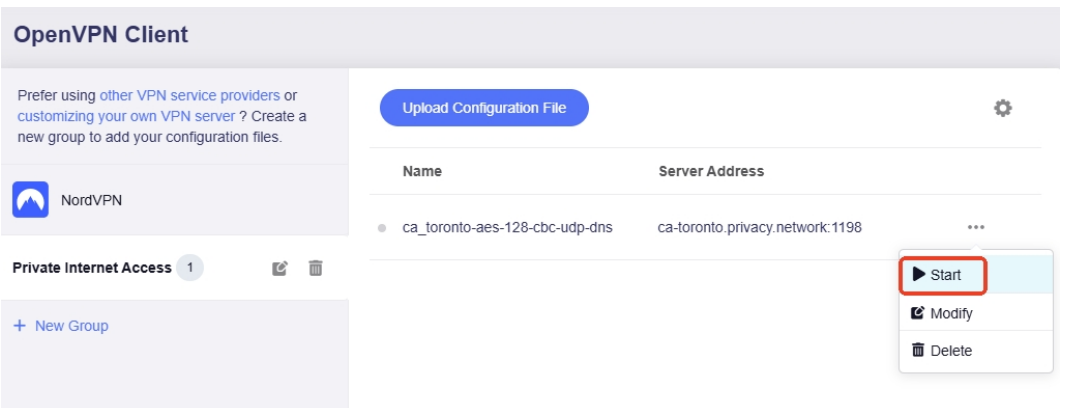
4. Upload your OpenVPN configuration file. Input the credentials if required, then click **Apply**.



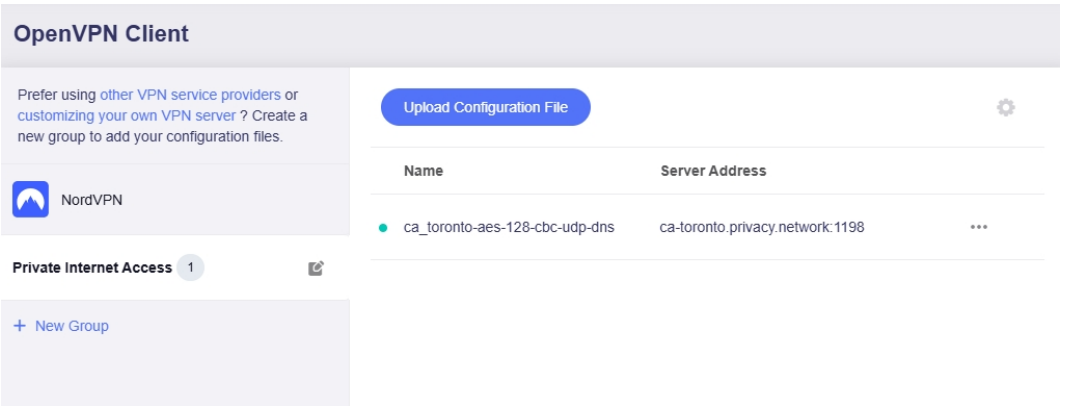
You will see the configuration file uploaded.



5. Click the three-dot icon on the right to start a connection.



6. Once connected, a green dot will appear next to the configuration file.



You can also check the VPN connection details on the **VPN Dashboard**.

10.2 Set Up WireGuard Client

You can set up WireGuard Client via the GL.iNet mobile app or the web admin panel.

- The mobile app integrates some WireGuard service providers, such as AzireVPN, Mullvad VPN, OVPN, StrongVPN, PIA VPN. You can set it up easily by entering the login credentials of the WireGuard service you subscribed to. Open the app and follow the on-screen instructions to set up.
- The web admin panel not only integrates some WireGuard service providers, but also provides an entry for manual configuration. You can either enter the credentials of your subscribed WireGuard service for quick setup, or manually upload a configuration file to complete the setup.

10.2.1 Preparation

First, ensure you have an active subscription with a VPN service provider that supports manual WireGuard configuration. See here for the WireGuard providers compatible with GL.iNet.

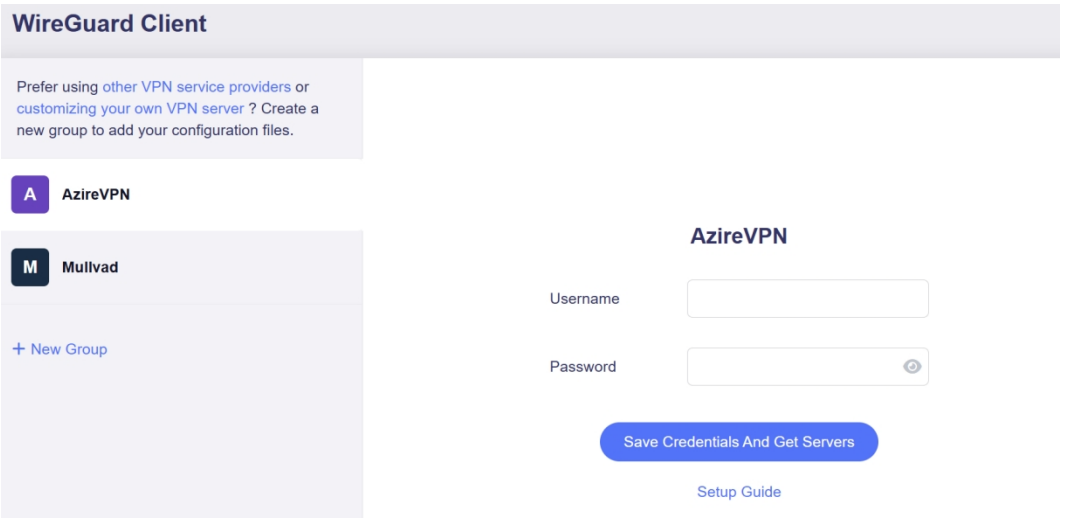
Next, select the corresponding WireGuard service provider below to quickly locate the step-by-step instructions.

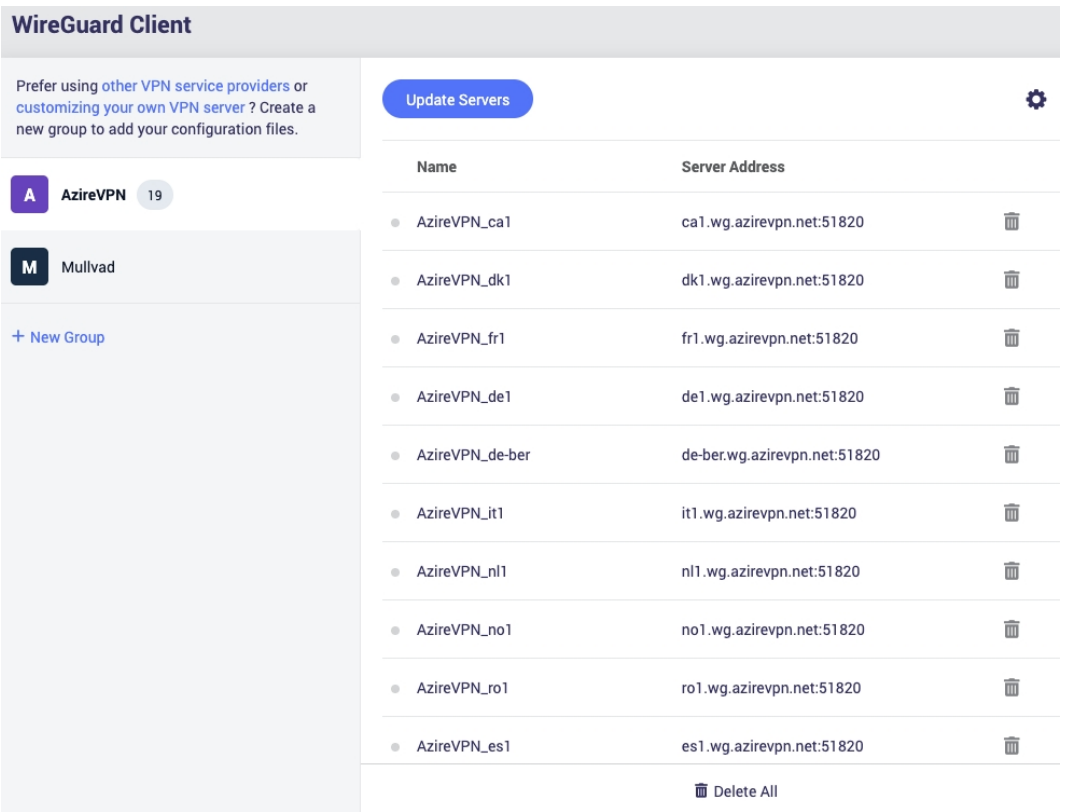
- Set Up AzireVPN
- Set Up Mullvad
- Set Up WireGuard Client Manually (for other providers)

10.2.2 Set Up AzireVPN

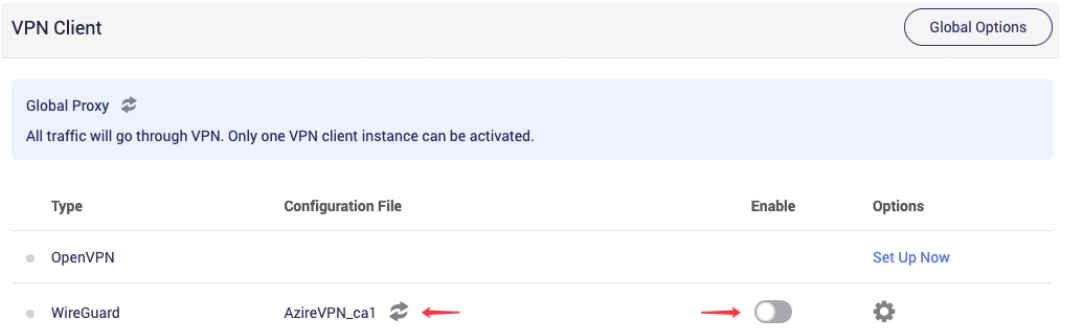
Follow the steps below to set your router as an AzireVPN client.

1. Log in to your router's web admin panel and go to **VPN** > **WireGuard Client** > **AzireVPN**.
2. Input Username and Password, then click **Save Credentials And Get Servers**. It will generate configuration files for each servers.

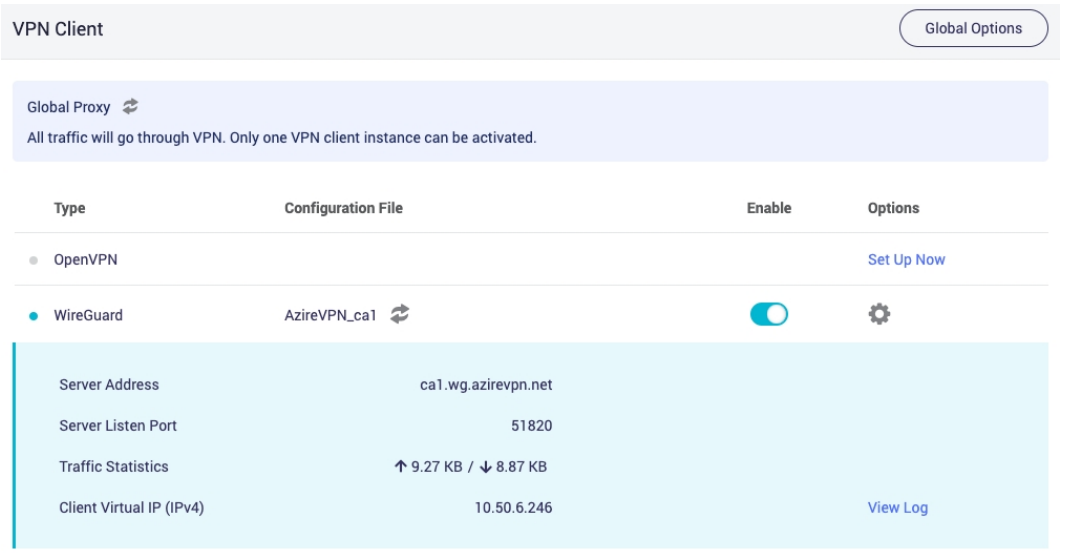




3. Go to VPN Dashboard to enable the connection.

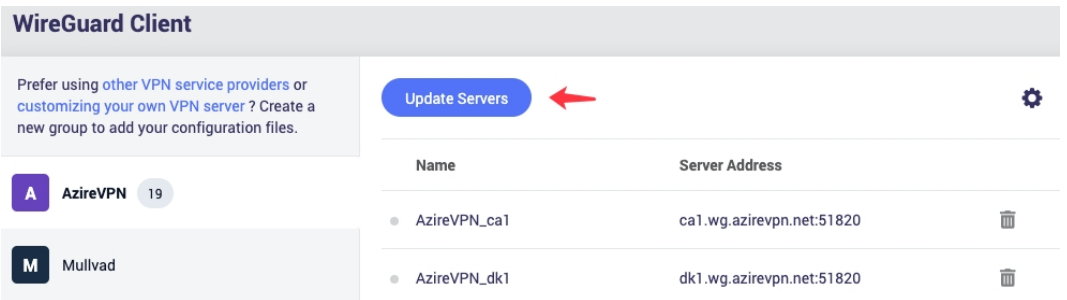


Once connected, you should see your user IP address and the number of Bytes send/received.



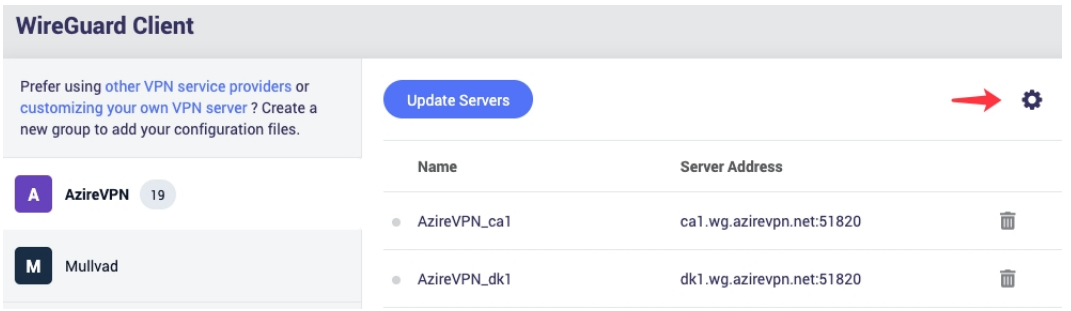
4. Update servers.

   AzireVPN may maintain or shutdown some servers, it will make the connection failed, you can **Update Servers** to get the latest available servers.



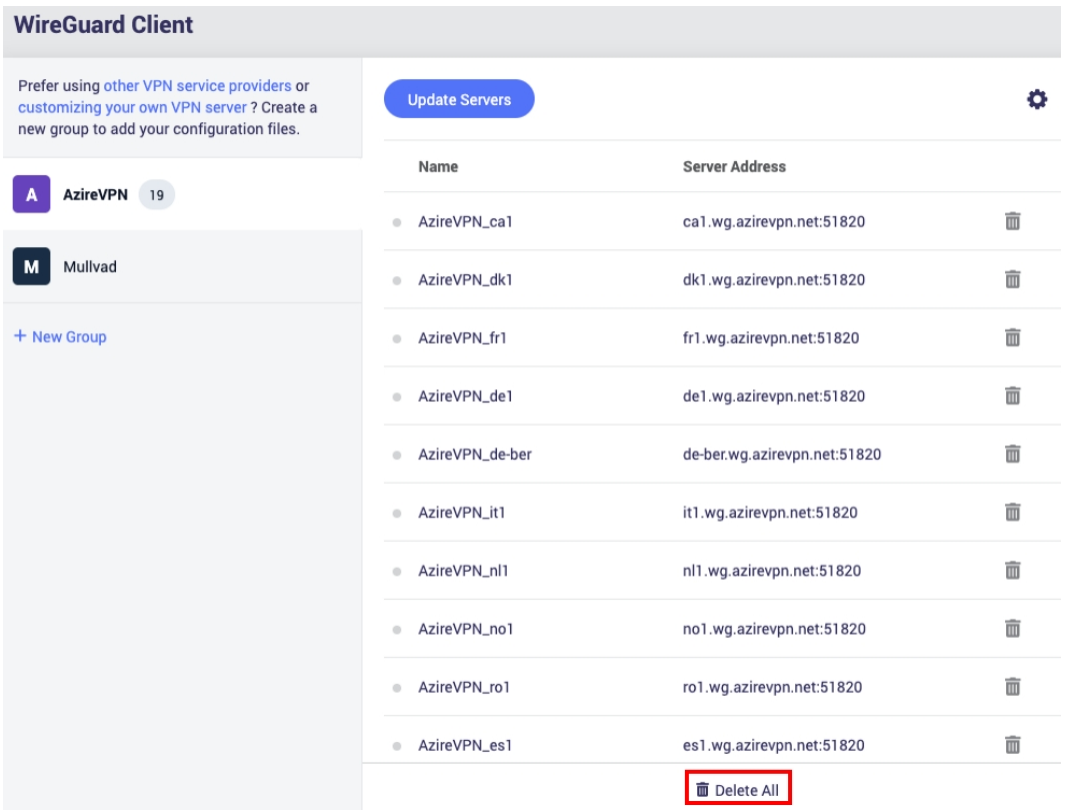
5. Edit credentials.

   Click the cog icon to edit the credential.



6. Delete all files.

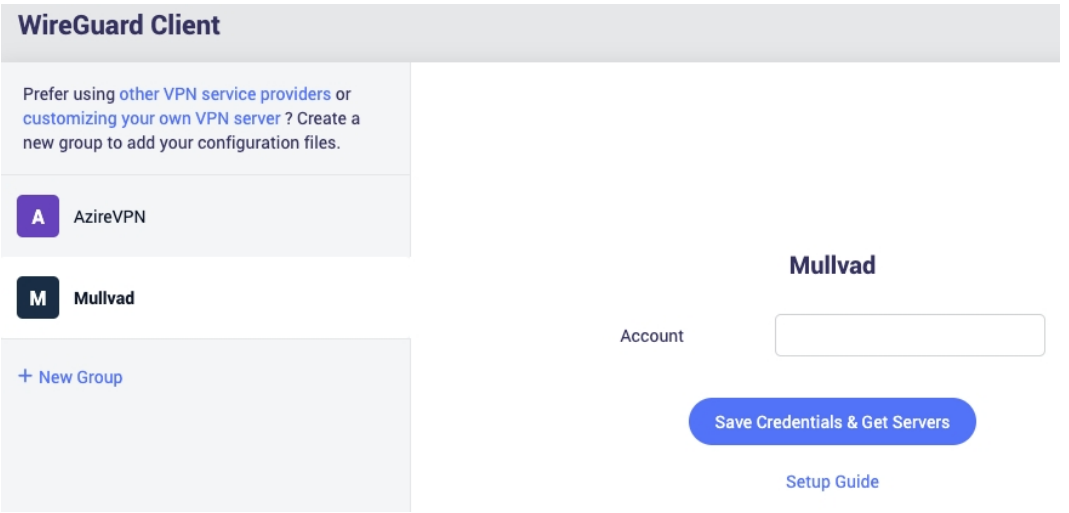
   You can click **Delete All** to delete all configuration files with one click.



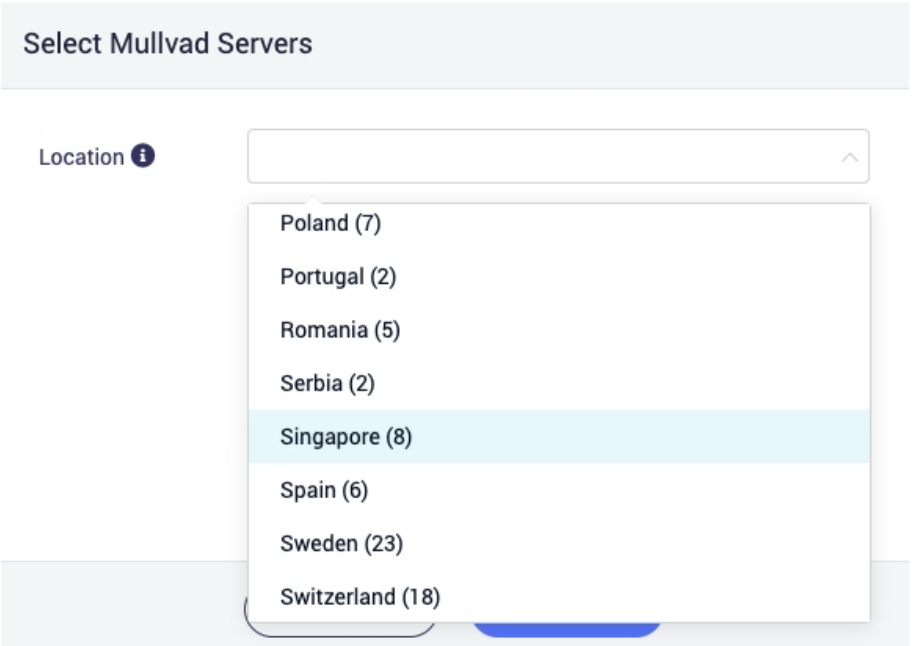
10.2.3 Set Up Mullvad

Follow the steps below to set your router as a Mullvad client.

1. Log in to your router's web admin panel and go to **VPN** > **WireGuard Client** > **Mullvad**.
2. Enter your Mullvad Account (16-digit number), then click **Save Credentials & Get Servers**.

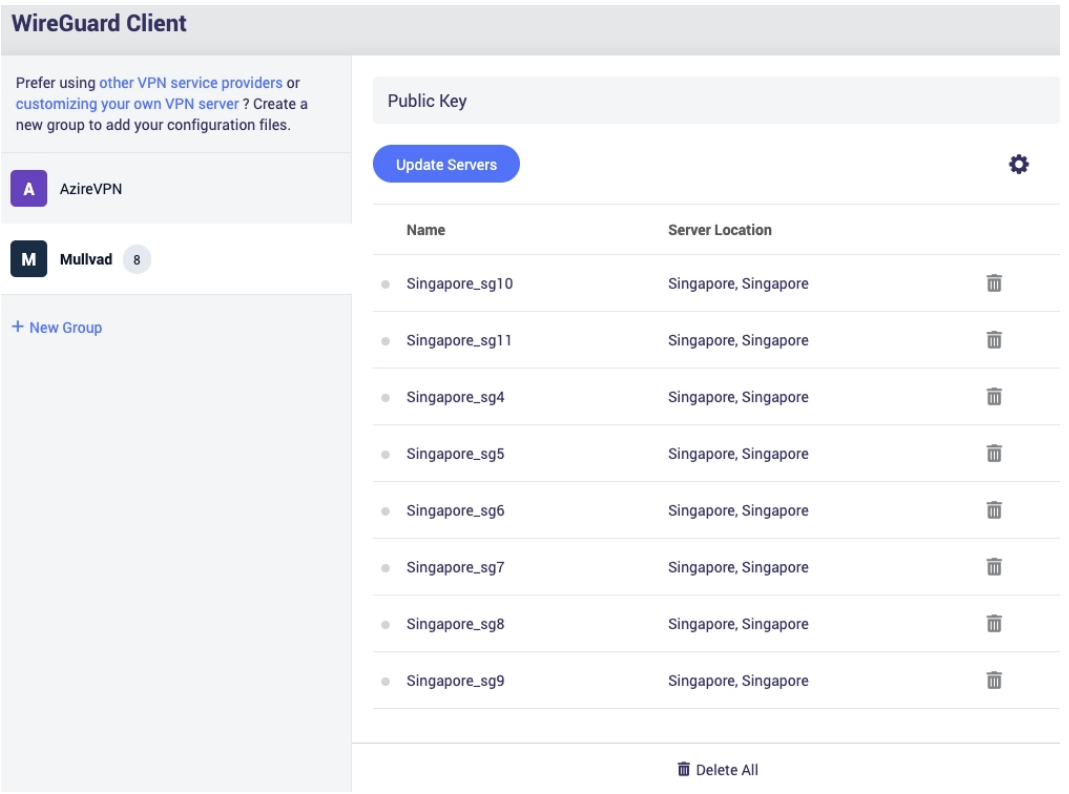


It will pop up a dialog to select a location.

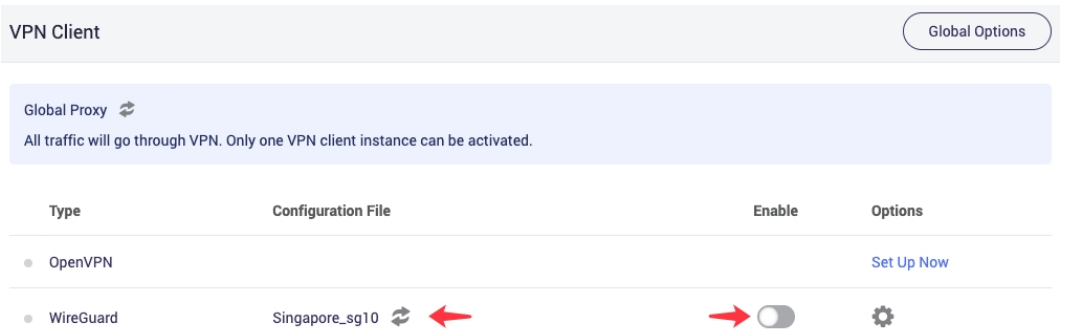


Then it will generate the configuration files of the selected location server.

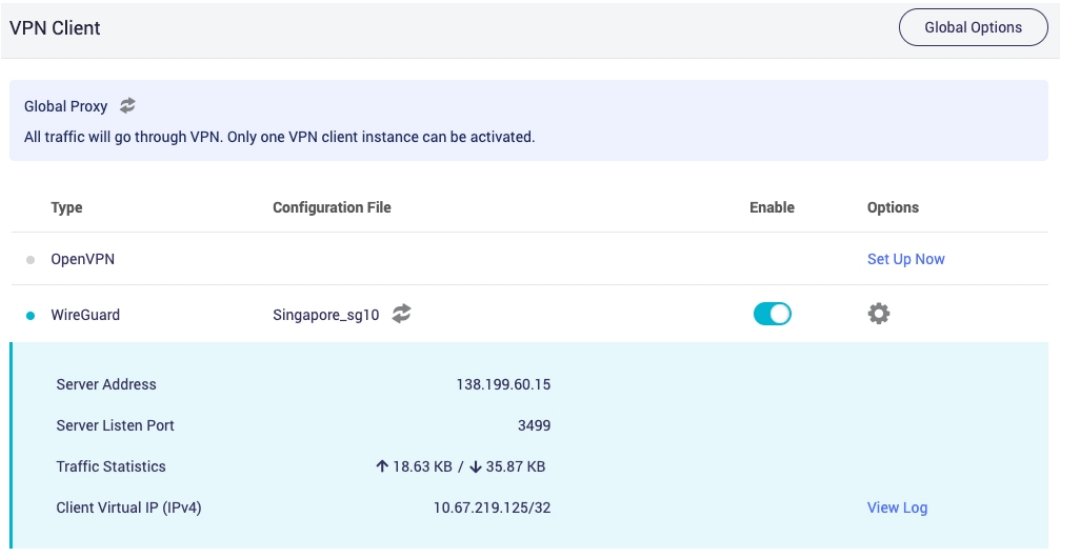
The **Public Key** is the WireGuard public key to send to Mullvad server. You can have up to five keys at the same time, and manage WireGuard keys on your Mullvad account page.



3. Go to VPN Dashboard to enable the connection.

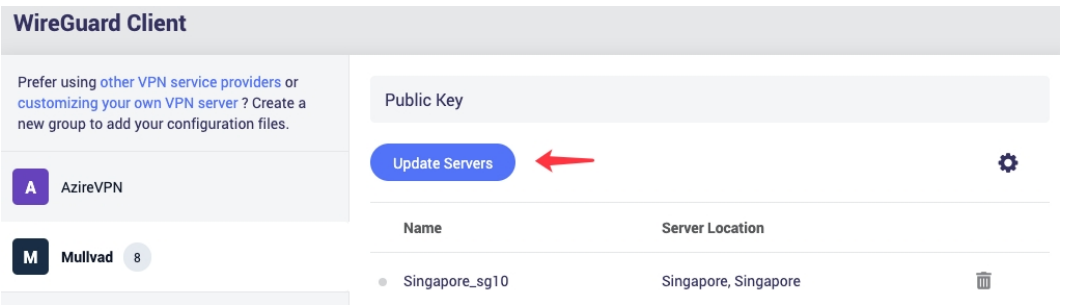


Once connected, you should see your user IP address and the number of Bytes send/received.



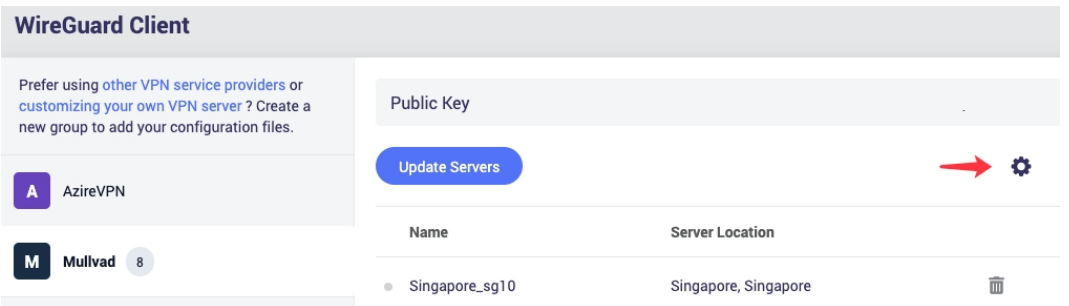
4. Update servers.

   Mullvad may maintain or shutdown some servers, it will make the connection failed, you can **Update Servers** to get the latest available servers.



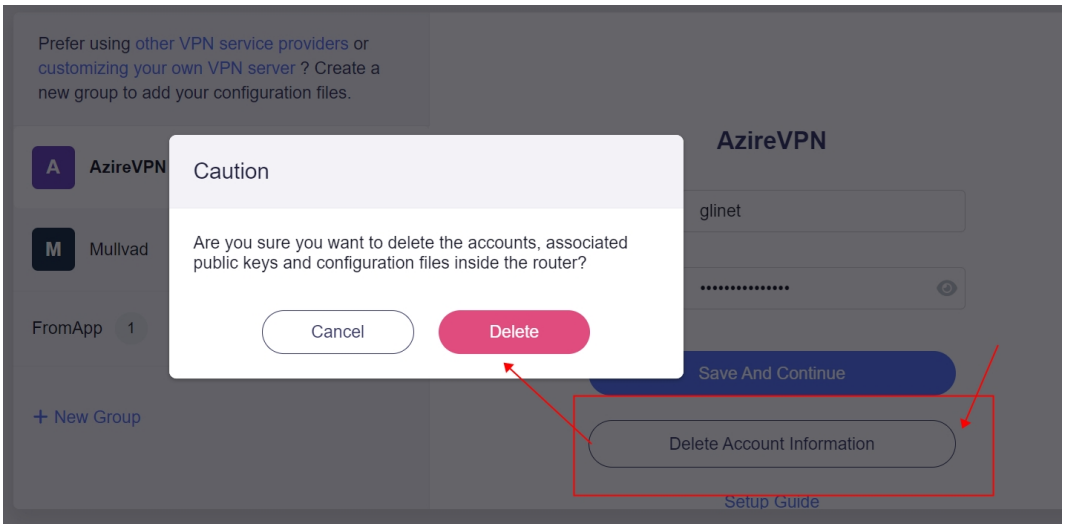
5. Edit credentials

   Click the gear icon to edit your login credentials.



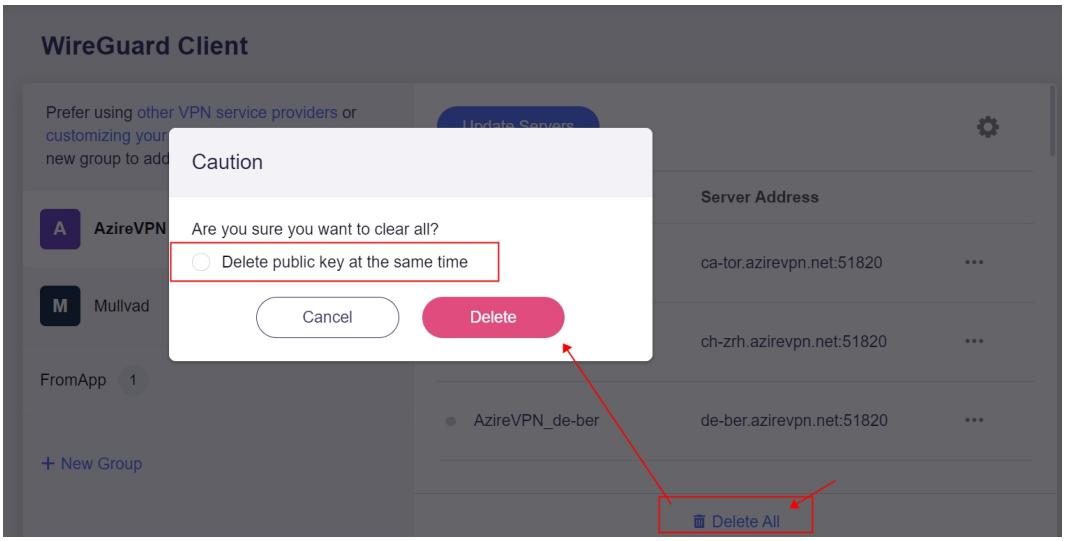
6. Delete account information

   If you click **Delete**, it will delete the account credential, private key, public key and configuration files **in the router**.



7. Delete

   Allow deleting all configuration files with one click and provide a prompt to also delete private key and public key.

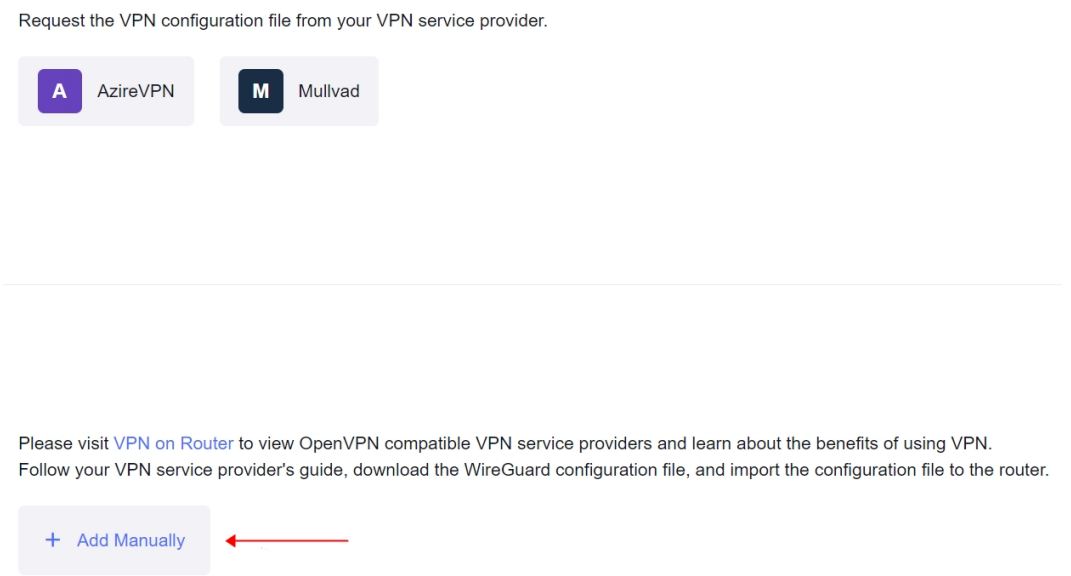


10.2.4 Set Up WireGuard Client Manually (for other providers)

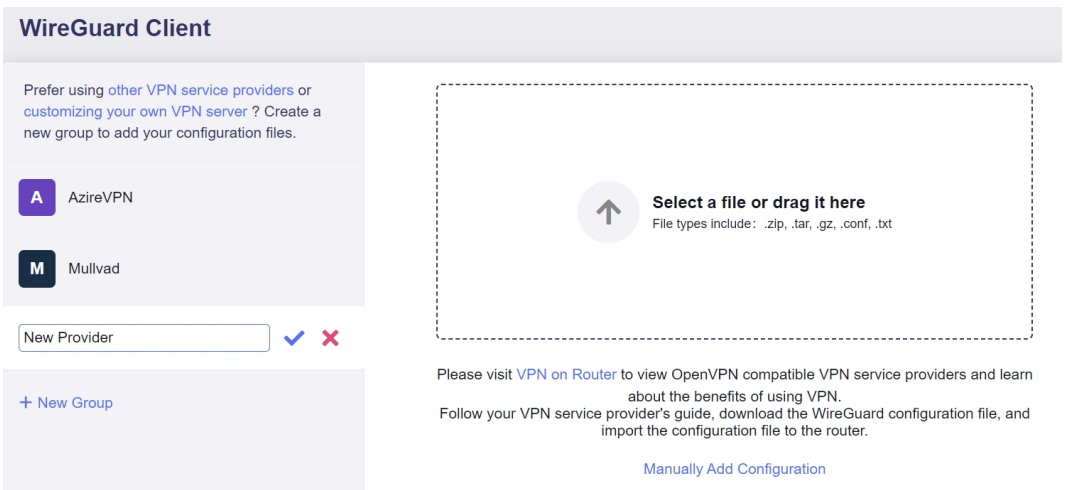
If your WireGuard service provider is not integrated into the web admin panel, visit the official website of your subscribed service provider first to obtain the configuration file. Then upload it to the router to set up a WireGuard client. If you don't know how to download the configuration files, see this guide or contact their support.

Below are steps to upload the configuration file to the router to set up a WireGuard client.

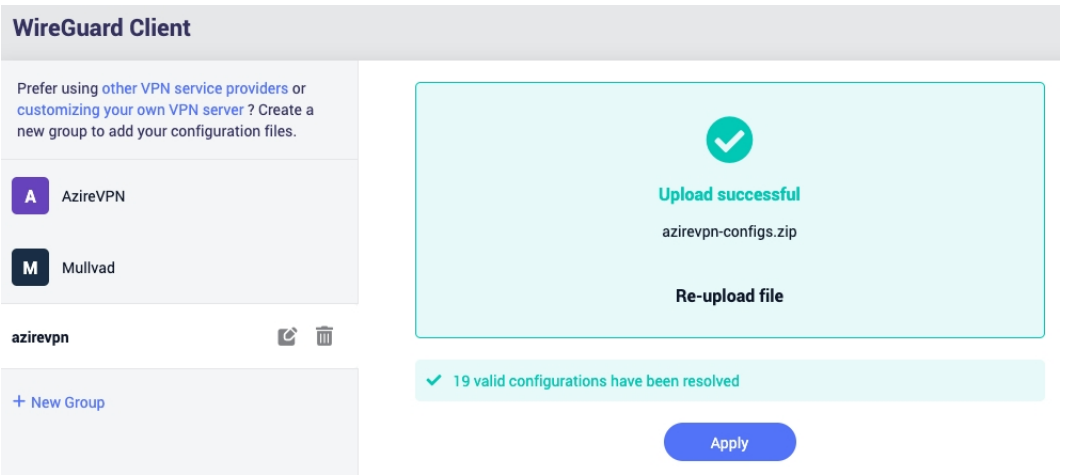
1. Log in to your router's web admin panel and navigate to **VPN** > **WireGuard Client** > **Add Manually**.



2. It will create a group on the left sidebar. Set a descriptive name for the group.

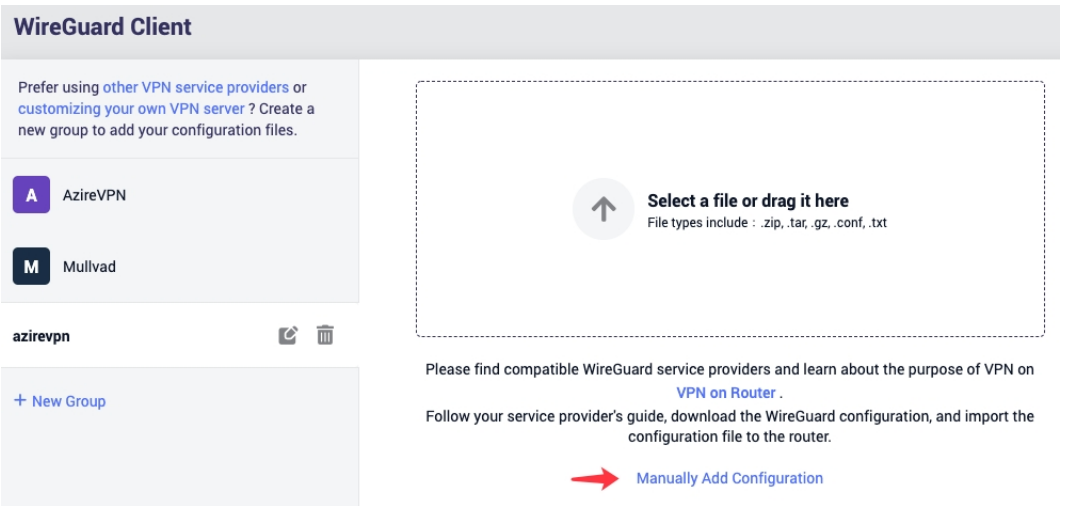


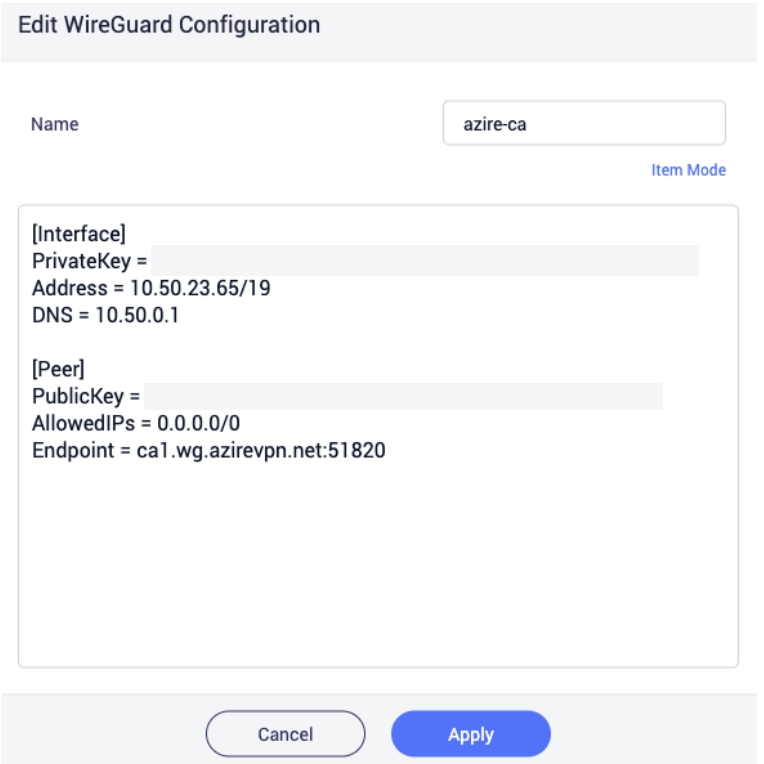
3. Click the upload area to upload your WireGuard configuration file (supported formats: zip, tar, gz, conf, txt), and click **Apply**.



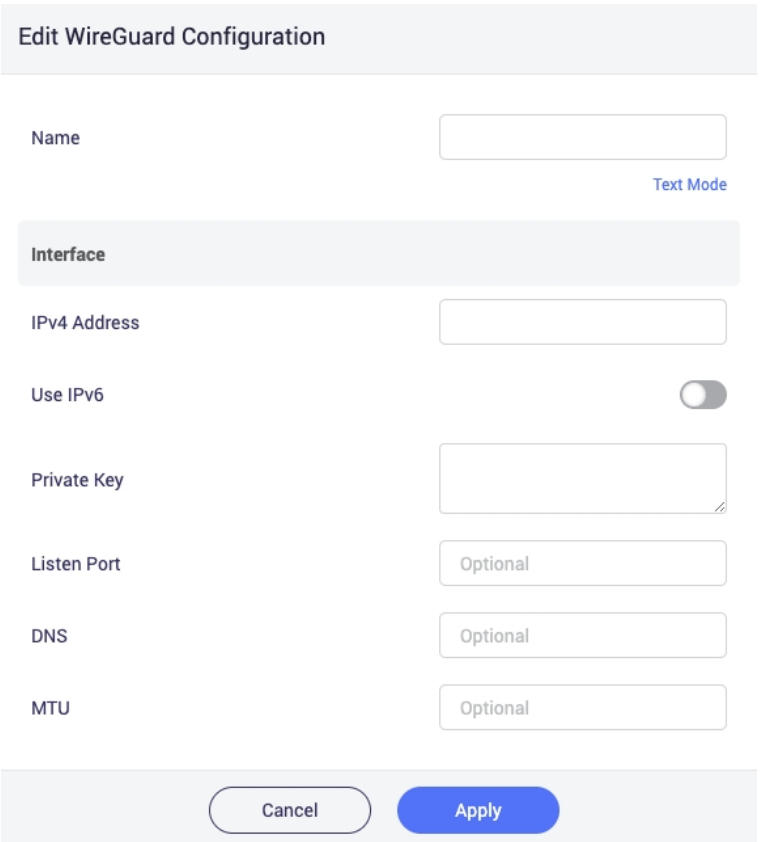
If you upload a compressed file containing multiple configuration files, it will be decompressed automatically.

Alternatively, you can click **Manually Add Configuration** at the bottom of the upload area, add configuration details in text form and click **Apply**.

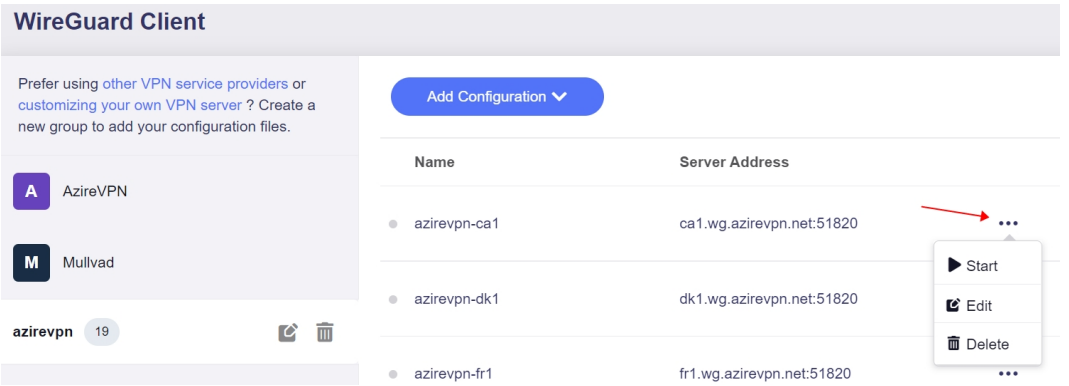




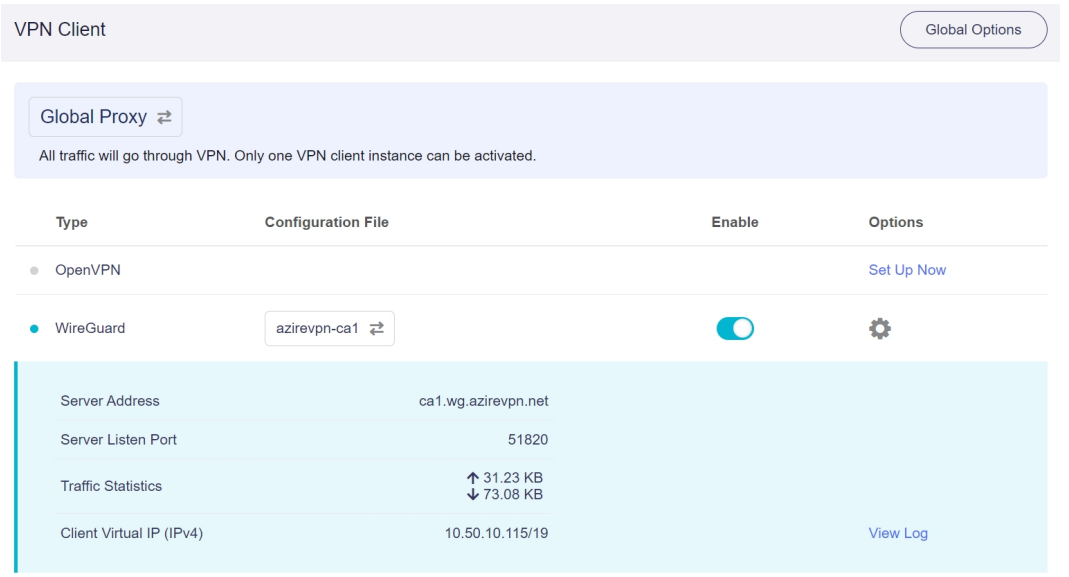
If you want to verify each item, you can switch to the Item mode and check the configuration details, then click **Apply**.



4. Click the three-dot icon on the right side to start the connection.



5. Once connected, a green dot will appear next to the configuration file. You can check the VPN connection details on the **VPN Dashboard**.



Chapter 11

Tor

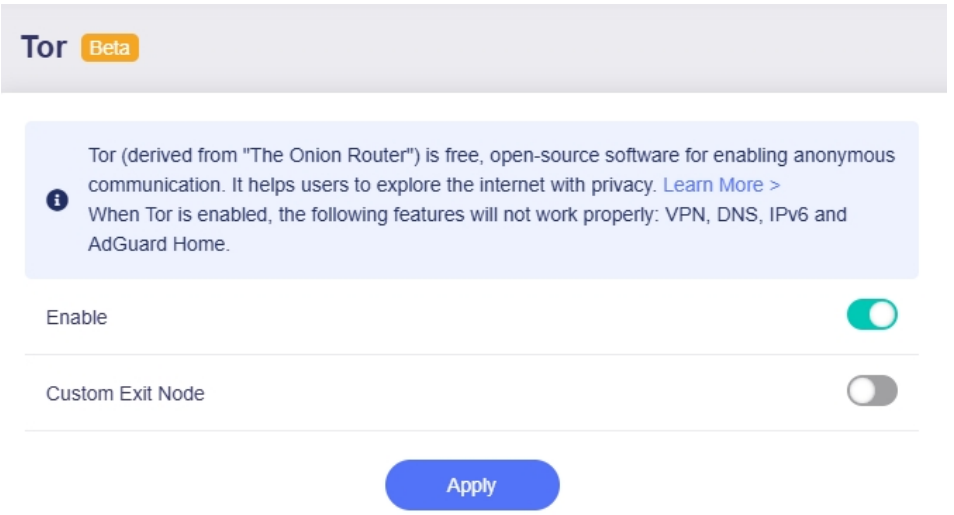
This chapter provides a brief introduction to Tor (The Onion Router), a free and open-source software for enabling anonymous communication.

Tor (derived from **The Onion Router**) is a free and open-source software for enabling anonymous communication. It helps users to explore the internet with privacy. Note that this feature is currently in beta, and may have some bugs.

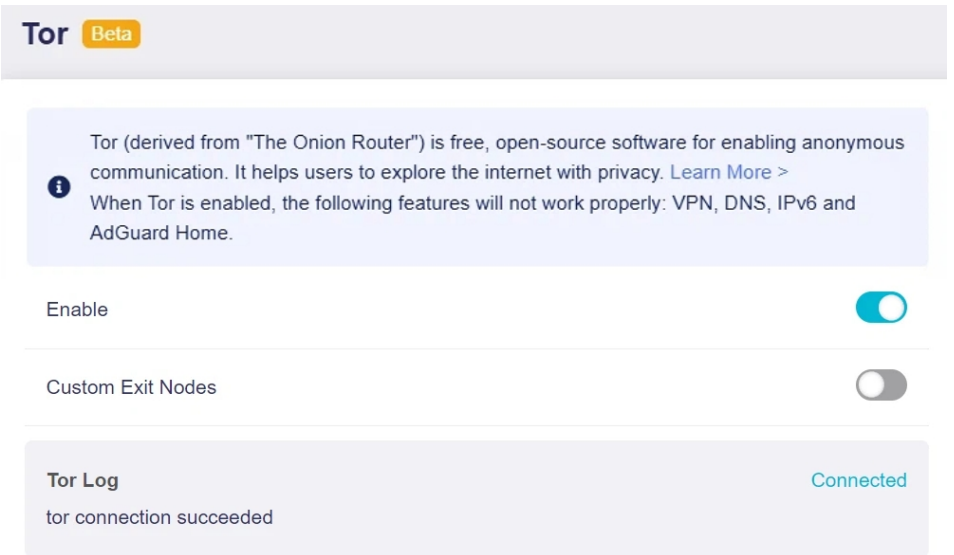
When Tor is enabled, the following features will not work properly: VPN, DNS, IPv6, and AdGuard Home.

Follow the steps below to set up Tor if needed.

1. Log in to your router's web admin panel and navigate to **VPN** > **Tor**. Toggle the switch to enable it, enable Custom Exit Nodes if required, and click **Apply**.



2. It will start connecting. If your network meets the requirements, it will show connected.



Chapter 12

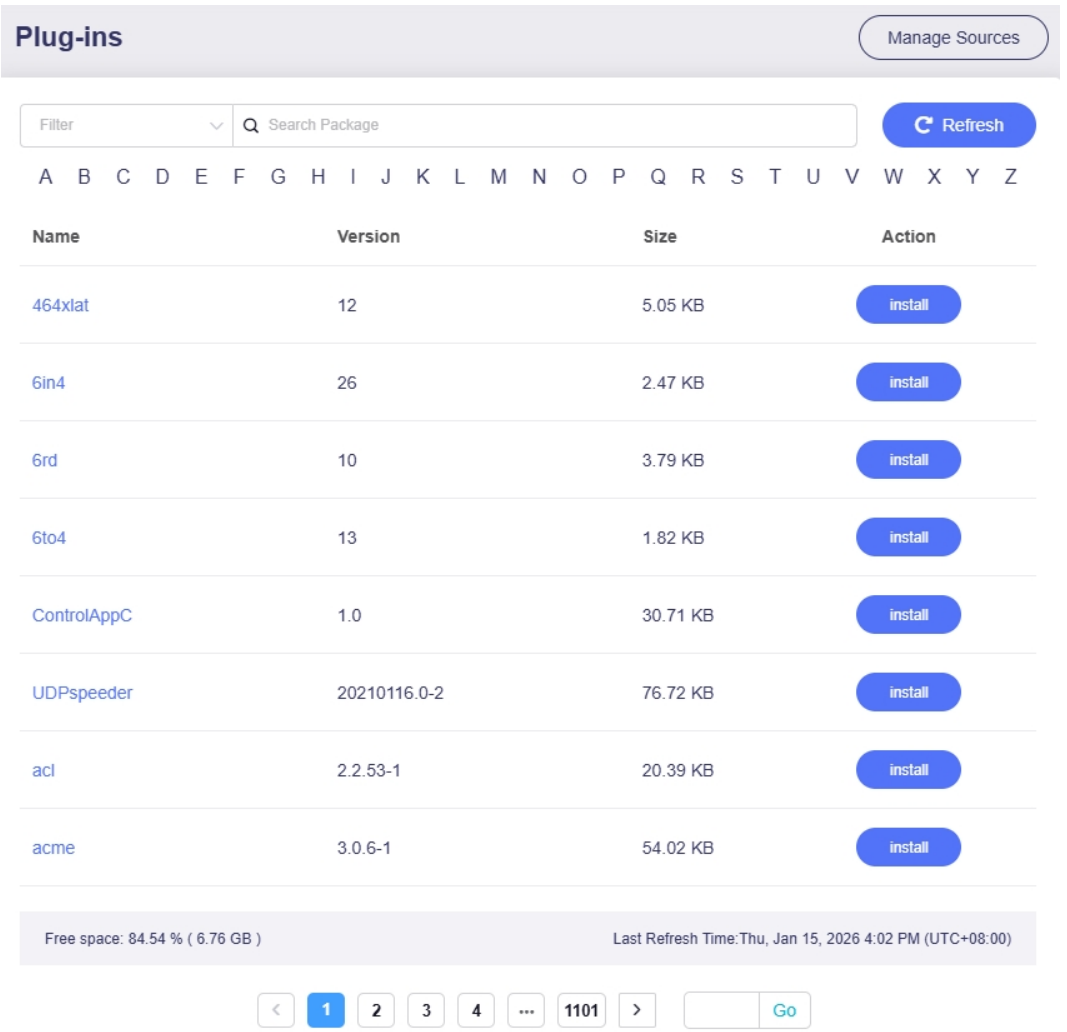
Applications

This chapter introduces some applications in GL.iNet routers, e.g., Plug-ins, Dynamic DNS, GoodCloud, AdGuard Home, Parental Control, ZeroTier, and Tailscale.

12.1 Plug-ins

The Plug-ins page allows you to manage OpenWrt packages.

Log in to your router's web admin panel, navigate to **APPLICATIONS** > **Plug-ins.** You can install or remove any package available in the repository. Click the **Refresh** button to update the package list before installing plug-ins.



Note:

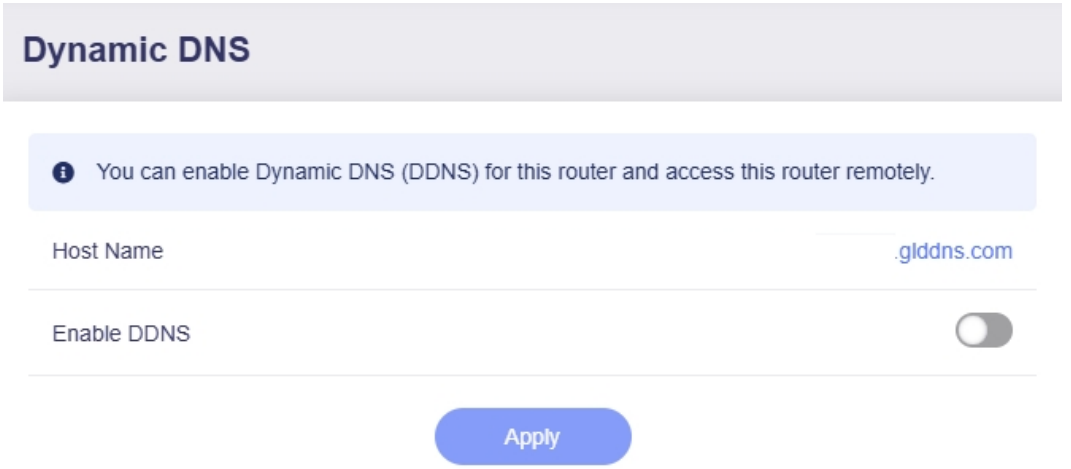
1. It is not recommended to update pre-installed plug-ins in GL.iNet official firmware, such as nginx, adguard home, tailscale, etc.
2. Third-party plugins manually installed by users can be updated; however, GL.iNet is not liable for any security issues from third-party plugins. For inquiries, please contact the respective third-party plugin authors.

12.2 Dynamic DNS

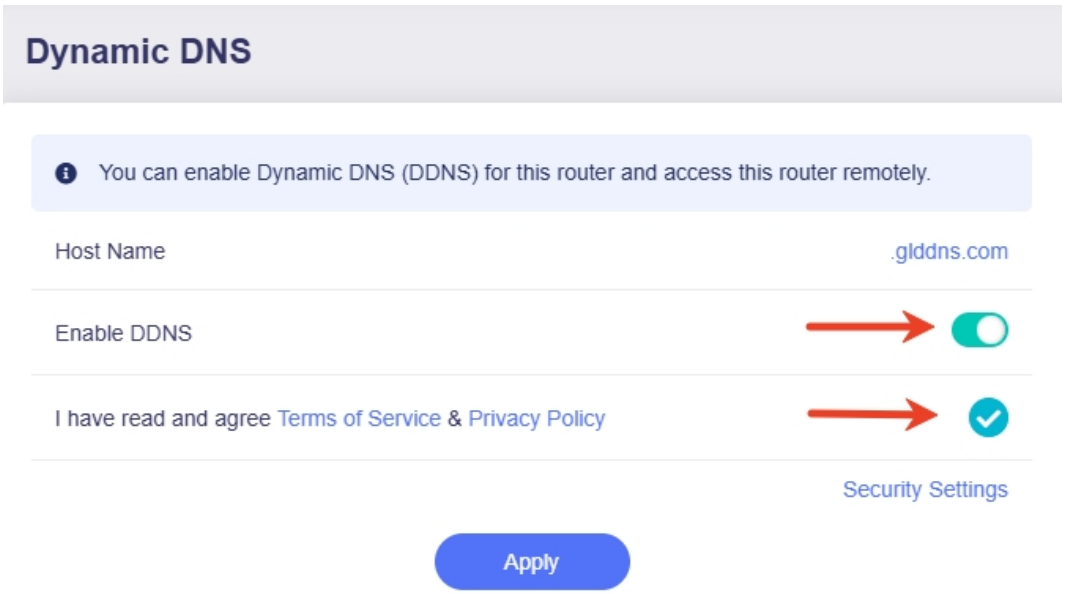
Dynamic Domain Name Service (DDNS, or Dynamic DNS) is a service used to map a domain name to the dynamic IP address of a network device. With Dynamic DNS, you can access your router remotely. A public IP address is required for this functionality.

12.2.1 Enable DDNS

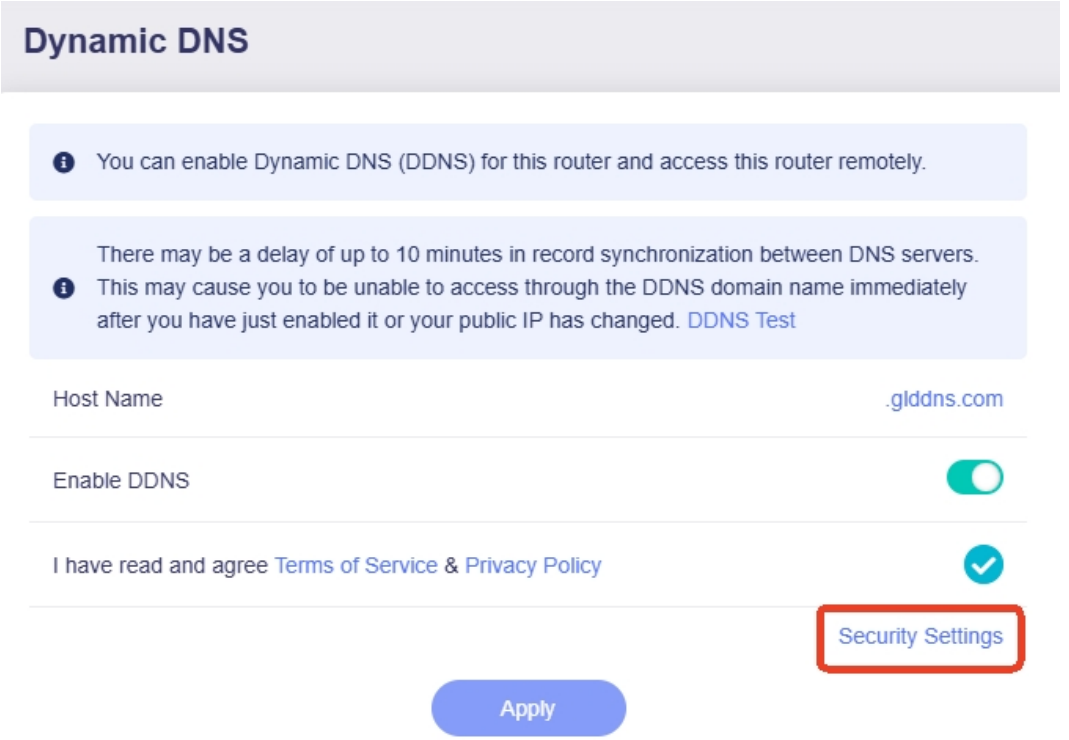
1. Log in to your router's web admin panel, navigate to **APPLICATIONS** > **Dynamic DNS**, the page is displayed as below.



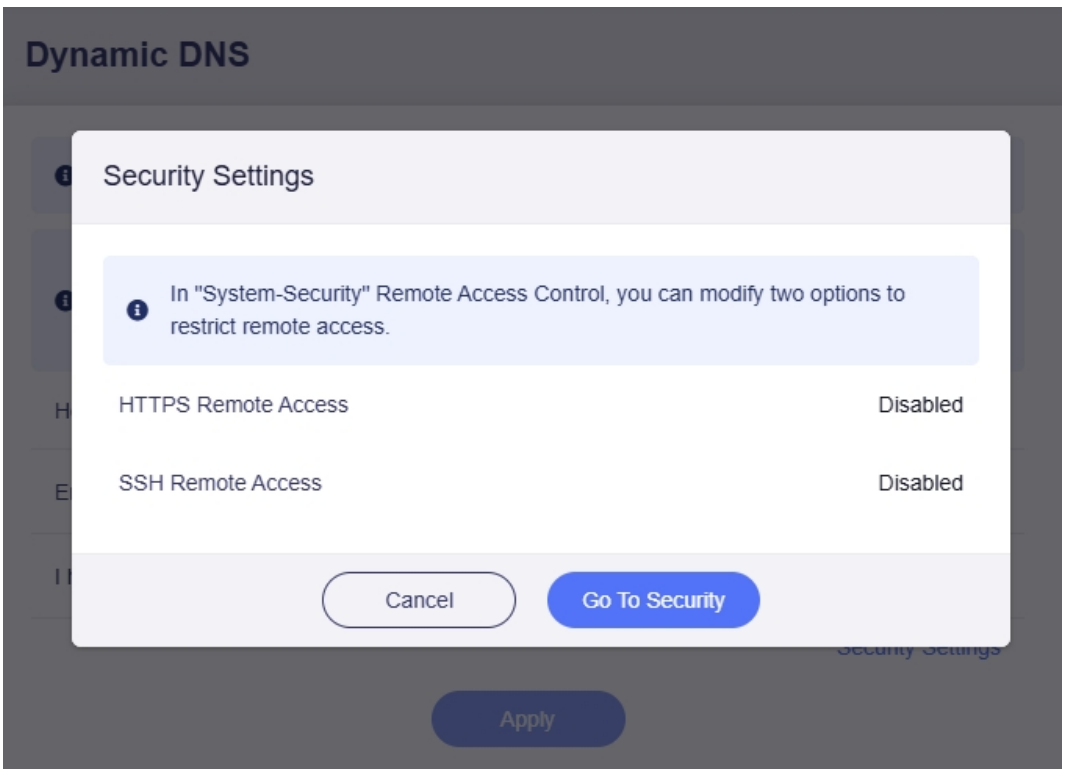
2. Toggle on **Enable DDNS**, read and agree to the **Terms of Services & Privacy Policy**, then click **Apply**.



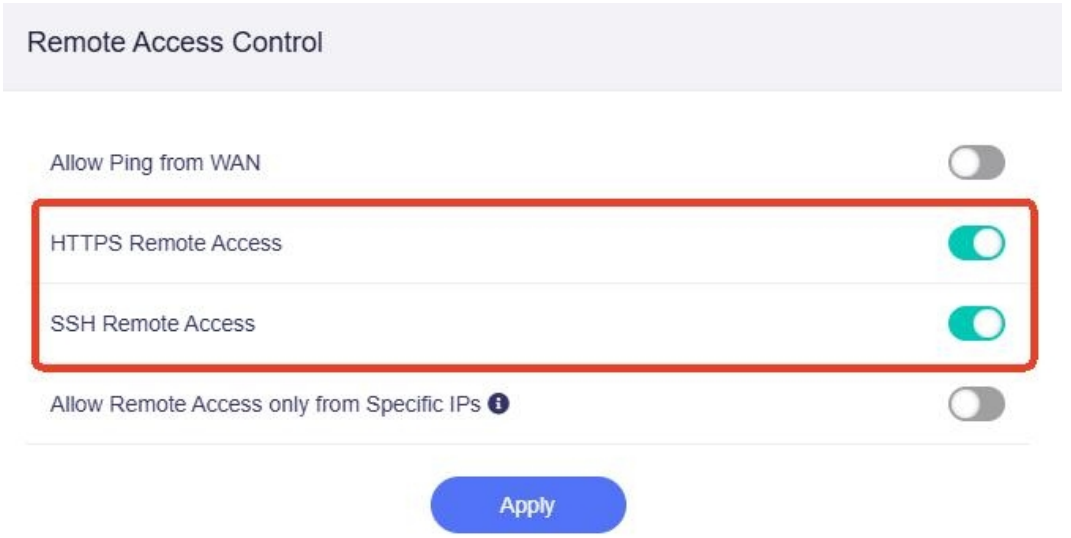
3. Click **Security Settings** in the bottom right corner.



4. In the pop-up window, check if the remote access you want to use is enabled.



If not, go to **SYSTEM** > **Security** > **Remote Access Control** to enable it, then click **Apply**.



Note:

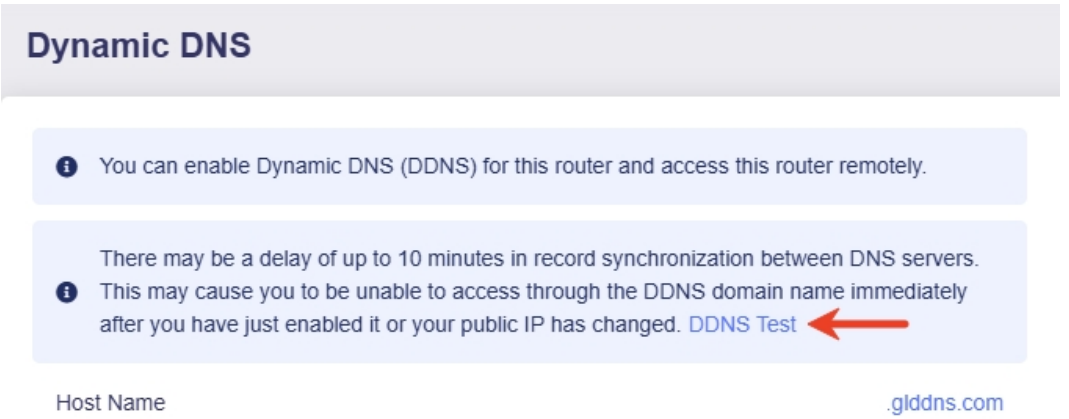
1. There may be a delay of up to 10 minutes in record synchronization between DNS servers. This may prevent you from accessing through the DDNS domain name immediately after enabling it or when your public IP changes.
2. If you enable DDNS and VPN Client at the same time, ensure that Services From GL.iNet Use VPN is disabled.

12.2.2 Check if DDNS Works

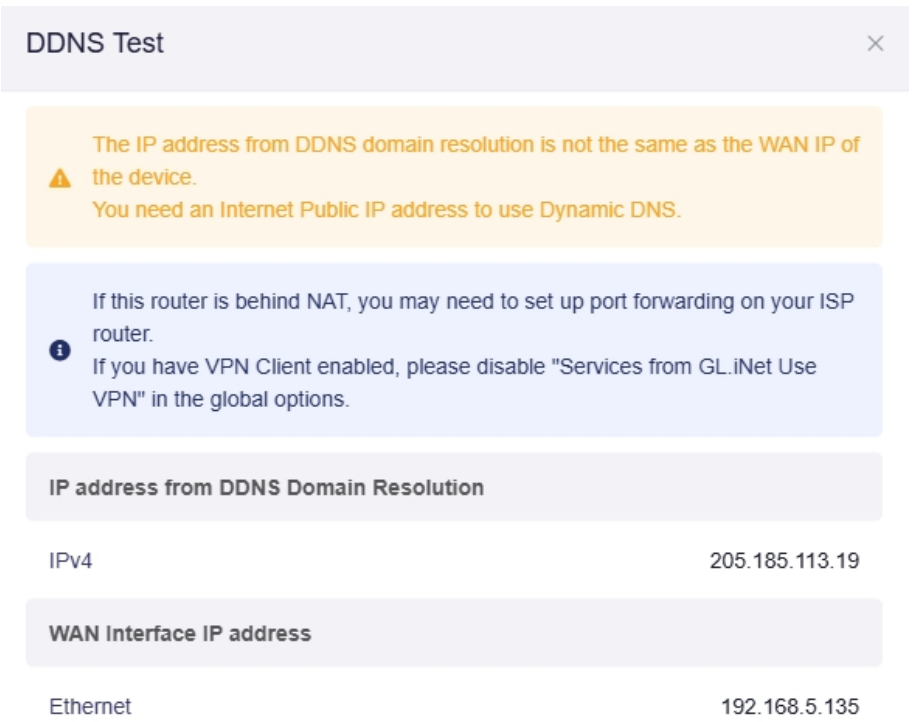
You can check if DDNS works using the DDNS test tool or manually via commands.

Method 1. Use DDNS Test tool

1. In the Dynamic DNS page, click the **DDNS Test**.



2. Make sure the IP address from DDNS domain resolution matches the router's WAN IP. If not, a yellow prompt will appear at the top, indicating that the router might be behind NAT, and you need to set up port forwarding on the upstream router.



Method 2. Use commands

1. Use nslookup command *nslookup xxxxxxx.glddns.com 8.8.8.8* to obtain the mapping between domain name and IP address, as shown below.



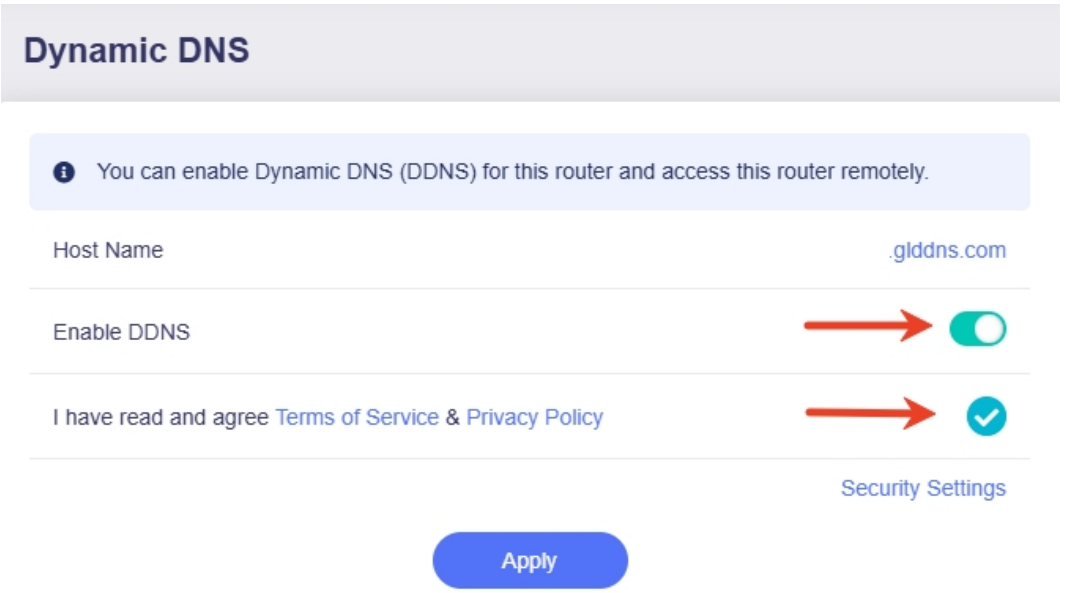
   - Replace “xxxxxxx.glddns.com” in the image above with your Host Name.
   - The “8.8.8.8” is the Google DNS. Use it or replace it with others, then press Enter.
2. If you get a public IP address such as “183.178.10.100” in the image above, it indicates that your DDNS domain has been successfully mapped to a public IP address. If you get a message like “server can’t find xxxxxxx.glddns.com”, it may indicate that domain resolution failed, and your DDNS domain has not been successfully mapped to a public IP address. Proceed to the next step to verify.
3. Log in to your router’s web admin panel and navigate to **INTERNET**. Find your router’s WAN IP address in the current active interface. Compare this IP address with the public IP address obtained above. If they are the same, the DDNS is in effect, otherwise it is not.

12.2.3 HTTPS Remote Access

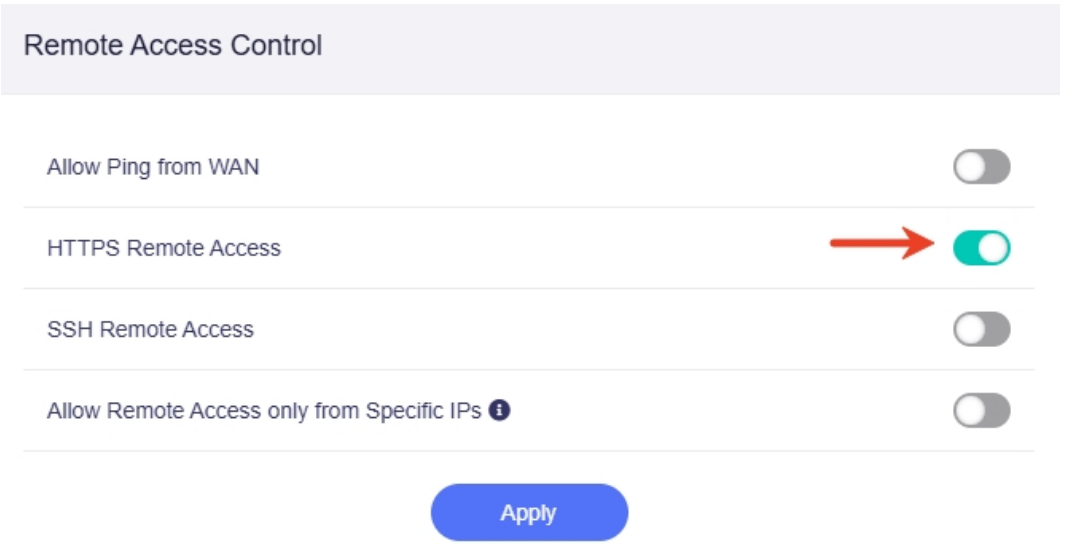
A **Public IP address** is required for HTTPS remote access. See here to verify whether your ISP assigns you a public IP address. If your router is behind NAT, configure port forwarding (**port 443**) on the upstream router for HTTPS access.

Follow the steps below to enable HTTPS remote access for your router.

1. On the Dynamic DNS page, toggle on **Enable DDNS**, agree to the **Terms of Services & Privacy Policy**, then click **Apply**.

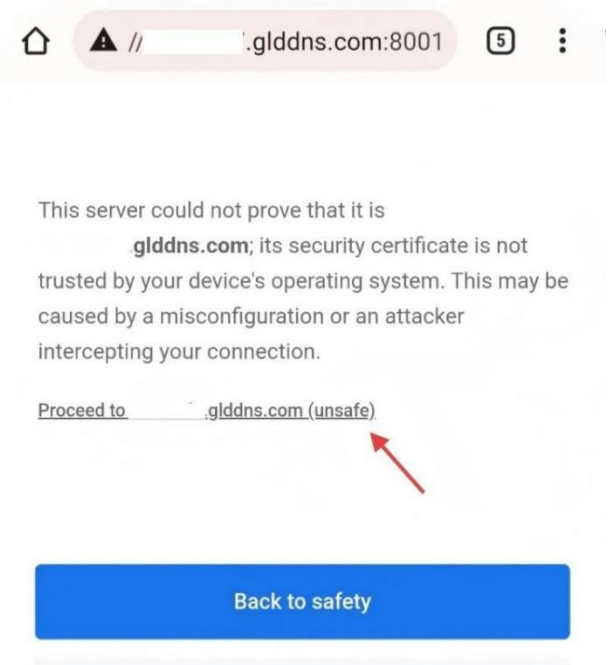


2. In the web admin panel, go to **SYSTEM** > **Security** > **Remote Access Control**. Enable **HTTPS Remote Access**, and click **Apply**.



3. Once enabled, you can access the router’s admin panel from anywhere using the DDNS host name over HTTPS, e.g., **https://xxxxxxx.glddns.com**. If port forwarding is configured, access it as **https://xxxxxxx.glddns.com:external_port** (replace the external_port with your actual port number).

Note: This function uses self-signed certificates; therefore, browsers will indicate "Your connection is not private" when accessing the router’s admin panel via the DDNS host name over HTTPS. To proceed the HTTPS remote access, click **Advanced** at the bottom, then click **Proceed to xxxxxxx.glddns.com** to continue.



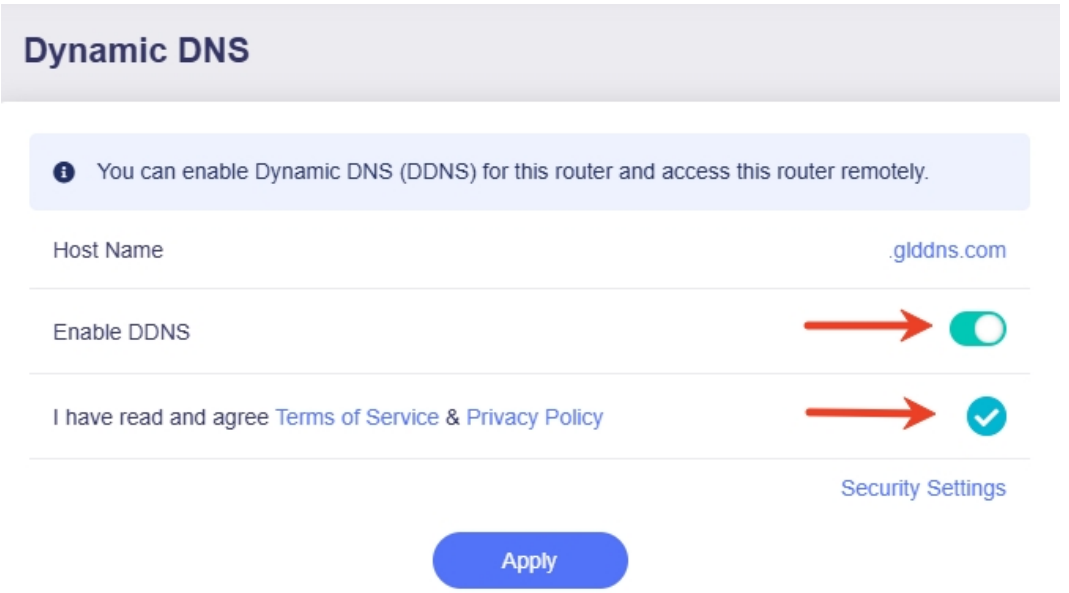
You will then be able to access the router’s web admin panel using the DDNS host name over **HTTPS**.

12.2.4 SSH Remote Access

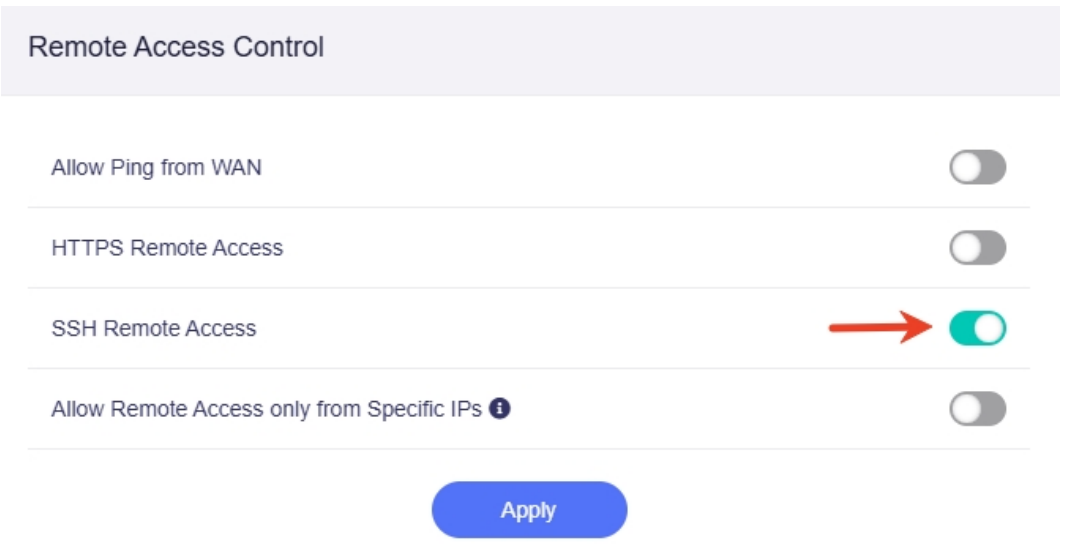
A **Public IP address** is required for SSH remote access. See here to verify whether your ISP assigns you a public IP address. If your router is behind NAT, configure port forwarding (**port 22**) on the upstream router for SSH remote access.

Follow the steps below to enable SSH remote access for your router.

1. On the Dynamic DNS page, toggle on **Enable DDNS**, agree to the **Terms of Services & Privacy Policy**, then click **Apply**.



2. In the web admin panel, go to **SYSTEM** > **Security** > **Remote Access Control**. Enable **SSH Remote Access**, and click **Apply**.



Once enabled, you can access the router's admin panel from anywhere using the DDNS host name over SSH, e.g., **ssh root@xxxxxxx.glddns.com**. If port forwarding is configured, access it as **ssh root@xxxxxxx.glddns.com:external_port** (replace the external_port with your actual port number).

12.3 GoodCloud

GL.iNet GoodCloud is a platform designed to simplify the remote deployment and management of connected devices. It provides an easy way to remotely access and manage GL.iNet routers. By centralizing network devices on the cloud, users can efficiently perform batch management tasks, such as deploying network configurations and performing software upgrades. They can also remotely access the router's web admin panel or connect to the router's terminal via SSH, achieving cross-regional and end-to-end network device management.

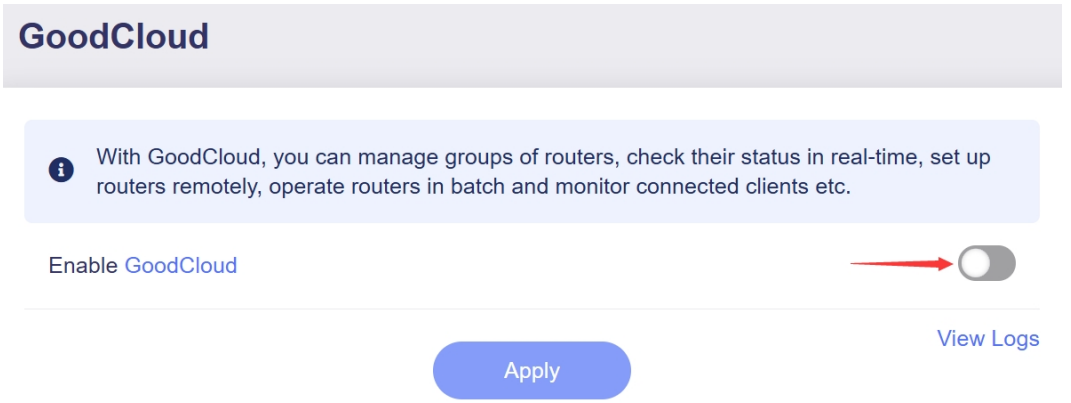
With GoodCloud, you can:

- Check your router’s status in real-time
- Manage groups of routers
- Set up routers remotely
- Monitor connected clients
- Operate routers in batch
- Establish Site-to-Site connection

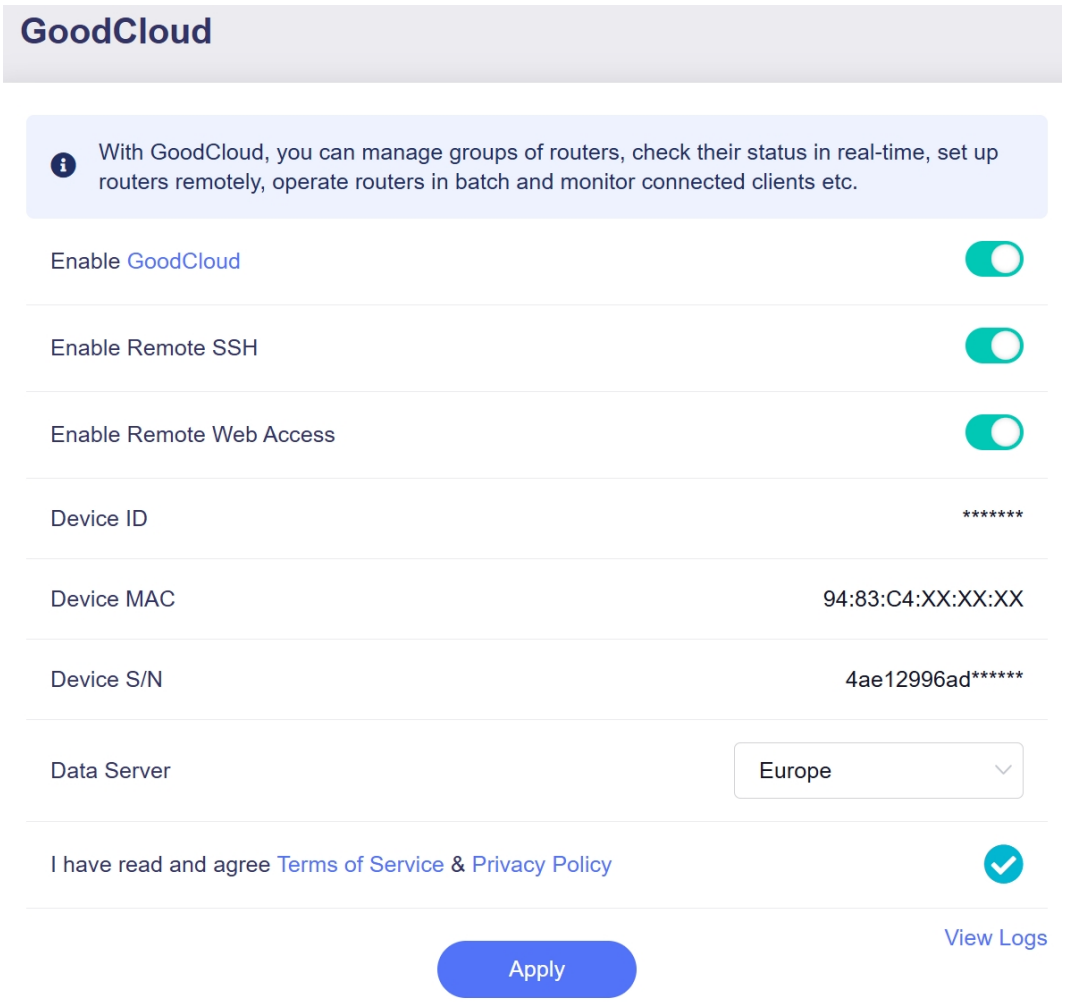
Some features are available in Enterprise Plan and VAR (Value Added Reseller) Plan. See here for details.

12.3.1 Enable GoodCloud

1. Log in to your router's web Admin Panel and navigate to **APPLICATIONS** > **GoodCloud**. Toggle the switch to enable GoodCloud.

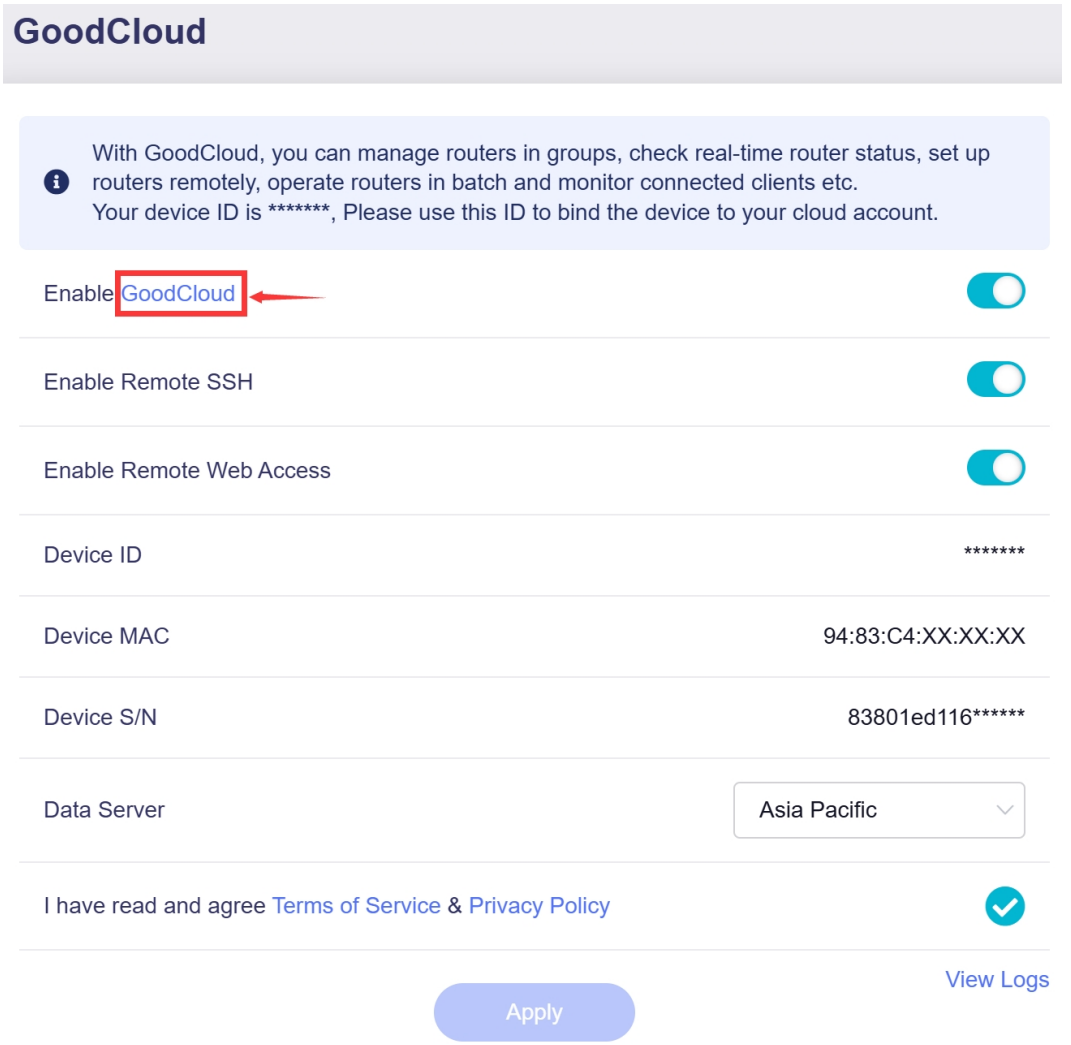


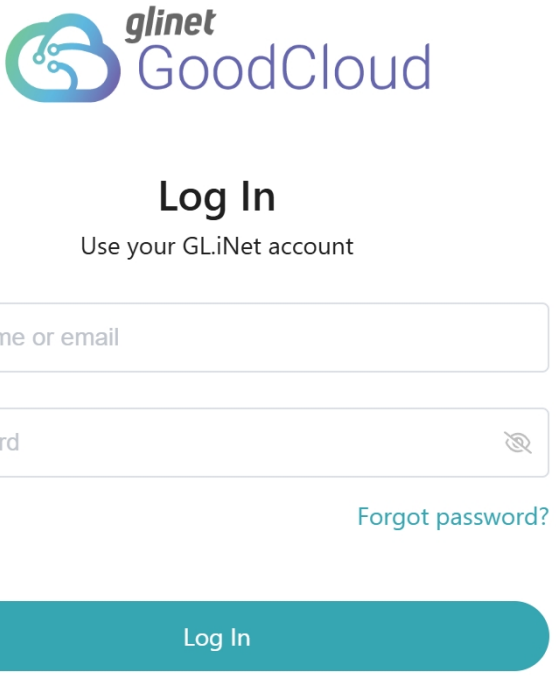
Enable **Remote SSH** and **Remote Web Access** if needed, select the nearest server, read and agree the **Terms of Service & Privacy Policy**, then click **Apply**.



- **Remote SSH**: For remotely accessing the router's terminal over SSH from GoodCloud platform.
- **Remote Web Access**: For remotely accessing the router's web Admin Panel over HTTP/HTTPS from GoodCloud platform.
- **Data Server**: Please choose the server nearest to your device's location. There are three options: Asia Pacific (Japan), America (Oregon), and Europe (Ireland).
- **View Logs**: Redirect to the Log page and display Cloud log.

2. Click GoodCloud to go to the login page, and log in with your GL.iNet Cloud account. If you don't have an account, sign up for one and log in. Once logged in, the router will be bound to your account automatically.

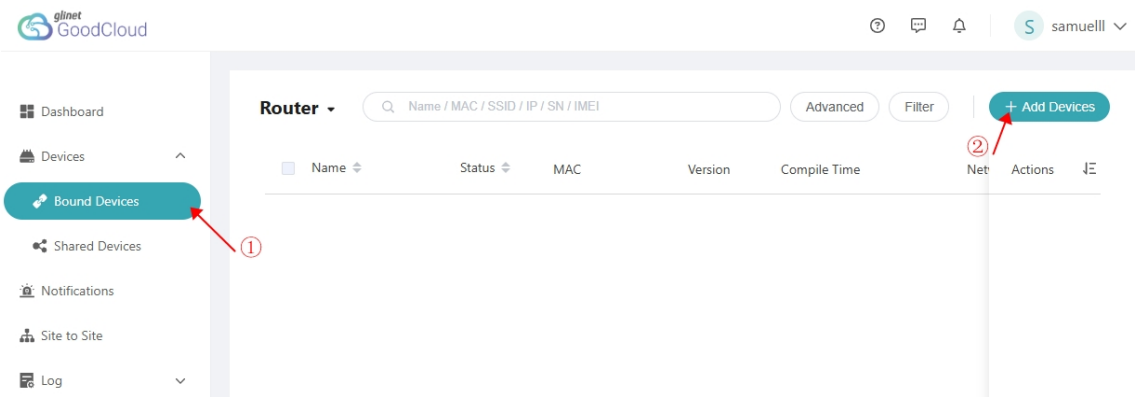




Tips:

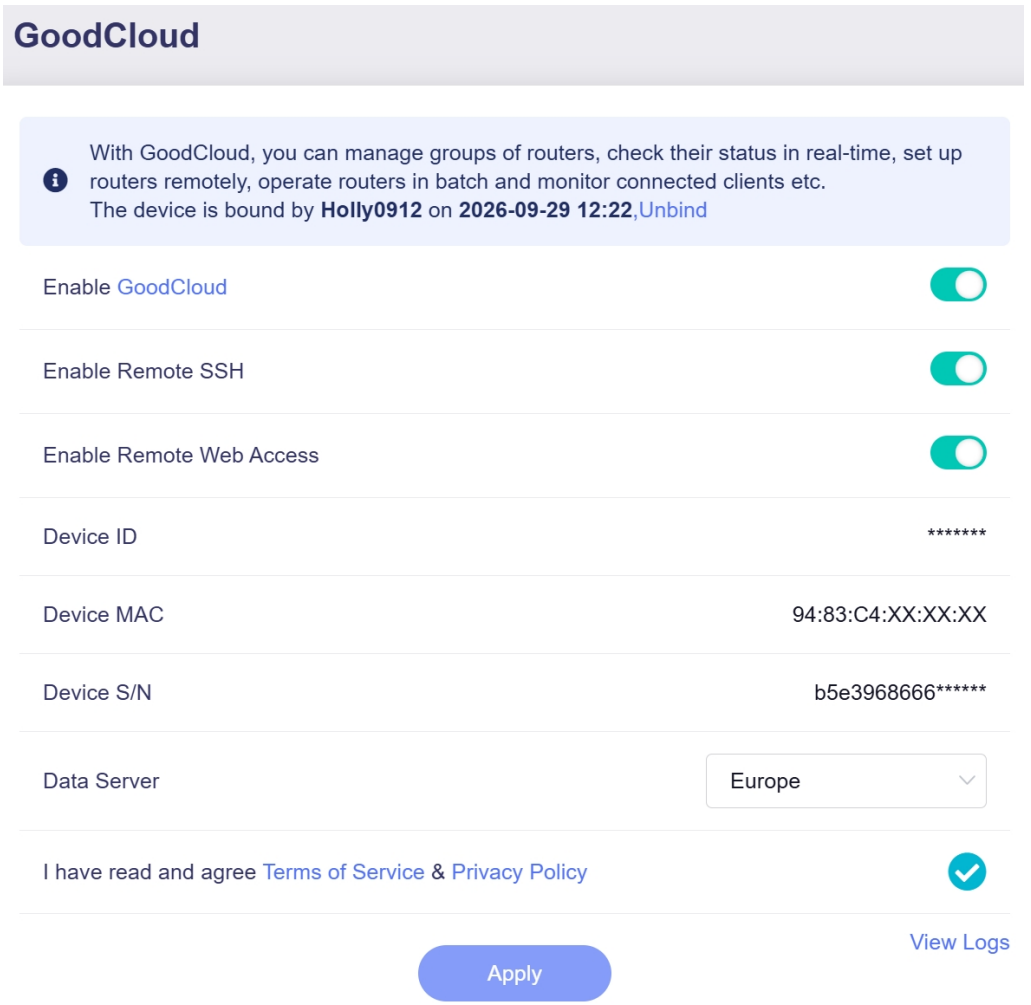
- The GoodCloud binding steps differ by firmware version.
- If you fail to receive the verification email, check your spam folder or try again later. For further assistance, contact us at support@gl-inet.com.

3. On the Cloud platform, navigate to **Devices** > **Bound Devices** > **Add Devices**.



There are three methods to bind device to your GoodCloud account: Auto Discover, Manually Add, and Bulk Import. Click here for more details.

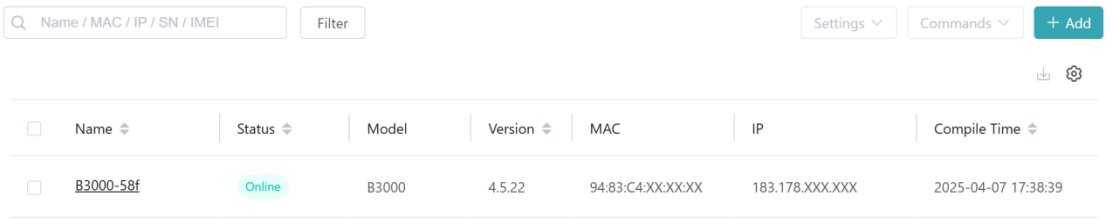
4. After successful binding, return to the router's web Admin Panel and navigate to **APPLICATIONS** > **GoodCloud**. This page displays the binding details, including username and binding time.


GoodCloud
With GoodCloud, you can manage groups of routers, check their status in real-time, set up routers remotely, operate routers in batch and monitor connected clients etc.
The device is bound by Holly0912 on 2026-09-29 12:22,Unbind
Enable GoodCloud
Enable Remote SSH
Enable Remote Web Access
Device ID
****
Device MAC
94:83:C4:XX:XX:XX
Device S/N
b5e3968666******
Data Server
Europe
I have read and agree Terms of Service & Privacy Policy
View Logs
Apply

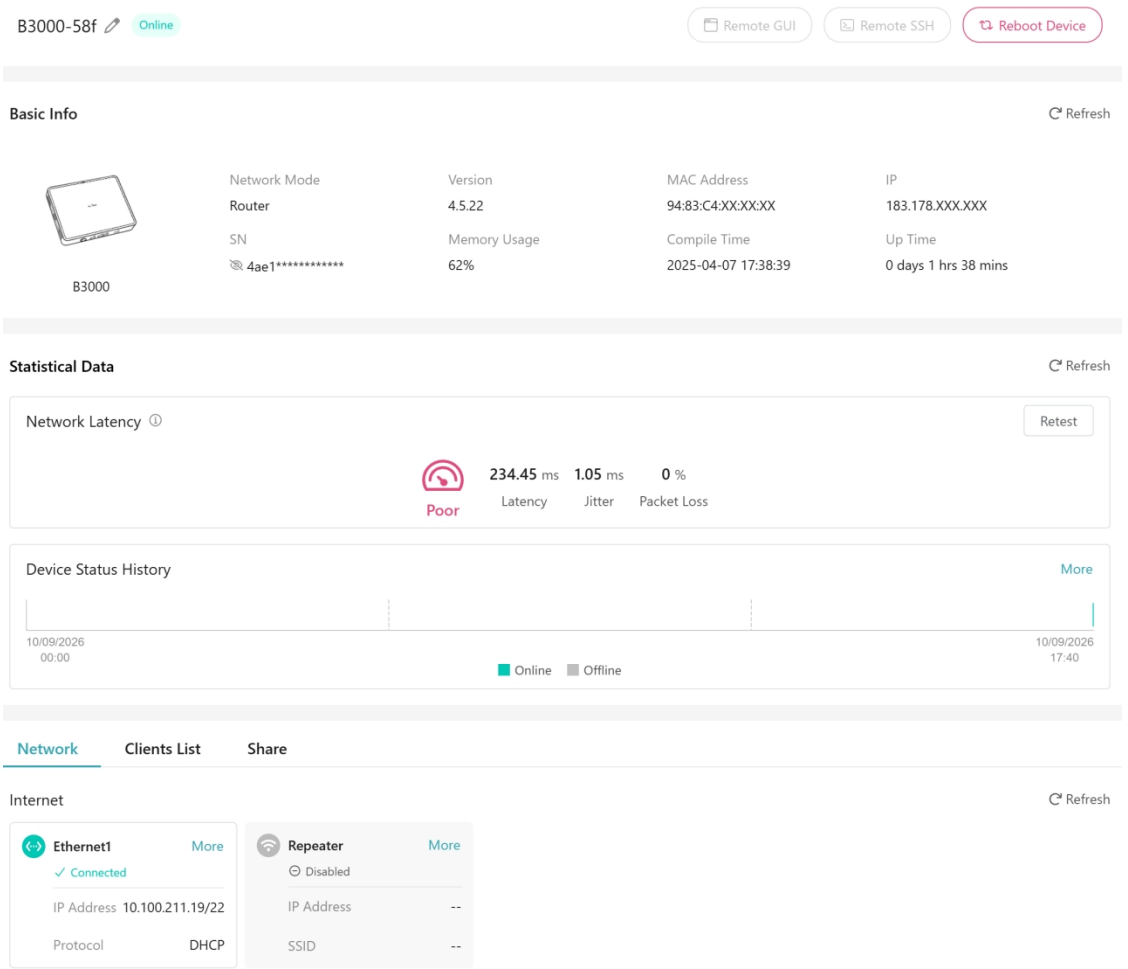
12.3.2 Manage Your Router

Check Device Details

Log in to the GoodCloud platform and navigate to **Devices** > **Bound Devices**. You can view the device's basic information, such as host name, status (online/offline), model, firmware version, and MAC address.

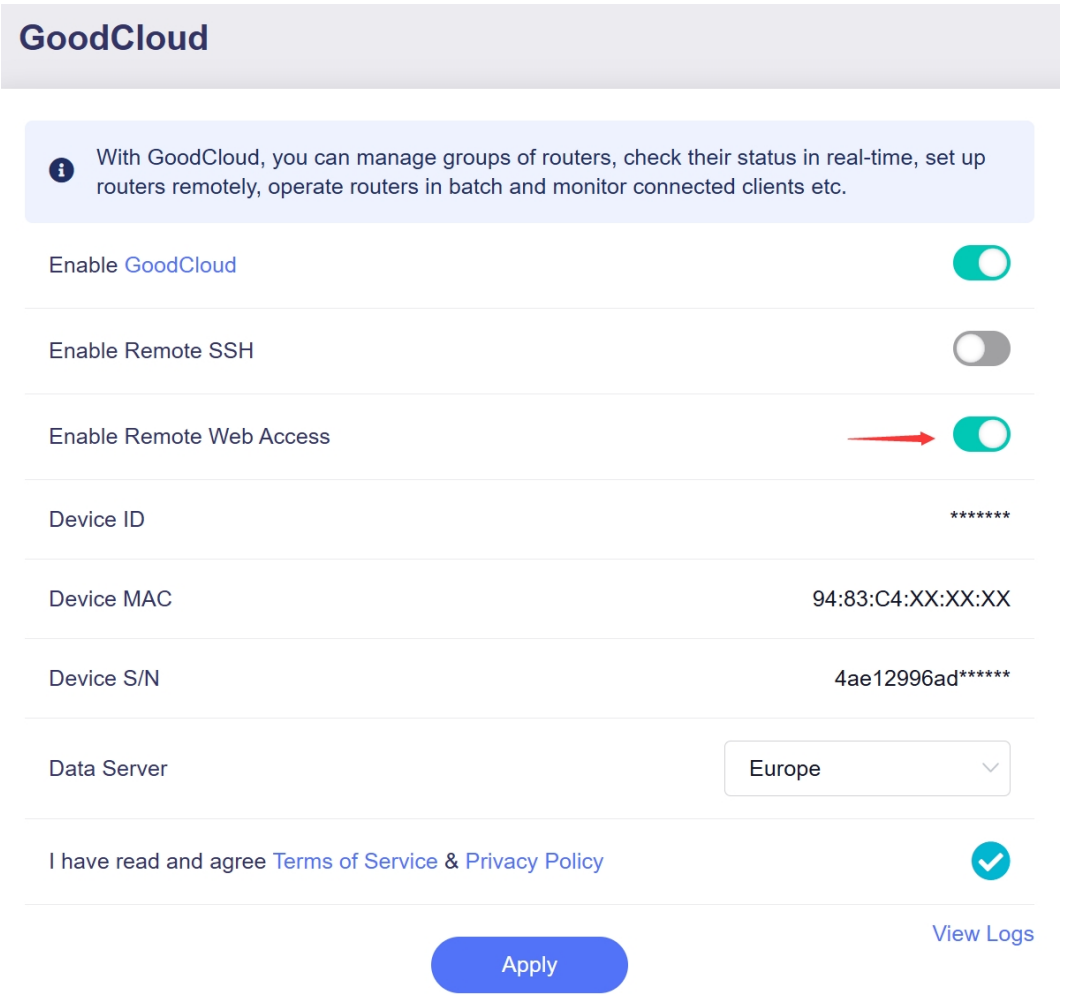


Click the device name to enter the device details page, which displays basic information, statistical data, network overview, client list, and timeline. You can also perform advanced operations, such as remotely accessing the router, and rebooting the device.

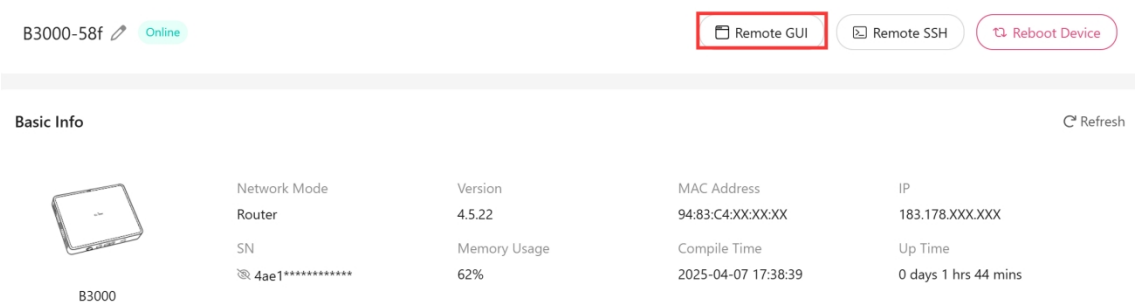


Remote Web Access

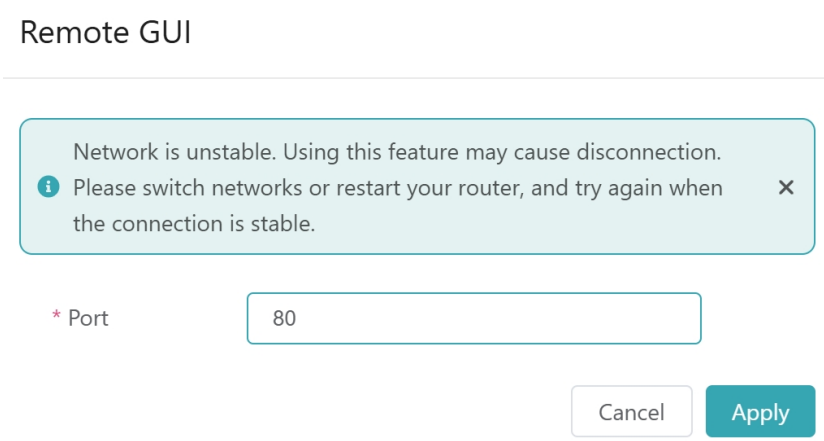
1. Log in to the router's web admin panel, navigate to **APPLICATIONS** > **GoodCloud**, enable **Remote Web Access**, then click **Apply**.



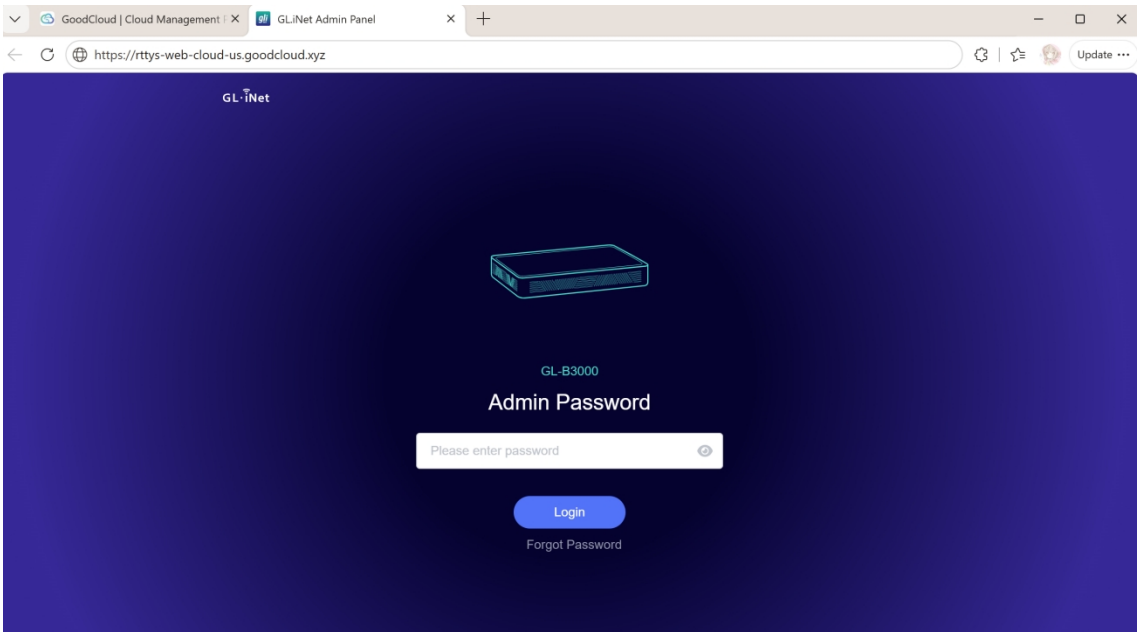
2. Log in to the GoodCloud platform and navigate to **Devices** > **Bound Devices**. Click the device you want to access, and you will enter the device details page.
3. On the device details page, click the **Remote GUI** button in the upper right corner.



4. Select the transfer protocol and port. The defaults are **HTTP** and Port **80**. You can switch the protocol to HTTPS if required, and the port will automatically change to 443. Then click **Apply**.

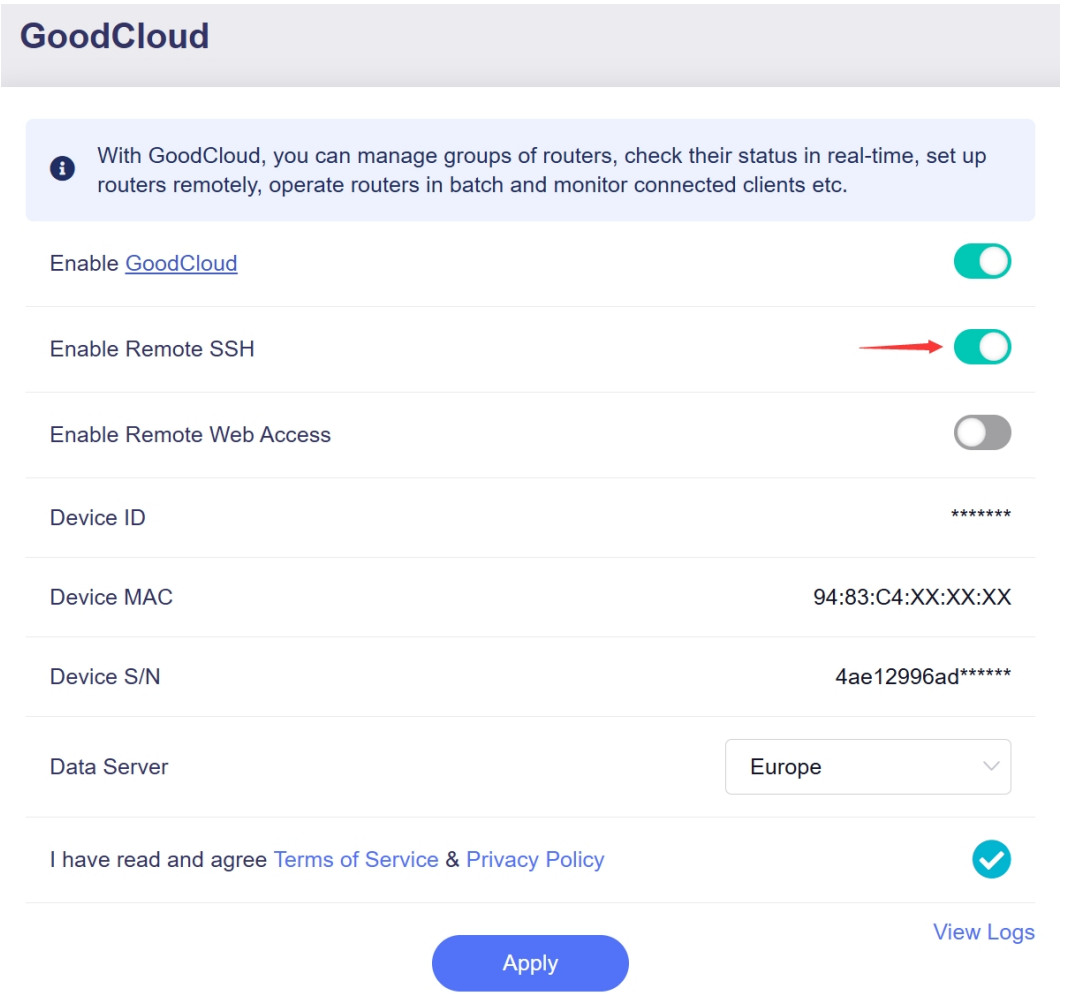


5. You will be re-directed to the router's login page. Enter the admin password to remotely access the router's web admin panel.

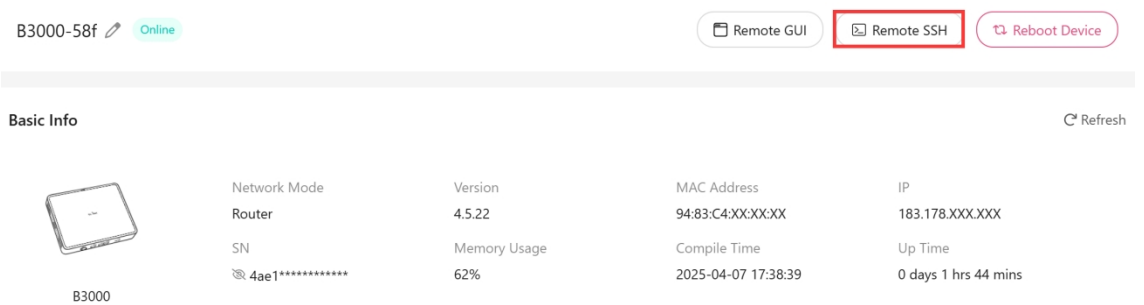


Remote SSH

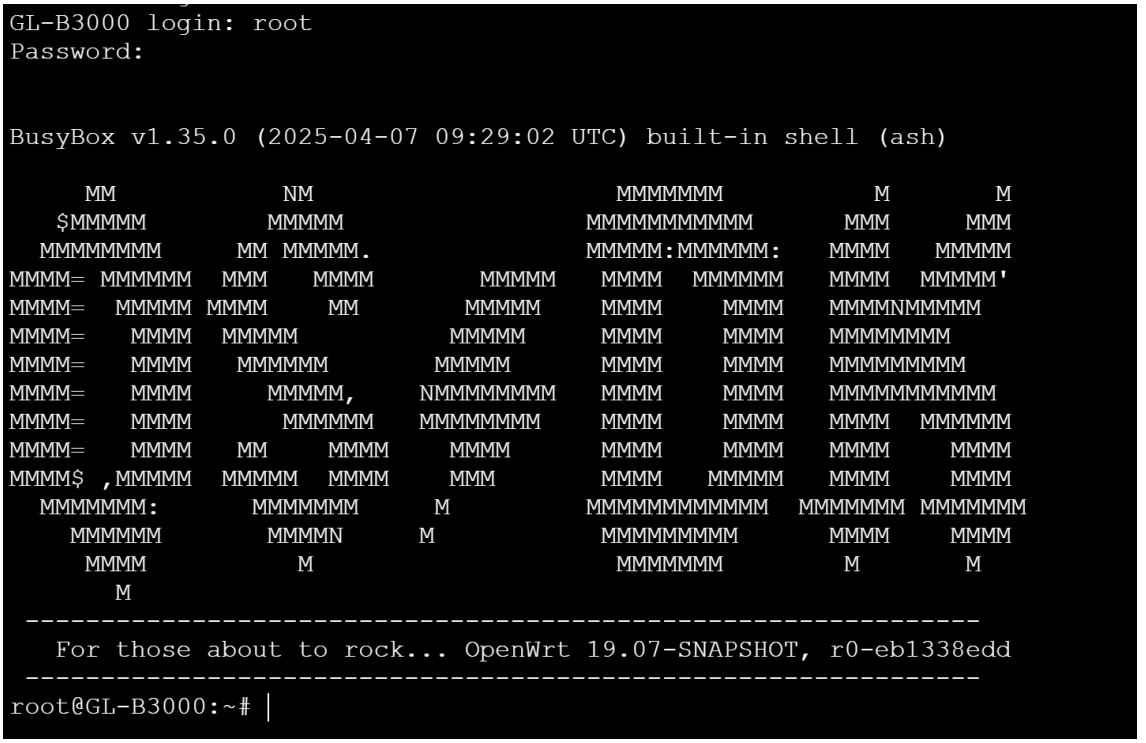
1. Log in to the router's web admin panel, navigate to **APPLICATIONS** > **GoodCloud**, enable **Remote SSH**, then click **Apply**.



2. Log in to the GoodCloud platform and navigate to **Devices** > **Bound Devices**. Click the device you want to access, and you will enter the device details page.
3. On the device details page, click the **Remote SSH** button in the upper right corner.

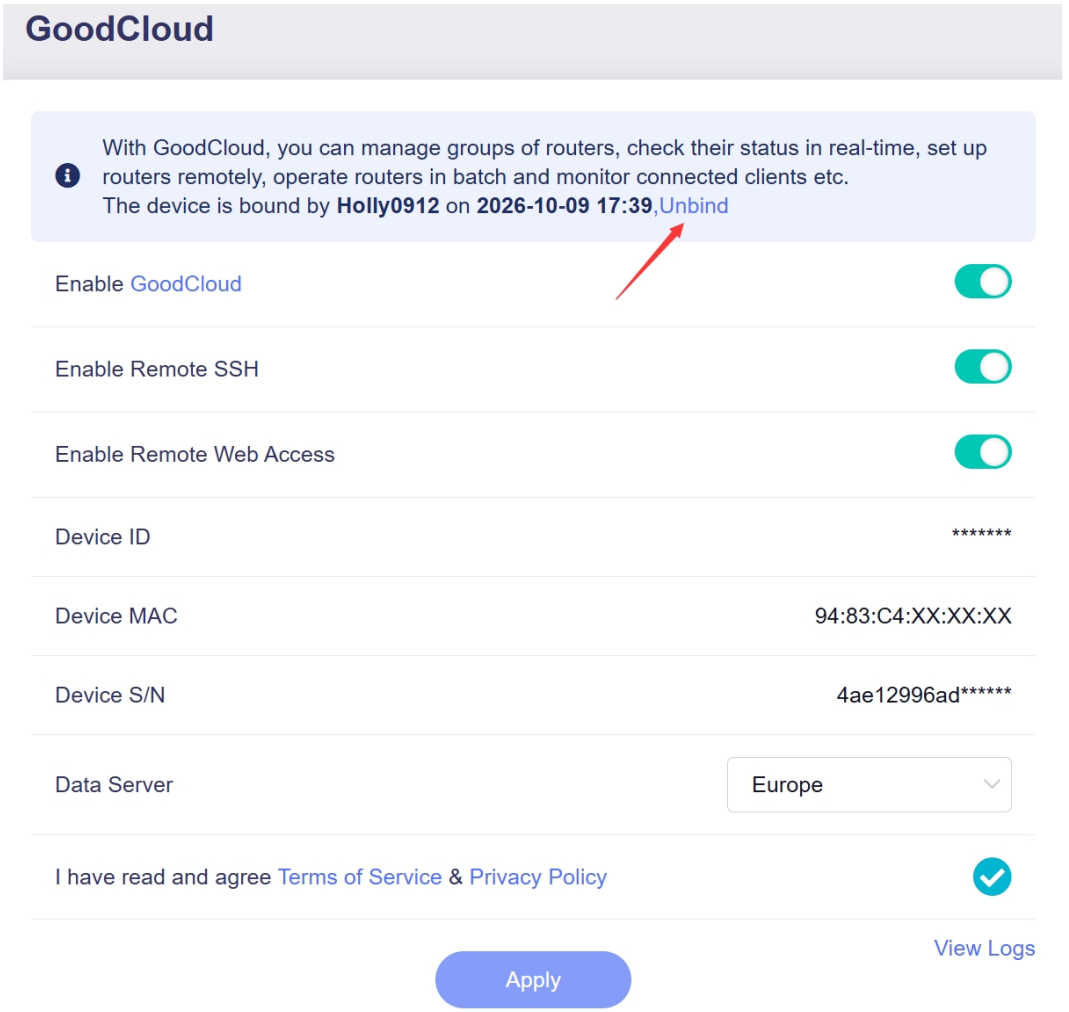


4. Log in as **root** and input the password to access the terminal of your router.

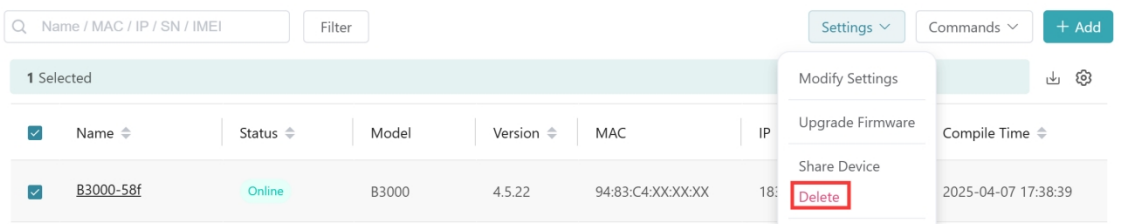


12.3.3 Unbind Device

In the router's web admin panel, click **Unbind**. Your device will then be unbound from your GoodCloud account.



Alternatively, log in to the Cloud platform and navigate to **Devices** > **Bound Devices**. Select the device you want to unbind, click **Settings** in the upper right corner, then select **Delete**. Your device will then be unbound from your GoodCloud account.

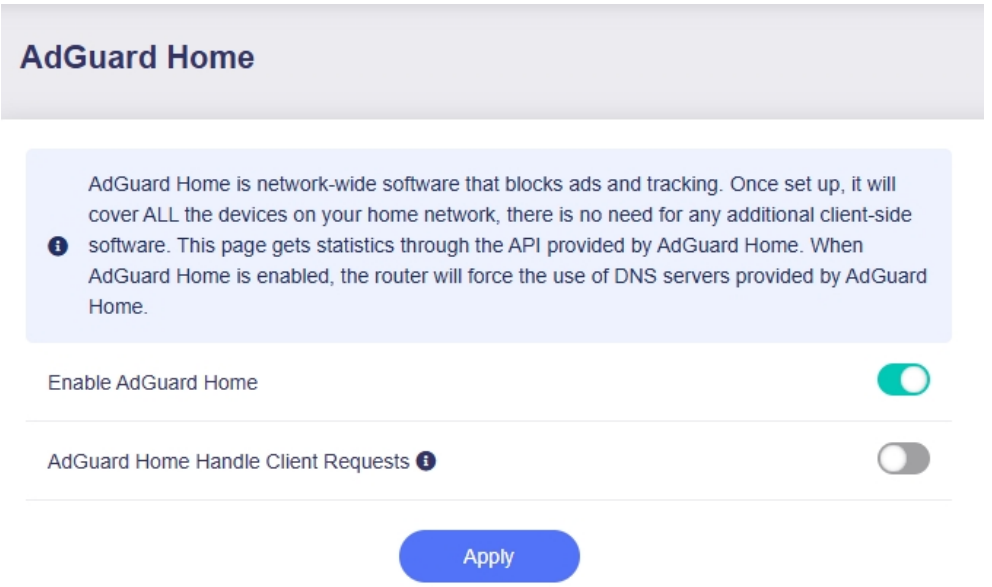


12.4 AdGuard Home

AdGuard Home is a network-wide ad-blocking and tracking-prevention software. Once set up, it will cover all client devices with no additional client-side software required.

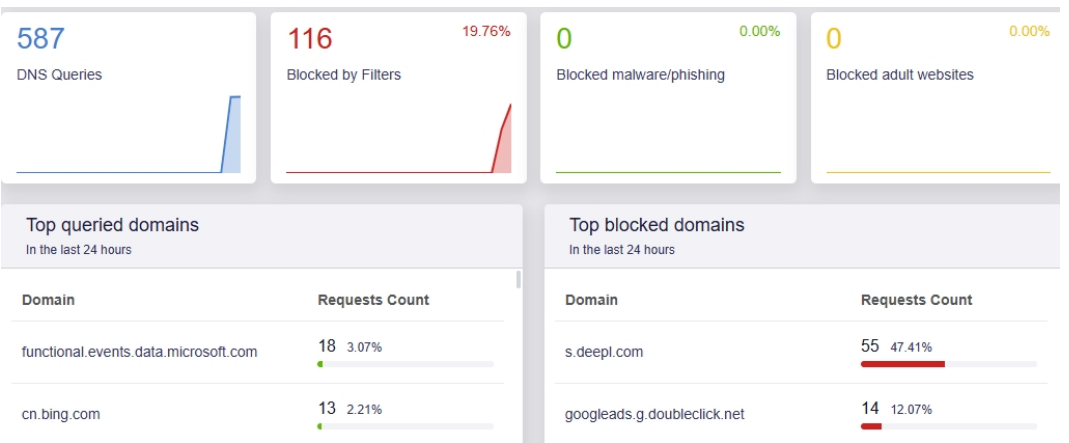
Follow these steps to set up AdGuard Home.

1. Log in to the router's web admin panel, navigate to **APPLICATIONS** > **AdGuard Home**. Toggle on **Enable AdGuard Home** and click **Apply**.

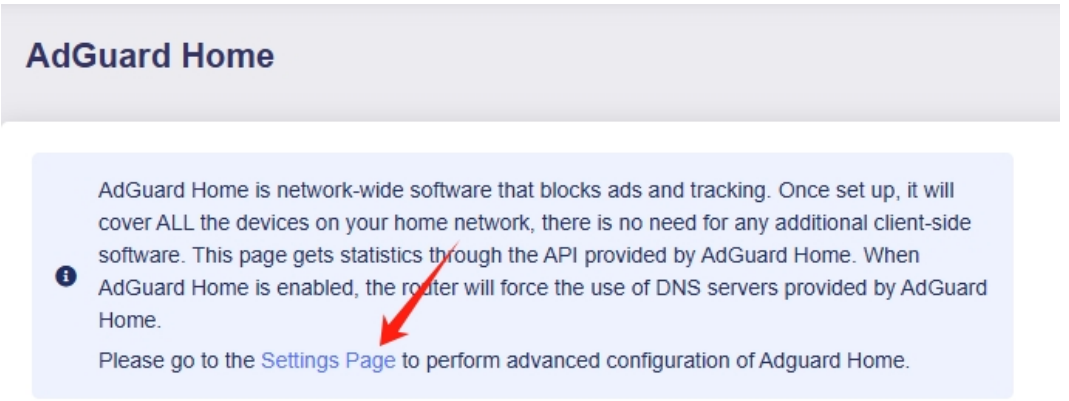


   - **AdGuard Home Handles Client Requests**: If enabled, DNS queries from client devices will be handled directly by AdGuard Home, but this will cause VPN policies based on domains to fail.

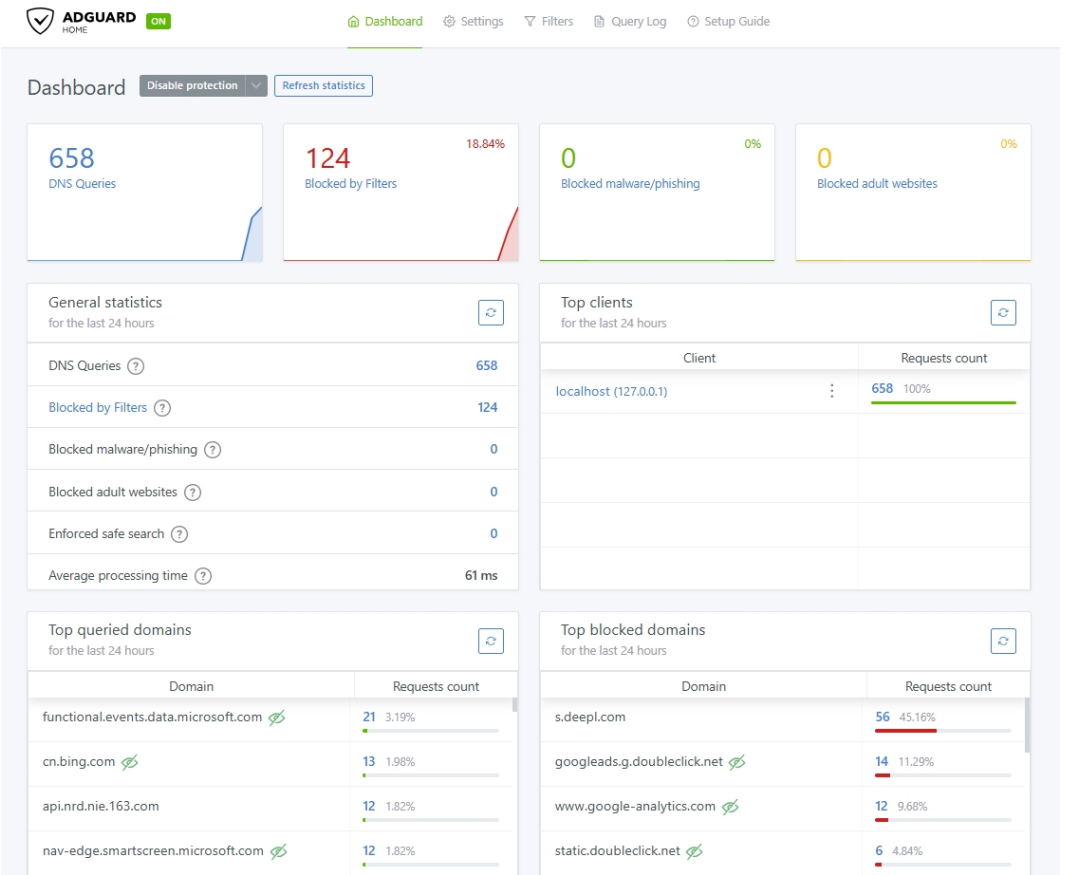
2. The page will automatically load DNS statistics (queries, blocked domains, etc.) via the API provided by AdGuard Home.



3. Click **Settings Page** to configure advanced settings for AdGuard Home.



4. You will be redirected to AdGuard Home's settings page. Please visit the [AdGuard Home Support Center] for assistance.



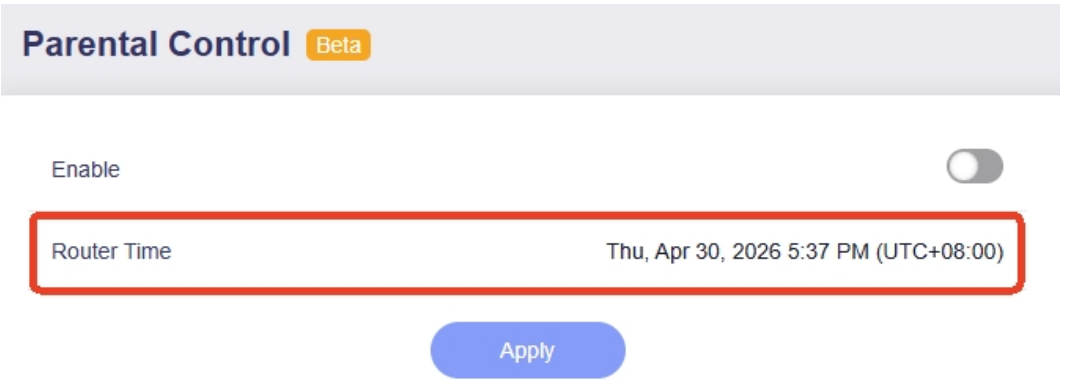
12.5 Parental Control

Parental control is a way to keep children safe online by blocking inappropriate websites and limiting how long they use devices. It helps prevent access to harmful content, manage screen time, and ensure children use the internet responsibly.

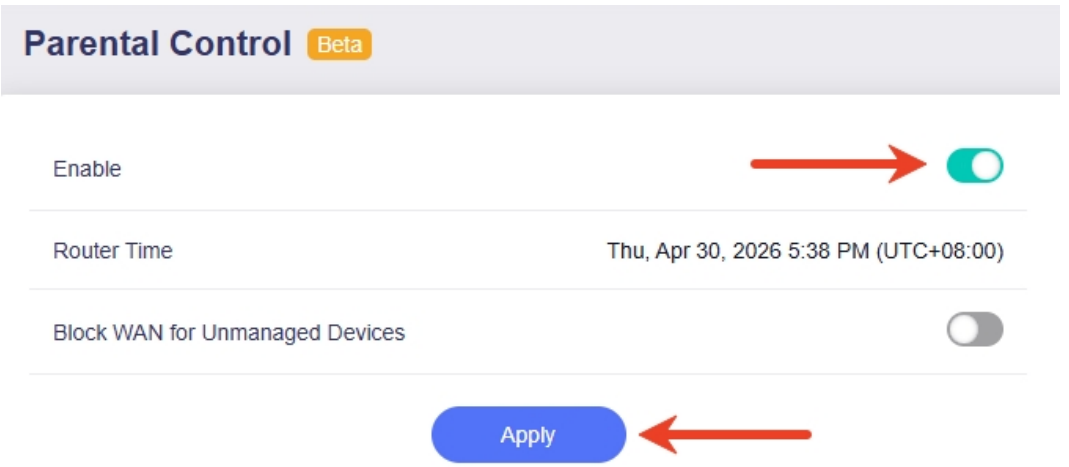
12.5.1 Quick Setup

Follow these steps to set up Parental Control on GL.iNet routers.

1. Log in to the router's web admin panel and go to **APPLICATIONS** > **Parental Control.** Ensure the router time is accurate. If not, go to **SYSTEM** > **Time Zone** to synchronize it first.



2. Enable Parental Control and click **Apply**. Then follow the setup wizard to set up Parental Control. You can also watch the setup video here.



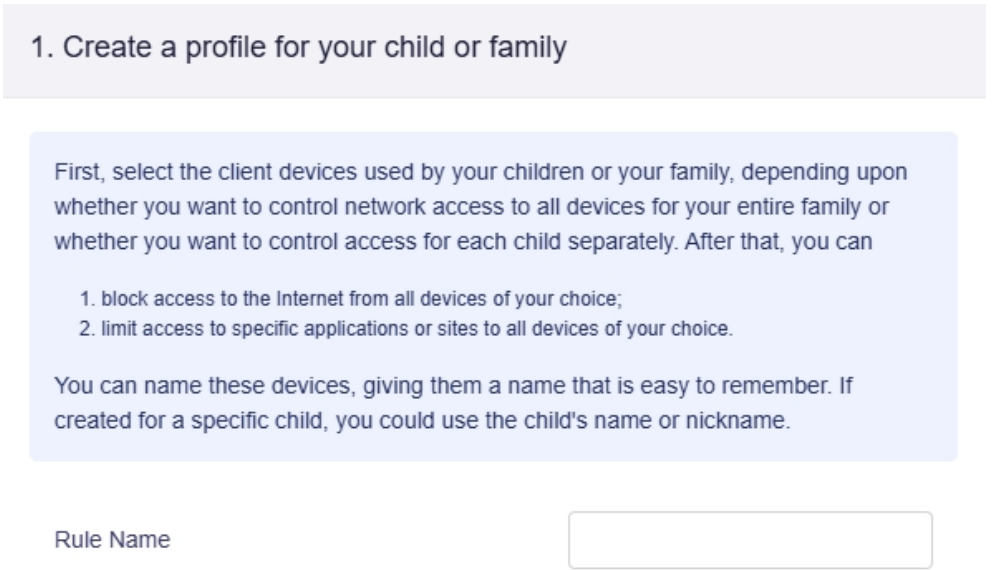
- **Block WAN for Unmanaged Devices**: Blocks internet access for all devices that are not on the Parental Control list.

Here is a use case for your reference.

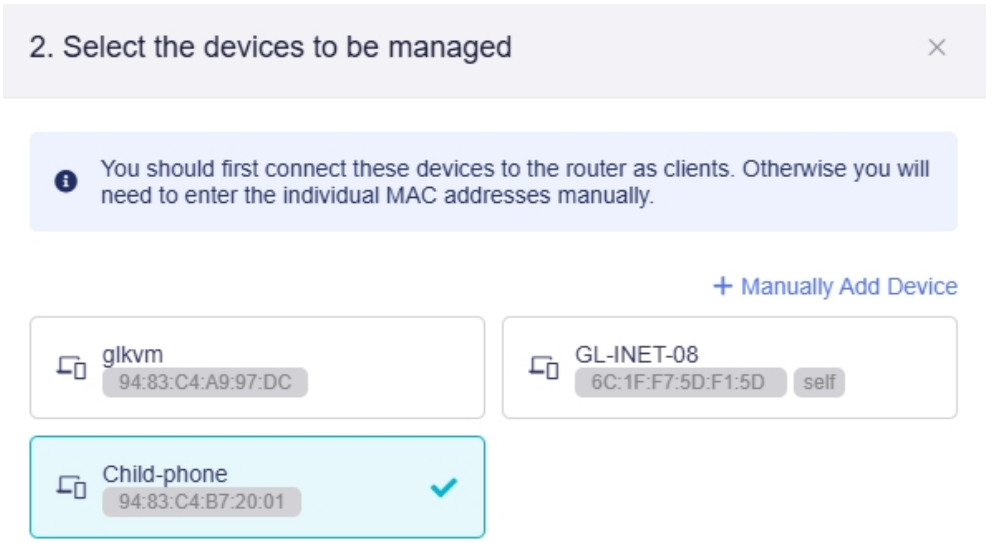
Scenario: Devices in this profile are only allowed to access the Internet for study from 8 AM to 11 AM on weekdays, and for gaming from 6 PM to 8 PM on weekends. Internet access is blocked by default at all other times.

Setup Steps:

1. Create a profile and customize a name.



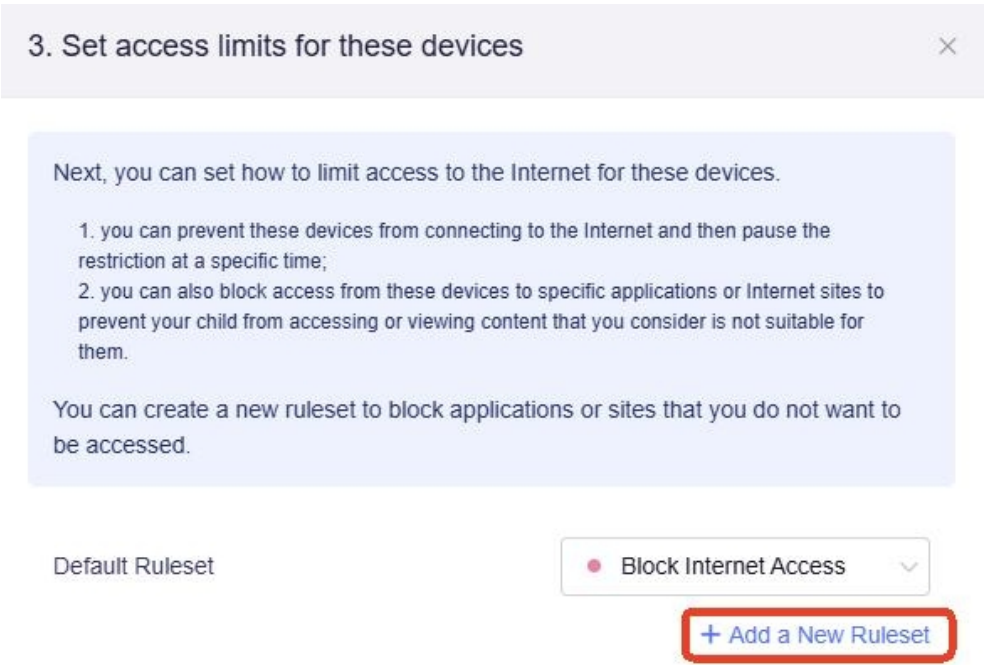
2. Select the devices you want to manage. Connect them to the router first. If they have not been connected to the router, add them manually by entering their MAC addresses.



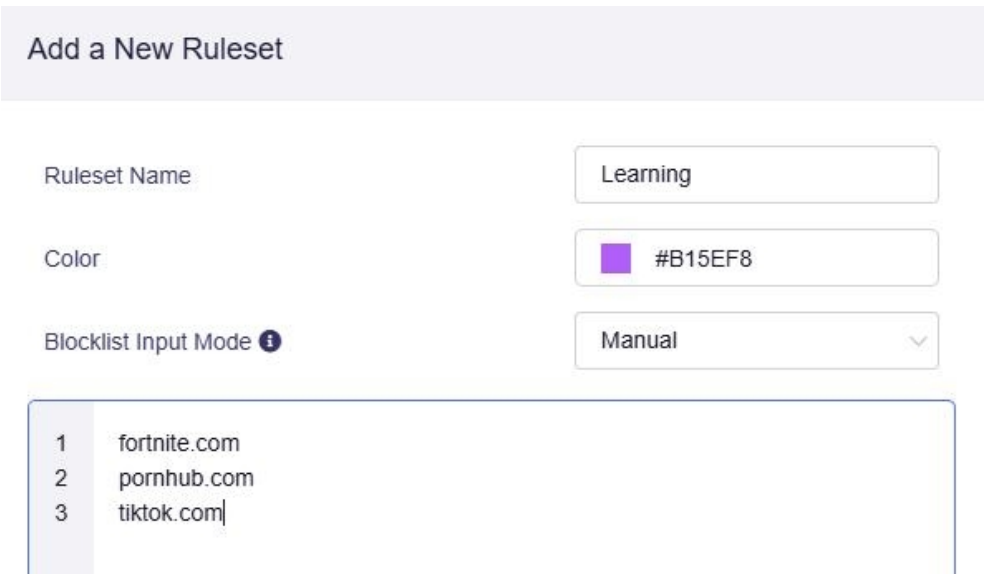
3. Set access limit.

   There are two default rulesets: **Block Internet Access** and **No Limit**.

Click **Add a New Ruleset** to create two more rulesets for later use: **Learning** and **Play**.

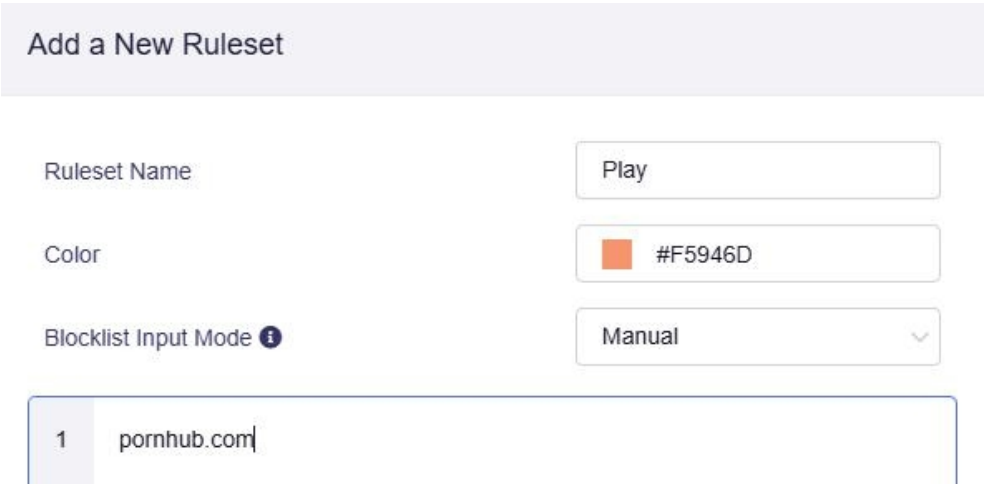


Specify the ruleset name (e.g., Learning) and color, enter the websites to block, then click **Apply**.

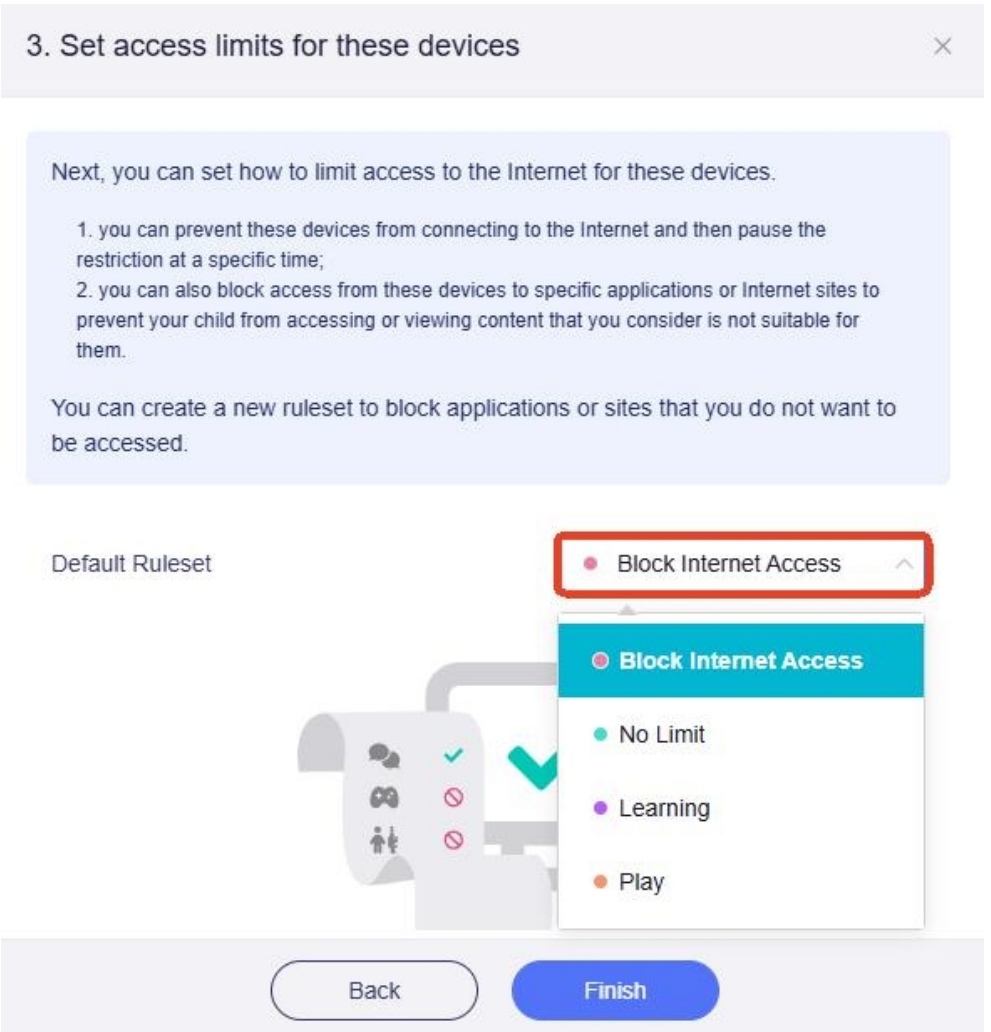


Note: The domain names entered in the blocklist should include their subdomains. For example, if "example.com" is entered, it also includes any subdomain, such as "subdomain.example.com".

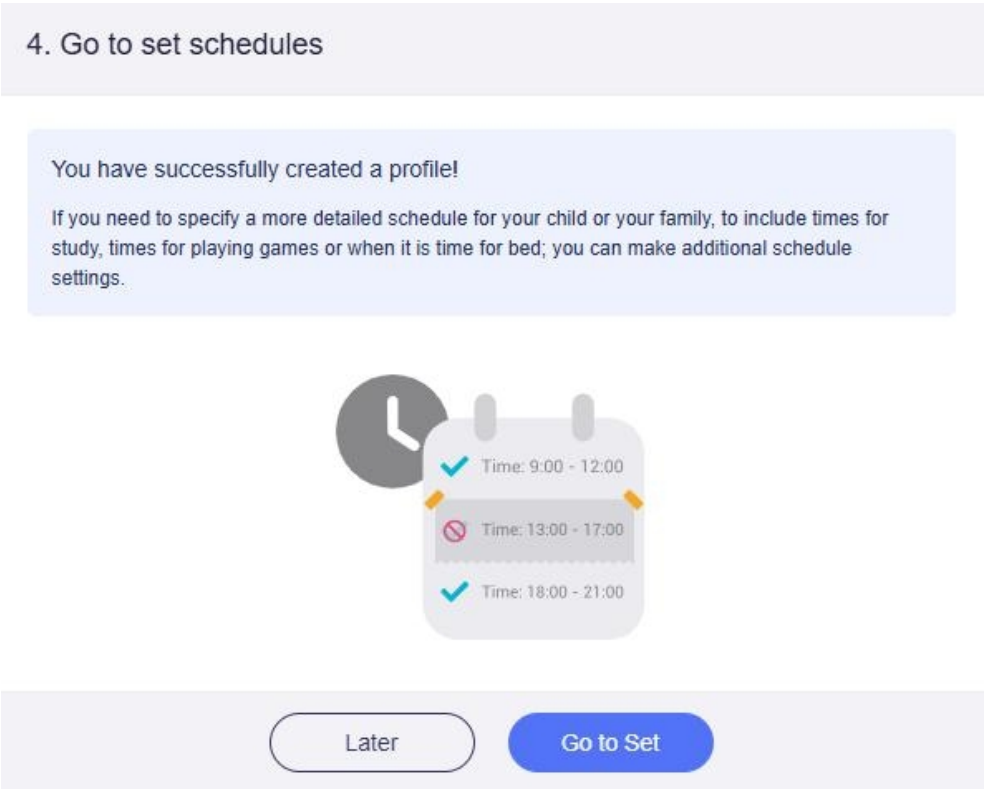
Similarly, create another ruleset. Specify the ruleset name (e.g., Play) and color, enter the websites to block, then click **Apply**.



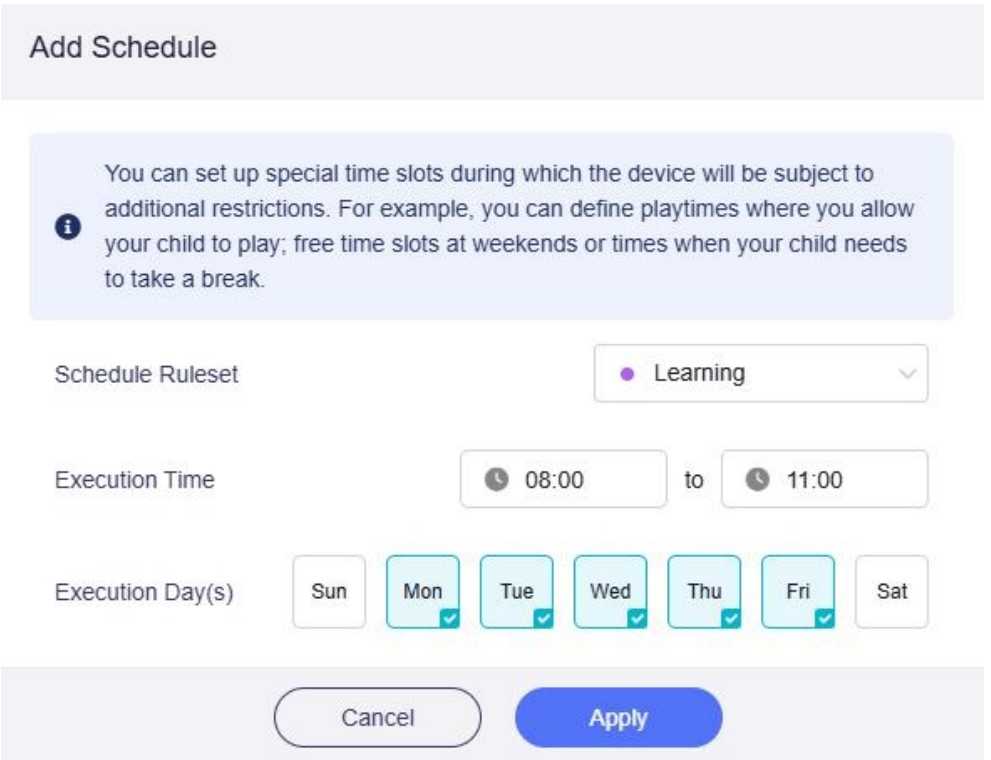
Upon applied, there will be a total of four rulesets. Select **Block Internet Access** as the **Default Ruleset**, and click **Finish**.



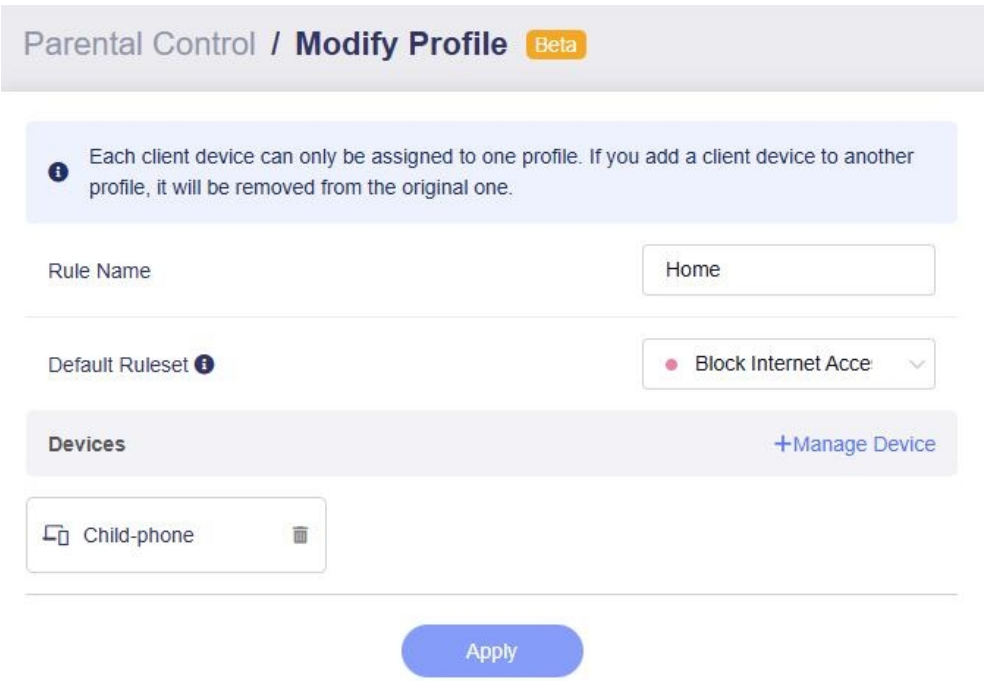
4. Next, set schedule for your profile. Click **Go to Set**.



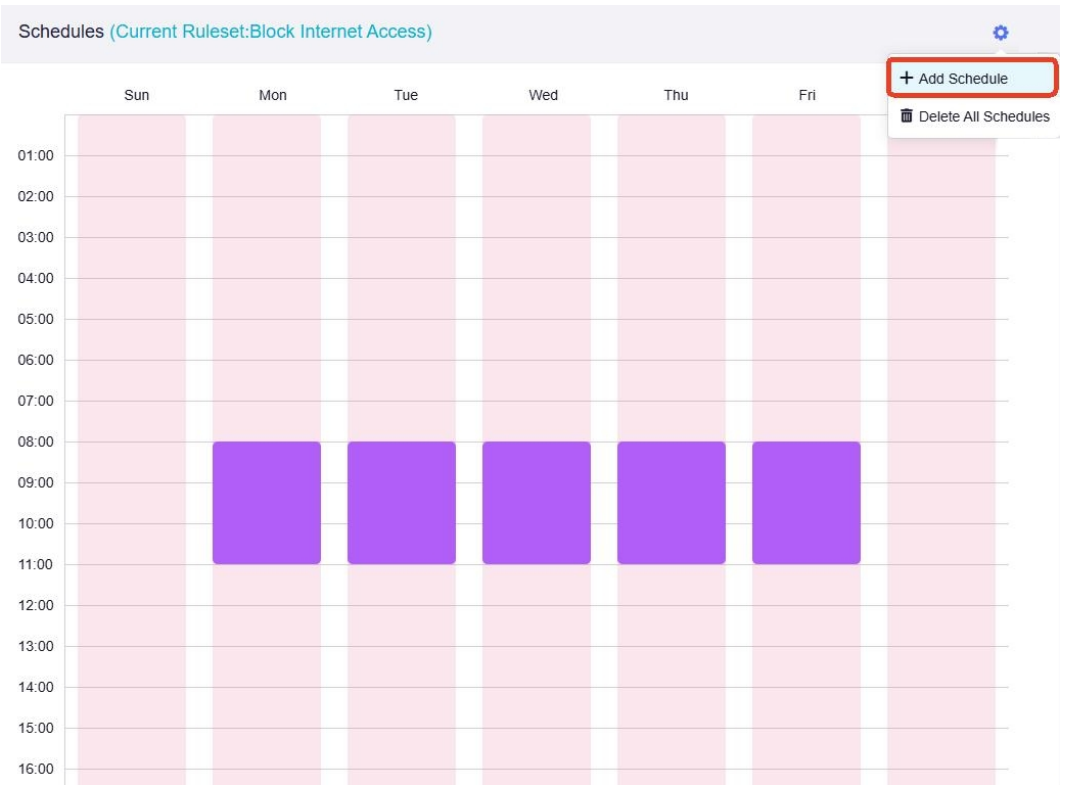
Add the **Learning** ruleset to the schedule. Set the **Execution Time** from 8 AM to 11 AM on weekdays, then click **Apply**.



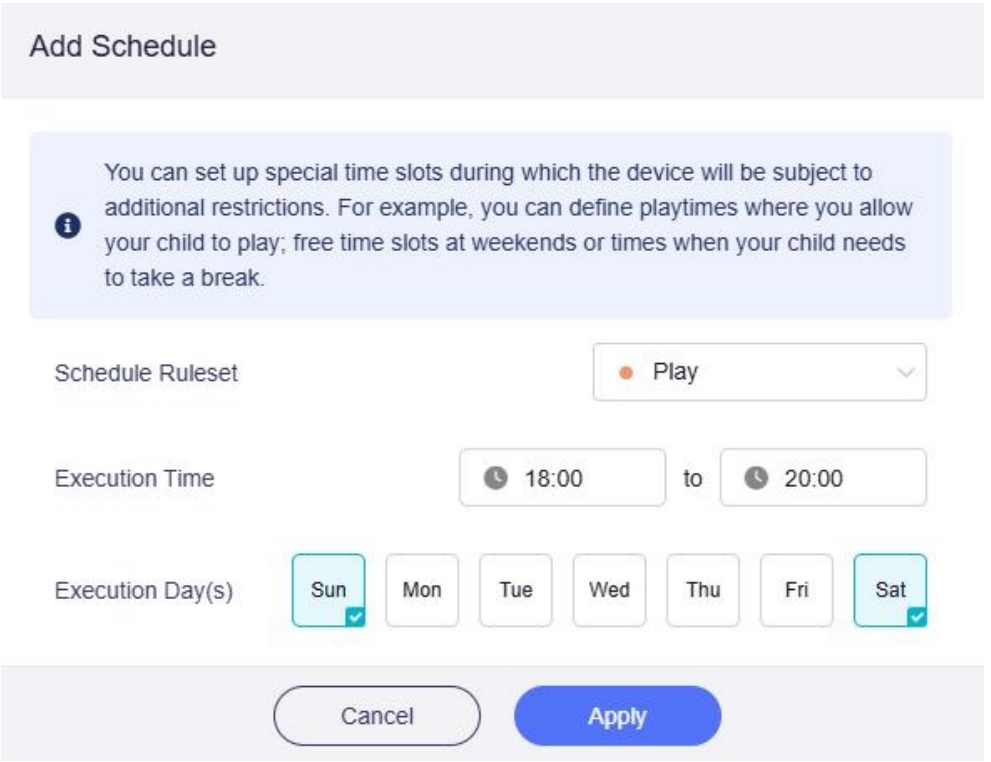
5. You will be redirected to the edit page of the created profile.



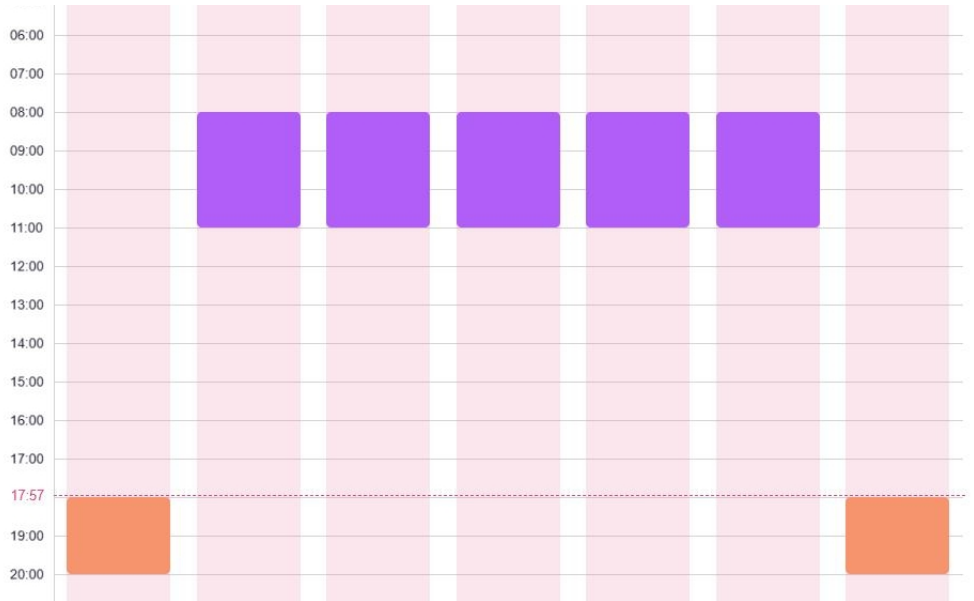
Move to the bottom, and you will see that a schedule has been created. Click the gear icon in the upper right and select **Add Schedule**.



6. Add another ruleset **Play** to the schedule. Set the **Execution Time** from 6 PM to 8 PM on weekends, then click **Apply**.



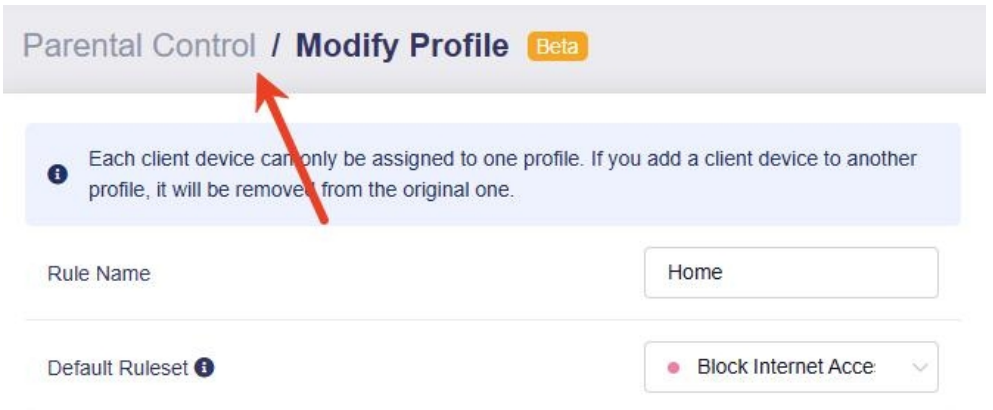
The Play ruleset will then be added into the schedule.



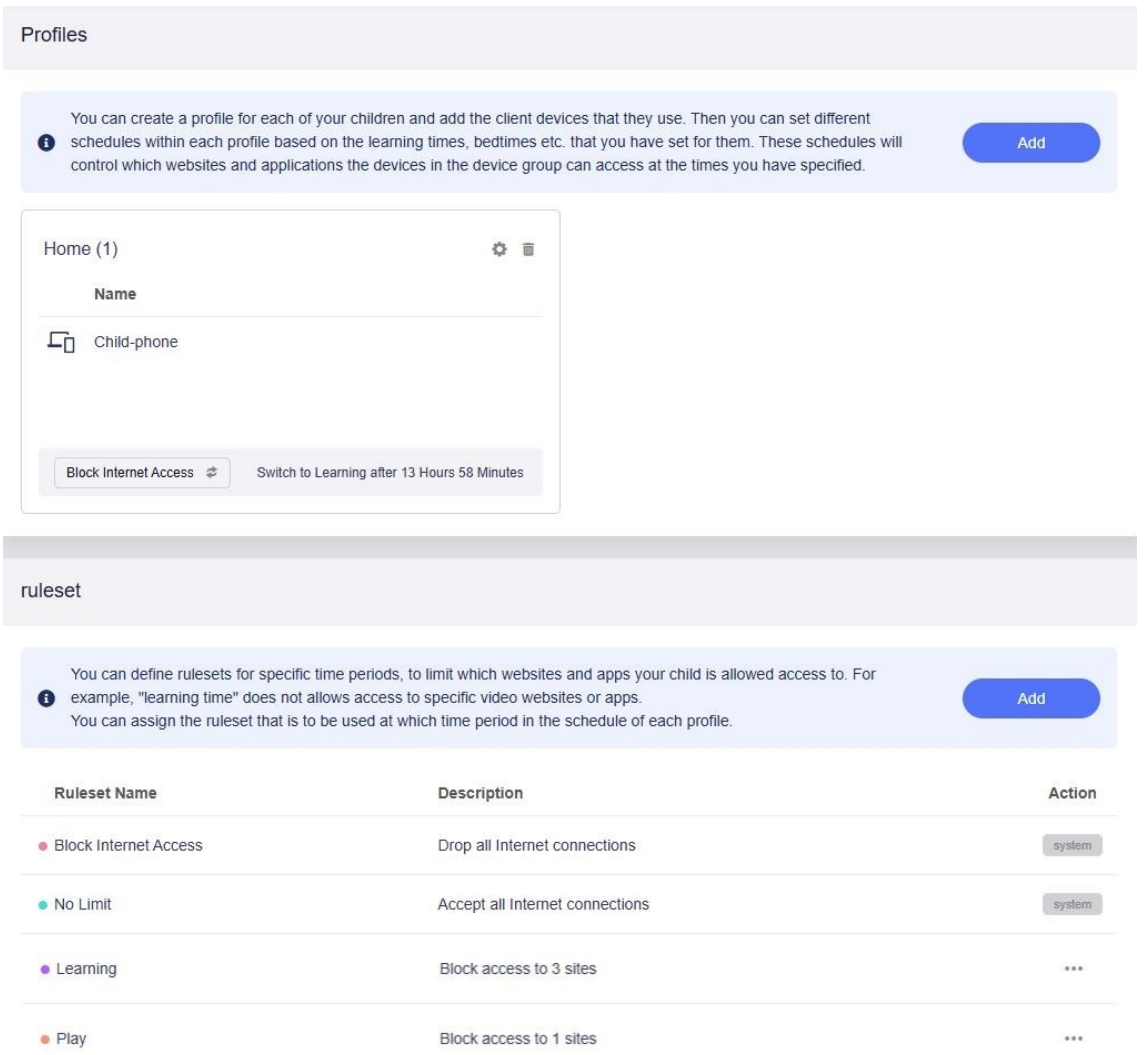
Tips:

- The red dashed line indicates the current time.
- You can modify the execution time by clicking on a certain ruleset in the schedule.

7. Click **Parental Control** at the top to return to the Parental Control page.



You will see the final configuration. Parental Control is now taking effect as per the schedule. You can modify existing profiles and rulesets, or add new ones if needed.



12.6.2 Troubleshooting

If your configured settings fail to take effect, check the following possible causes.

1. DNS cache issue.
   Browsers and operating systems maintain DNS caches, which may delay the application of configuration changes. Clear the DNS cache to apply changes immediately.
2. The profile schedule has not yet started.
3. The entered domain name may be incorrect.
   While a website's public domain is easy to find, the API domains used by apps are often not publicly available. To locate the correct domain, use a packet capture tool such as Wireshark or look up the relevant domain information.
   For example, when blocking "www.google.com", entering "google.com" delivers better results than "www.google.com".
4. The target device uses a randomized MAC address for each network connection, which prevents access rules from taking effect. Disable random MAC address on the target device, then re-add the device to your profile.

12.7 ZeroTier

ZeroTier is a software-based virtual private network (VPN) that enables secure, encrypted communications between devices over the internet. It creates a private, virtual network that allows devices to communicate as if they were on the same local network, regardless of their physical location or network topology. ZeroTier is designed to be easy to set up and use, and offers features such as end-to-end encryption, network segmentation, and network bridging capabilities.

The ZeroTier feature on GL.iNet routers allows the router to join a ZeroTier virtual network, enabling remote access to the router itself, as well as its WAN and LAN-side resources.

Note:

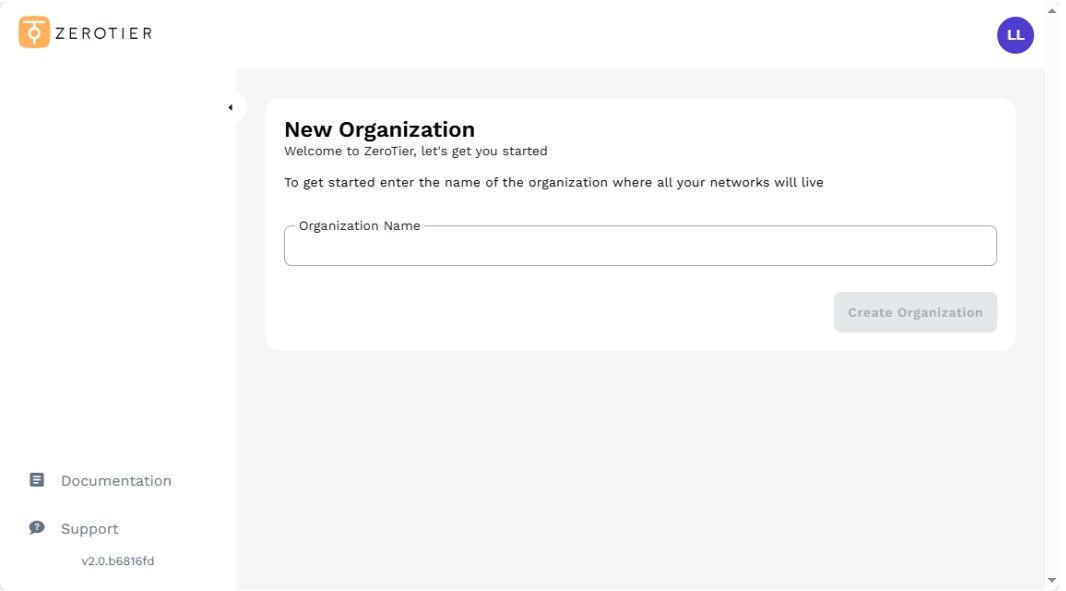
1. It is not recommended to use ZeroTier simultaneously with any of the following features or services, as this may cause routing conflicts: OpenVPN Client, WireGuard Client, GoodCloud Site to Site, and Tailscale.
2. This feature is currently in beta, and may have some bugs.

12.7.1 Set Up ZeroTier

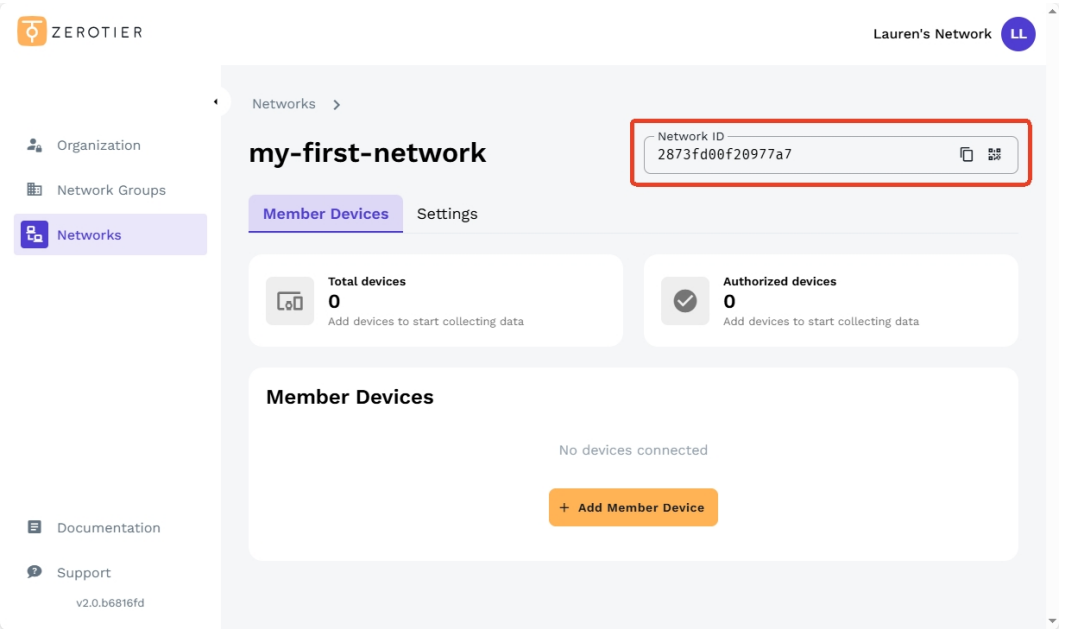
Two versions of ZeroTier Central are available: New Central and Legacy Central.

The following steps use New Central as an example.

1. Visit ZeroTier official website and sign in with your account.
2. Create an organization.

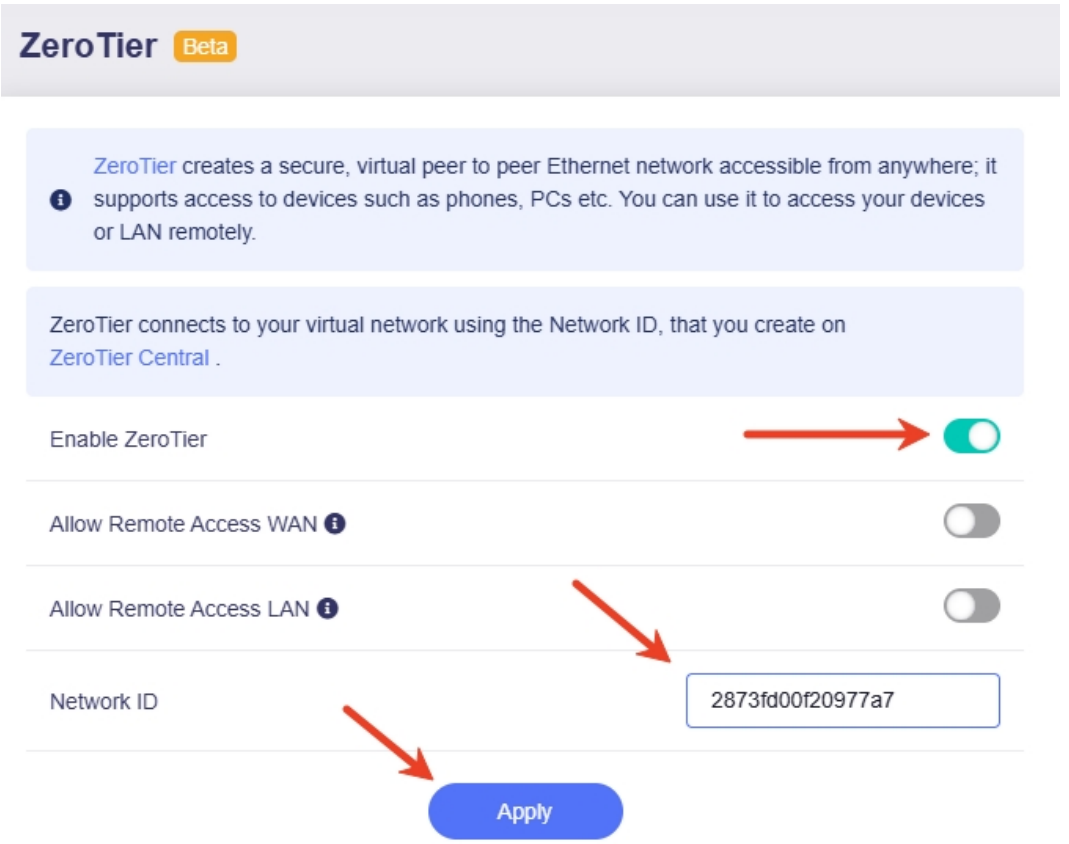


3. Select a plan. Here we choose **Personal plan** as an example, which includes 10 devices, 1 network admin, and 1 network. If you need to create more networks, add more devices, or add custom routes and DNS, choose other paid plan.
4. Now your ZeroTier network has been created.

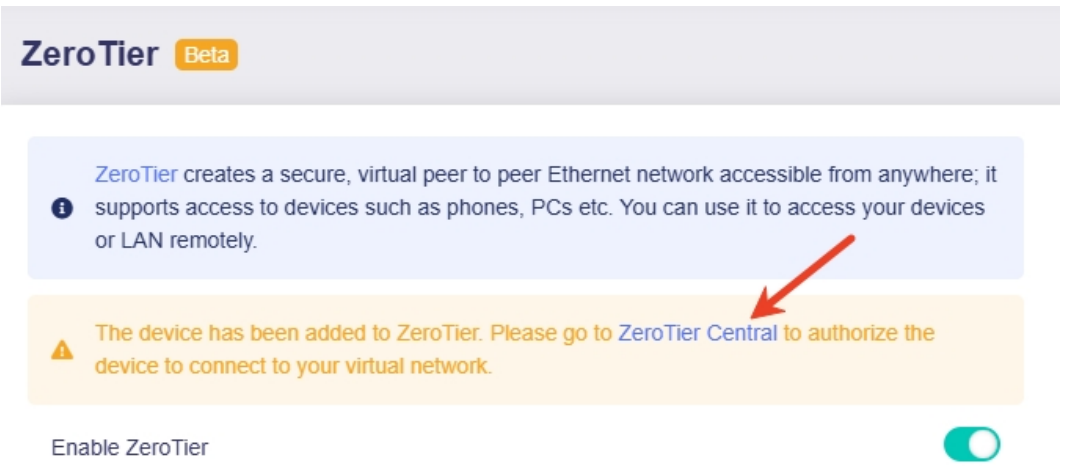


Take note of the **Network ID**, which is a 16-character alphanumeric combination in the upper right corner, as it will be required when connecting other devices later.

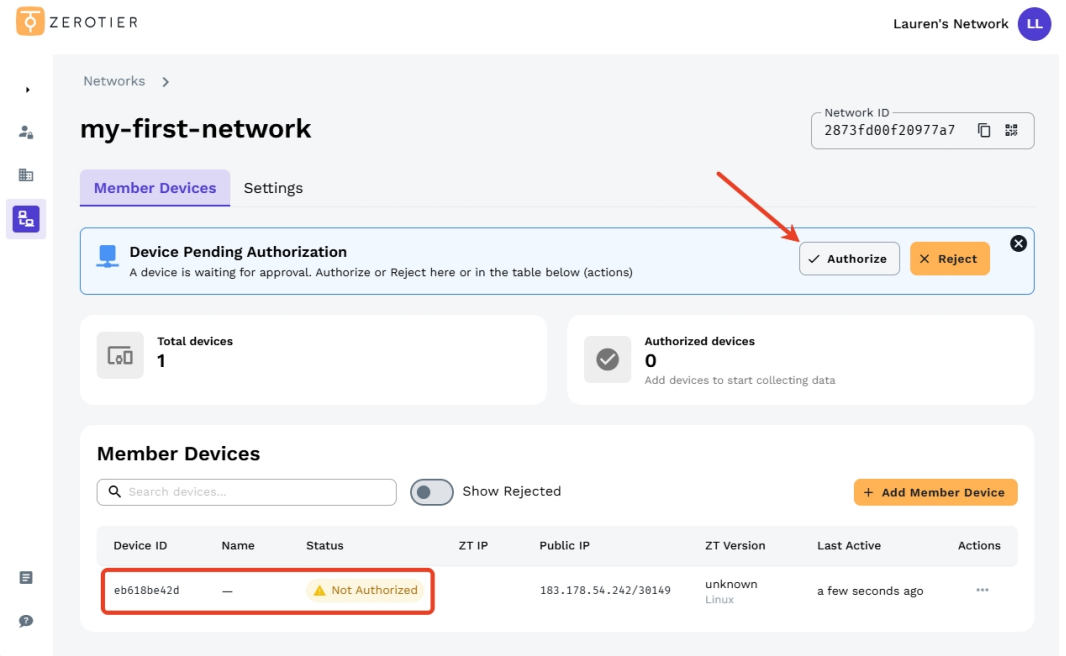
5. Log in to your router's web Admin Panel and navigate to **APPLICATIONS** > **ZeroTier**. Enable ZeroTier, enter the **Network ID**, then click **Apply**.



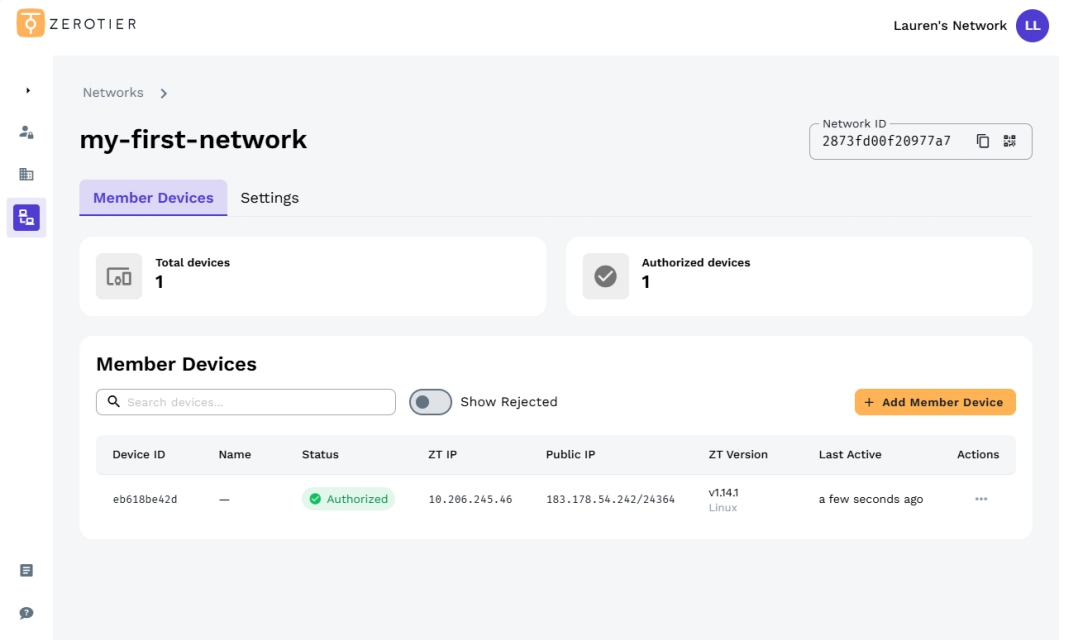
After a short while, the page will indicate that authorization is required. Click the **ZeroTier Central** hyperlink to redirect to the ZeroTier Central.



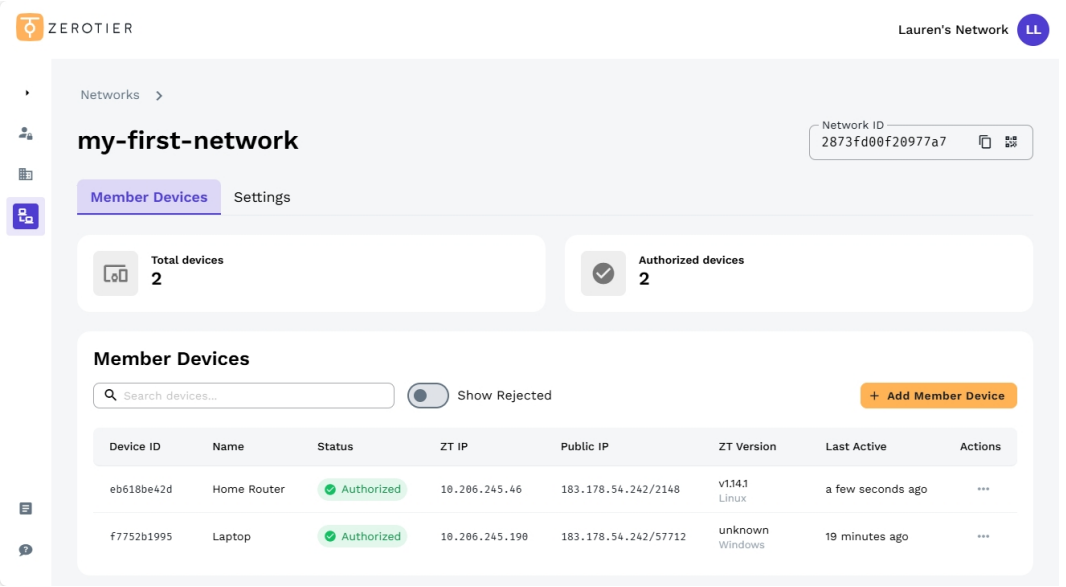
6. On the ZeroTier Central, locate the Pending device and authorize it.



Once authorized, the page displays as follows.

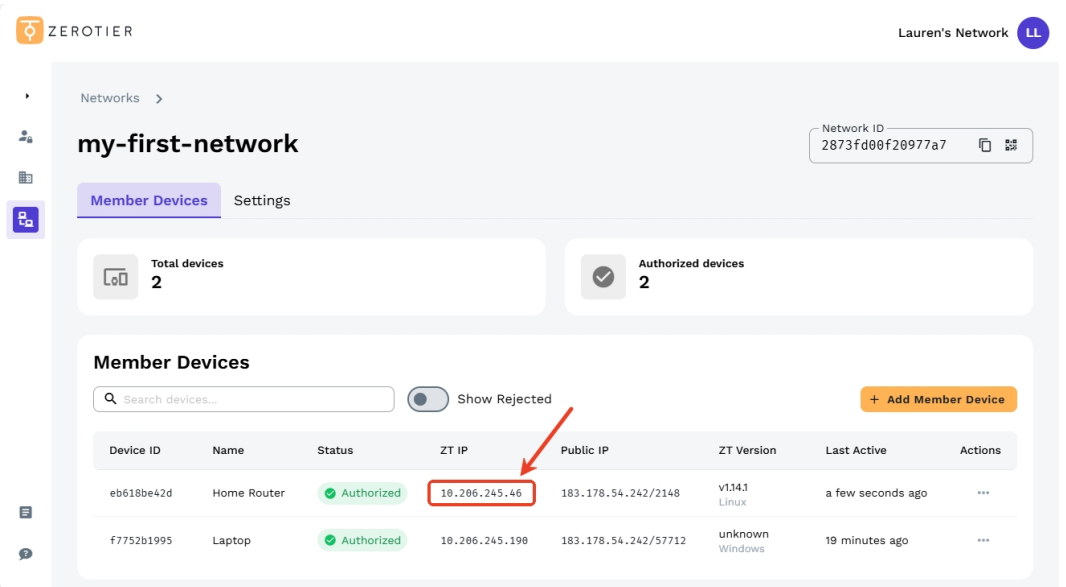


7. Add another device (such as a computer or smartphone) to the same ZeroTier network by following this guide. Once successfully added, the page displays as follows. You will see the details of member devices, such as **Device ID**, **Name**, **Status**, **Managed IP**, and **Public IP**.



Tip: You can click the three-dot icon on the right to edit member device settings, including the device name, Managed IP(s), and advanced settings.

8. Click the router's **Managed IP** to copy it.



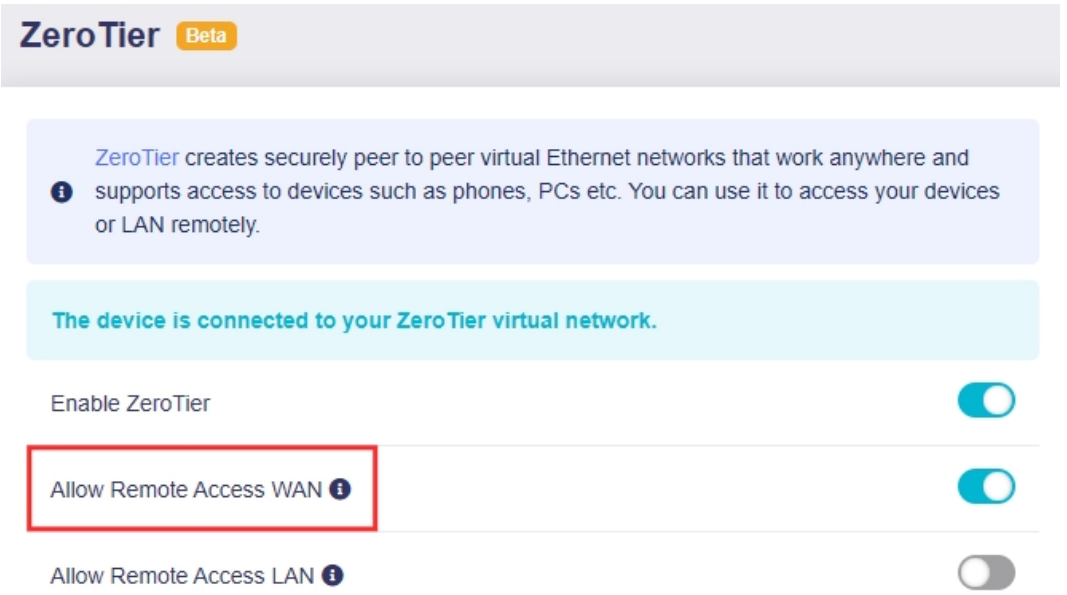
You can then use this Managed IP to access the router from your laptop that is on the same ZeroTier network.

9. Test connectivity.

   On the laptop connected to the same ZeroTier network, open a web browser and enter the router's Managed IP obtained in the previous step. If you can access the router's web Admin Panel, the ZeroTier connection is successful.

12.7.2 Allow Remote Access WAN

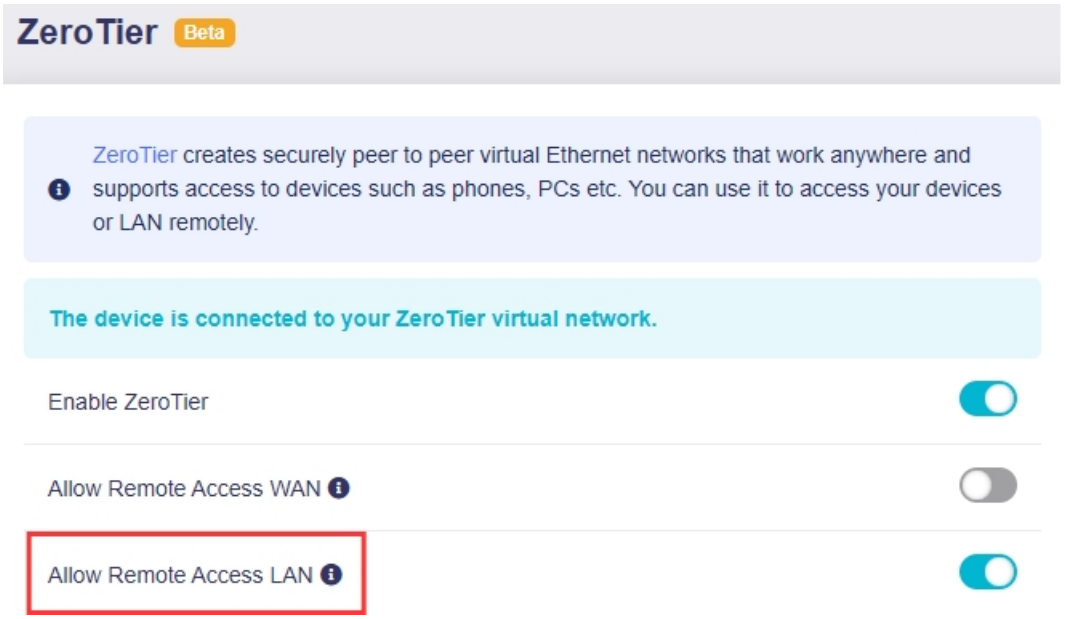
If this option is enabled, resources on the device's WAN side can be accessed through the ZeroTier virtual network. See here for more details.



Note: This feature requires routing rules to be added to the ZeroTier network to take effect. One custom route can be added for free in Legacy Central, while in New Central you can only configure custom routes with an Essential plan or higher. See here for pricing details.

12.7.3 Allow Remote Access LAN

If this option is enabled, resources on the device's LAN side can be accessed through the ZeroTier virtual network. See here for more details.



Note: This feature requires routing rules to be added to the ZeroTier network to take effect. One custom route can be added for free in Legacy Central, while in New Central you can only configure custom routes with an Essential plan or higher. See here for pricing details.

12.8 Tailscale

Tailscale is a VPN service that makes your personal devices and applications accessible worldwide, securely and effortlessly.

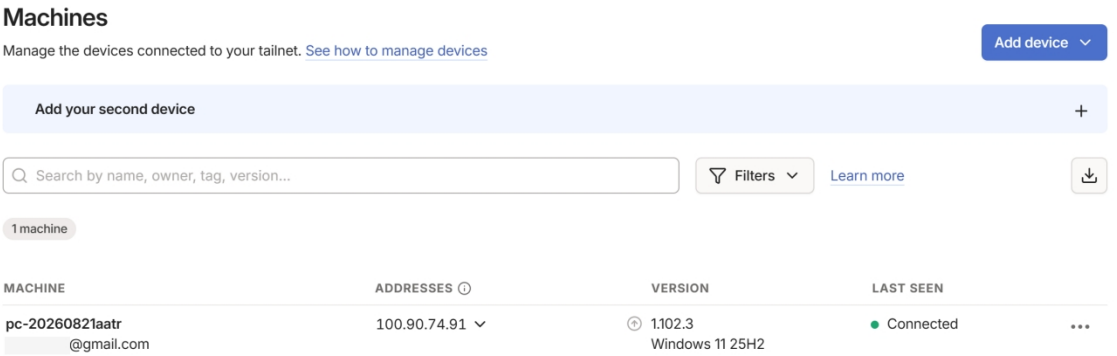
The Tailscale feature on GL.iNet routers allows the router to join a Tailscale virtual network, enabling remote access to the router itself, as well as its WAN and LAN-side resources.

Note:

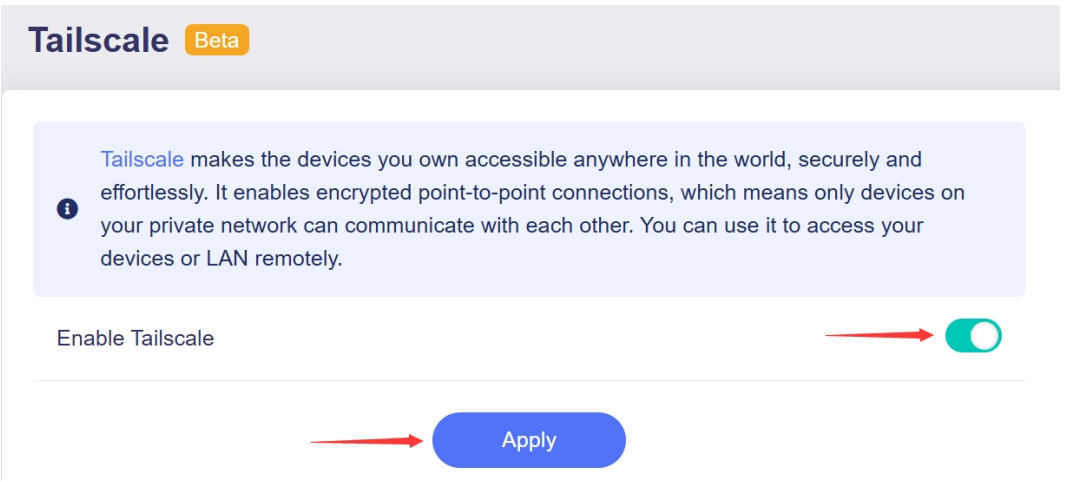
1. Since Tailscale is based on WireGuard, it is not recommended to use Tailscale with any of the following features or services simultaneously, as this may cause routing conflicts: OpenVPN Client, WireGuard Client, GoodCloud Site to Site, ZeroTier.
2. This feature is currently in beta, and may have some bugs.

12.8.1 Set Up Tailscale

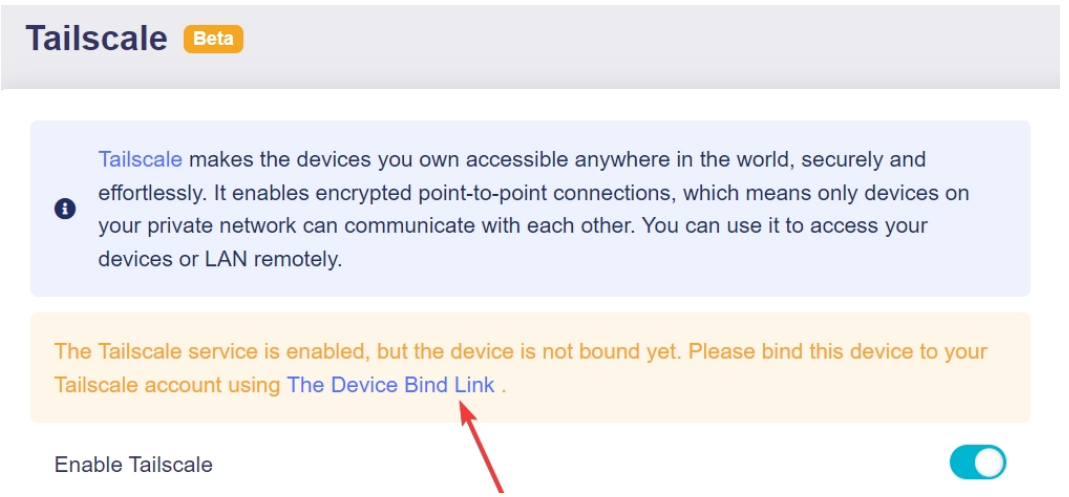
1. Register a Tailscale account first and bind one or two devices to your Tailscale account for testing purposes. After binding, you will see your devices in the Tailscale Console.



2. Log in to your router's web admin panel and navigate to **APPLICATIONS** > **Tailscale**. Toggle on **Enable Tailscale** and click **Apply**.



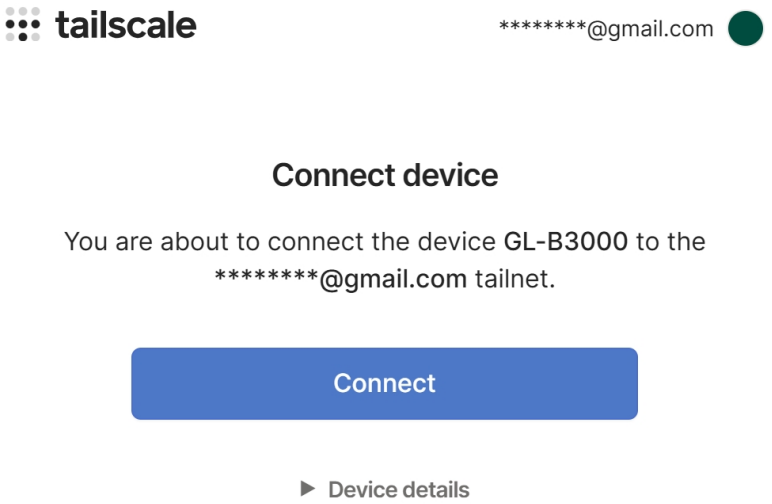
3. The page will prompt you to bind the device. Click **Device Bind Link**.



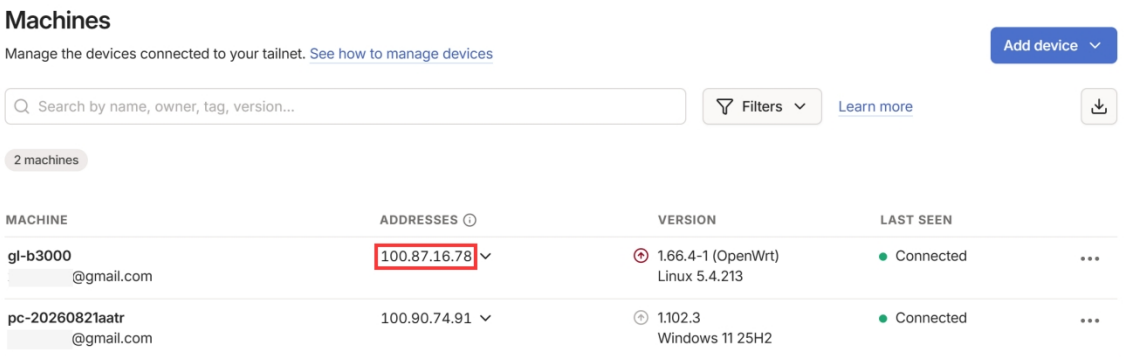
4. In the pop-up window, click the link and log in with your Tailscale account.



5. Once logged in, you will be asked to confirm the device. Click **Connect**.

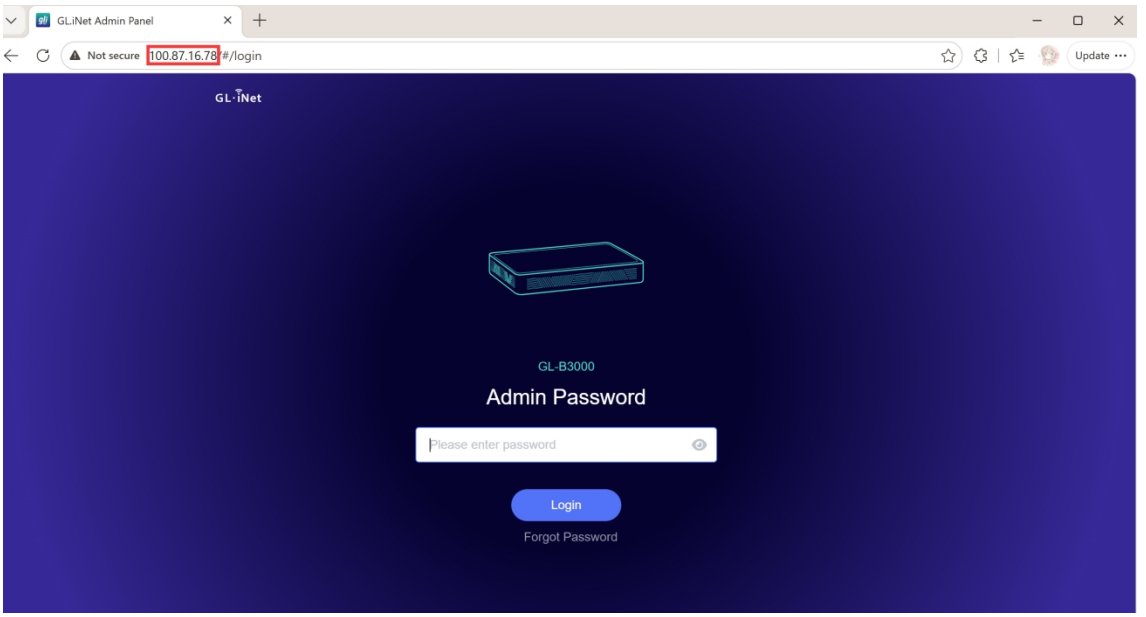


6. You will then be redirected to the Tailscale admin console. Now the router has been added into the Tailscale virtual network, and it can be accessed remotely by the Tailscale virtual IP **100.87.16.78**.



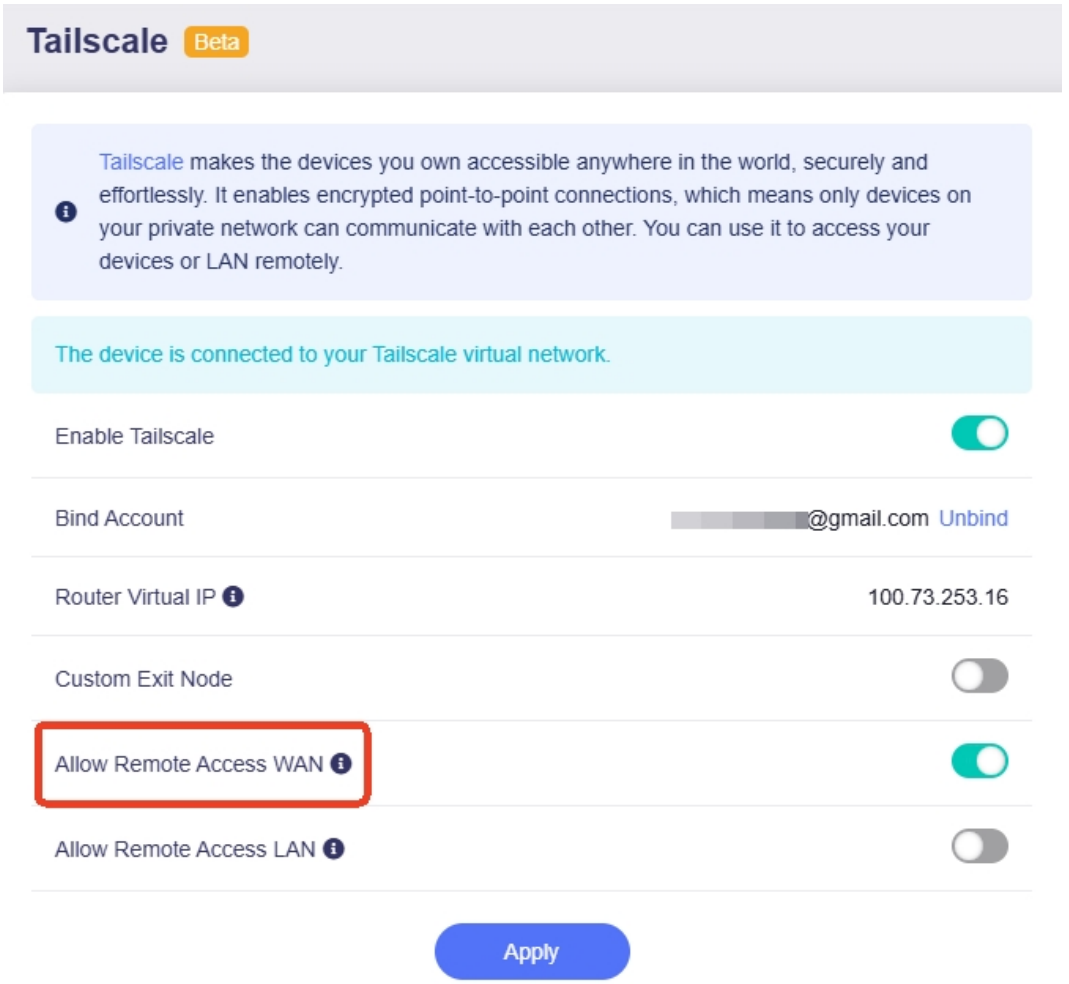
7. Test connectivity.

   On another device connected to the same Tailscale network, open a web browser and enter the router's virtual IP in the address bar. If you can access the router's web admin panel, it means Tailscale is working. You can also use the ping command or SSH log in to the router's terminal by its virtual IP to test connectivity.


GL.iNet Admin Panel
Not secure
100.87.16.78/#/login
Update
GL·iNet
GL-B3000
Admin Password
Please enter password
Login
Forgot Password

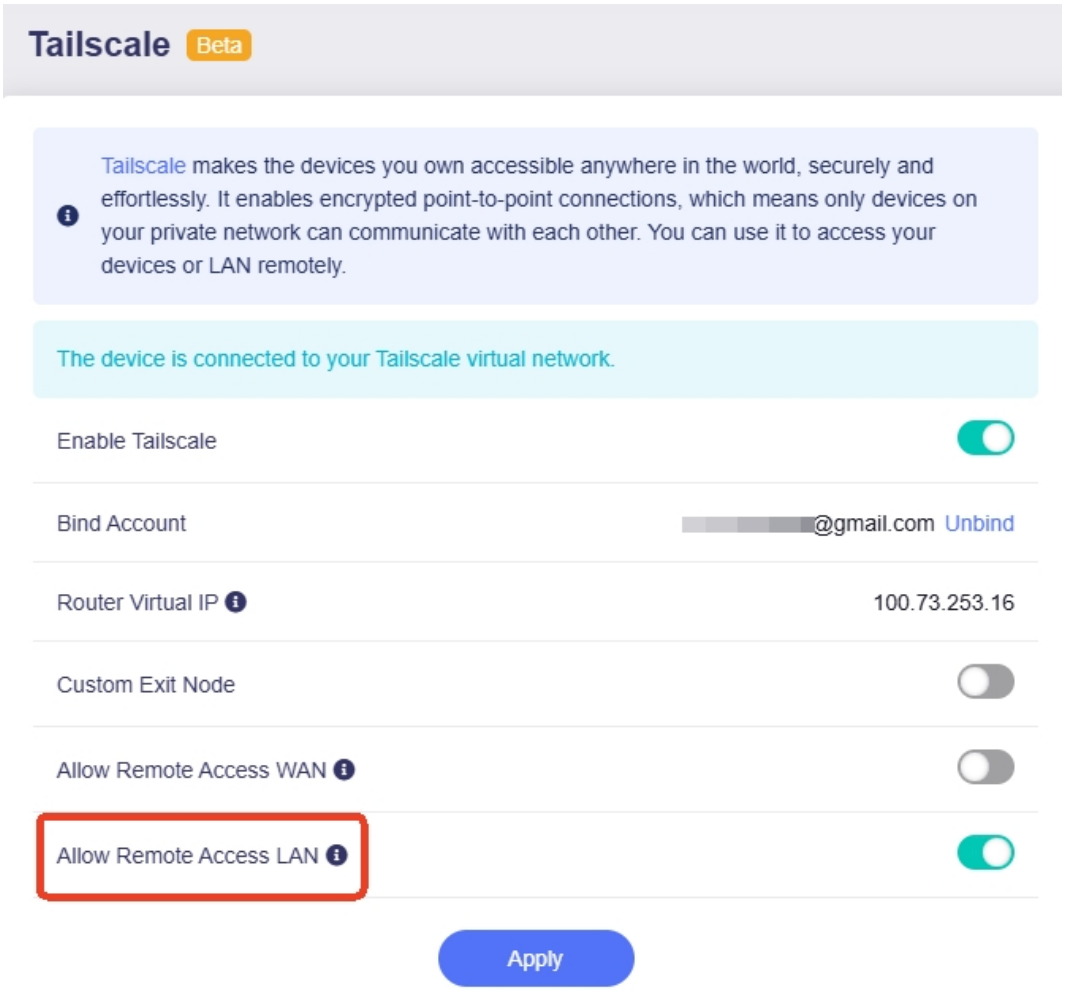
12.8.2 Allow Remote Access WAN

If this option is enabled, resources on the device's WAN side can be accessed through the Tailscale virtual network. See here for more details.



12.8.3 Allow Remote Access LAN

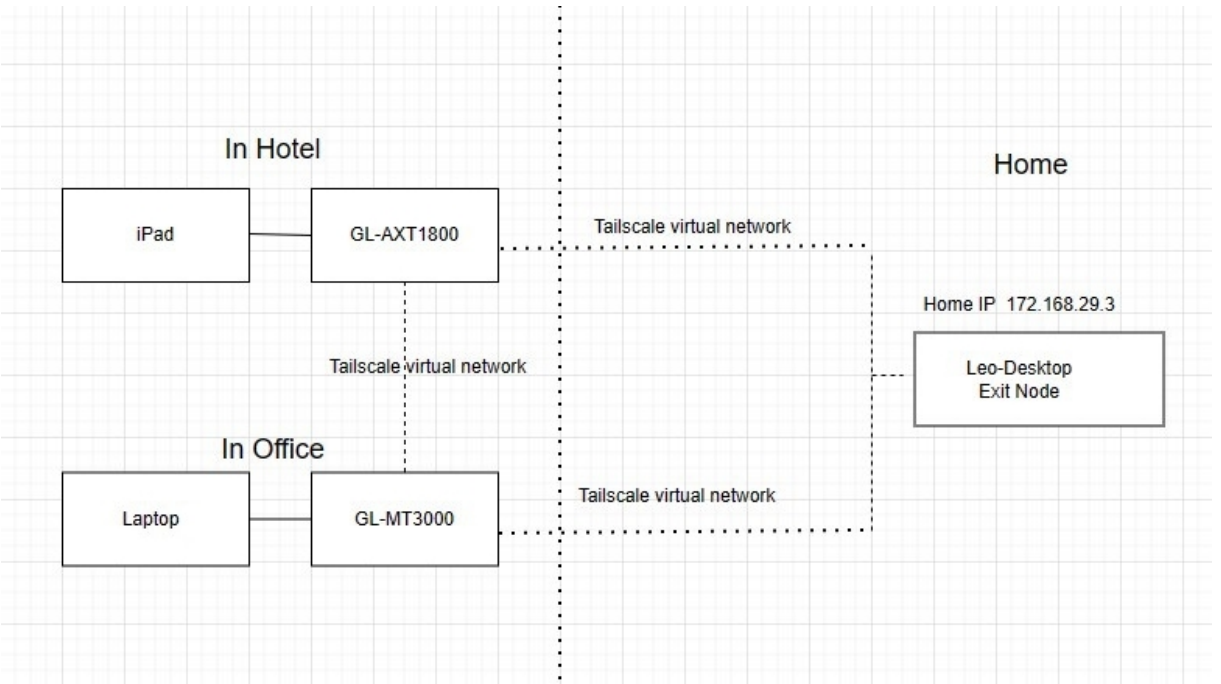
If this option is enabled, resources on the device's LAN side can be accessed through the Tailscale virtual network. See here for more details.



12.8.4 Custom Exit Nodes

By default, Tailscale acts as an overlay network: it only routes traffic between devices running Tailscale, and does not process your public Internet traffic — such as when browsing websites like Google.

However, there might be times when you want Tailscale to route your public Internet traffic. For example, when you are away from home or traveling abroad, if you need to access online services (such as banking) that are only available in your home country, you can set your home desktop with a public IP as an Exit node, and configure other devices on the same Tailnet — such as the GL-AXT1800 and GL-MT3000 in the image below — to send their traffic through it. This enables all your public Internet traffic to be forwarded via the Exit Node.



In summary, an Exit node routes outbound Internet traffic from your Tailnet devices, effectively acting as VPN servers. When connected to an Exit node, all your non-Tailscale Internet traffic appears to originate from its location, helping you access geo-restricted content and enhance your online privacy. The device handling this traffic forwarding is referred to as an "Exit Node". To configure custom exit node on GL.iNet routers, please refer to this tutorial.

Note: If the router's DNS Server is a private IP address that can be accessed only in the local network, you may lose Internet access when running the exit nodes. To avoid this, please set a public DNS server (e.g., 8.8.8.8) manually for your router.

Chapter 13

Network

This chapter introduces network-related settings for configuration and management, such as LAN, DNS, and IPv6.

13.1 Firewall

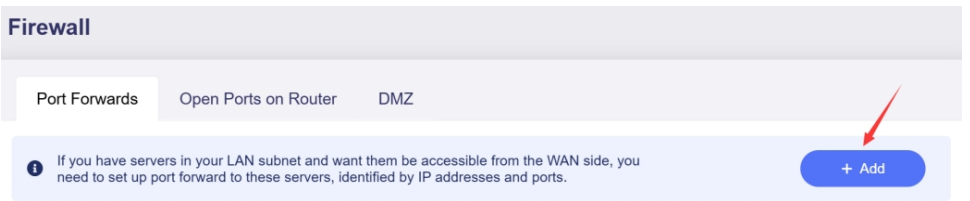
Firewall is a network feature that routes external requests to specific devices on your local network. The Firewall page includesthree key functions: **Port Forwards** (for targeted access to specific ports of devices), **Open Ports on Router** (for access to services running on the router itself) and **DMZ** (for direct full access to a single device).

13.1.1 Port Forwards

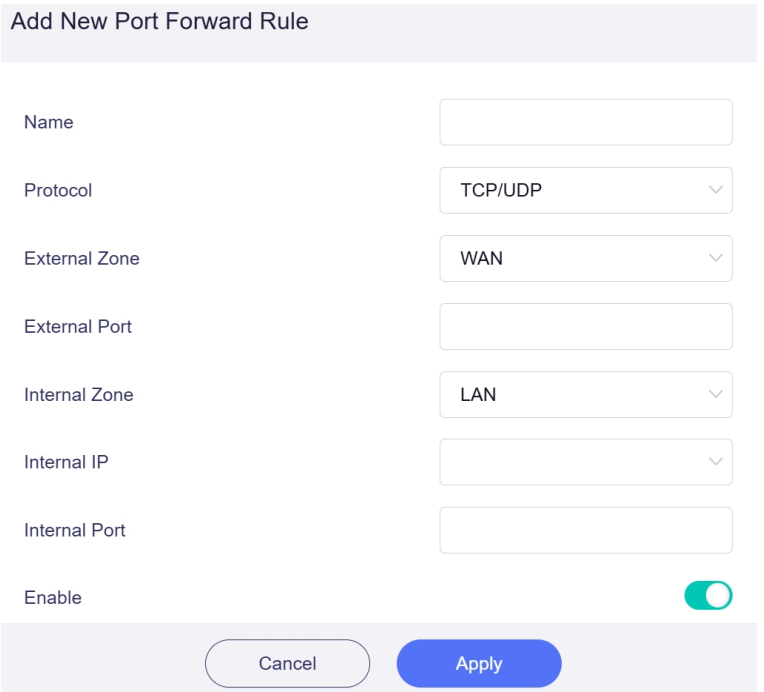
Port Forwards enables remote computers to connect to a local computer or server behind the LAN firewall (e.g., web servers, FTP servers).

If you need to set up port forwards, follow the steps below.

1. Log in to your router's web admin panel, go to **NETWORK** > **Firewall** > **Port Forwards** section, and click **Add**.



2. In the pop-up window, enter or select the required parameters from the drop-down list to add a port forward rule, then click **Apply**.

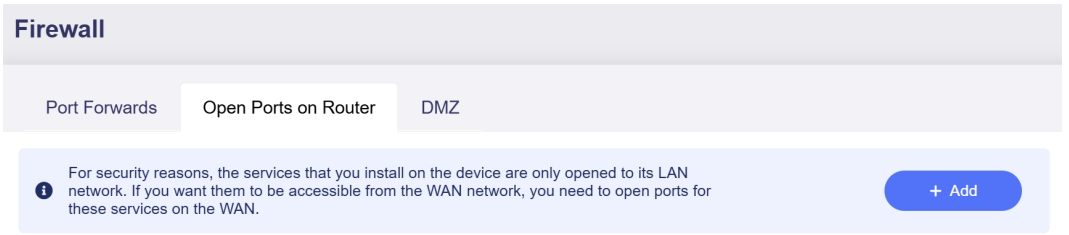


- **Name**: The name of the rule which can be specified by the user.
- **Protocol**: The protocol used. You can choose TCP, UDP, or both TCP and UDP.
- **External Zone**: Available options are WAN, WireGuard Client, WireGuard Server, OpenVPN Client, OpenVPN Server, LAN, and Guest.
- **External Port**: The number(s) of external ports. Enter a specific port number here. The port range is 1–65535. You can set a single port or a port range by concatenating the first and last port numbers with a hyphen (e.g., 501-510).
- **Internal Zone**: Available options are LAN, Guest, WireGuard Client, WireGuard Server, OpenVPN Client, OpenVPN Server, and WAN.
- **Internal IP**: The IP address assigned by the router to the device that needs remote access. If you set a single port in External Port, set a single port here. If you set a port range in External Port, set the corresponding port range here.
- **Internal Port**: The internal port number of the device. Enter a specific port number. Leave it blank if it matches the external port.
- **Enable**: Enable or disable this rule.

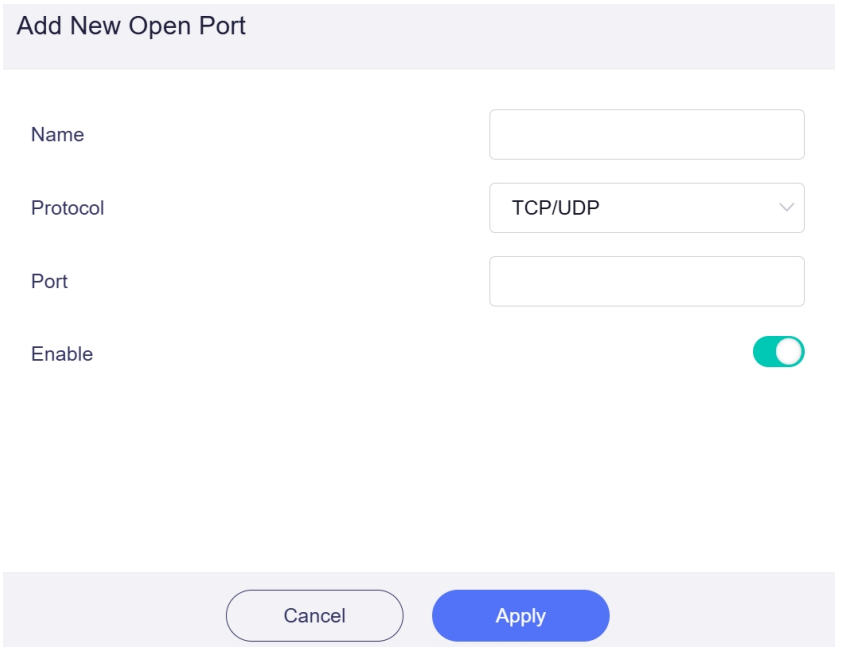
13.1.2 Open Ports on Router

The router's services, such as web and FTP, requires their respective ports to be opened on the router in order to be publicly reachable.

To open a port, switch to the Open Ports on Router tab, then click Add.



In the pop-up window, open a new port and click Apply.



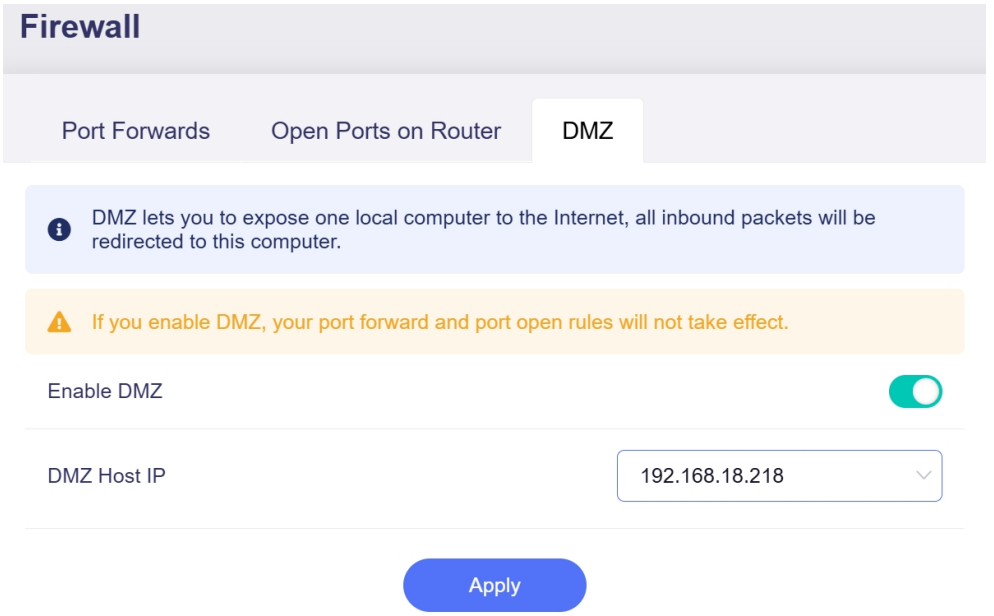
- **Name**: The name of the rule which can be specified by the user.
- **Protocol**: The protocol used, you can choose TCP, UDP, or both TCP and UDP.
- **Port**: The port number that you want to open.

13.1.3 DMZ

DMZ allows you to expose one computer to the Internet, so all inbound packets will be redirected to this computer.

Follow the steps below to enable DMZ if needed.

1. Log in to your router's web admin panel and navigate to **NETWORK** > **Firewall** > **DMZ** section.
2. Toggle on **Enable DMZ**, then select the **DMZ Host IP** from the drop-down list. The selected device receives all inbound packets. Click **Apply** to save the settings.



13.2 Multi-WAN

Multi-WAN enables simultaneous use of multiple Internet access methods, allowing configuration of diverse connectivity options on the router. It offers two working modes:

- **Failover**: Automatically switches to an alternate connection within a short time if the primary connection fails, ensuring uninterrupted network access.
- **Load Balance**: Distributes network traffic across all available connections at a set ratio for concurrent multi-connection usage, optimizing bandwidth utilization.

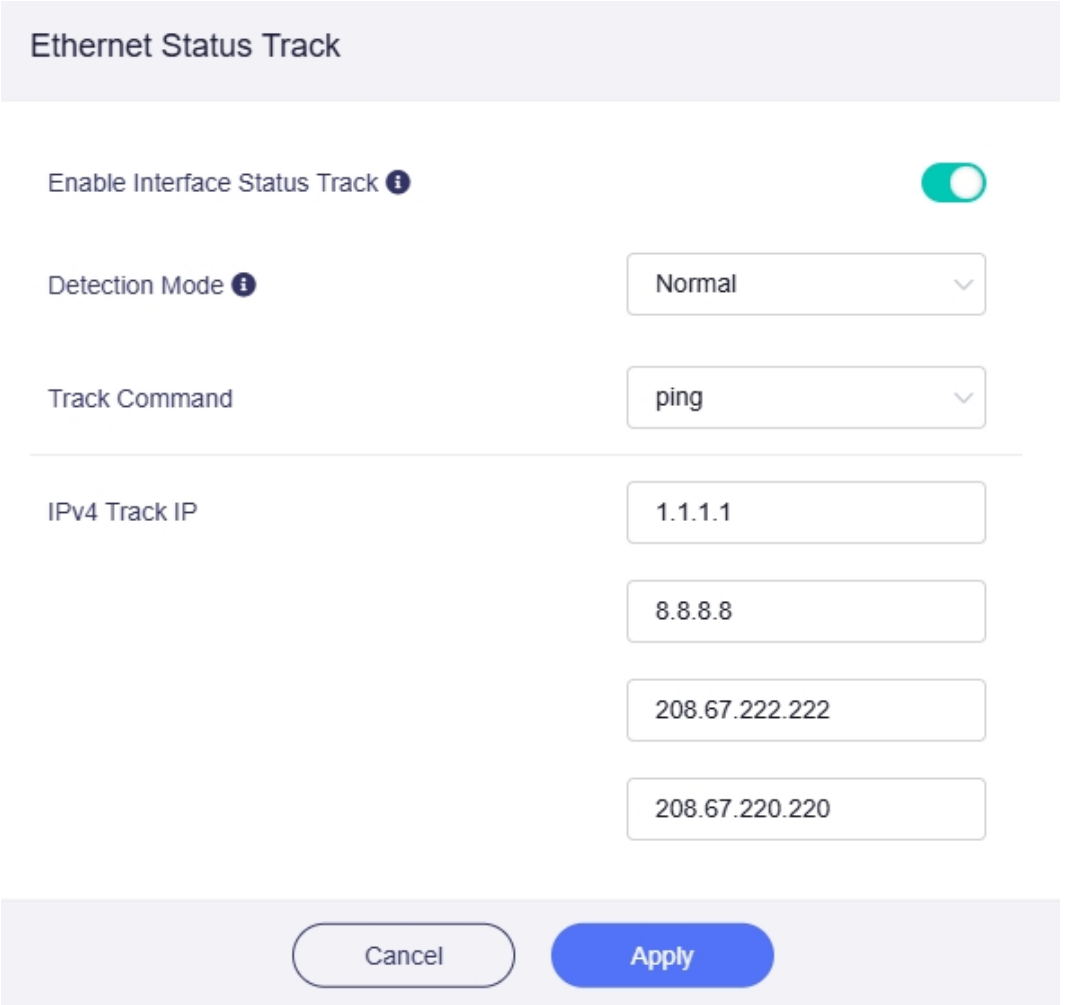
Log in to your router's web admin panel and navigate to **NETWORK** > **Multi-WAN**. This page includes two sections: Interface Status Track and Multi-WAN Mode.

13.2.1 Interface Status Track

GL.iNet routers use the **ping** command to monitor the connection status to the destination IP and determine if the interface is available. If the interface is available, a green dot will be displayed on the left; otherwise it will be gray.



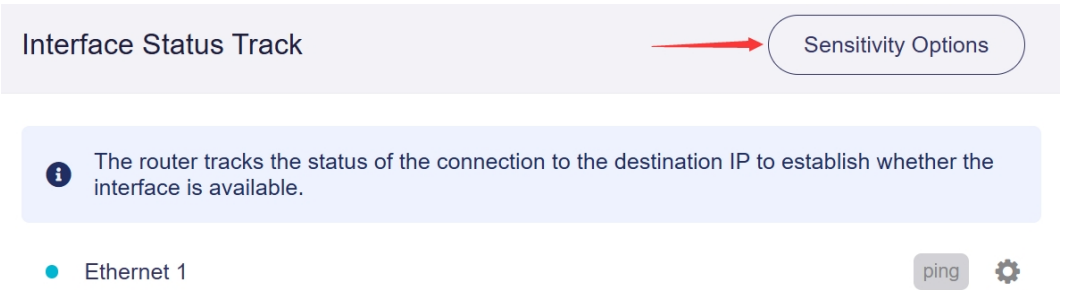
In the **Interface Status Track** section, click the gear icon on the right to access the status tracking settings for each network interface. Below are the status tracking settings for the Ethernet interface. The same configuration logic applies to other interfaces.



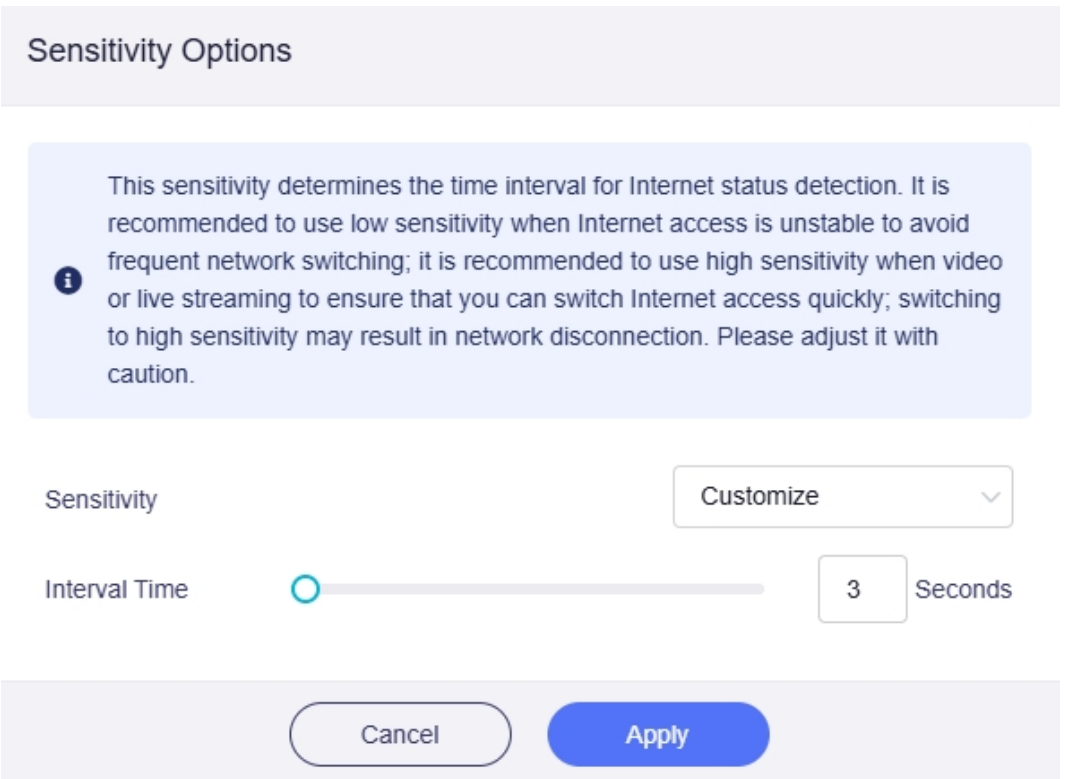
- **Enable Interface Status Track**: It is enabled by default. If disabled, the router will determine the interface status based on physical conditions (e.g., whether the Ethernet cable is plugged in).
- **Detection Mode**: This feature was introduced as Low Data Mode in firmware v4.5, then renamed Detection Mode in firmware v4.7. Three modes are available: Normal Mode, Low Data Mode, and Strict Mode.
  - **Normal**: It is used by default.
  - **Low Data**: It only triggers tracking when a network error occurs on the network interface. Use this mode if you are on a limited data plan. Note that reconnecting after a disconnection may be slightly slower than in Normal Mode, and it is enabled by default only for cellular interface.
  - **Strict**: It determines the interface status exclusively based on the results of a detection command sent to a public IP.

- **Track Command**: The ping command is used to monitor connection status to the destination IP and verify interface availability.
- **IPv4 Track IP**: Customize the IPv4 Track IP addresses if needed.

Click **Sensitivity Options** in the upper right corner.



You can set the time interval for Internet status detection to Low, Medium, High, or customize it. The adjustable interval time ranges from 0.5 seconds to 90 seconds.



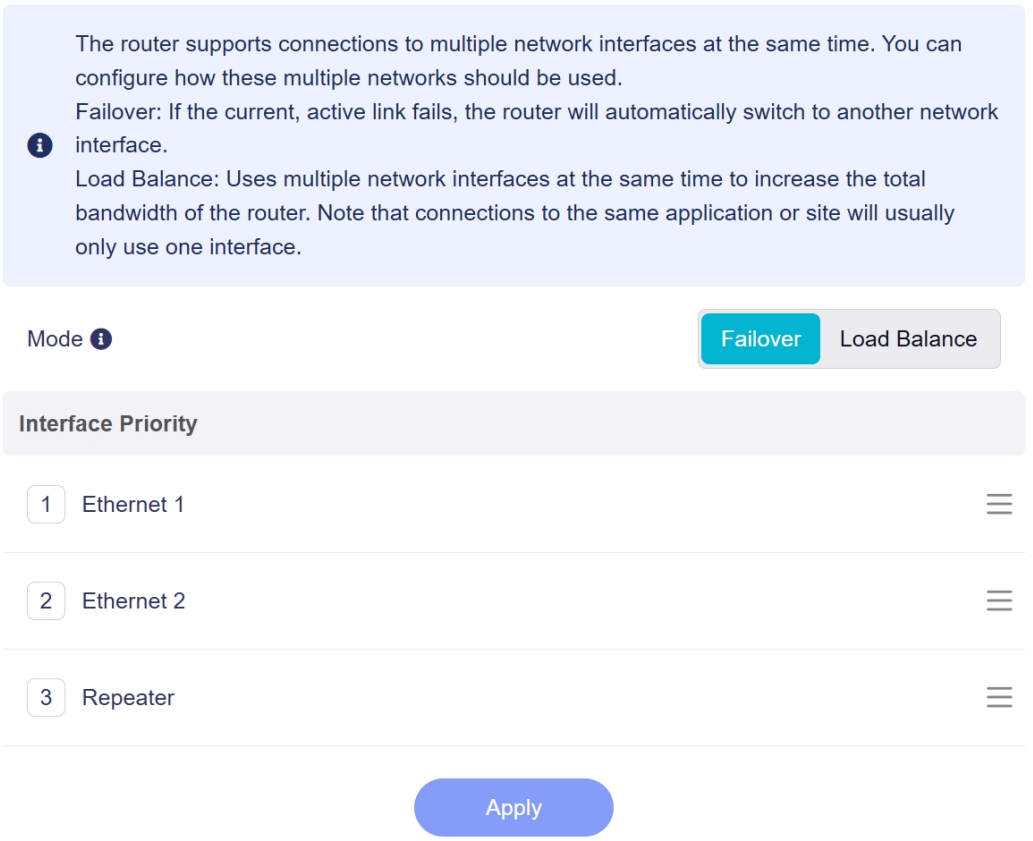
13.2.2 Multi-WAN Mode

Two modes are available for Multi-WAN: **Failover** and **Load Balance**. Note that these modes are mutually exclusive.

Failover

Failover is the default mode when multiple connections are configured. If the active link fails, the router will automatically switch to another network interface for Internet access.

You can set priority levels for each interface: when the currently used interface fails, the router switches to the next available interface with the highest priority. Once a higher-priority connection is restored, the router will automatically switch back to it.

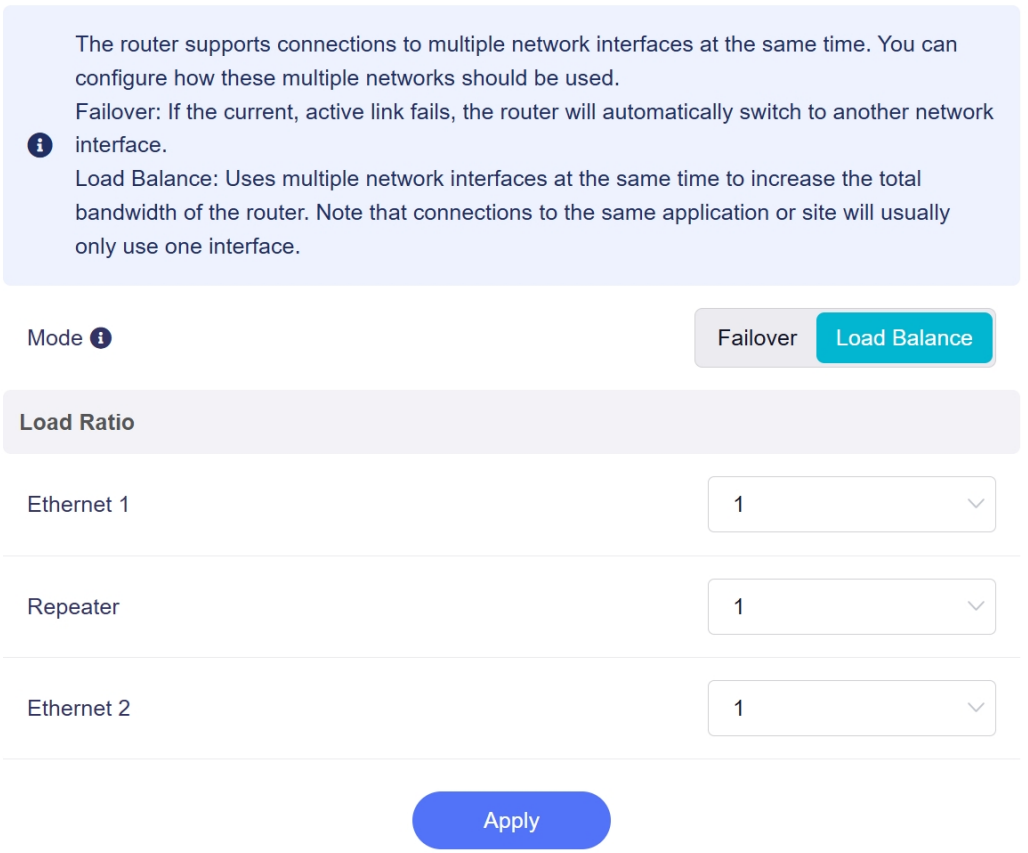


Load Balance

Load Balance mode uses multiple network interfaces simultaneously to increase the router's total bandwidth, with the system distributing new connections across interfaces according to a configured load ratio. Note that connections to the same application or website will typically use only one interface.

The load ratio refers to the proportion between each network interface. The system will assign interfaces to handle new connections based on this configured ratio.

For example, if the router is connected to three networks (e.g., Ethernet 1, Repeater, and Ethernet 2) simultaneously and all interfaces are available for Internet access, enabling Load Balance and setting a 1:1:1 ratio means the three interfaces will share network bandwidth equally. The system will distribute new connections across these interfaces according to the configured 1:1:1 load ratio.



You can also customize the load ratio if needed. For example, if Ethernet 1 has a bandwidth of 100 Mbps, Repeater has 200 Mbps and no other connections are active, set the load ratios to

1 for Ethernet 1, 2 for Repeater r, and 0 for Ethernet 2. The system will then distribute new connections across these interfaces according to the configured 1:2 ratio, meaning Ethernet 1 will handle half as many connections as Repeater. Unlike Failover mode, this mode optimizes overall throughput efficiency by balancing traffic load across all available interfaces.

Note: Existing connections or traffic are not guaranteed to align with the load ratio. The actual distribution will gradually approach the configured ratio with prolonged use.

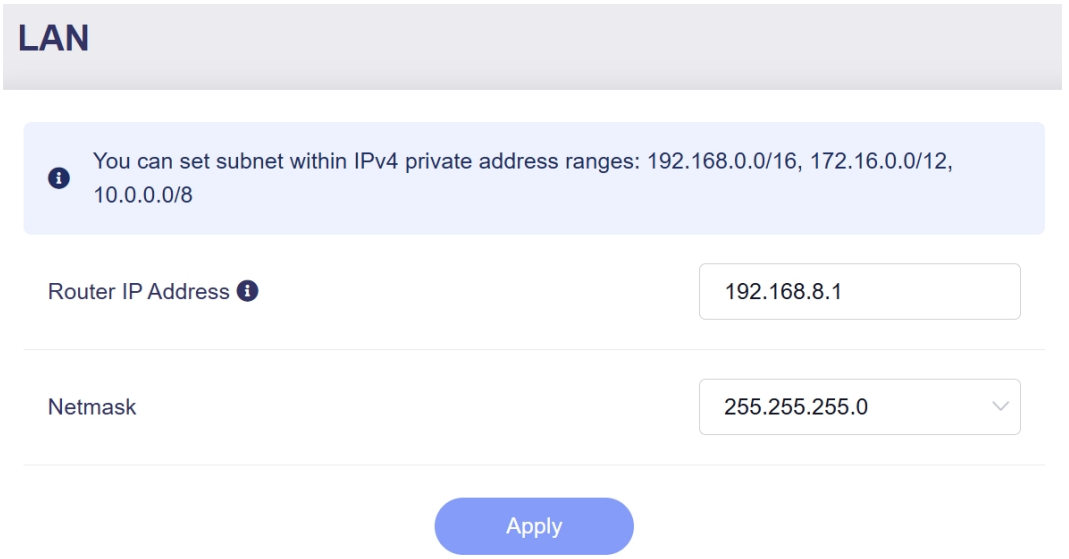
13.3 LAN

LAN (Local Area Network) refers to the private local network, to which your devices connect via Ethernet cables.

Log in to your router's web admin panel and navigate to **NETWORK** > **LAN**. Here you can configure LAN settings, including basic settings, DHCP server, and address reservation.

13.3.1 Basic Settings

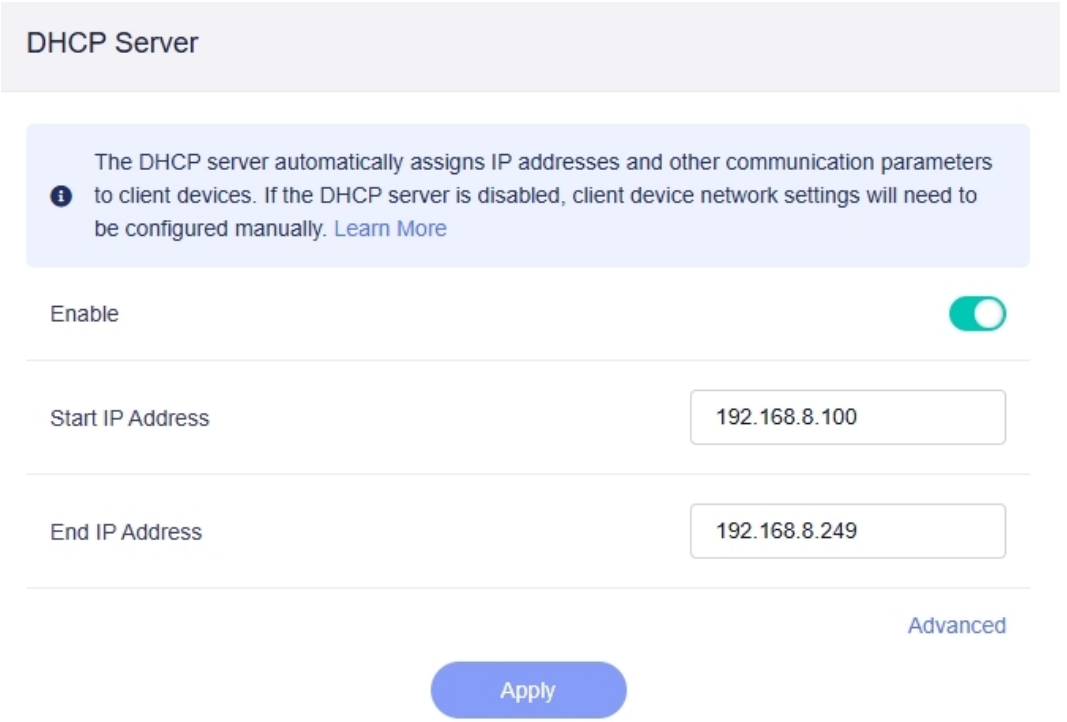
The basic settings include Router IP address and Netmask. You can set subnet within IPv4 private address ranges: 192.168.0.0/16, 172.16.0.0/12, 10.0.0.0/8



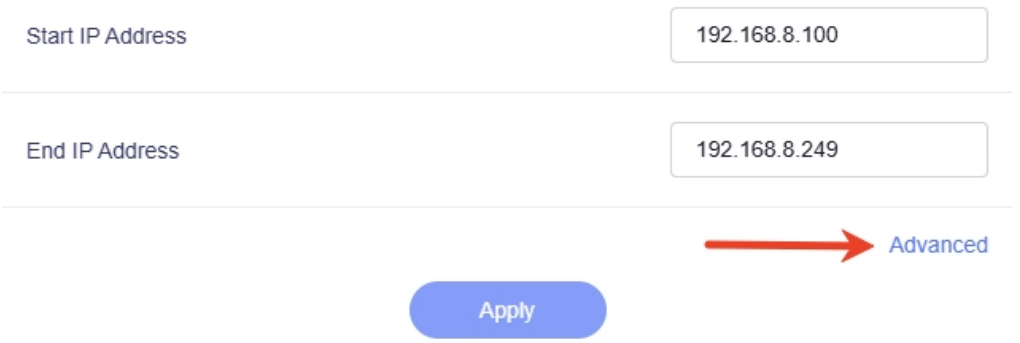
- **Router IP Address**: This is the address entered into a browser's address bar to access the router's admin panel. It is 192.168.8.1 by default and can be changed if it conflicts with the upstream network.
- **Netmask**: Two options are available: 255.255.255.0 and 255.255.0.0.

13.3.2 DHCP Server

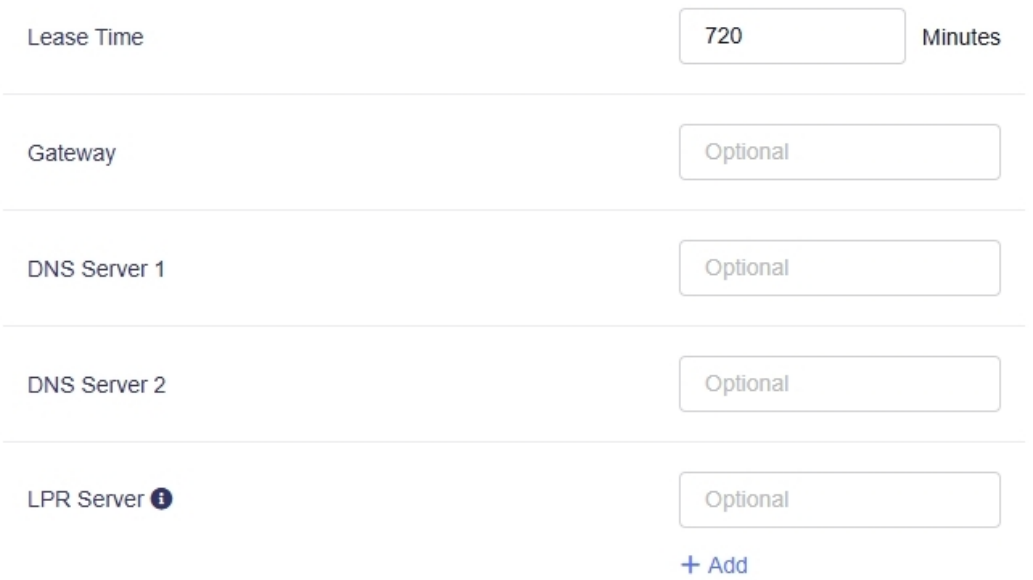
The DHCP server automatically assigns IP addresses and other communication parameters to each connected client. GL.iNet router's DHCP server is enabled by default, and the DHCP server's IP address pool ranges from 192.168.8.100 to 192.168.8.249. You can customize the address range if needed.



Click **Advanced** in the bottom right corner.



You will be able to configure advanced settings, including Lease Time, Gateway, DNS Server(s), and LPR Server.



- **Lease Time**: The duration for which a device can use an IP address assigned via DHCP.
- **Gateway**: The router component that routes traffic between the local network and external networks (e.g., the internet).
- **DNS Server 1**: The primary server responsible for translating domain names into IP addresses.
- **DNS Server 2**: A backup server used to resolve domain names if the primary DNS server fails.
- **LPR Server**: (Line Printer Remote Server) A service that manages print jobs and enables networked devices to send print requests to remote printers. Multiple LPR ports for printers can be configured.

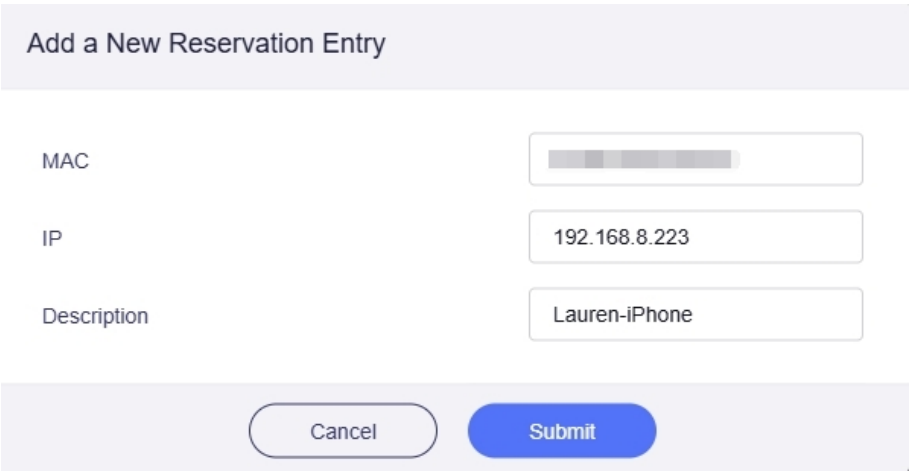
Note: If DHCP server is disabled, you need to configure static IP and other communication parameters manually for each clients. See here for details.

13.3.3 Address Reservation

Address reservation allows you to specify a fixed IP address for a LAN client, so that the client will always receive the same IP address each time it accesses the router's DHCP server. You can assign reserved IP addresses to computers or servers that require permanent IP settings. Note that clients with address reservation configured must reconnect to the router to activate the setting.

Follow the steps below to configure address reservation if needed.

1. Log in to your router's web admin panel, navigate to **NETWORK** > **LAN** > **Address Reservation**, and click **Add**.
2. In the pop-up window, select the MAC address from the drop-down list, then the corresponding IP address for the selected MAC will be auto-filled. Enter a descriptive name and click **Submit**.



3. After adding a new IP address reservation, the page will display the reserved entry, as shown below.



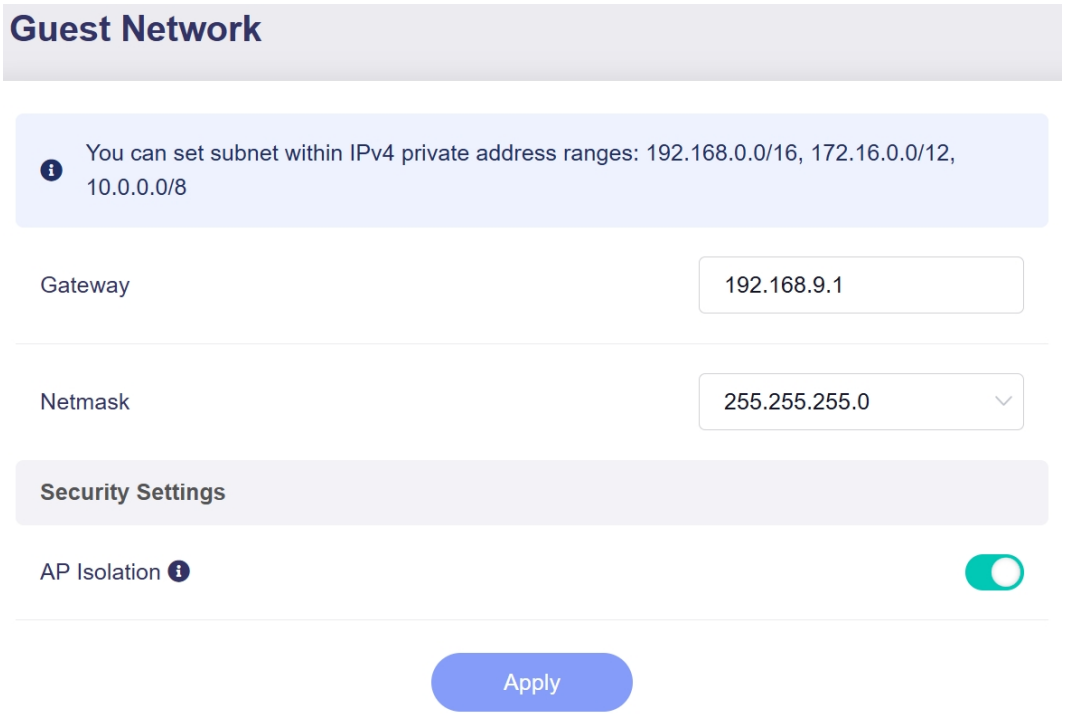
13.4 Guest Network

Guest Network refers to a dedicated network for visitors to connect to, isolating them from your main LAN to protect your private network security.

Log in to your router's web admin panel and go to **NETWORK** > **Guest Network**. This page allows you to configure Guest Network settings, including basic settings and DHCP server.

13.4.1 Basic Settings

The basic settings include Gateway, Netmask, and AP Isolation.

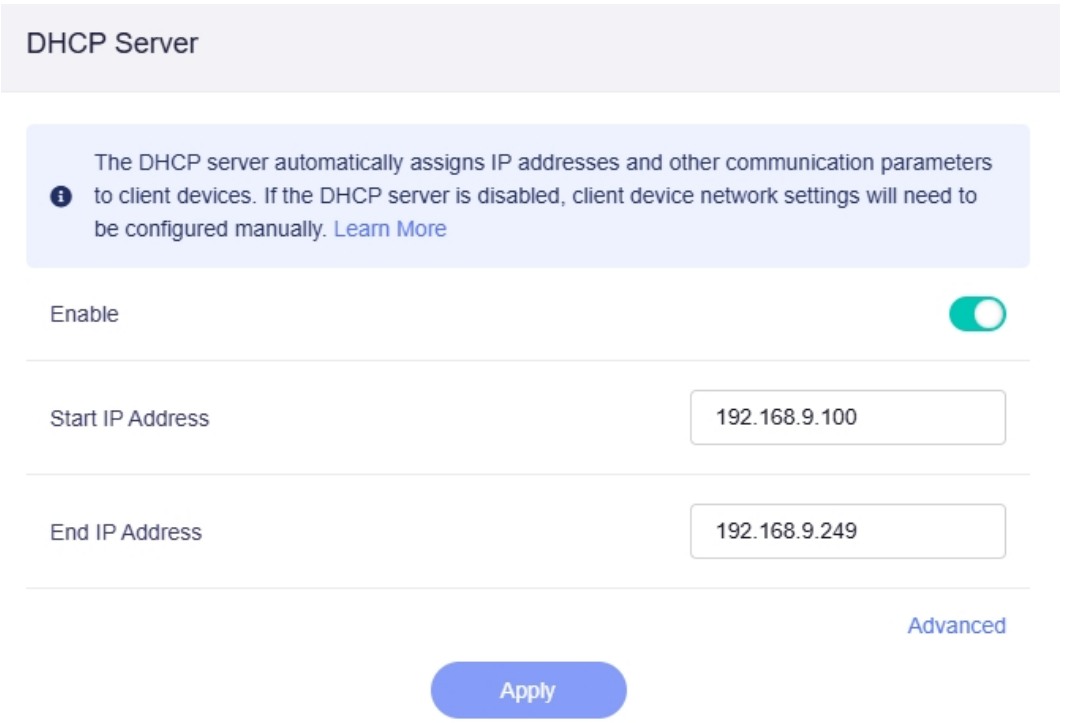


- **Gateway**: It is 192.168.9.1 by default and can be changed if needed, but it must not conflict with the gateway of the main network.
- **Netmask**: Two options are available: 255.255.255.0 and 255.255.0.0.
- **AP Isolation**: It is used to isolate guest network clients into separate segments so they cannot communicate with other devices on the same network.

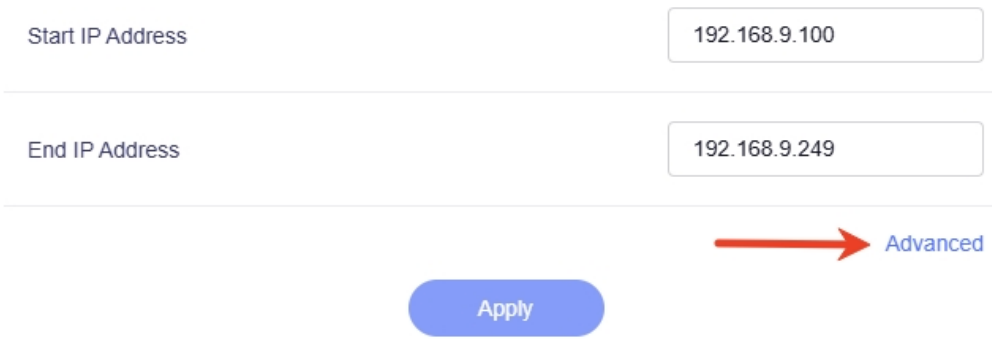
13.4.2 DHCP Server

Since the Guest network is disabled by default, its DHCP server is disabled and hidden until it is manually enabled.

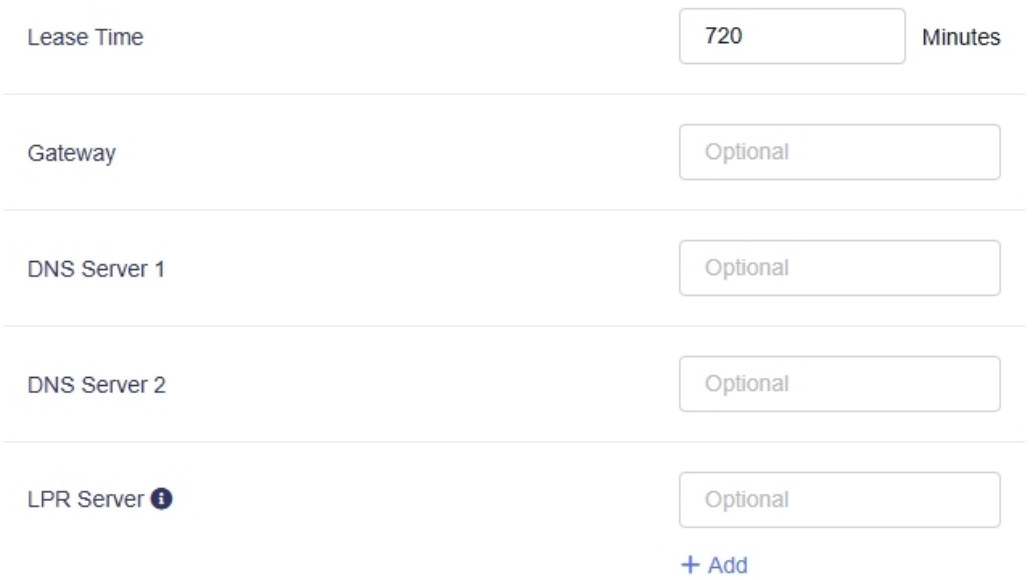
When enabled, the DHCP server automatically assigns IP addresses and other communication parameters to each connected client. The DHCP server's IP address pool for the Guest network ranges from 192.168.9.100 to 192.168.9.249. You can customize the address range if needed.



Click **Advanced** in the bottom right corner.



You will be able to configure advanced settings, including Lease Time, Gateway, DNS Server(s), and LPR Server.



- **Lease Time**: The duration for which a device can use an IP address assigned via the Guest network's DHCP.
- **Gateway**: The router component that routes traffic between the guest network and external networks (e.g., the internet).
- **DNS Server 1**: The primary server responsible for translating domain names into IP addresses.
- **DNS Server 2**: A backup server used to resolve domain names if the primary DNS server fails.
- **LPR Server**: (Line Printer Remote Server) A service that manages print jobs and enables networked devices to send print requests to remote printers. Multiple LPR ports for printers can be configured.

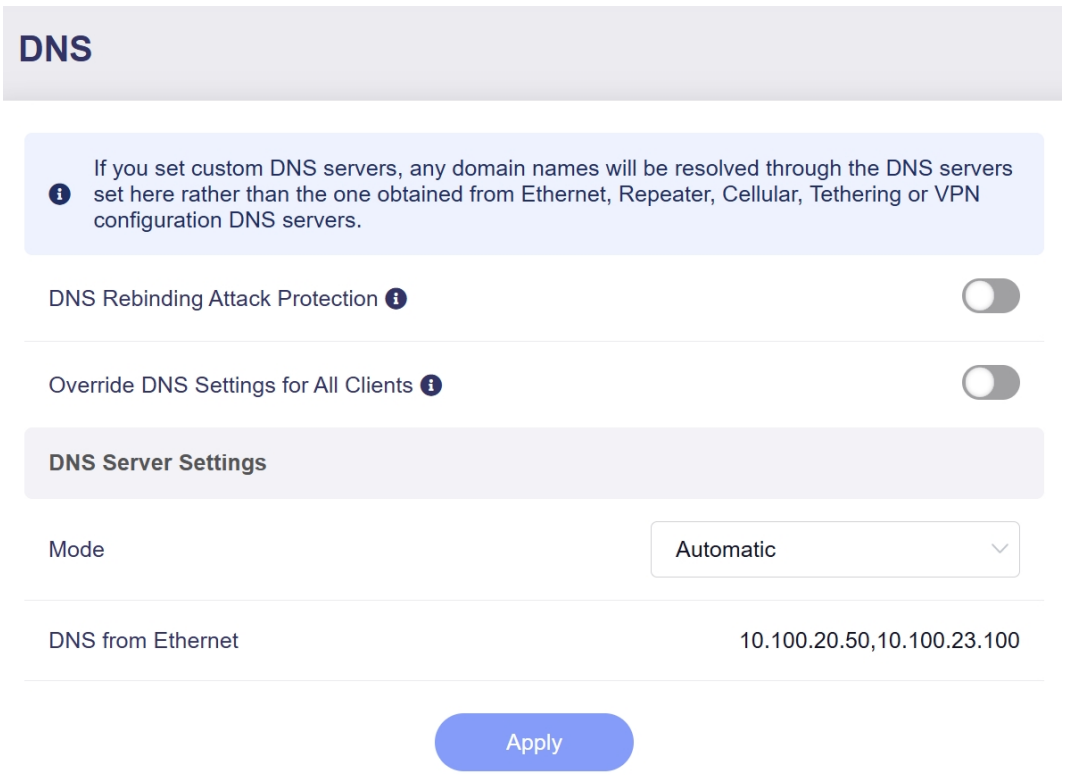
13.5 DNS

DNS (Domain Name System) is a service that translates human-readable domain names, such as www.google.com, into IP addresses so that devices can locate and connect to websites and online services.

On a router, DNS settings usually determine which DNS servers are used by connected devices. In most cases, the router either obtains DNS server addresses automatically from the ISP or upstream network, or allows users to manually specify public DNS servers, such as 8.8.8.8, in the web management interface. Once configured, these DNS settings are typically distributed to connected devices automatically, so there is no need to configure DNS separately on each device.

Log in to your router's web admin panel and navigate to **NETWORK** > **DNS**. This page allows you to configure DNS related settings.

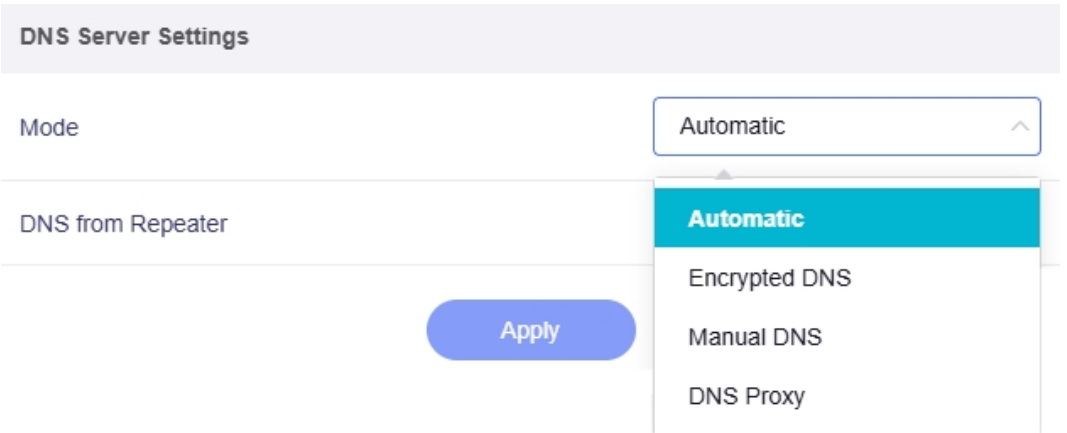
13.5.1 General Settings



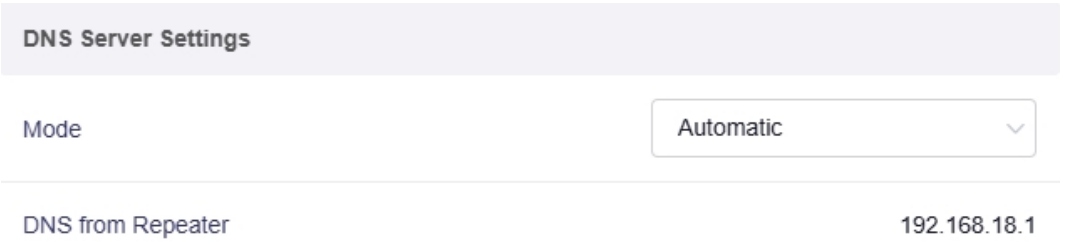
- **DNS Rebinding Attack Protection**: Protects against DNS rebinding attacks by blocking malicious DNS resolution attempts. Note that enabling it may cause private DNS lookup failure; disable if your network uses a captive portal (e.g., public Wi-Fi login pages).
- **Override DNS Settings of All Clients**: If enabled, all connected devices will be forced to use the DNS servers configured on the router, ignoring their own original DNS settings. It enables unified DNS configuration for all devices.

13.5.2 DNS Server Settings

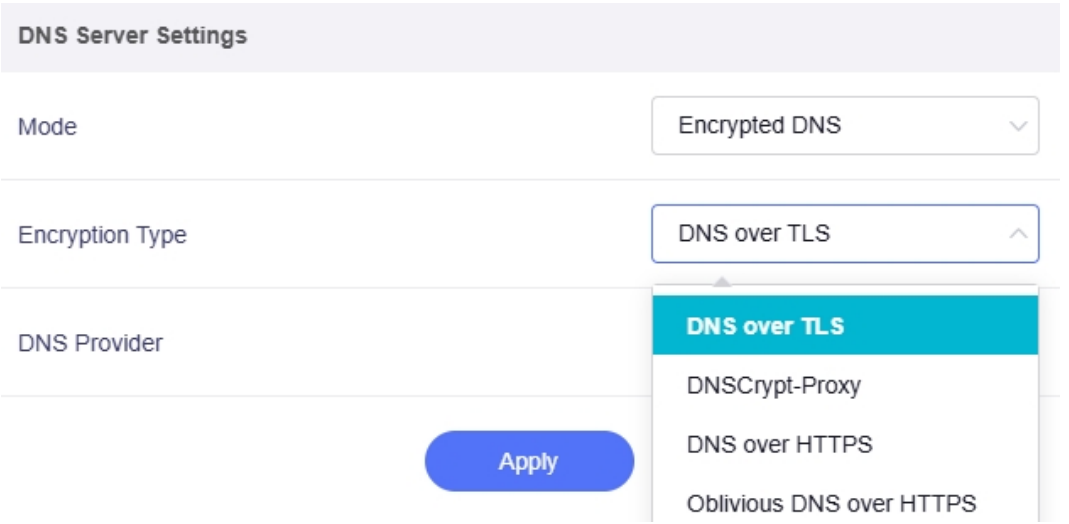
There are four modes for the DNS server: Automatic, Encrypted DNS, Manual DNS, and DNS Proxy.



1. **Automatic**: When selected, the router will automatically obtain DNS server addresses from the upstream network and apply them to all connected devices.

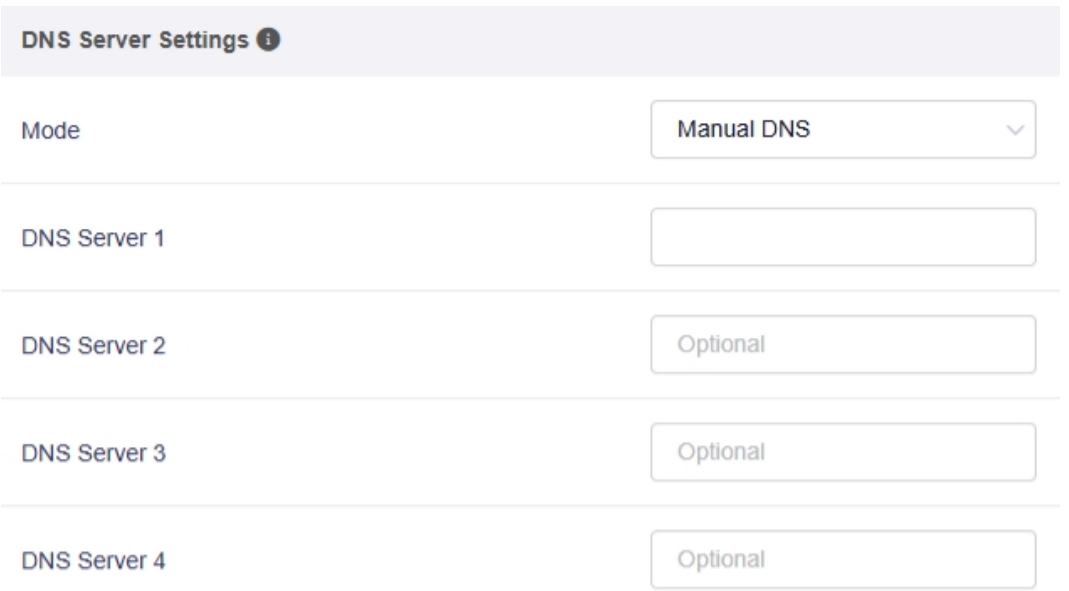


2. **Encrypted DNS**: When selected, the router will use encrypted protocols to process DNS queries, securing resolution data against eavesdropping or tampering.
   It has four encryption types: DNS over TLS, DNSCrypt-Proxy, DNS over HTTPS, and Oblivious DNS over HTTPS.



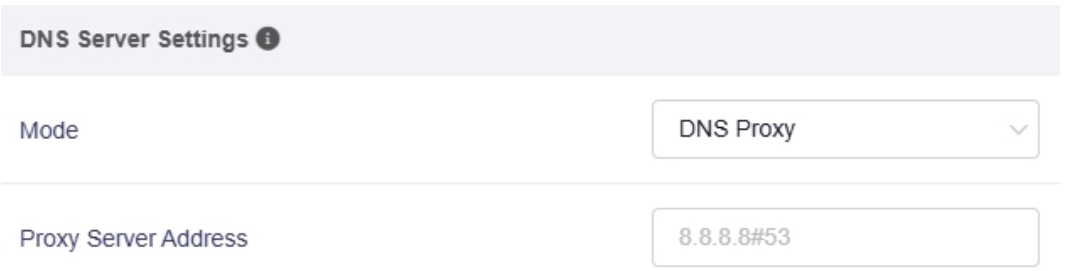
- For DNS over TLS, select a DNS provider among Control D, NextDNS, and Cloudflare.
- For the other three (i.e., DNSCrypt-Proxy, DNS over HTTPS, and Oblivious DNS over HTTPS), select at least one DNS server from the repository. Up to 8 servers can be selected. When multiple servers are selected, the router will use the fastest one automatically.

3. **Manual DNS**: When selected, you can customize your router's DNS servers. Click DNS Server 1 and choose a DNS server from the drop-down list. The remaining DNS fields will update automatically.



Note: If you need to use IPv6 addresses for manual DNS, enable IPv6 on your router first.

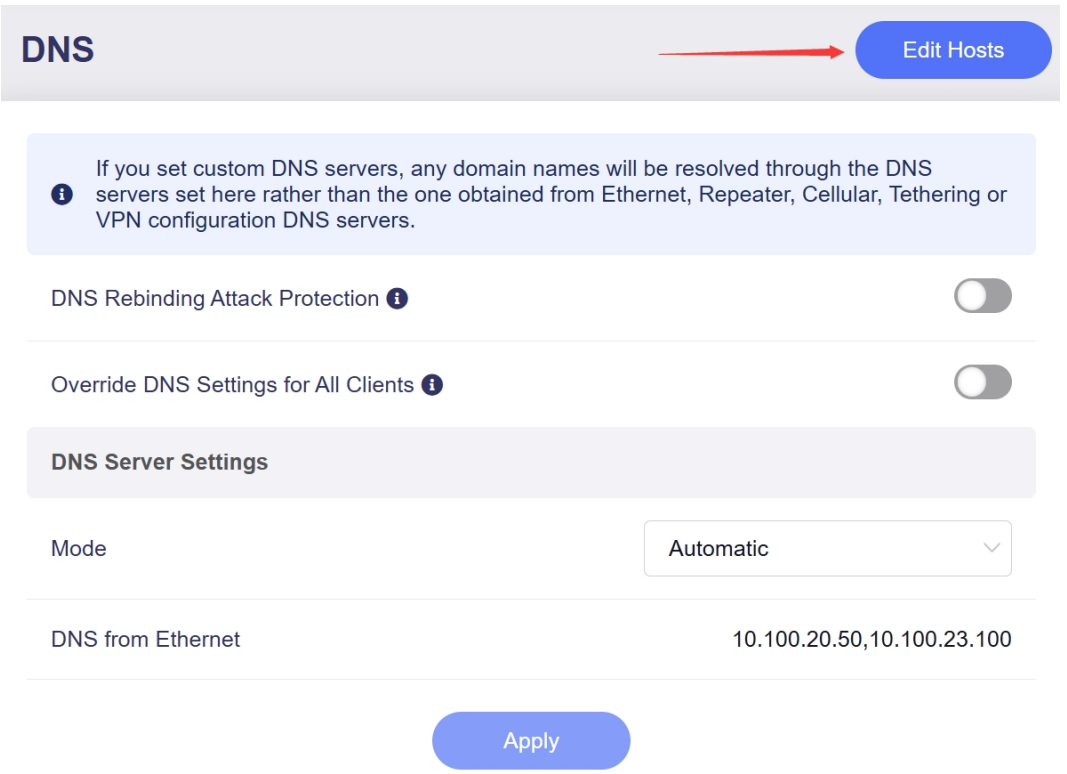
4. **DNS Proxy**: When selected, the router forwards all DNS queries through a proxy server, allowing resolution via the proxy's network environment for specific access needs.



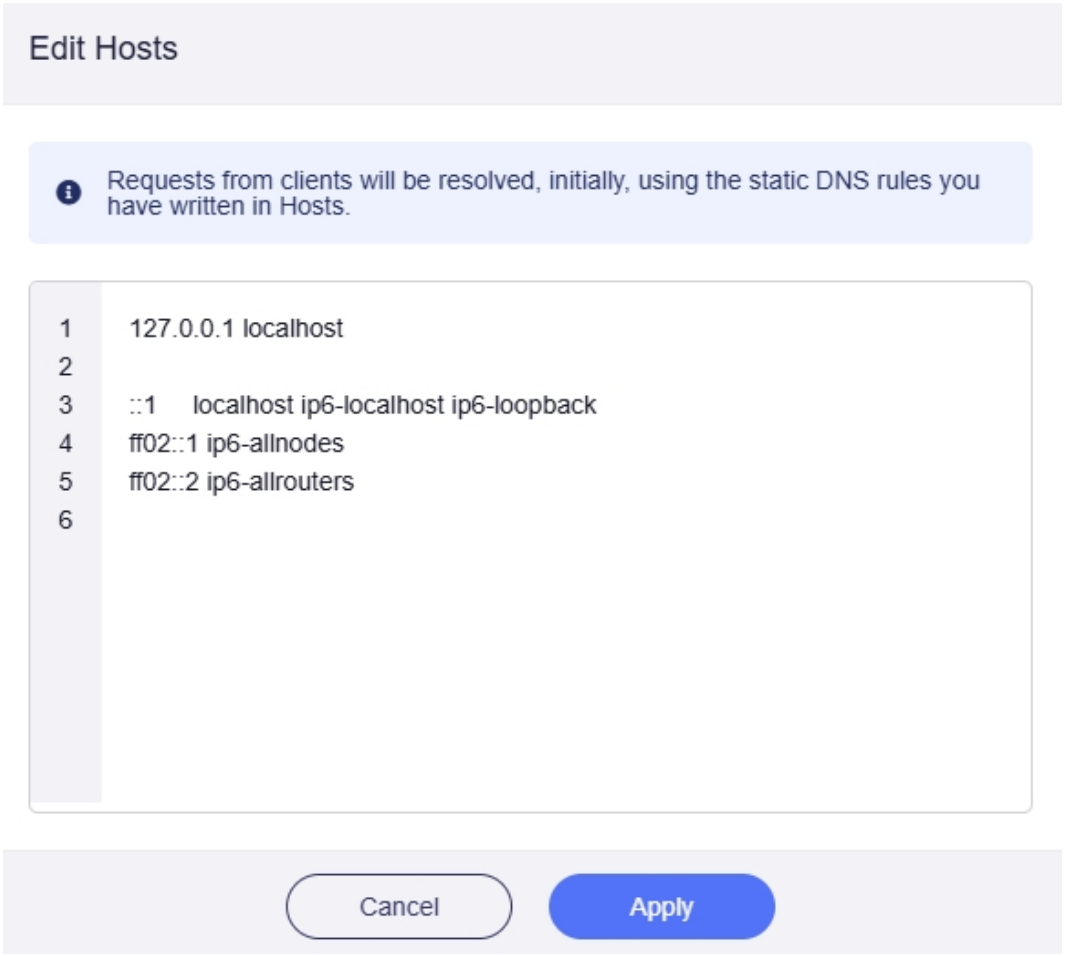
13.5.3 Edit Hosts

You can define static DNS resolution rules if needed.

On the DNS page, click **Edit Hosts** in the top right corner.



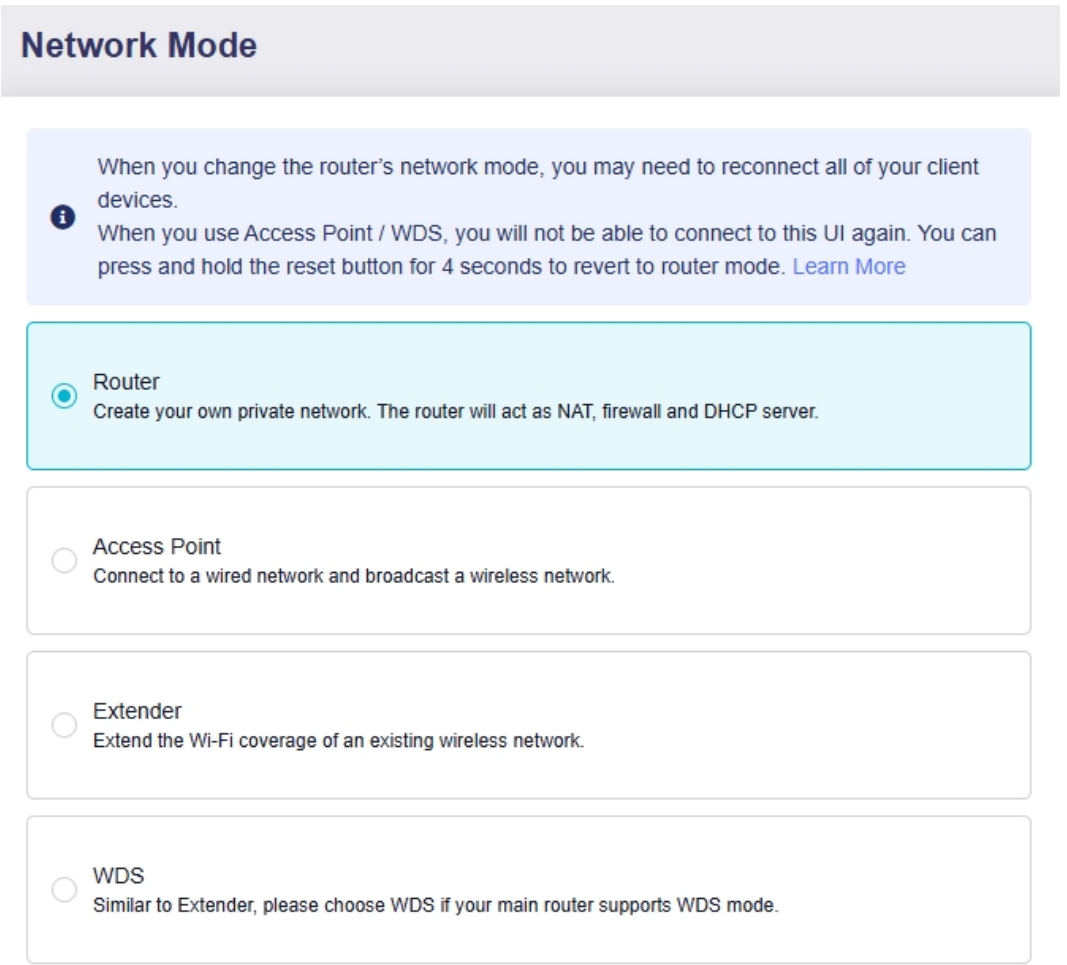
Requests from clients will be resolved preferentially using the static DNS rules written here, allowing you to manually map IP addresses to hostnames (e.g., the default entries like 127.0.0.1 localhost for local loopback) for customized domain name resolution control.


Edit Hosts
Requests from clients will be resolved, initially, using the static DNS rules you have written in Hosts.
1 127.0.0.1 localhost
2
3 ::1 localhost ip6-localhost ip6-loopback
4 ff02::1 ip6-allnodes
5 ff02::2 ip6-allrouters
6
Cancel
Apply

13.6 Network Mode

Network mode refers to the different operational roles and functions a router can assume to meet various network deployment needs.

Log in to your router's web admin panel and navigate to **NETWORK** > **Network Mode**. You can change the network mode of your router.



- **Router**: This is the default operational mode for most home and small office routers, designed to create a private local area network (LAN) and act as a dedicated gateway between the public internet and connected devices. In this mode, the router enables core functions including NAT, DHCP, and a built-in firewall. It connects to an upstream line such as broadband fiber, automatically assigns private IP addresses to connected devices, and provides network security for the entire private network.
- **Access Point**: This mode enables a router to connect to a wired network via a LAN cable and broadcast wireless signals, expanding Wi-Fi coverage in large spaces to allow more

devices to access the network. In this mode, the router disables its NAT and DHCP functions, operating purely as a wireless signal transmitter and switch rather than a standalone gateway.

- **Extender**: This mode is designed to extend the Wi-Fi coverage of an existing wireless network and eliminate signal dead zones in areas with poor connectivity. It enables the router to wirelessly receive signals from the main router, amplify them, and retransmit the boosted signal. Unlike Access Point mode, it requires no wired connection to the main router, but it may lead to bandwidth halving, as the device has to handle simultaneous signal reception and transmission.
- **WDS**: Wireless Distribution System (WDS) mode is similar to Extender mode as it extends Wi-Fi coverage wirelessly, but it supports wireless bridging between multiple compatible routers. It is recommended for wireless network expansion when the upstream router has WDS functionality.

  This mode is ideal for scenarios like covering multi-story buildings or small office campuses where multiple routers need to work together to form a unified wireless network. Unlike Extender mode, which only transmits signals from one main router to a single extender, WDS mode allows interconnected routers to both send and receive signals, enabling seamless coverage across larger areas with multiple signal nodes.

Note:

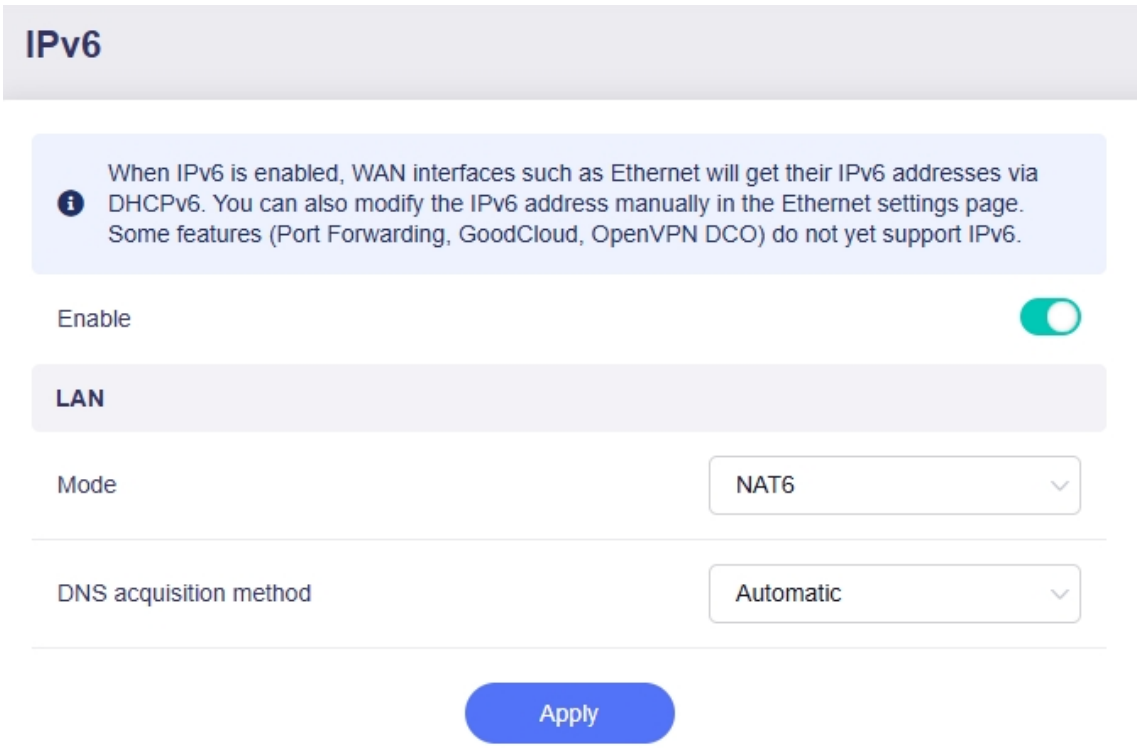
1. When the network mode is changed, all client devices shall reconnect to the router for stable network connectivity.
2. **In Access Point / WDS mode, you will not be able to access the web admin panel using the original IP address**. Instead, you need to log in to the upstream router to find the IP address it has assigned to this router, then use this IP address to access the web admin panel. If you do not have access to the upstream router, press and hold the reset button for 4 seconds to revert it to the default Router mode.
3. **In Access Point / Extender / WDS mode, the following features will be unavailable**: Access Control (Allowlist and Blocklist), VPN, AdGuard Home, Parental Control, ZeroTier, Tailscale, Firewall, Multi-WAN, DHCP Server, Address Reservation, Guest Network, DNS, IPv6, Drop-in Gateway, IGMP Snooping, NAT Settings.

13.7 IPv6

IPv6 (Internet Protocol version 6) is the latest Internet Protocol designed to replace IPv4. It offers a larger pool of unique IPs, solving the address exhaustion issue of IPv4 and supporting the growing number of connected devices globally.

Log in to your router's web admin panel and navigate to **NETWORK** > **IPv6**. This page allows you to enable and configure IPv6 on your router. When IPv6 is enabled, WAN interfaces such as Ethernet will get their IPv6 addresses via DHCPv6.

Toggle on **Enable**, select the mode for your main network and DNS acquisition method, then click **Apply.**



Note: Some features (e.g., firewall, GoodCloud) do not yet support IPv6. If you enable these features and IPv6 at the same time, it's likely to cause connectivity issues.

13.7.1 IPv6 Mode

Four modes are available: Native, Passthrough, NAT6 and Static IPv6.

- **Native**: This mode is applicable when the router directly obtains a public IPv6 address, and the router automatically assigns IPv6 addresses to online devices. This mode can meet the IPv6 access needs of most users.
- **Passthrough**: This mode is applicable when IPv6 packets need to be directly passed through without any processing or conversion. For example, some specific applications or services may require the complete preservation of IPv6 packet content for further processing or analysis. This mode is used by technical personnel for network debugging or security analysis.
- **NAT6**: This mode is suitable for scenarios where a router is used as a gateway to assign dynamic internal IPv6 addresses to each device on the network. In this mode, terminal devices connect through a Optical Network Terminal and obtain a local area network IPv6 address.
- **Static IPv6**: This mode is suitable for devices or services that require a fixed IPv6 address, such as servers or network printers. This mode ensures that the device always uses the same IPv6 address, facilitating management and access.

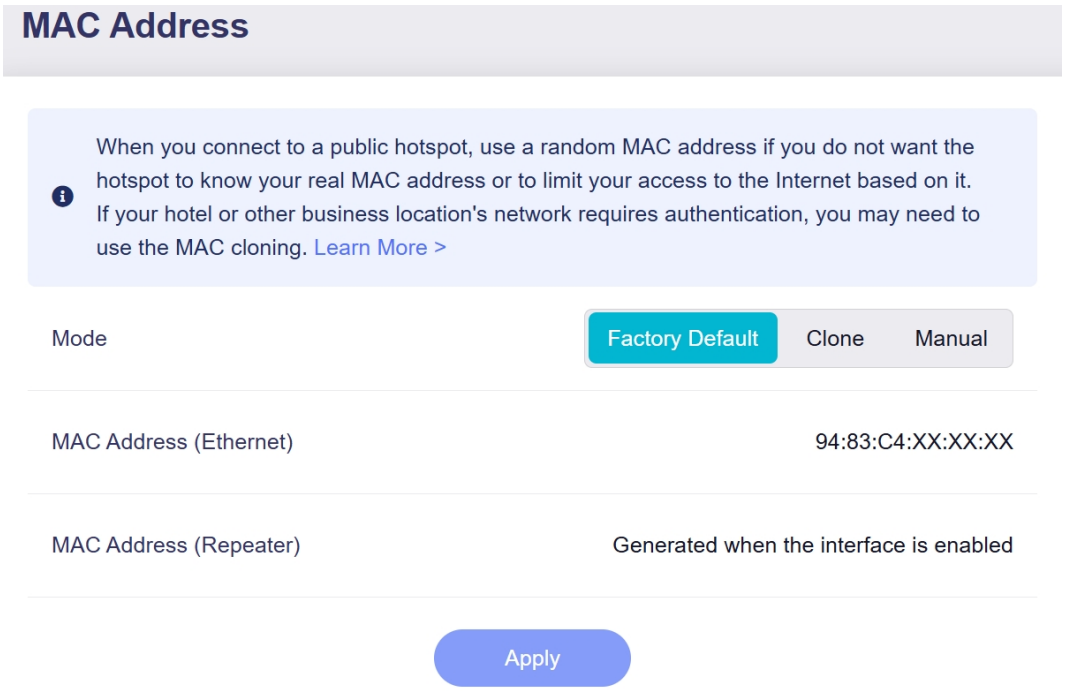
13.7.2 DNS Acquisition Method

It determines how the router obtains IPv6 DNS server addresses. There are two options: Automatic and Manual.

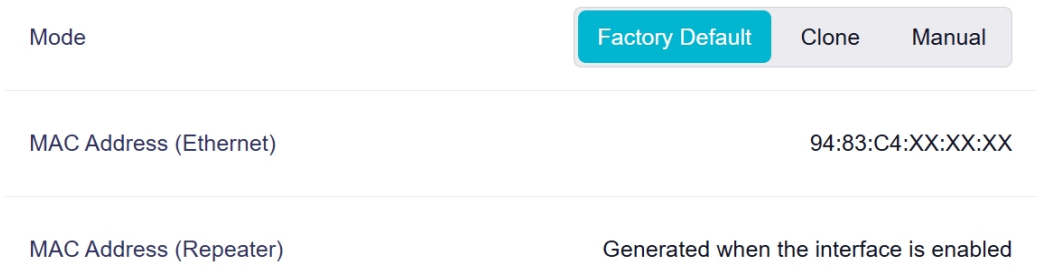
- **Automatic**: The router will obtain IPv6 DNS server addresses dynamically (e.g., via DHCPv6).
- **Manual**: Input custom IPv6 DNS server addresses. However, since DNS is used to resolve domain names to their corresponding IP addresses, manual DNS server configuration may result in DNS lookup failures. Please use it with caution.

13.8 MAC Address

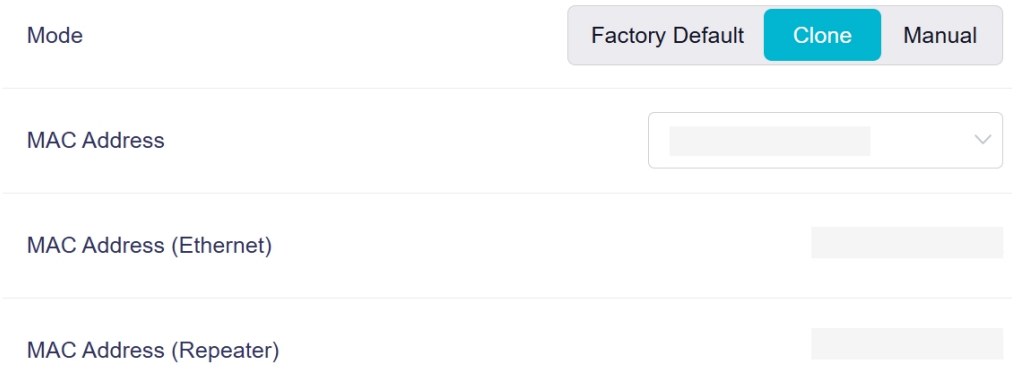
The MAC Address page displays the router's default MAC address, clone a client's MAC address, enter a MAC address manually, or generate a random MAC address. If the device supports setting multiple Ethernet ports to be used as WAN ports, you can set the MAC address for each port separately. Note that the MAC address setting is only valid when the Ethernet port is used as a WAN port.



- **The factory default MAC address.**

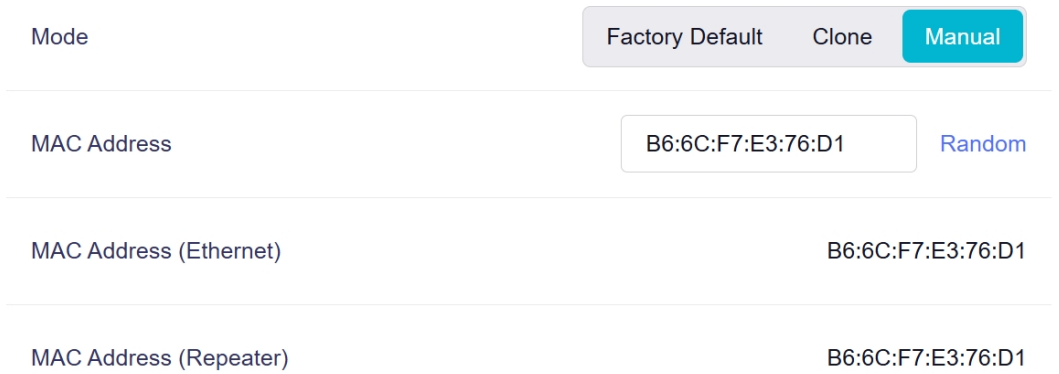


- **Clone a client's MAC address.**



Note: Many new devices now use a different random MAC address to connect to different Wi-Fi, so the MAC address shown here may not be the actual MAC address of the user's device. The randomized MAC may also be called a Private Wi-Fi Address or a random hardware address on different devices.

- **Manual input or generate a random MAC address.**

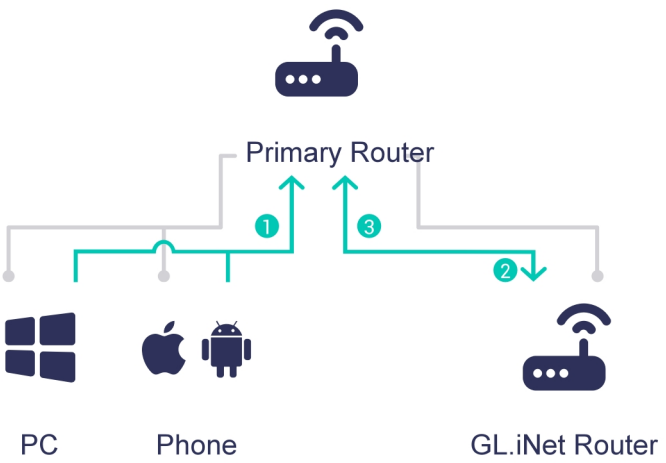


13.9 Drop-in Gateway

Drop-in Gateway is an extension function that enables capability expansion for an existing primary router without replacing or re-configuring it. By connecting the GL.iNet router to the primary router via an Ethernet cable, users can add advanced features onto the existing network infrastructure, for example:

- Filter advertisements via AdGuard Home
- Enable VPN client
- Use encrypted DNS

Drop-in Gateway operates as an intermediate network system, routing data traffic from client devices through the GL.iNet router for processing before transmitting it via the primary router. During this process, it not only preserves existing network settings to ensure uninterrupted connectivity for all connected devices, but also allows you to manage network traffic for all or specific client devices if needed.



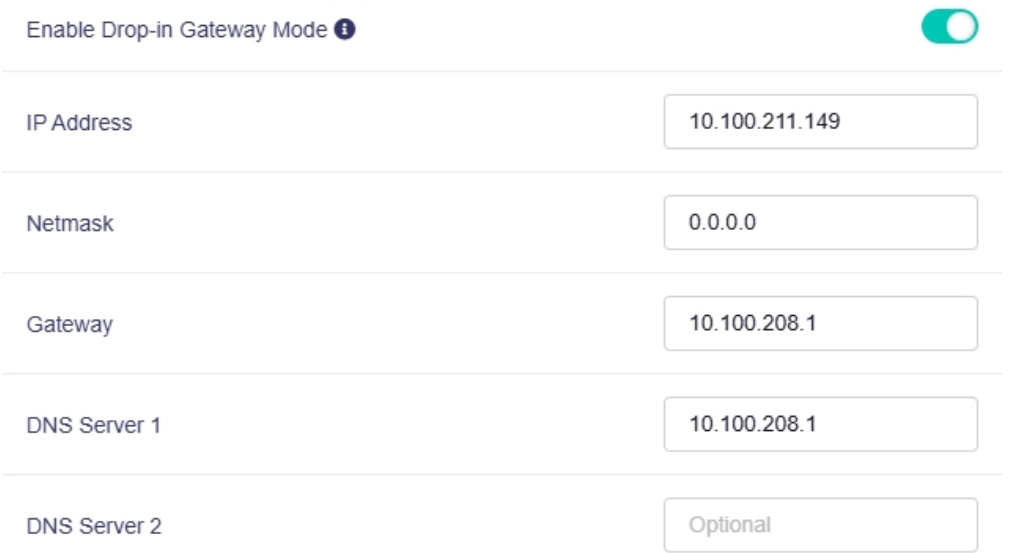
The diagram above consists of two types of lines: gray lines, and green lines marked with three arrows, each labeled with a corresponding number.

- **Gray lines** illustrate the physical connection topology: client devices (e.g., computer, laptop) connect to the primary router, and the primary router's LAN port links to the WAN port of the GL.iNet router (with Drop-in Gateway enabled) via an Ethernet cable.

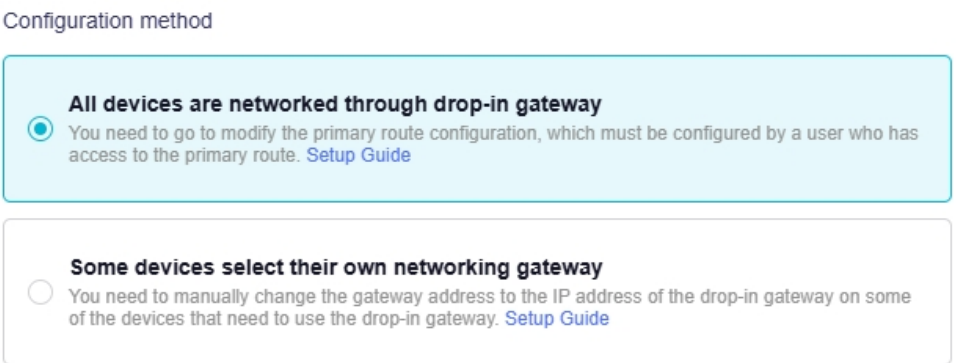
- **Green lines** depict the sequential data transmission path when Drop-in Gateway is active, with the numbered arrows indicating the traffic flow order:
    1. Traffic from client devices is first routed to the primary router;
    2. The primary router forwards the traffic to the GL.iNet router for processing (e.g., ad filtering, VPN encryption);
    3. After processing, the traffic is sent back to the primary router, which then either delivers the final data to the original client devices or routes it out to the Internet.

Follow the steps below to enable Drop-in Gateway if needed.

1. Log in to your router's web admin panel and navigate to **NETWORK** > **Drop-in Gateway**. Toggle on **Enable Drop-in Gateway Mode**, and confirm the network parameters.



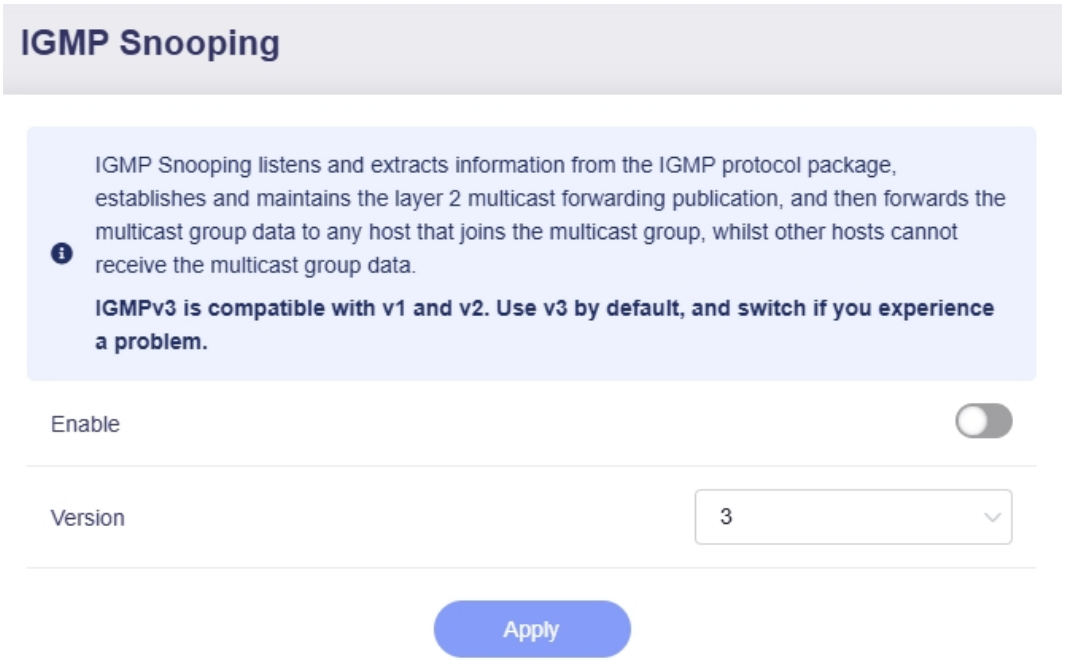
2. Select the configuration method, then click **Apply**. Please refer to this tutorial for details.



13.10 IGMP Snooping

IGMP Snooping listens to the IGMP protocol package, extracts the corresponding information, establishes and maintains the layer 2 multicast forwarding table, and then forwards the multicast group data to the host that joins the multicast group, while other hosts cannot receive the multicast group data.

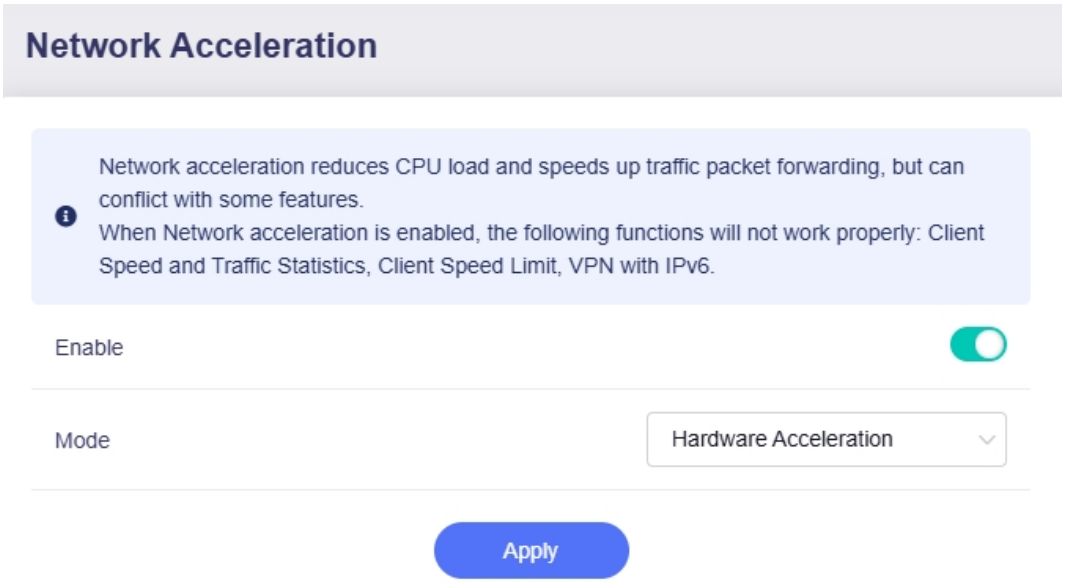
Log in to your router's web admin panel and navigate to **NETWORK** > **IGMP Snooping**. You can enable it to use the multicast function on your router if needed.



13.11 Network Acceleration

Network acceleration reduces CPU load and speeds up traffic packet forwarding, but can conflict with some features.

Log in to your router's web admin panel, and navigate to **NETWORK** > **Network Acceleration**. This page allows you to enable Network Acceleration and select the mode as Hardware Acceleration.

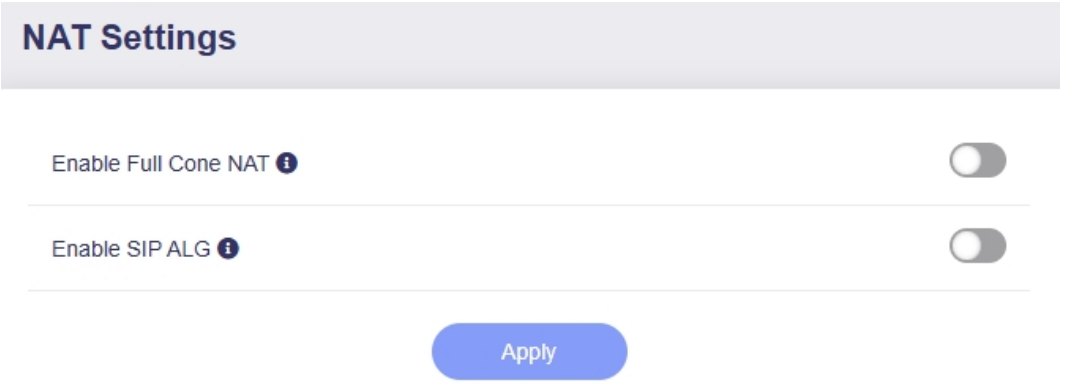


Hardware Acceleration Mode offloads high-frequency network tasks (e.g., NAT, packet forwarding, checksum verification) to dedicated hardware such as NPUs or HWNAT chips. It specifically works on Ethernet and Repeater connections, excelling in these scenarios with fixed paths and simple rules to deliver high throughput, low latency, and minimal CPU load for wire-speed data transmission.

Note: When Network Acceleration is enabled, the following functions will not work properly: Client Speed Statistics, Traffic Statistics, Speed Limit, Parental Control, and VPN with IPv6.

13.12 NAT Settings

Log in to your router's web admin panel and navigate to **NETWORK** > **NAT Settings**. This page allows you to configure two key NAT-related features: Full Cone NAT and SIP ALG.



- **Full Cone NAT**: It can be used to reduce game latency, enhancing the responsiveness of online gaming. However, enabling Full Cone NAT may be less secure as it allows unrestricted incoming connections.
- **SIP ALG**: It is intended to mitigate the effects of multiple NATs on SIP (Session Initiation Protocol) traffic. However, in most cases, it will not help and may even affect VoIP calls, causing issues like one-way audio, phones not ringing, unexpected call drops, or calls going directly to voicemail.

Chapter 14

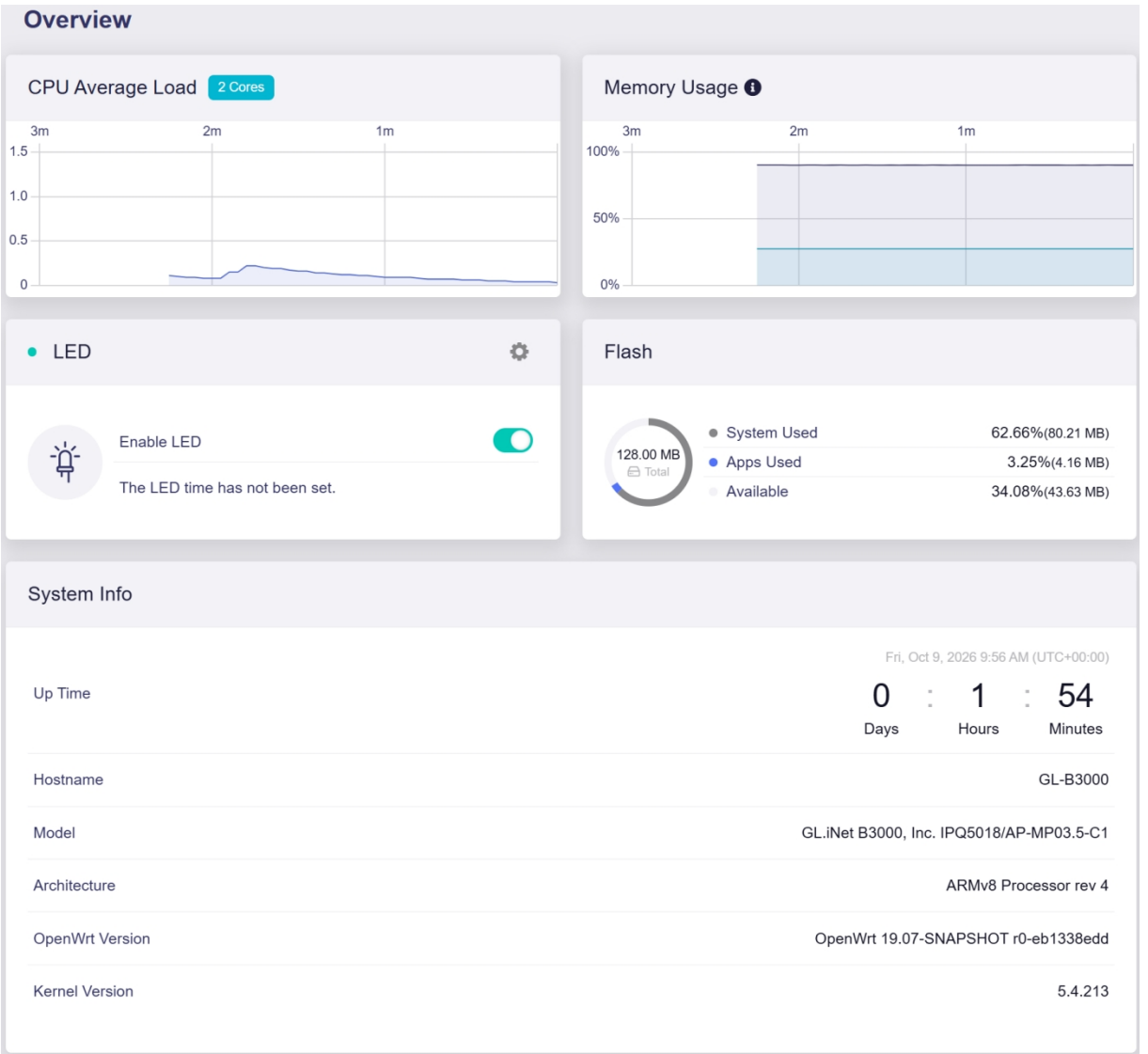
System

This chapter covers system management tools for the device, such as system overview, upgrade, scheduled tasks, time zone, log, firmware reset, and advanced settings.

14.1 Overview

Log in to your router's web admin panel and navigate to **SYSTEM** > **Overview**. This page displays hardware status and supports some simple controls, including:

- CPU, Memory, and Flash Status
- LED Control
- Device Information

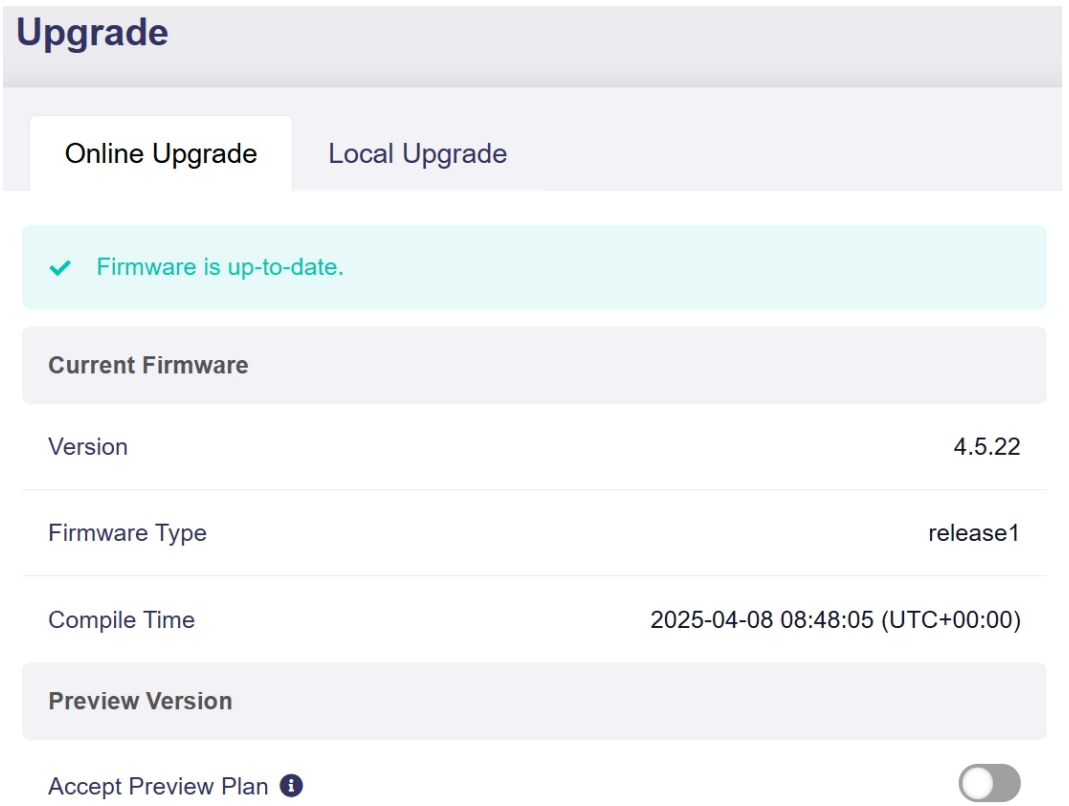


14.2 Upgrade

Log in to your router's web admin panel and navigate to **SYSTEM** > **Upgrade**. You can upgrade the router's firmware version by online upgrade or local upgrade.

14.2.1 Online Upgrade

You can find the current firmware details here, including firmware version, firmware type (e.g., release, beta), and update time. If your router is connected to the Internet, it will check for the newer firmware version available for download.



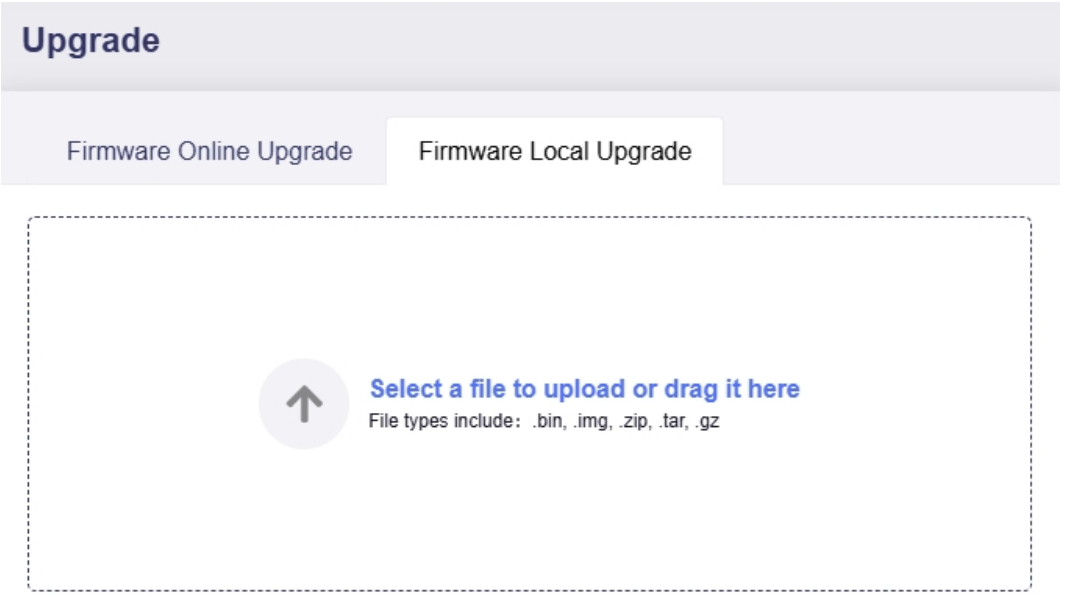
If **Accept Preview Plan** is enabled, you can try new features before the final version is issued and provide us with feedback. Set it once and it stays on. Note that these upgrades may not be stable.

Tip: When trying to perform an online upgrade, if it displays **Download Failed**, please navigate to **SYSTEM** > **Time Zone**, and fix the time zone error (sync to browser).

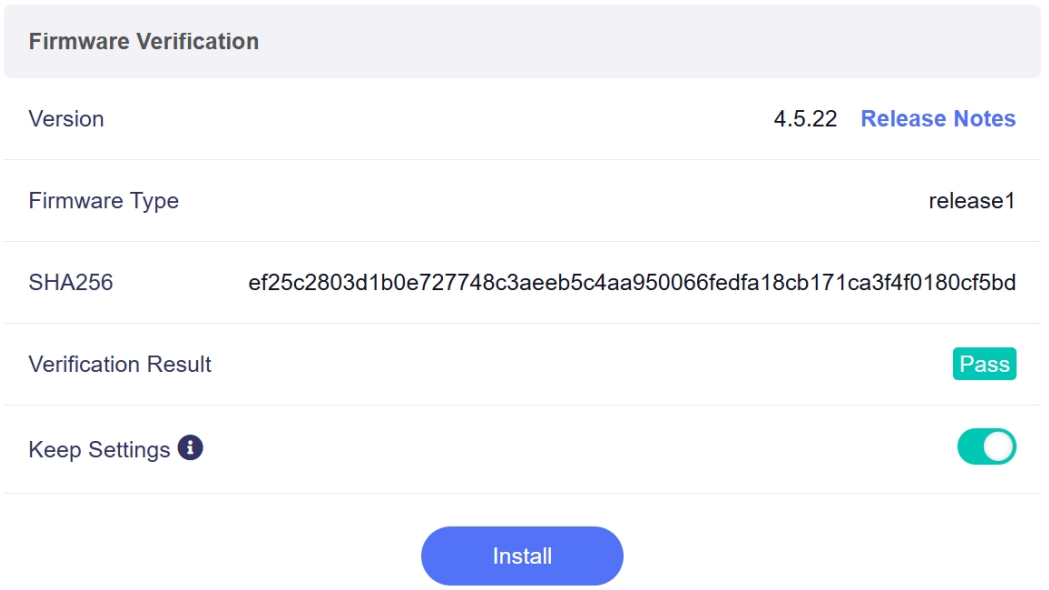
14.2.2 Local Upgrade

Local upgrade does not rely on an Internet connection for the router.

Download the correct firmware package (matching your router model) from the official Download Center to your local device. Then log in to the router's web admin panel, navigate to **SYSTEM** > **Upgrade** > **Local Upgrade** section, and upload the firmware package.



The page will display the firmware details. Verify these details before clicking **Install**.



If **Keep Settings** is enabled, current settings are retained. However, any manually installed packages must be reinstalled after the upgrade completes. Do not enable this option when downgrading the firmware.

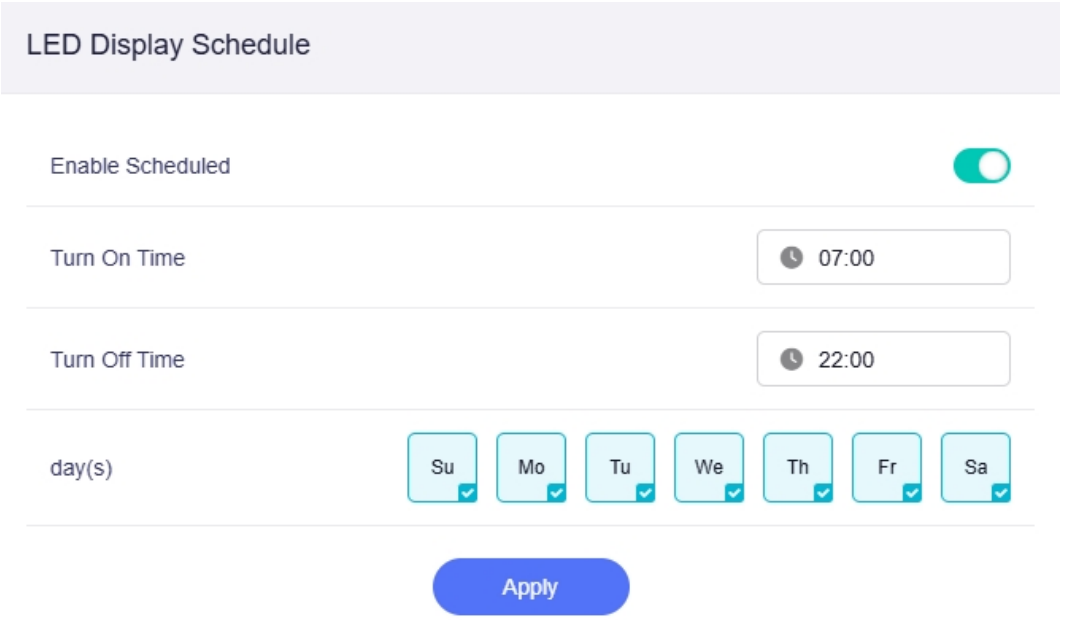
14.3 Scheduled Tasks

Log in to your router's web admin panel and navigate to **SYSTEM** > **Scheduled Tasks**. This page allows you to set up a daily schedule for some basic actions, including switching LED light on and off, and restarting the router.

Note: Please synchronize the time in the Time Zone before using this function. If the device is shut down at the scheduled time, the task will not be executed.

14.3.1 LED Display Schedule

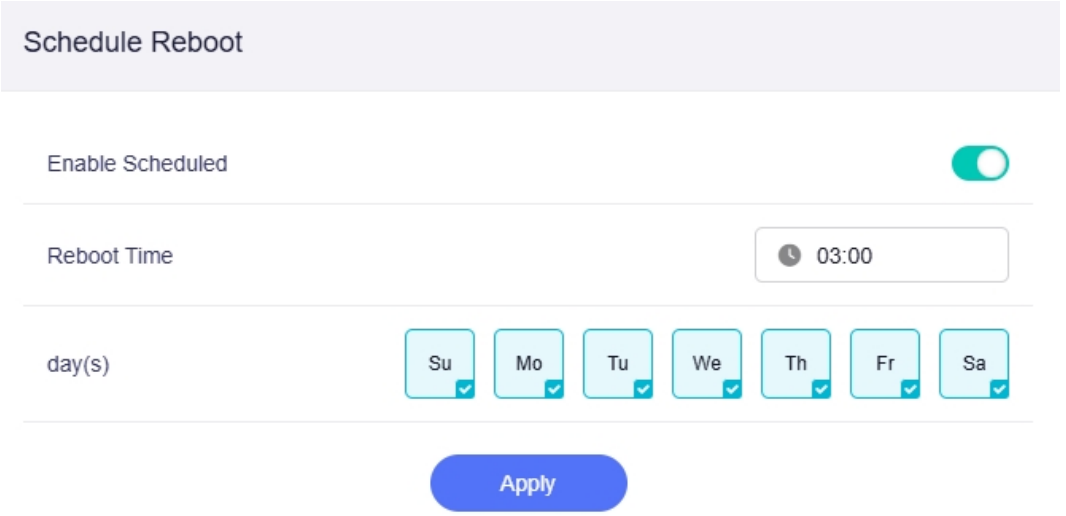
Set a schedule for your router's LED light if needed, then click **Apply**.



- **Enable Scheduled**: Toggle this switch to enable the LED display schedule.
- **Turn On Time**: Set the time (e.g., 07:00) when the LED light will turn on.
- **Turn Off Time**: Set the time (e.g., 22:00) when the LED light will turn off.
- **day(s)**: Select the effective days of the week for these settings.

14.3.2 Schedule Reboot

Set a schedule for automatically restarting your router if needed, then click **Apply**.



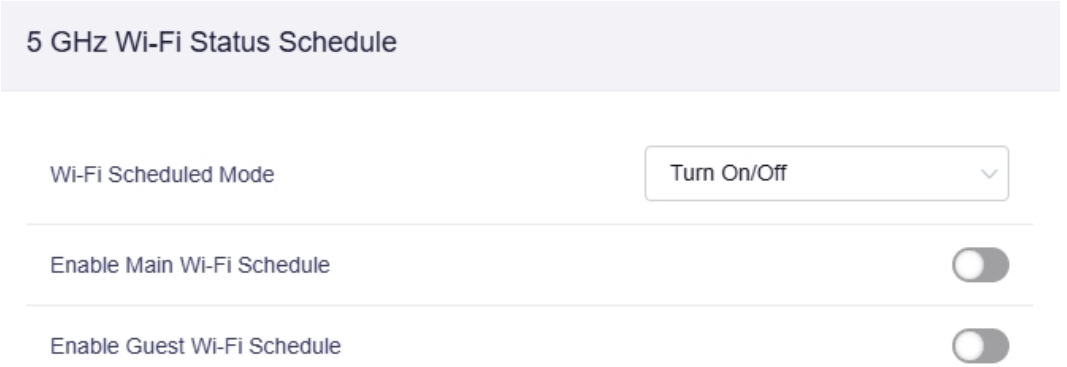
- **Enable Scheduled**: Toggle this switch to enable the scheduled reboot.
- **Reboot Time**: Set the specific time (e.g., 03:00) when the router will restart.
- **day(s)**: Select the effective days of the week for these settings.

14.3.3 5GHz Wi-Fi Schedule

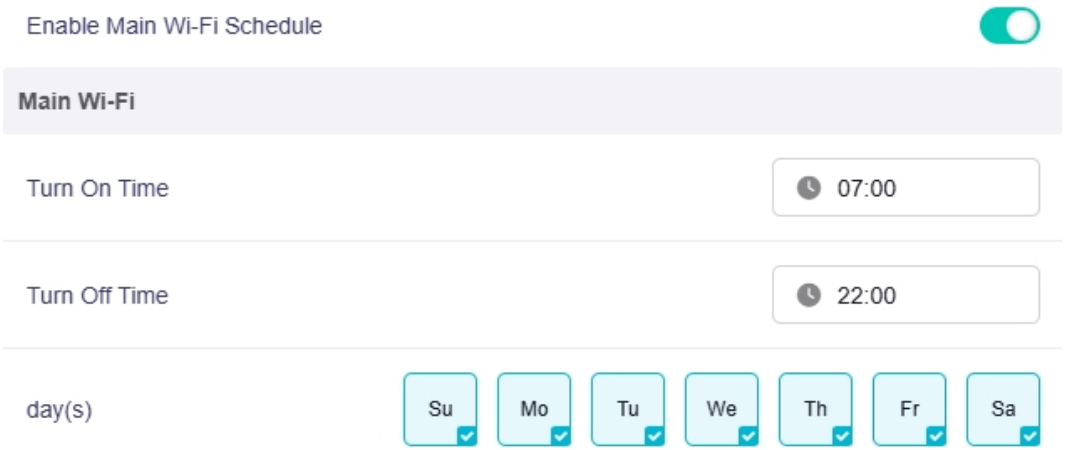
This function allows you to set a schedule for your 5GHz Wi-Fi. There are two modes: Turn On/Off, and Switch TX Power.

Mode 1: Turn On/Off

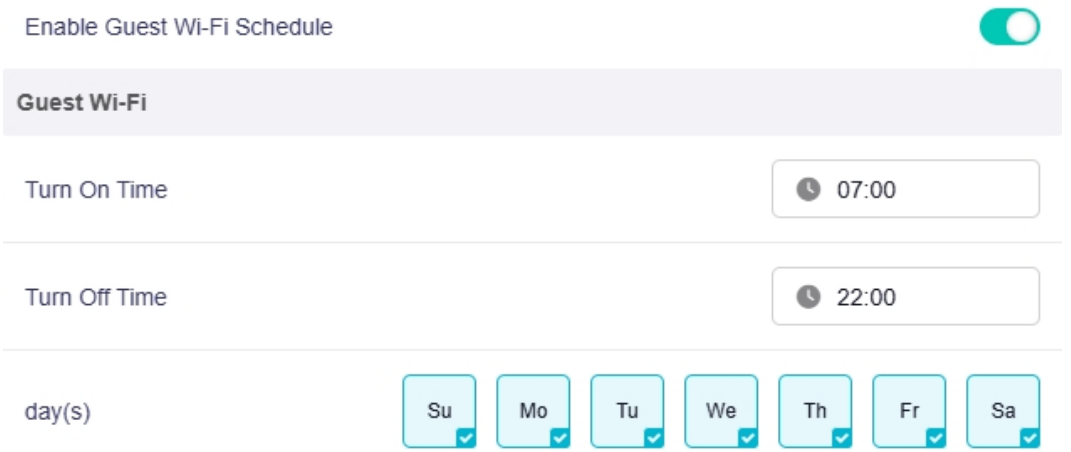
You can enable the on/off schedule for both the 5GHz Main Wi-Fi and Guest Wi-Fi.



- **Main Wi-Fi Schedule**: When enabled, set the on and off times for your 5GHz Main Wi-Fi, and select an effective date for the week.

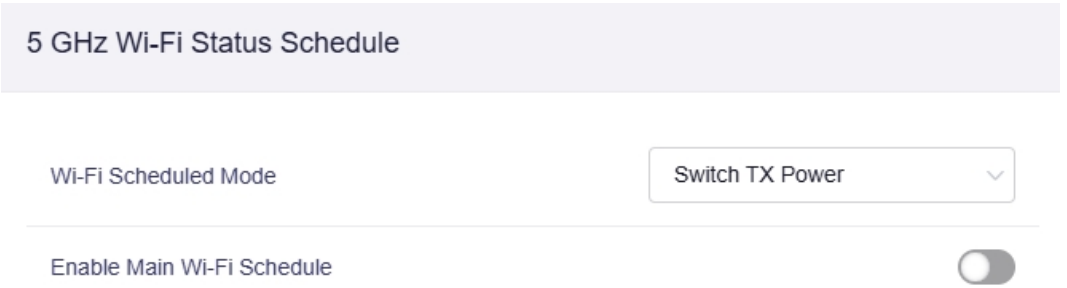


- **Guest Wi-Fi Schedule**: When enabled, set the on and off times for your 5GHz Guest Wi-Fi, and select an effective date for the week.

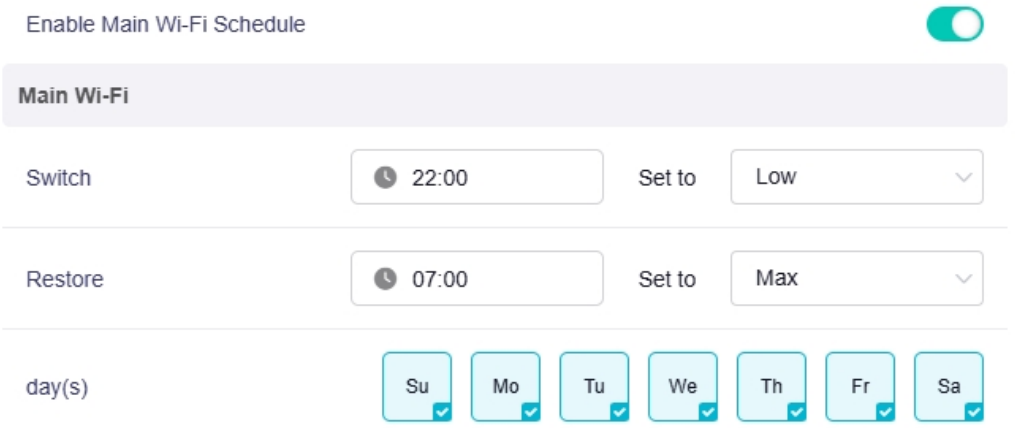


Mode 2: Switch TX Power

You can enable the TX power switching schedule for the 5GHz Main Wi-Fi.



When enabled, set two timed actions for your 5GHz Main Wi-Fi to switch TX power, and select an effective date for the week.



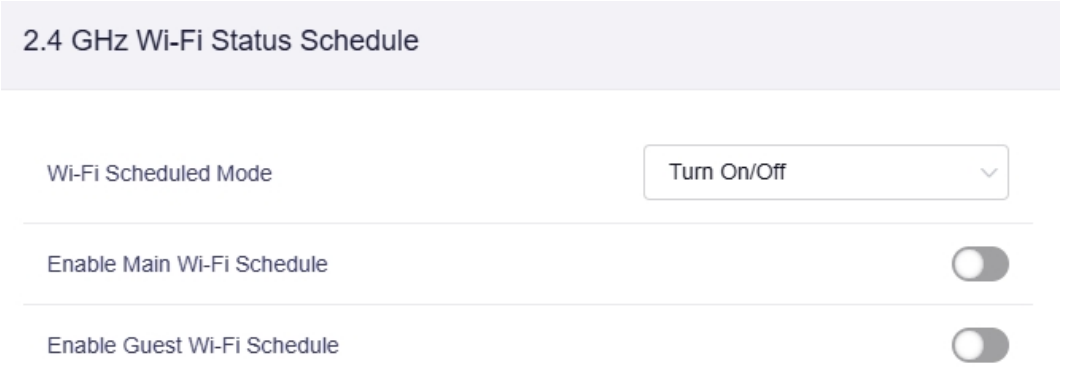
- **Switch**: Set TX Power to a certain level (e.g., Low) at a specific time (e.g., 22:00).
- **Restore**: Restore TX Power to another level (e.g., Max) at another time (e.g., 07:00).
- **days**: Select the effective days of the week for these settings.

14.3.4 2.4GHz Wi-Fi Schedule

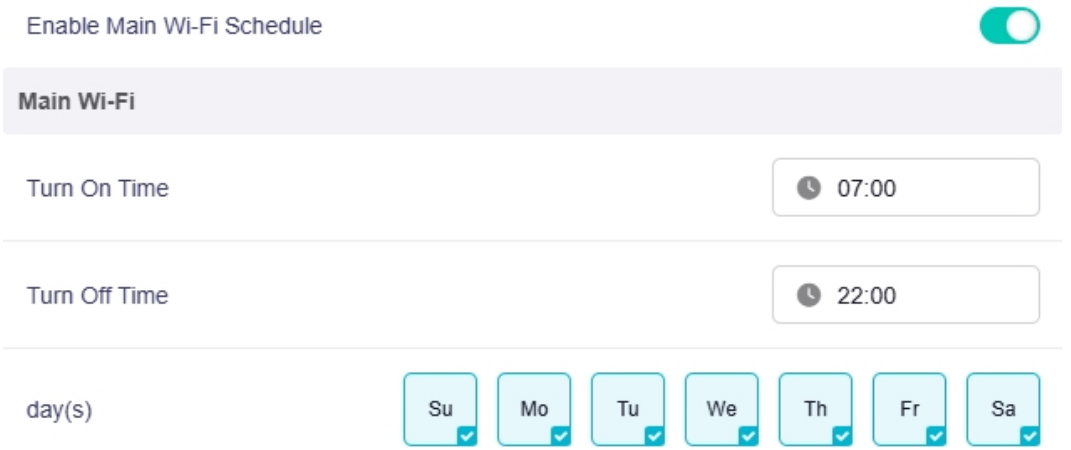
This function allows you to set a schedule for your 2.4GHz Wi-Fi. There are two modes: Turn On/Off, and Switch TX Power.

Mode 1: Turn On/Off

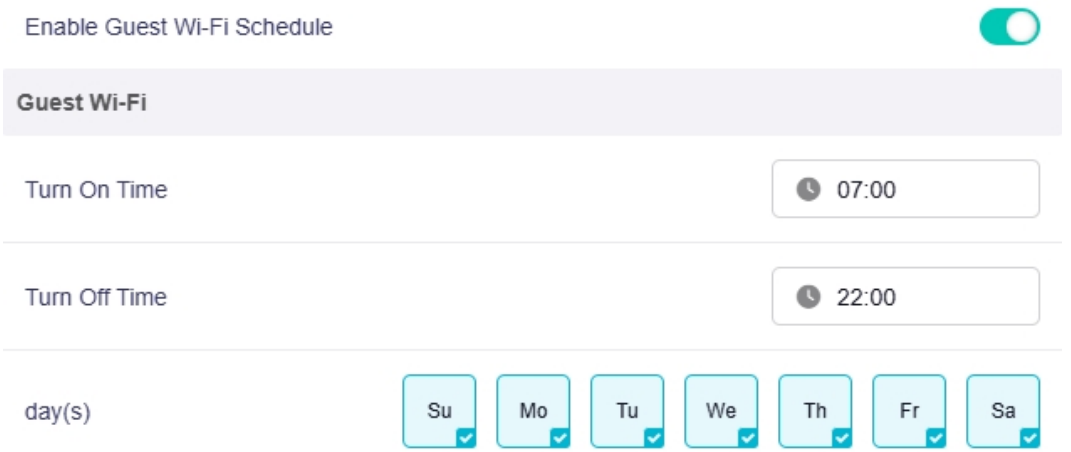
You can enable the on/off schedule for both the 2.4GHz Main Wi-Fi and Guest Wi-Fi.



- **Main Wi-Fi Schedule**: When enabled, set the on and off times for your 2.4GHz Main Wi-Fi, and select an effective date for the week.

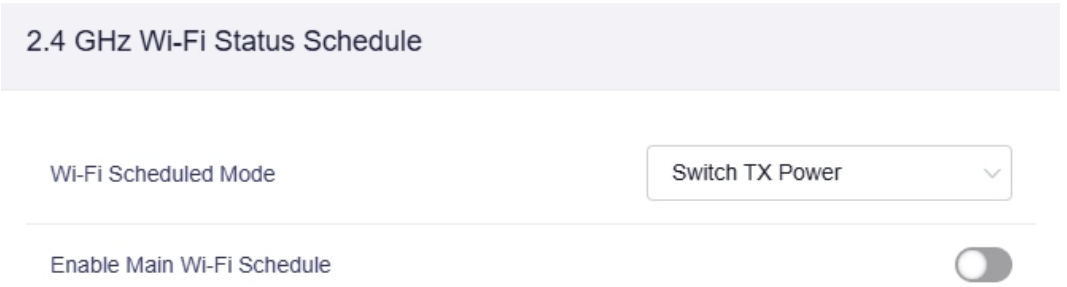


- **Guest Wi-Fi Schedule**: When enabled, set the on and off times for your 2.4GHz Guest Wi-Fi, and select an effective date for the week.

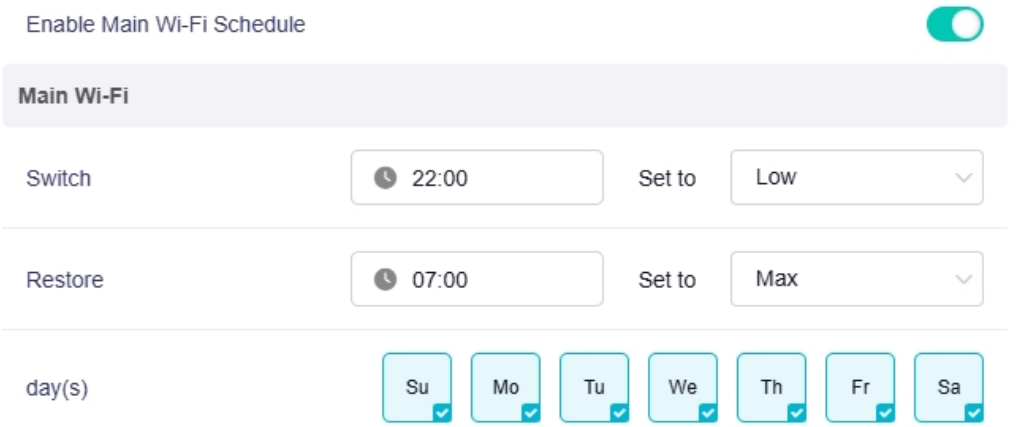


Mode 2: Switch TX Power

You can enable the TX power switching schedule for the 2.4GHz Main Wi-Fi.



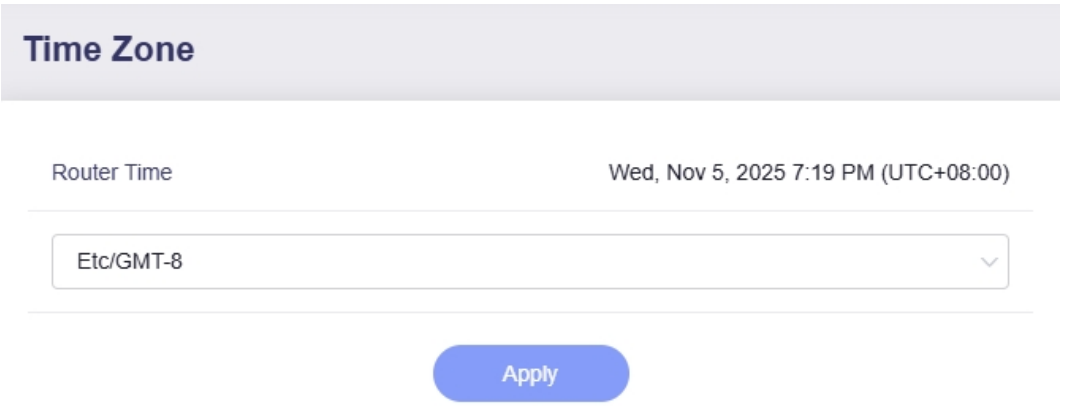
When enabled, set two timed actions for your 2.4GHz Main Wi-Fi to switch TX power, and select an effective date for the week.



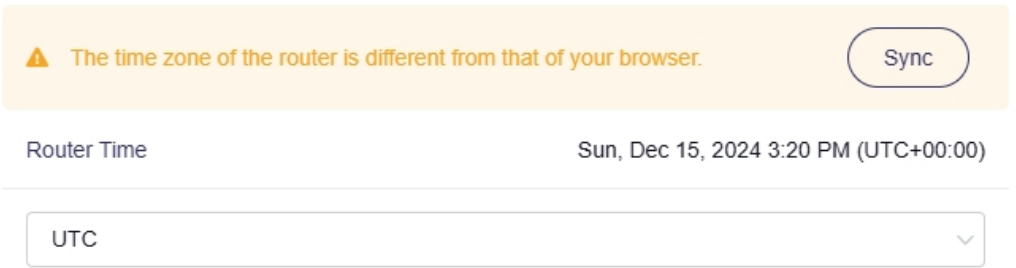
- **Switch**: Set TX Power to a certain level (e.g., Low) at a specific time (e.g., 22:00).
- **Restore**: Restore TX Power to another level (e.g., Max) at another time (e.g., 07:00).
- **days**: Select the effective days of the week for these settings.

14.4 Time Zone

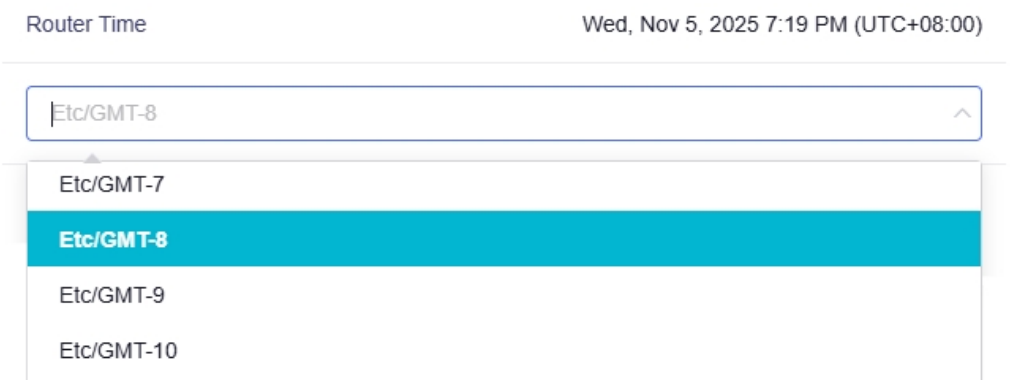
Log in to your router's web admin panel and navigate to **SYSTEM** > **Time Zone**. This page displays your router's system time, indicating the date, time, and corresponding time zone offset.



Some functions rely on the router's system time to take effect. Please ensure the correct time zone is properly synchronized. If the router's time zone is different from that of your browser, a prompt will be displayed as follows. Click the **Sync** button to synchronize the time zone.

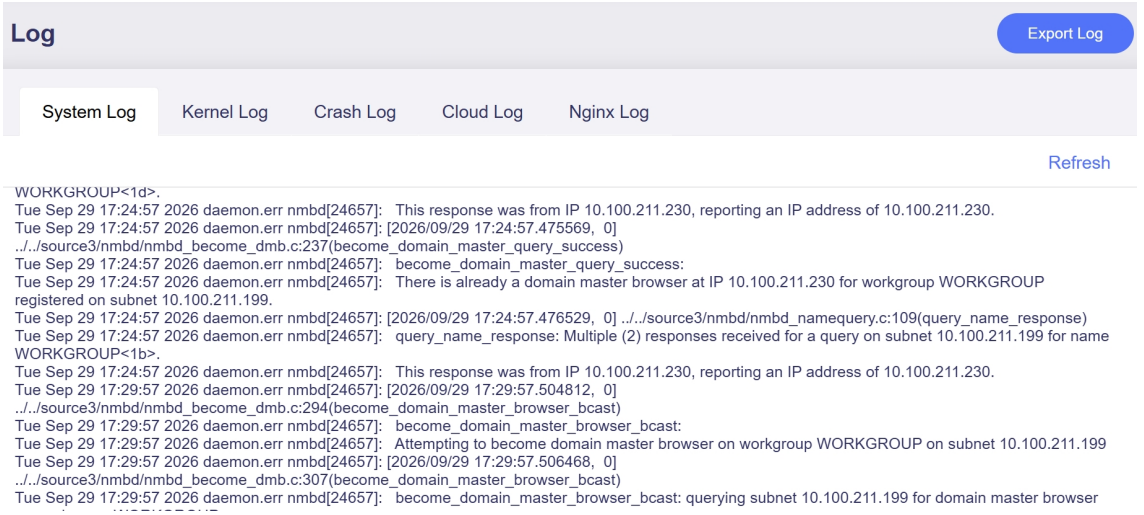


To switch time zone, select the appropriate time zone from the list to ensure the router's system time matches your local time.



14.5 Log

Log in to your router's web admin panel and navigate to **SYSTEM** > **Log**. This page allows you to view logs of System, Kernel, Crash, Cloud and Nginx for analysis and troubleshooting.



- **Refresh**: Click this button to refresh logs.
- **Export Log**: Click this button to export debug info along with the logs.

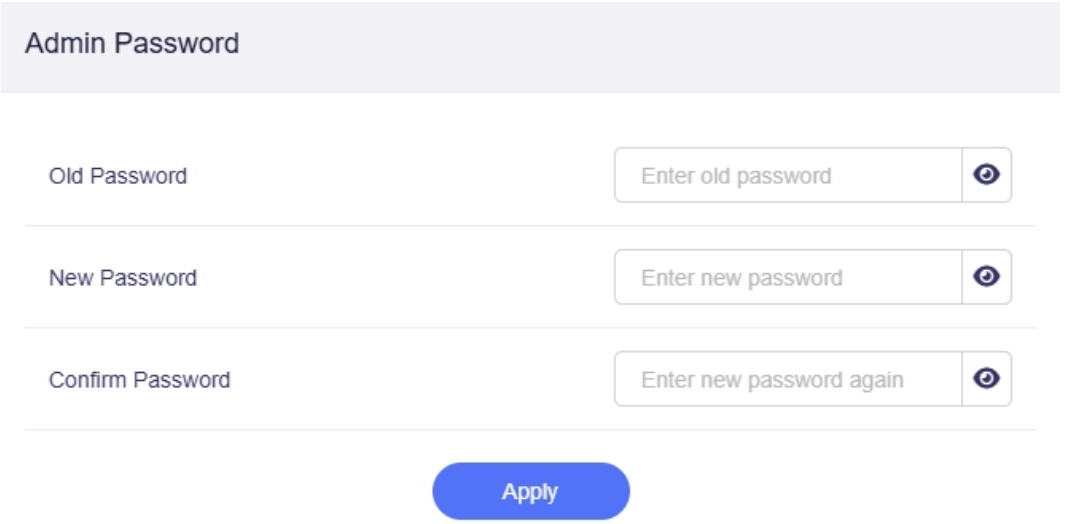
14.6 Security

Log in to your router's web admin panel and navigate to **SYSTEM** > **Security**. This page contains configuration options for the router's local and remote management, including:

- Admin password
- Local access for web admin panel, LuCI, and SSH
- Remote HTTPS/SSH access
- Open ports on router

14.6.1 Admin Password

In this section, you can change the login password of the web admin panel.

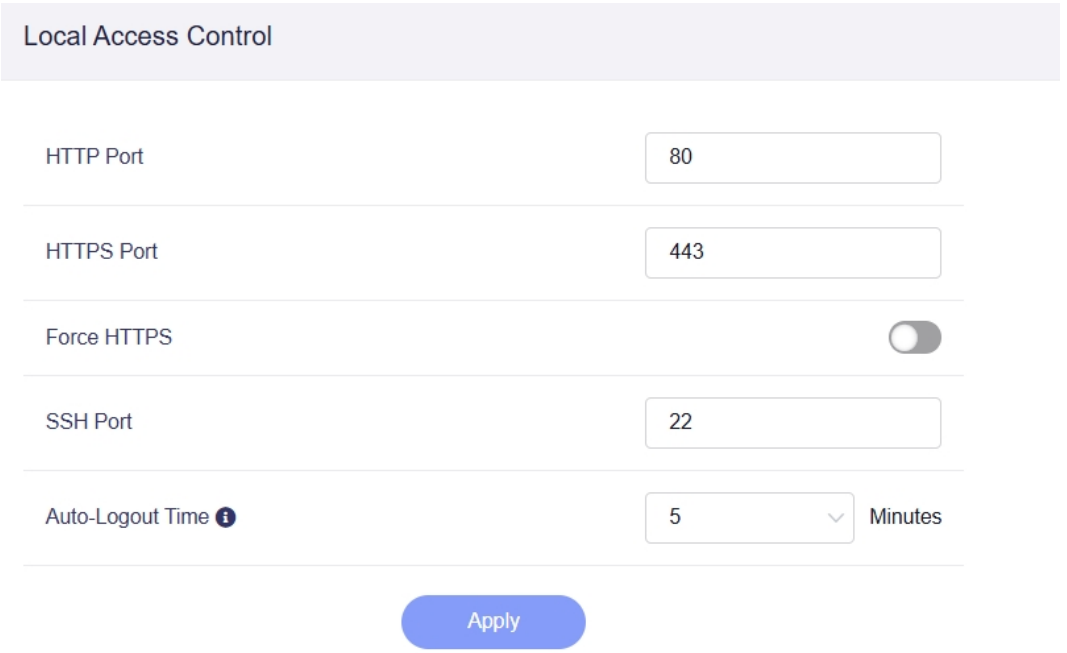


The requirements for the admin password are as follows:

1. Minimum 10 characters and maximum 63 characters in length.
2. Letters (case sensitive), numbers and symbols (e.g., ! @ # $ % ^ & * ( ) _ + - = , . > < | ? / \ [ ] { } : ; " ' ` ~) are allowed.
3. At least two types (uppercase letters, lowercase letters, numbers, and symbols) are required.

14.6.2 Local Access Control

This section manages access to the router's multiple interfaces (Admin Panel, SSH). It can prevent scanning and intrusion attempts on the default port and avoid network problems caused by port conflicts.

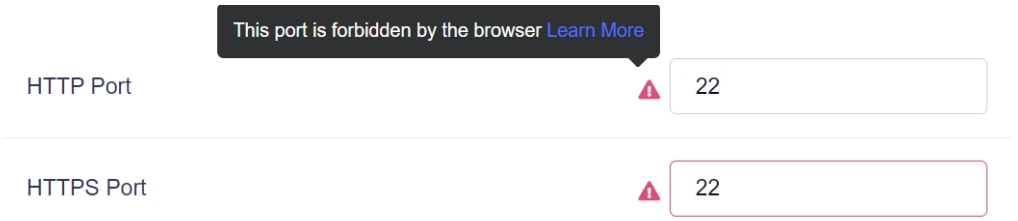


Admin Panel

- **HTTP Port**: Defaults to 80, used for unencrypted HTTP access to the web admin panel.
- **HTTPS Port**: Defaults to 443, used for secure HTTPS access to the web admin panel.
- **Force HTTPS**: When enabled, access to the web admin panel is enforced to use a secure HTTPS connection.
- **SSH Port**: Defaults to 22, the port used for SSH access to the router.
- **Auto-Logout Time**: Set to 5 minutes by default, it automatically logs out idle admin sessions after this duration for security. You can customize the auto-logout time, ranging from 1 minute to 3 hours.

Note:

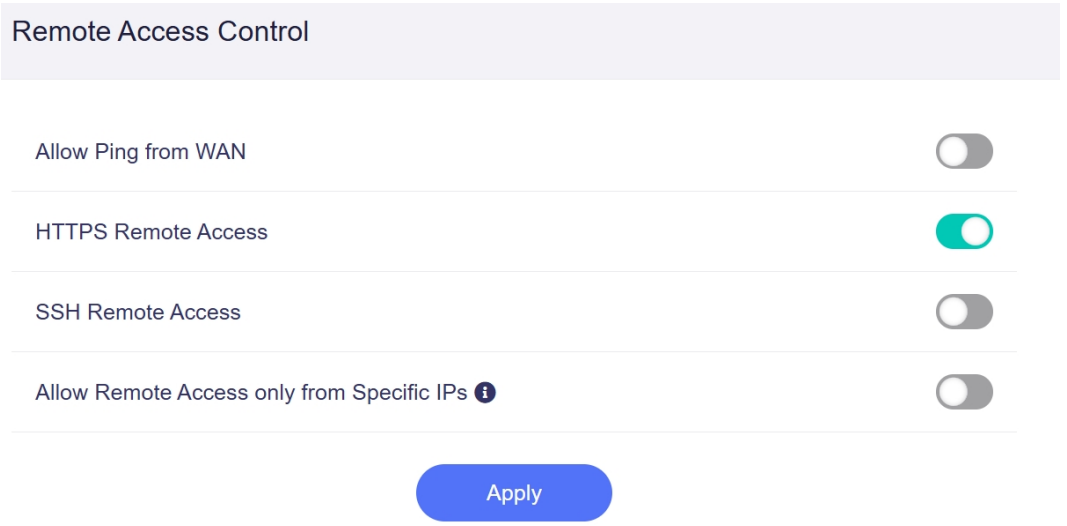
1. If you assign a port number that conflicts with a reserved port (or one reserved for specific services by browsers/network conventions), a prompt will appear stating "This port is forbidden by the browser".



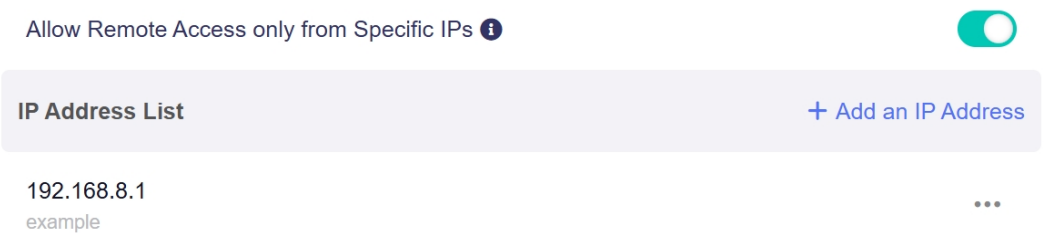
2. If the port number is modified in the firmware, you need to enter the correct port number to access the admin panel. If you forgot the port number, please reset the router to restore the default port number.

14.6.3 Remote Access Control

This section manages remote access to router interfaces, including HTTPS, SSH and WAN-side ping. It also allows you to restrict access from specific IP addresses, striking a balance between remote accessibility and network security.



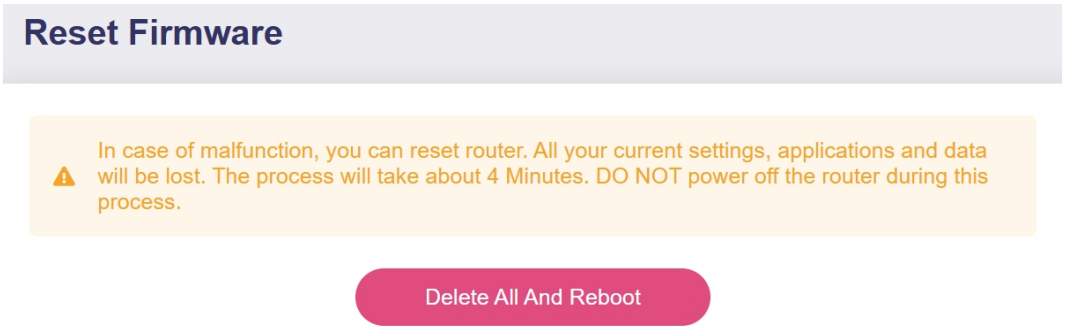
- **Allow Ping from WAN**: Allowing Ping from the router's WAN side can help users check whether the router is reachable over the WAN when there is a network issue, as well as determine network latency and packet loss.
- **HTTPS Remote Access**: HTTPS Remote Access enables secure remote access to the router's web admin panel via the HTTPS protocol. It ensures encrypted data transmission when managing the router remotely through a web browser.
- **SSH Remote Access**: SSH Remote Access enables secure access to the router terminal. It allows users to remotely manage the router via SSH, establishing an encrypted tunnel for tasks.
- **Allow Remote Access from Specific IPs**: This feature is only available when any of the above three features are enabled. You can add multiple specified IP addresses to remotely manage the router only from devices with these IPs.



14.7 Reset Firmware

If the router malfunctions, you can try resolving the issue by resetting the firmware.

Log in to your router's web admin panel and navigate to **SYSTEM** > **Reset Firmware**. Click **Delete All and Reboot** to reset the firmware if needed.



Note: All your current settings, applications and data will be cleared. The process will take about 2 minutes. Do not power off the router during this process.

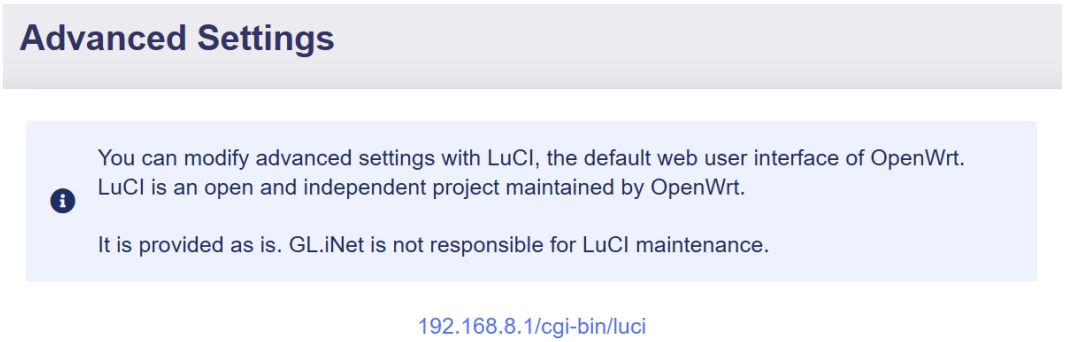
If you fail to access the router's web admin panel, try resetting your router using the physical reset button on the side.

14.8 Advanced Settings

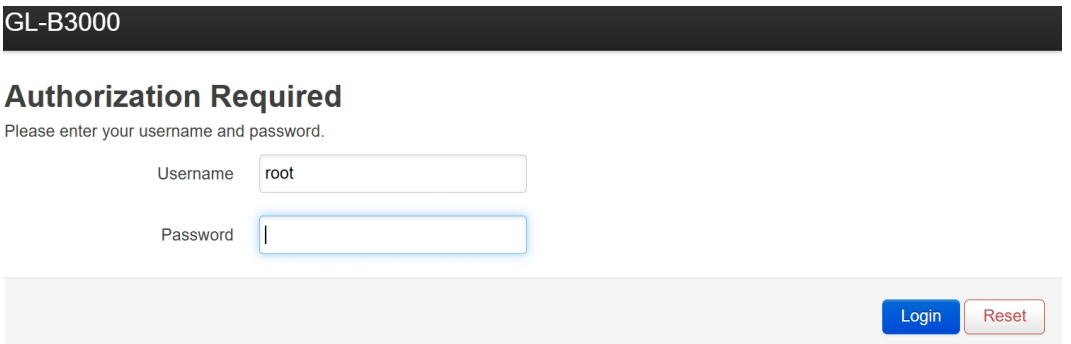
Log in to your router's web admin panel and navigate to **SYSTEM** > **Advanced Settings**. This page allows you to modify advanced settings in LuCI, which is the default web user interface of OpenWrt. As an open and independent project maintained by OpenWrt, LuCI is provided as-is. GL.iNet is not responsible for LuCI maintenance.

Follow the steps below to log in to the LuCI interface.

1. Click the access link, and you will be re-directed to the LuCI login page.



2. Enter the login password, which is the same as the password of the web admin panel.



You will then log in to the LuCI interface.

