

# User Guide

DSL Modem Router  
V12/V300



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# Preface

Thank you for choosing Tenda!

## Applicable models

This user guide walks you through all functions on the web UI (User Interface) of the DSL Modem Router. It applies to the following models: V12 and V300. V12 is used as an example throughout this user guide. Functions and operations may vary depending on different software versions. Please refer to the actual product you purchased.

## Conventions

The typographical elements that may be found in this document are defined as follows.

| Item                | Presentation | Example  |
|---------------------|--------------|--|
| Cascading menus     | >            | <b>System &gt; Live Users</b>                          |
| Parameter and value | Bold         | Set <b>User Name</b> to <b>Tom</b> .                   |
| Variable            | Italic       | Format: <i>XX:XX:XX:XX:XX:XX</i>                       |
| UI control          | Bold         | On the <b>Policy</b> page, click the <b>OK</b> button. |

The symbols that may be found in this document are defined as follows.

| Symbol  | Meaning  |
|---|--|
|  <b>NOTE</b> | This format is used to highlight information of importance or special interest. Ignoring this type of note may result in ineffective configurations, loss of data or damage to device. |
|  <b>TIP</b>  | This format is used to highlight a procedure that will save time or resources.   |

## For more documents

If you want to get more documents of the device, visit [www.tendacn.com](http://www.tendacn.com) and search for the corresponding product model.

The related documents are listed as below.

| Document                 | Description  |
|--------------------------|--|
| Data Sheet               | It introduces the basic information of the device, including product overview, selling points, and specifications.   |
| Quick Installation Guide | It introduces how to set up the device quickly for internet access and provides the descriptions of LED indicators, ports, buttons, FAQ, statement information, and so on. |
| User Guide               | It introduces how to set up more functions of the device for more requirements, including all functions on the web UI of the device.                                       |

## Technical Support

If you need more help, contact us by any of the following means. We will be glad to assist you as soon as possible.



Website

[www.tendacn.com](http://www.tendacn.com)



Email

[support@tenda.com.cn](mailto:support@tenda.com.cn)

## Revision History

Tenda is constantly searching for ways to improve its products and documentation. The following table indicates any changes that might have been made since this guide was first published.

| Version | Date       | Description  |
|---------|------------|--|
| V1.1    | 2022-10-30 | Added description of the following functions: <ul style="list-style-type: none"> <li>- <a href="#">ACL</a></li> <li>- <a href="#">Auto system maintenance</a></li> <li>- <a href="#">DHCP</a></li> </ul> Updated the function description of <a href="#">Guest network</a> . |
| V1.0    | 2022-02-15 | Original publication.  |

# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Get to know your device .....</b>               | <b>1</b>  |
| <b>2</b> | <b>Connect your modem router.....</b>              | <b>2</b>  |
|          | 2.1 Connect uplink devices .....                   | 2         |
|          | 2.2 Power on the modem router .....                | 4         |
|          | 2.3 Connect user devices to the modem router ..... | 4         |
| <b>3</b> | <b>Login and logout.....</b>                       | <b>5</b>  |
|          | 3.1 Login.....                                     | 5         |
|          | 3.2 Logout .....                                   | 6         |
| <b>4</b> | <b>Web UI .....</b>                                | <b>7</b>  |
|          | 4.1 Layout.....                                    | 7         |
|          | 4.1.1 EasySet page.....                            | 7         |
|          | 4.1.2 Advance page .....                           | 8         |
|          | 4.2 Frequently-used Buttons.....                   | 10        |
| <b>5</b> | <b>Quick setup .....</b>                           | <b>11</b> |
|          | 5.1 Configuration procedure.....                   | 11        |
|          | 5.1.1 Serving as a DSL modem router .....          | 11        |
|          | 5.1.2 Serving as a DSL modem .....                 | 12        |
|          | 5.1.3 Serving as a wireless router .....           | 12        |
|          | 5.1.4 Serving as a wireless AP .....               | 13        |
|          | 5.2 Parameter description .....                    | 16        |
| <b>6</b> | <b>System status .....</b>                         | <b>19</b> |
|          | 6.1 System.....                                    | 19        |
|          | 6.2 DSL .....                                      | 21        |
|          | 6.3 LAN configuration .....                        | 22        |

|  |           |
|--|-----------|
| 6.4 WAN configuration.....                 | 23        |
| 6.5 PPTP configuration.....                | 24        |
| 6.6 L2TP configuration .....               | 25        |
| 6.7 IPv6 LAN configuration.....            | 26        |
| 6.8 IPv6 prefix delegation .....           | 26        |
| 6.9 IPv6 WAN configuration.....            | 27        |
| <b>7 Internet settings .....</b>           | <b>28</b> |
| 7.1 WAN mode.....                          | 28        |
| 7.2 DSL settings.....                      | 29        |
| 7.3 VDSL settings.....                     | 31        |
| 7.3.1 Overview .....                       | 31        |
| 7.3.2 Edit or create a VDSL link .....     | 31        |
| 7.3.3 Delete a VDSL link.....              | 32        |
| 7.3.4 Parameter description.....           | 32        |
| 7.4 ADSL settings.....                     | 40        |
| 7.4.1 Overview .....                       | 40        |
| 7.4.2 Create an ADSL link .....            | 40        |
| 7.4.3 Delete an ADSL link .....            | 41        |
| 7.4.4 Parameter description.....           | 42        |
| 7.5 ADSL QoS settings .....                | 50        |
| 7.6 Ethernet settings.....                 | 52        |
| 7.6.1 Overview .....                       | 52        |
| 7.6.2 Edit or create an Ethernet Link..... | 52        |
| 7.6.3 Delete an Ethernet Link.....         | 53        |
| 7.6.4 Parameter description.....           | 53        |
| 7.7 LAN settings .....                     | 61        |
| 7.8 IPv6 LAN settings.....                 | 63        |
| 7.8.1 RADVD .....                          | 63        |

|  |           |
|--|-----------|
| 7.8.2 DHCPv6 config .....                                      | 65        |
| <b>8 Wi-Fi Settings .....</b>                                  | <b>66</b> |
| 8.1 Basic settings.....  | 66        |
| 8.2 Channel & Bandwidth .....                                  | 68        |
| 8.3 Wireless repeating .....                                   | 71        |
| 8.3.1 Overview .....   | 71        |
| 8.3.2 Example of using wireless repeating.....                 | 71        |
| 8.4 WPS.....   | 76        |
| 8.4.1 Overview .....   | 76        |
| 8.4.2 Connect the Wi-Fi networking using PBC negotiation ..... | 76        |
| 8.4.3 Connect the Wi-Fi networking using PIN code.....         | 78        |
| 8.5 Access control .....                                       | 79        |
| 8.6 Guest network.....   | 80        |
| 8.6.1 Overview .....   | 80        |
| 8.6.2 Configure the guest network.....                         | 81        |
| <b>9 Services.....</b>   | <b>82</b> |
| 9.1 DDNS.....  | 82        |
| 9.1.1 Overview .....   | 82        |
| 9.1.2 Configure DDNS.....                                      | 83        |
| 9.2 UPnP.....  | 84        |
| 9.3 Samba.....   | 85        |
| 9.3.1 Overview .....   | 85        |
| 9.3.2 Example of configuring the storage service function..... | 85        |
| 9.4 FTP server.....  | 87        |
| 9.4.1 Overview .....   | 87        |
| 9.4.2 Example of configuring the storage service function..... | 87        |
| 9.5 Port Forwarding .....                                      | 89        |
| 9.5.1 Overview .....   | 89        |

|   |            |
|---|------------|
| 9.5.2 Example of configuring port forwarding .....  | 89         |
| 9.6 DMZ.....  | 92         |
| 9.6.1 Overview .....                                | 92         |
| 9.6.2 Example of configuring DMZ .....              | 92         |
| 9.7 IPTV .....                                      | 94         |
| 9.7.1 Overview .....                                | 94         |
| 9.7.2 Example of configuring the IPTV function..... | 95         |
| <b>10 Advanced .....</b>                            | <b>97</b>  |
| 10.1 Routing.....                                   | 97         |
| 10.2 MLD proxy.....                                 | 98         |
| 10.3 SNMP.....                                      | 99         |
| 10.3.1 Overview .....                               | 99         |
| 10.3.2 Example of configuring SNMP.....             | 101        |
| 10.4 TR069 .....                                    | 103        |
| <b>11 VPN.....</b>                                  | <b>105</b> |
| 11.1 PPTP & L2TP VPN .....                          | 105        |
| 11.1.1 Overview .....                               | 105        |
| 11.1.2 Example of configuring PPTP client.....      | 106        |
| 11.2 IPsec VPN .....                                | 108        |
| 11.2.1 Overview .....                               | 108        |
| 11.2.2 Configure an IPsec VPN .....                 | 109        |
| 11.2.3 Parameter description.....                   | 109        |
| <b>12 Firewall .....</b>                            | <b>117</b> |
| 12.1 IP & port filtering .....                      | 117        |
| 12.1.1 Overview .....                               | 117        |
| 12.1.2 Configure a filter rule .....                | 118        |
| 12.2 IPv6/Port filtering.....                       | 120        |
| 12.2.1 Overview .....                               | 120        |

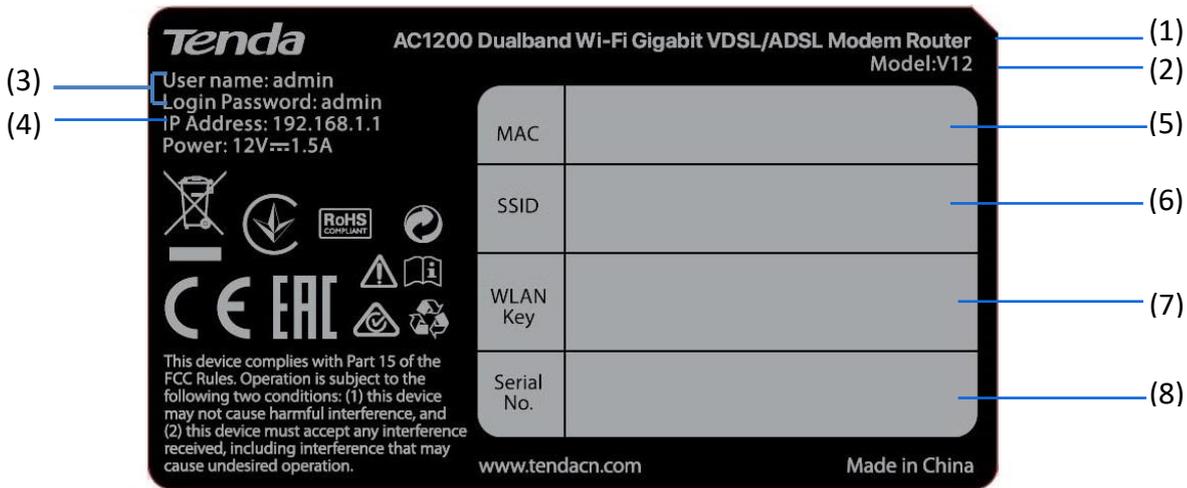
|  |            |
|--|------------|
| 12.2.2 Configure an IPv6 filter rule .....                   | 120        |
| 12.3 URL blocking.....                                       | 123        |
| 12.4 DDOS .....  | 124        |
| 12.5 ALG .....   | 125        |
| 12.6 ACL .....   | 127        |
| 12.6.1 Overview .....  | 127        |
| 12.6.2 Configure an ACL rule.....                            | 128        |
| <b>13 System settings.....</b>                               | <b>130</b> |
| 13.1 Reboot & reset .....                                    | 130        |
| 13.2 Auto system maintenance .....                           | 131        |
| 13.3 Backup & restore.....                                   | 132        |
| 13.3.1 Overview .....  | 132        |
| 13.3.2 Back up the configuration .....                       | 132        |
| 13.3.3 Restore the configuration.....                        | 133        |
| 13.4 Firmware upgrade.....                                   | 134        |
| 13.5 Password .....  | 136        |
| 13.6 Time zone.....  | 137        |
| 13.6.1 Overview .....  | 137        |
| 13.6.2 Synchronizing the system time with the internet ..... | 138        |
| 13.6.3 Manually configure the time .....                     | 138        |
| 13.7 Diagnostics .....                                       | 139        |
| 13.7.1 Overview .....  | 139        |
| 13.7.2 Ping and Ping IPv6 diagnostics .....                  | 139        |
| 13.7.3 ADSL connection diagnostics .....                     | 140        |
| 13.8 System log .....  | 141        |
| <b>14 Statistics.....</b>                                    | <b>143</b> |
| 14.1 DHCP .....  | 143        |
| 14.1.1 DHCP clients .....                                    | 143        |

|                                   |            |
|-----------------------------------|------------|
| 14.1.2 Address reservations ..... | 143        |
| 14.2 Interface .....              | 145        |
| 14.3 DSL .....                    | 146        |
| <b>Appendix .....</b>             | <b>148</b> |
| Factory default settings.....     | 148        |
| Acronyms and Abbreviations .....  | 152        |

## 1

# Get to know your device

You can obtain information about the modem router on the label stuck on the rear side. For details of the label, see the following figure.



(1): Name of the modem router.

(2): Model of the modem router.

(3): Default user name and password used to [log in to the web UI of the modem router](#).

(4): Default IP address of the modem router. You can use this IP address to [log in to the web UI of the modem router](#).

(5): MAC address of the modem router.

(6): Default SSID (Wi-Fi network name) of the modem router. Tenda\_XXXXXX is used, and XXXXXX indicates the last 6 characters of the MAC address of the modem router.

(7): Default password of the default Wi-Fi network.

(8): Serial number of the modem router.

# 2 Connect your modem router

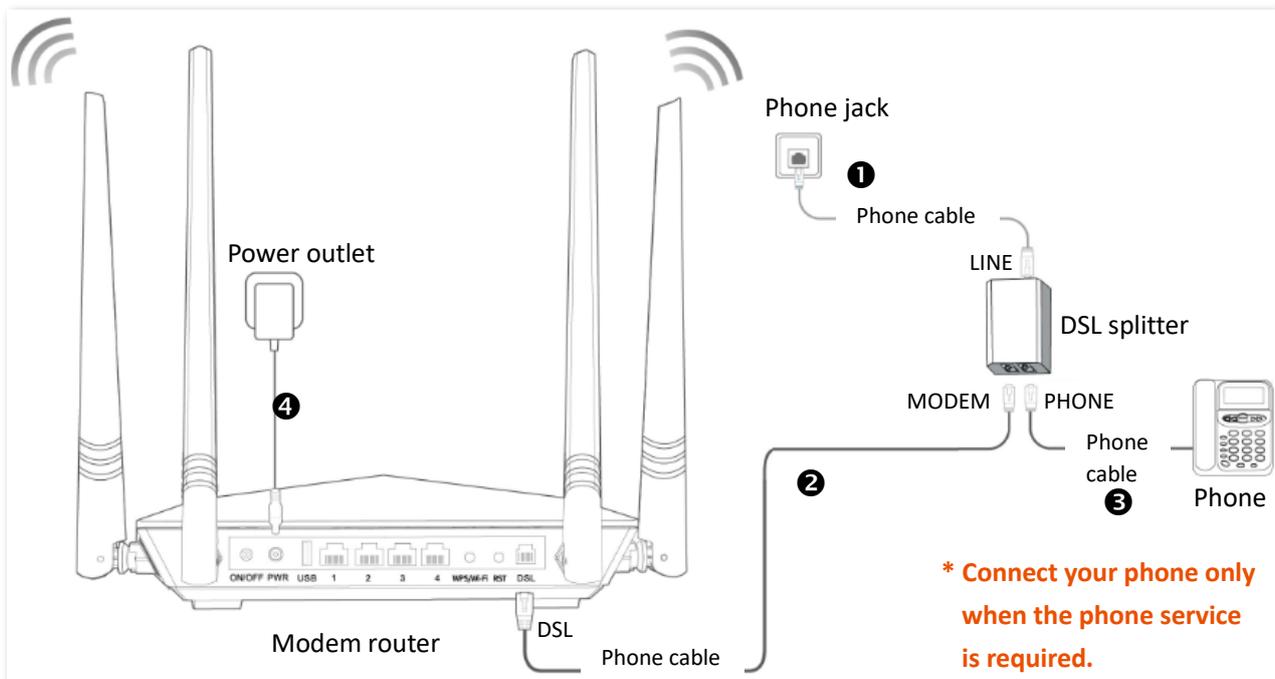
## 2.1 Connect uplink devices

This modem router can be used in the following four typical ways, and you can select one as required:

- [Serving as a wireless DSL modem router](#)
- [Serving as a wireless DSL modem](#)
- [Serving as a wireless router](#)
- [Serving as a wireless AP](#)

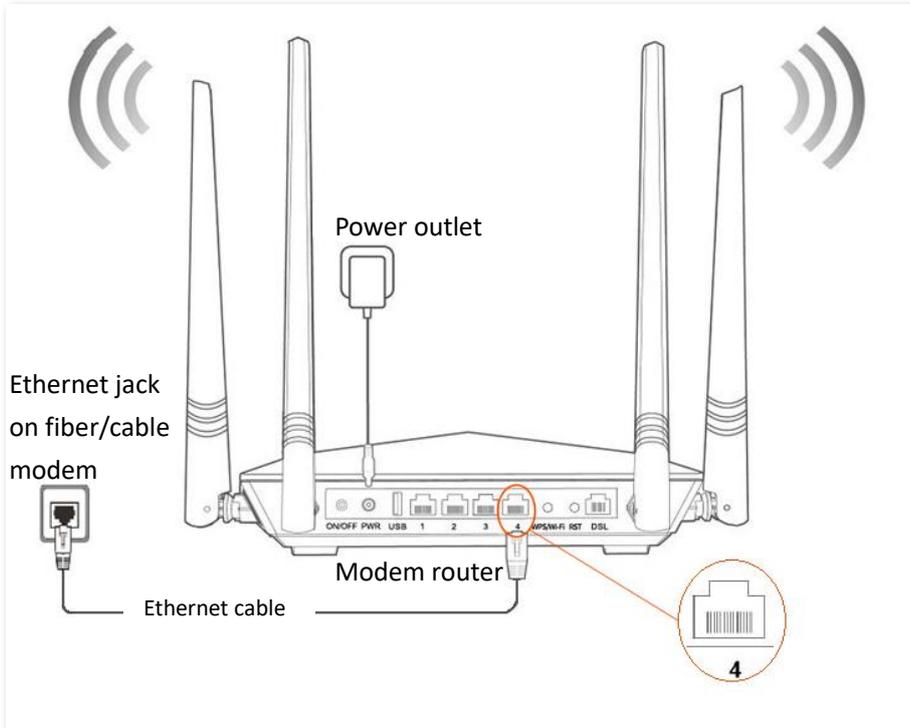
### Serving as a wireless DSL modem router or wireless DSL modem

If you access the internet with a phone cable, connect the modem router as shown in the following figure.

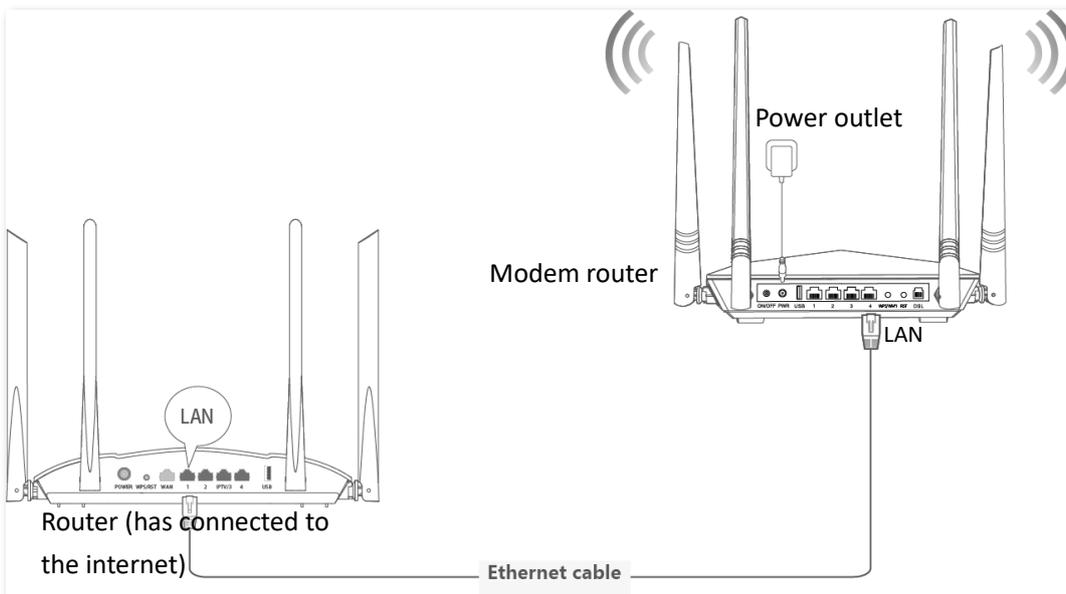


## Serving as a wireless router

If you access the internet with an Ethernet cable, connect the modem router as shown in the following figure.



## Serving as a wireless AP



## 2.2 Power on the modem router

**Step 1** Use the included power adapter to connect the modem router to a power source.

**Step 2** Press the ON/OFF button of the modem router.

----End

When the **PWR** LED indicator lights solid green, the system completes startup.

## 2.3 Connect user devices to the modem router

- **For wired devices (such as computers)**

Connect to a LAN port of the modem router using an Ethernet cable.

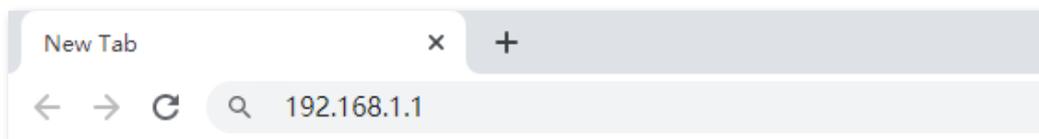
- **For wireless devices (such as smartphones or tablets)**

Connect to a Wi-Fi network of the modem router. You can find the default Wi-Fi name (SSID) and password (WLAN Key) on the bottom label of the modem router.

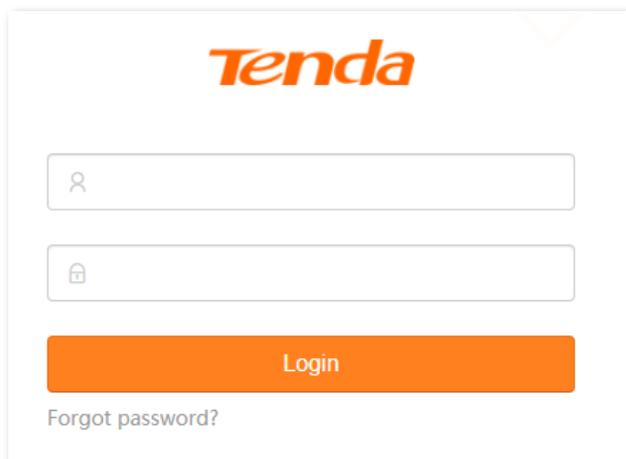
# 3 Login and logout

## 3.1 Login

- Step 1** Connect your smartphone (or tablet) to the Wi-Fi network, or connect your computer to a LAN port of the modem router.
- Step 2** Start a web browser on the device (computer used as an example here) connected to the modem router, enter the LAN IP address of the modem router (**192.168.1.1** by default) in the address bar, and visit it.



- Step 3** Enter the login user name and password, and click **Login**. (The default user name and password are both **admin**.)



----End



---

If the above page does not appear, please try the following solutions:

- If you are using a wireless device, such as a smartphone:
  - Verify that the device connects to the Wi-Fi network of the modem router.
  - Verify that the cellular network (mobile data) of the device is disabled.
- If you are using a wired device, such as a computer:
  - Verify that the Ethernet cable between your computer and the modem router is connected properly.
  - Verify that your computer is set to Obtain an IP address automatically and Obtain DNS server address automatically.
  - Verify that you entered the IP address of the modem router (**192.168.1.1** by default) in the address bar rather than the search bar.
  - Clear cache of your browser, or use another browser.
  - Use another computer to log in again.

If the problem persists, reset the modem router and try again.

---

## 3.2 Logout

If you log in to the web UI of the modem router and perform no operation within 3 minutes, the modem router logs you out automatically. You can also log out by clicking **Logout** in the top right corner of the web UI.

# 4 Web UI

## 4.1 Layout

The web UI of the modem router includes two main configuration pages, that is, the [EasySet page](#) and [Advance page](#).

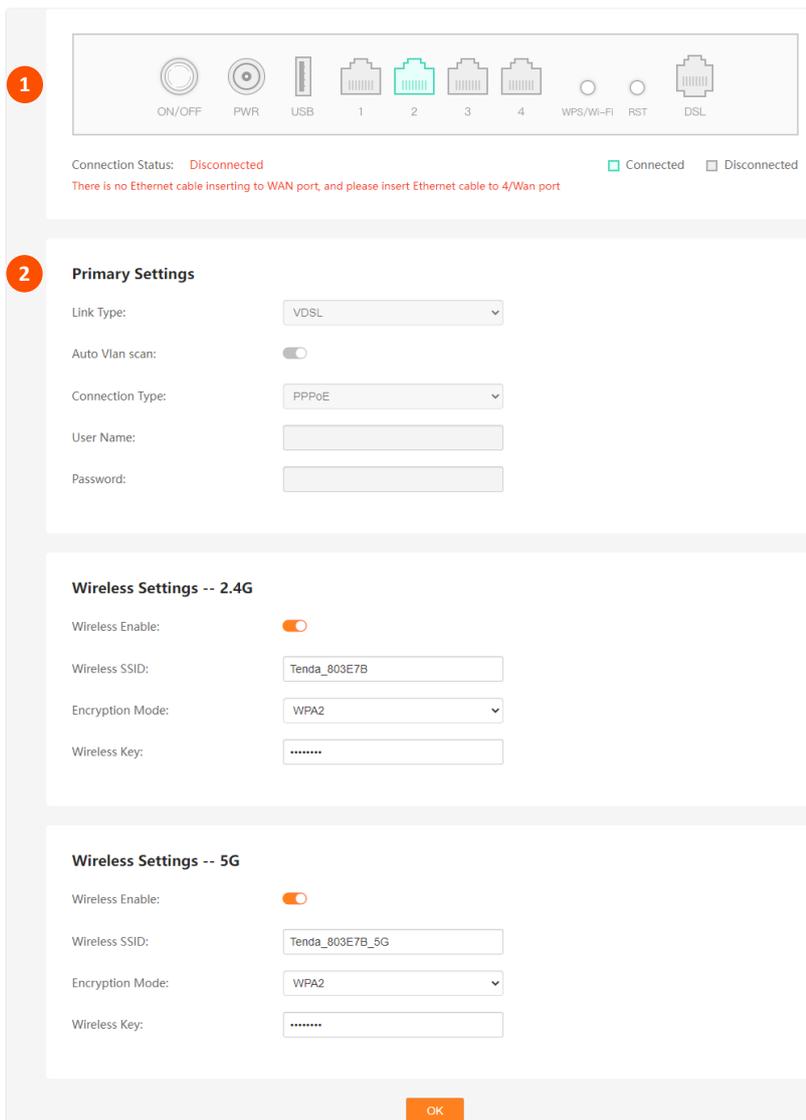
### 4.1.1 EasySet page

By default, the **EasySet** page is displayed upon your login. It is used for [quick setup](#). It consists of two sections, including the connection status and configuration area.



Functions or parameters displayed in gray on the web UI are not supported yet or cannot be modified under the current configurations.

---

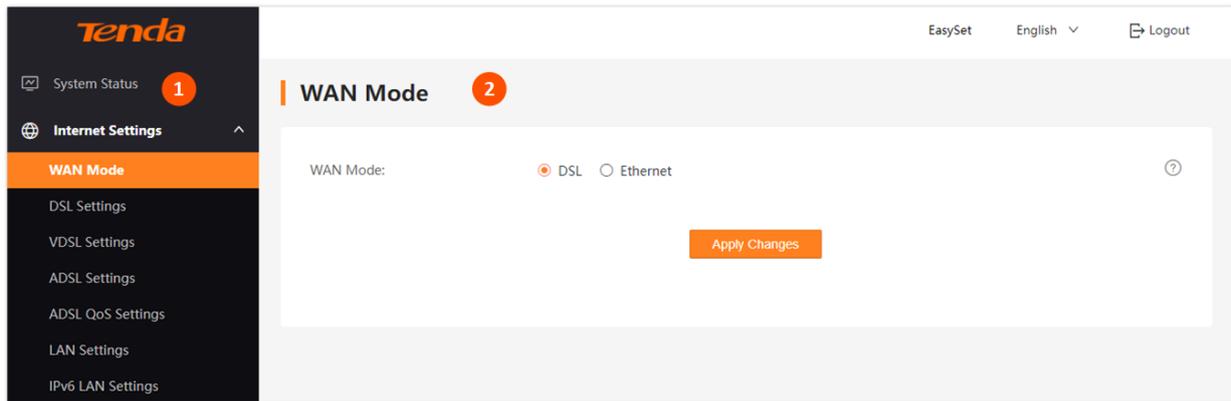


| No. | Name               | Description   |
|-----|--------------------|---|
| 1   | Connection status  | Used to display the connection status of the ports of modem router. |
| 2   | Configuration area | Used for quick setup.   |

### 4.1.2 Advance page

To access the **Advance** page, [log in to the EasySet page of the modem router](#) and click **Advance** in the upper right corner of the page.

The web UI of **Advance** page consists of two sections, including the navigation bar and the configuration area. See the following figure.



| No. | Name               | Description   |
|-----|--------------------|---|
| 1   | Navigation bar     | Used to display the function menu of the modem router. Users can select functions in the navigation bars and the configuration appears in the configuration area. |
| 2   | Configuration area | Used to modify or view your configuration.  |

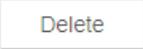


**TIP**

Functions or parameters displayed in gray on the web UI are not supported yet or cannot be modified under the current configurations.

## 4.2 Frequently-used Buttons

The following table describes the frequently-used buttons available on the web UI of the modem router.

| Button  | Description   |
|---|---|
|  | Used to refresh the current page.   |
|  | Used to save the configuration on the current page and enable the configuration to take effect. |
|  | Used to add a data record.  |
|  | Used to delete a data record.   |
|  | Check the help information of the current page.   |

# 5 Quick setup

On the **EasySet** page, you can quickly set the network connection parameters and modify the Wi-Fi names and passwords.

## 5.1 Configuration procedure

### 5.1.1 Serving as a DSL modem router

**Step 1** [Log in to the EasySet page of the modem router.](#)

**Step 2** Set network connection parameters in the **Primary Settings** module.



TIP

- After connecting the phone cable to the modem router, the system will automatically detect the **Link Type**.
- You can obtain the parameter values from your ISP.

**Step 3** (Optional) Modify the Wi-Fi names and passwords in the **Wireless Settings** modules.

**Step 4** Click **OK** on the bottom of the page.

----End

When **Connection Status** displays **Connected**, the modem router is connected to the internet. Now the devices connected to the LAN ports or Wi-Fi networks of the modem router can access the internet.



TIP

If you cannot access the internet after completing the quick setup, contact your ISP for help.

## 5.1.2 Serving as a DSL modem

**Step 1** [Log in to the EasySet page of the modem router.](#)

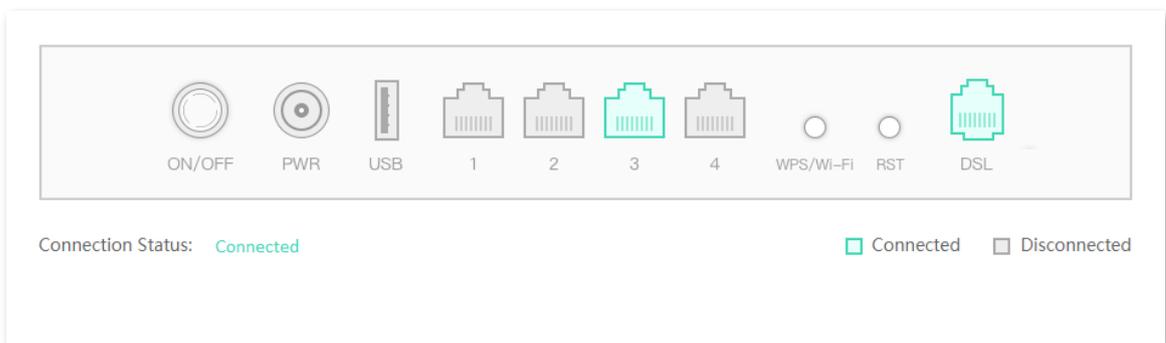
**Step 2** Set network connection parameters in the **Primary Settings** module.



- After connecting the phone cable to the modem router, the system will automatically detect the **Link Type**.
- You can obtain the parameter values from your ISP.
- Set **Connection Type** to **Bridge**.

**Step 3** (Optional) Turn off **Wireless Enable** in the **Wireless Settings** module.

**Step 4** Click **OK** on the bottom of the page.



----End

After the settings are complete, your devices can access the internet through the following ways:

- Complete network connection settings on the router connected to the modem router, and then connect your device to the router.
- Complete network connection settings on your device if no other router is used.

## 5.1.3 Serving as a wireless router

**Step 1** Set **WAN Mode** to **Ethernet**.

1. [Log in to the Advance page of the modem router](#), choose **Internet Settings** > **WAN Mode**.
2. Set **WAN Mode** to **Ethernet**.
3. Click **Apply Changes**. Wait until the system is restarted successfully.

**Step 2** Set network connection parameters and wireless parameters.

1. [Log in to the EasySet page of the modem router.](#)

2. Set network connection parameters in the **Primary Settings** module.

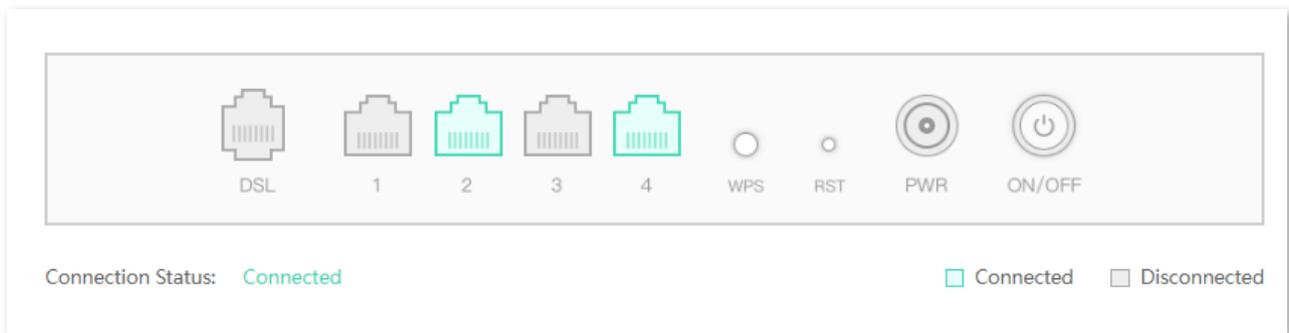


You can obtain the parameter values from your ISP.

3. (Optional) Modify the Wi-Fi names and passwords in the **Wireless Settings** modules.
4. Click **OK** on the bottom of page.

----End

When **Connection Status** displays **Connected**, the modem router is connected to the internet. Now the devices connected to the LAN ports or Wi-Fi networks of the modem router can access the internet.



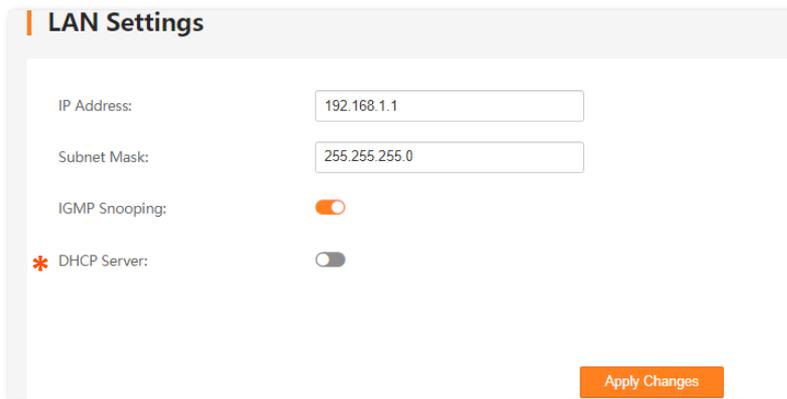
If you cannot access the internet after completing the quick setup, contact your ISP for help.

## 5.1.4 Serving as a wireless AP

**Step 1** Disable the DHCP server function of the modem router.

1. [Log in to the Advance page of the modem router](#), choose **Internet Settings > LAN Settings**.
2. Turn off **DHCP server**.

3. Click **Apply Changes**.

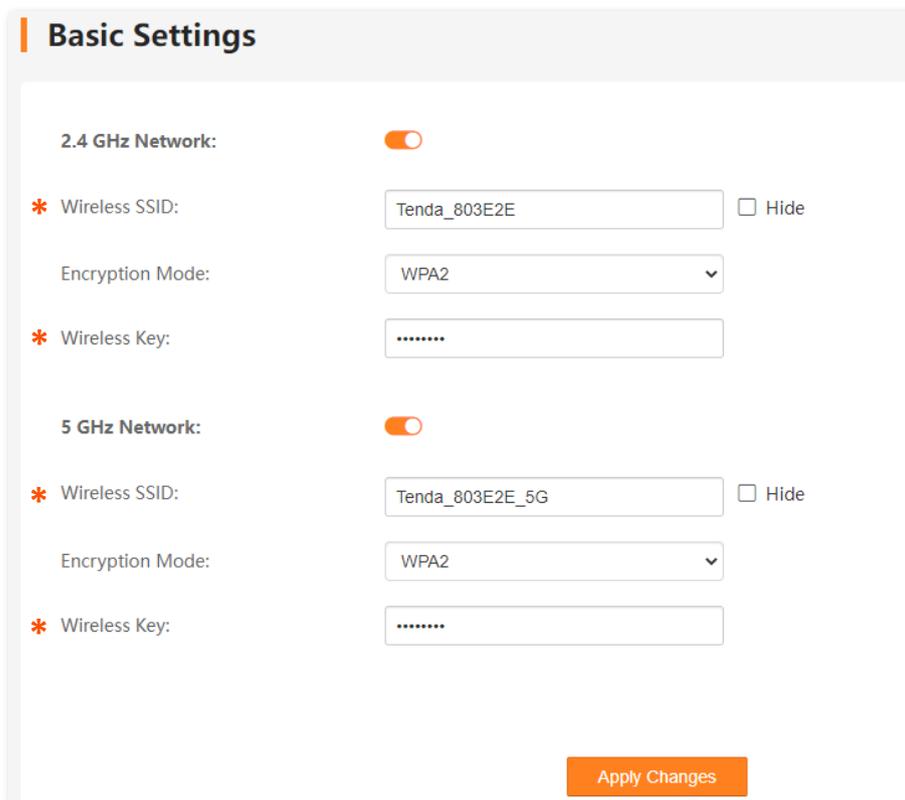


The screenshot shows the 'LAN Settings' configuration page. It includes the following fields and controls:

- IP Address:** Text input field containing '192.168.1.1'.
- Subnet Mask:** Text input field containing '255.255.255.0'.
- IGMP Snooping:** Toggle switch, currently turned on (orange).
- \* DHCP Server:** Toggle switch, currently turned off (grey).
- Apply Changes:** Orange button at the bottom right.

**Step 2** (Optional) Modify the wireless SSID and key of the modem router.

1. Go to **Wi-Fi Settings > Basic Settings**.
2. Enable **2.4 GHz Network** and **5 GHz Network** as required.
3. Modify the **Wireless SSID** and **Key**.
4. Click **Apply Changes**.



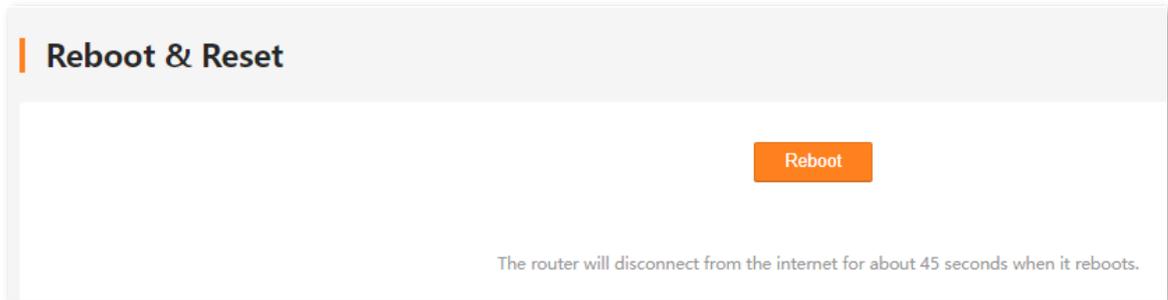
The screenshot shows the 'Basic Settings' configuration page for wireless networks. It includes the following fields and controls:

- 2.4 GHz Network:** Toggle switch, currently turned on (orange).
- \* Wireless SSID:** Text input field containing 'Tenda\_803E2E' and a 'Hide' checkbox.
- Encryption Mode:** Dropdown menu set to 'WPA2'.
- \* Wireless Key:** Password input field with masked characters '.....'.
- 5 GHz Network:** Toggle switch, currently turned on (orange).
- \* Wireless SSID:** Text input field containing 'Tenda\_803E2E\_5G' and a 'Hide' checkbox.
- Encryption Mode:** Dropdown menu set to 'WPA2'.
- \* Wireless Key:** Password input field with masked characters '.....'.
- Apply Changes:** Orange button at the bottom right.

**Step 3** Reboot the modem router to activate the DHCP server settings.

1. Go to **System Settings > Reboot & Reset**.

2. Click **Reboot**.
3. Click **OK** on the pop-up window.



-----End

Wait until the system is restarted successfully, then the devices connected to the LAN ports or Wi-Fi networks of the modem router can access the internet.



**TIP** If you cannot access the internet after completing the quick setup, contact your ISP for help.

---

## 5.2 Parameter description

### Primary settings

**Primary Settings**

Link Type:

Auto Vlan scan:

Country / Region:

ISP:

Input Vlan:

Vlan ID:  (1 - 4094)

Connection Type:

| Name           | Description   |
|----------------|---|
| Link Type      | <p>It specifies the link type of the modem router for internet access.</p> <ul style="list-style-type: none"> <li>- <b>VDSL</b> (Very high-speed Digital Subscriber Line): VDSL is digital subscriber line (DSL) technology providing data transmission faster than asymmetric digital subscriber line (ADSL), and VDSL is deployed over existing wiring used for analog telephone service and lower-speed DSL connections. Select this type if the link type your ISP provided to you is VDSL.</li> <li>- <b>ADSL</b>: ADSL is a broadband connection that works through the copper wires of existing phone lines and is mainly used for home broadband and within small businesses. Select this type if the link type your ISP provided to you is ADSL.</li> <li>- <b>Ethernet</b>: If you use an Ethernet cable for internet access, refer to the configuration in this part to complete your internet settings. In this case, this device only serves as a wireless router or wireless AP.</li> </ul> |
| Auto Vlan scan | <p>With this function enabled, the modem router can scan the VLAN automatically.</p> <p>This function is unavailable for <b>Bridge</b> connection type.</p>   |
| Auto PVC scan  | <p>With this function enabled, the modem router can scan the Permanent Virtual Circuit (PVC) automatically.</p> <p>This function is unavailable for Bridge, PPPoA, and IPoA connection types.</p>   |

| Name             | Description   |
|------------------|---|
| Country / Region | <ul style="list-style-type: none"> <li>- If the VLAN ID is provided, set both <b>Country/Region</b> and <b>ISP</b> to <b>Other</b>, and enter the VLAN ID.</li> <li>- If the VLAN ID is not provided, select your <b>Country/Region</b> and <b>ISP</b>, and the VLAN ID will be automatically populated.</li> </ul>   |
| ISP              | <p>They are used to select the country/region and ISP according to your actual situation.</p> <p>Select your country or region from the drop-down lists, and the Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) values will be automatically populated. If your country/region and ISP are not available in the drop-down lists, select <b>Other</b>.</p>   |
| VPI/VCI          | VPI and VCI are used to identify the data path for ADSL connection.   |
| Input Vlan       | It is used to enable or disable the Input VLAN function.  |
| Vlan ID          | If the VLAN ID is provided, toggle on <b>Input Vlan</b> , and enter the VLAN ID in the <b>Vlan ID</b> box.  |
| Connection Type  | <p>It specifies the connection type for internet access. In this part, the available options for VDSL connection include <b>Bridge</b>, <b>IPoE</b> and <b>PPPoE</b>.</p> <ul style="list-style-type: none"> <li>- <b>Bridge:</b> When this option is selected, the modem router is used as only a modem in the DSL Link mode and only a switch in the Ethernet mode. You can access the internet through the following ways: <ul style="list-style-type: none"> <li>• Complete network connection settings on the router connected to the modem router, and then connect your device to the router.</li> <li>• Complete network connection settings on your device if no other router is used.</li> </ul> </li> <li>- <b>IPoE/IPoA:</b> The modem router is used as a router. Select this type if your ISP does not provide any parameters for internet access or your ISP provides a static IP address, subnet mask, gateway, and Domain Name System (DNS) server address to you for internet access. If your ISP provides a static IP address and other related information to you for internet access, your connection type may be IPoA. For details, contact your ISP. IPoA only supports Static IP.</li> <li>- <b>PPPoE/PPPoA:</b> If your ISP provides a user name and password to you for internet access, your connection type may be PPPoE or PPPoA. Contact your ISP for details. PPPoA is applicable only when <b>Link Type</b> is set to <b>ADSL</b>.</li> </ul> |
| Address Mode     | <p>It specifies the mode to obtain the IP address.</p> <ul style="list-style-type: none"> <li>- <b>Dynamic IP:</b> Obtain the IP address automatically.</li> <li>- <b>Static IP:</b> Manually enter the IP address information.</li> </ul>  |
| IP Address       |   |
| Subnet Mask      | If <b>Address Mode</b> is set to <b>Static IP</b> , enter the IP address and related information provided by your ISP.  |
| Gateway          |   |

| Name          | Description   |
|---------------|---|
| Primary DNS   |  <b>TIP</b><br>If the ISP only provides one DNS server address, you can leave the secondary DNS blank. |
| Secondary DNS |   |
| User Name     | They specify the user name and password provided by your ISP for internet connection.   |
| Password      |   |

## Wireless settings

**Wireless Settings -- 2.4G**

Wireless Enable

Wireless SSID

Encryption Mode:

Wireless Key

---

**Wireless Settings -- 5G**

Wireless Enable

Wireless SSID

Encryption Mode:

Wireless Key

## Parameter description

| Name            | Description   |
|-----------------|---|
| Wireless Enable | It is used to enable or disable the wireless network.   |
| Wireless SSID   | It specifies the name of the wireless network.  |
| Encryption Mode | It specifies the encryption mode of the wireless network, which supports <b>None</b> , <b>WPA</b> , <b>WPA2</b> , and <b>WPA-WPA2</b> . |
| Wireless Key    | It specifies the password of the wireless network.  |

# 6 System status

This section displays the system status and some basic information about the modem router.

To access the page, choose **Advance > System Status**.



TIP

You can click **Refresh** on the bottom of the page to view the latest status information of the modem router.

## 6.1 System

This part displays the system status of the modem router.

| System               |  |
|----------------------|--|
| Device Name          | V12V1.0  |
| Uptime               | 2 days, 16:21  |
| Firmware Version     | V56.1.1.1  |
| Hardware Version     | V1.1   |
| DSP Version          | v136l619   |
| CPU Usage            | 8%   |
| Memory Usage         | 36%  |
| DNS Servers          | 202.96.134.33, 202.96.128.86, 240c::6666, 240e:1f:1::1, 2020:2021:2022:90::1 |
| IPv4 Default Gateway | 10.11.122.1  |
| IPv6 Default Gateway | fe80::f0:1928  |

## Parameter description

| Name                 | Description  |
|----------------------|--|
| Device Name          | It specifies the model of the modem router.  |
| Uptime               | It specifies the time that has elapsed since the device was started the last time.   |
| Firmware Version     | It specifies the system firmware version of the modem router.  |
| Hardware Version     | It specifies the hardware version of the modem router.   |
| DSP Version          | This field is available when the WAN mode of the modem router is set to DSL.<br>It specifies the DSL driver version of the modem router. |
| CPU Usage            | It specifies the Central Processing Unit (CPU) usage of the modem router.  |
| Memory Usage         | It specifies the memory usage of the modem router.   |
| DNS Servers          | It specifies the DNS server addresses of the modem router.   |
| IPv4 Default Gateway | It specifies the IPv4 default gateway of the modem router.   |
| IPv6 Default Gateway | It specifies the IPv6 default gateway of the modem router.   |

## 6.2 DSL



This section is available when WAN mode is set to DSL.

This part displays the DSL status of the modem router.

| DSL                |                          |
|--------------------|--------------------------|
| Operational Status | ADSL2+ Annex M,SHOWTIME. |
| Upstream Speed     | 1299 kbps                |
| Downstream Speed   | 24967 kbps               |

### Parameter description

| Name               | Description   |
|--------------------|---|
| Operational Status | It specifies the operating status of the DSL connection.          |
| Upstream Speed     | They specify the upstream/downstream speed in the DSL connection. |
| Downstream Speed   |   |

## 6.3 LAN configuration

This part displays the LAN configuration of the modem router.

| LAN Configuration |               |
|-------------------|---------------|
| IP Address        | 192.168.1.1   |
| Subnet Mask       | 255.255.255.0 |
| DHCP Server       | Enabled       |
| MAC Address       | c83a35803e6f  |

### Parameter description

| Name        | Description  |
|-------------|--|
| IP Address  | It specifies the LAN IP address of the modem router. LAN users can use this IP address to <a href="#">log in to the web UI of the modem router</a> . |
| Subnet Mask | It specifies the subnet mask of LAN IP address of the modem router.  |
| DHCP Server | It displays whether the DHCP server is enabled.  |
| MAC Address | It specifies the MAC address of the modem router's LAN port.   |

## 6.4 WAN configuration

This part displays the WAN connection information of the modem router.

| WAN Configuration |      |         |               |          |            |         |        |
|-------------------|------|---------|---------------|----------|------------|---------|--------|
| Interface         | VLAN | VPI/VCI | Encapsulation | Protocol | IP Address | Gateway | Status |
| nas0_0            | 1    | ---     | ---           | Bridged  |            |         | up     |
| nas0_1            | ---  | ---     | ---           | Bridged  |            |         | up     |

### Parameter description

| Name          | Description  |
|---------------|--|
| Interface     | It specifies the interface that the WAN connection uses.     |
| VLAN          | It specifies the VLAN ID of the WAN connection.              |
| VPI/VCI       | It specifies the VPI/VCI of the WAN connection.              |
| Encapsulation | It specifies the encapsulation method of the WAN connection. |
| Protocol      | It specifies the protocol of the WAN connection.             |
| IP Address    | It specifies the WAN IP address.                             |
| Gateway       | It specifies the gateway address of the WAN connection.      |
| Status        | It specifies the WAN connection status.                      |

## 6.5 PPTP configuration

This part displays the PPTP configuration when the modem router is connected to the PPTP server.

| PPTP Configuration |          |            |         |        |
|--------------------|----------|------------|---------|--------|
| Interface          | Protocol | IP Address | Gateway | Status |
| ppp9               | PPP      |            |         | down   |

### Parameter description

| Name       | Description   |
|------------|---|
| Interface  | It specifies the interface that the connection uses.          |
| Protocol   | It specifies the protocol used for the connection.            |
| IP Address | It specifies the IP address of the connected server.          |
| Gateway    | It specifies the gateway of the peer side for the connection. |
| Status     | It specifies the connection status.                           |

## 6.6 L2TP configuration

This part displays the L2TP configuration when the modem router is connected to the L2TP server.

| L2TP Configuration |          |            |         |        |
|--------------------|----------|------------|---------|--------|
| Interface          | Protocol | IP Address | Gateway | Status |

### Parameter description

| Name       | Description  |
|------------|--|
| Interface  | It specifies the interface that the connection uses.       |
| Protocol   | It specifies the protocol used for the connection.         |
| IP Address | It specifies the IP address of the server to be connected. |
| Gateway    | It specifies the gateway of the connection.                |
| Status     | It specifies the connection status.                        |

## 6.7 IPv6 LAN configuration

This part displays the IPv6 LAN configuration of the modem router.

| IPV6 LAN Configuration  |  |
|-------------------------|--|
| IPv6 Address            | 2020:2021:2022:a1:522b:73ff:fe77:f5a0/64 |
| IPv6 Link-Local Address | fe80::1/64                               |

### Parameter description

| Name                    | Description  |
|-------------------------|--|
| IPv6 Address            | It specifies the LAN IPv6 address, which is an aggregate global unicast address. |
| IPv6 Link-Local Address | It specifies the LAN IPv6 link-local address.                                    |

## 6.8 IPv6 prefix delegation

This part displays the IPv6 prefix if you have enabled DHCPv6 for requesting the IPv6 prefix.

| IPV6 Prefix Delegation |  |
|------------------------|--|
| Prefix                 |  |

## 6.9 IPv6 WAN configuration

This part displays the IPv6 WAN configuration of the modem router if you have configured IPv6 settings.

| IPv6 WAN Configuration |      |         |               |          |            |        |
|------------------------|------|---------|---------------|----------|------------|--------|
| Interface              | VLAN | VPI/VCI | Encapsulation | Protocol | IP Address | Status |

### Parameter description

| Name          | Description  |
|---------------|--|
| Interface     | It specifies the interface that the connection uses.           |
| VLAN          | It specifies the VLAN ID of the IPv6 WAN connection.           |
| VPI/VCI       | It specifies the VPI/VCI for IPv6 WAN connection.              |
| Encapsulation | It specifies the encapsulation method for IPv6 WAN connection. |
| Protocol      | It specifies the protocol for IPv6 WAN connection.             |
| IP Address    | It specifies the IPv6 WAN IP address.                          |
| Status        | It specifies the IPv6 WAN connection status.                   |

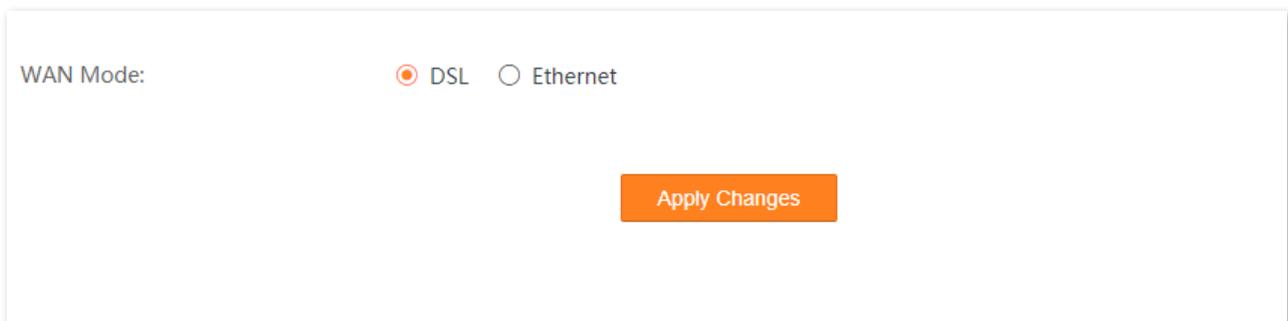
# 7 Internet settings

## 7.1 WAN mode

This section allows you to configure the WAN mode either to DSL mode or to Ethernet mode for internet connection.

- **DSL:** The modem router uses the DSL port for DSL connection.
- **Ethernet:** The modem router uses the WAN port for Ethernet connection.

To access this page, choose **Advance > Internet Settings > WAN Mode**.



WAN Mode:  DSL  Ethernet

Apply Changes

## 7.2 DSL settings



This section is available when **WAN Mode** is set to **DSL**.

This page allows you to configure DSL parameters based on the parameters of the upstream device. Wrong configurations may lead to internet access failure.

Change them only when you are instructed by your ISP or technical staff if your modem router fails to negotiate with the ISP in DSL mode.

To access this page, choose **Advance > Internet Settings > DSL Settings**.

DSL Modulation:  G.Lite  G.Dmt  T1.413  ADSL2  ADSL2+  VDSL2 ?

AnnexL Option:  (Note: Only ADSL 2 supports AnnexL)

AnnexM Option:  (Note: Only ADSL 2/2+ support AnnexM)

G.Vector Option:

VDSL2 Profile:  8a  8b  8c  8d  12a  12b  17a  30a  35b

DSL Capability:  Enabled Bitswap  Enabled SRA

### Parameter description

| Connection Type | Description  |
|-----------------|--|
| G.Lite          | It specifies G992.2. The maximum uploading/downloading rate is 512 Kbps/1.5 Mbps. When it is used, POTS splitter is NOT required for clients.  |
| DSL Modulation  |  |
| G.Dmt           | It specifies G992.1. The maximum uploading/downloading rate is 1.3 Mbps/8 Mbps. When it is used, POTS splitter is required for clients.  |
| T1.413          | It specifies ANSI_T1.413. Based on discrete multitone modulation (DMT) standard, the maximum uploading/downloading rate is 1.5 Mbps/15 Mbps. When it is used, POTS splitter is required for clients. |

| Connection Type |                                     | Description  |
|-----------------|-------------------------------------|--|
|                 | ADSL2                               | It specifies G992.3. The maximum uploading/downloading rate is 1 Mbps/12 Mbps.   |
|                 | ADSL2+                              | It specifies G992.5. The maximum uploading/downloading rate is 1 Mbps/24 Mbps.   |
|                 | VDSL2                               | It specifies G993.2. The maximum uploading/downloading rate is 50 Mbps/80 Mbps.  |
| AnnexL Option   |                                     | It specifies reach Extended ADSL2. When the clients are far away from the modem router, this mode can improve the coverage. The maximum uploading/downloading rate is 1.5 Mbps/15 Mbps.  |
| AnnexM Option   |                                     | This mode is compatible with the upstreaming bandwidth extension mode and implemented based on G992.3 ADSL2 and G992.5 ADSL2+. In this mode, the upload rate of ADSL2+ is increased from 1 Mbps to 2.5 Mbps. AnnexM takes effect only when ADSL2, AnnexL or ADSL2+ DSL modulation mode is selected.                  |
| G.Vector        |                                     | It specifies G993.5. The maximum uploading/downloading rate is 16 Mbps/52 Mbps.  |
| VDSL2 Profile   | 8a/8b/8c/8d/<br>12a/12b/17a/30a/35b | These profiles are defined by the VDSL2 standard which enables the modem router to support CO, FTTC applications and so on, reducing the complexity and cost of the product development.   |
| Enabled Bitswap |                                     | Bitswap can improve the ADSL adaptation capacity and the stability of ADSL line in the dynamic environment.  |
| DSL Capability  | Enabled SRA                         | Seamless Rate Adaptation (SRA) is a dynamic rate adaptation protocol achieving ADSL rate adaptation. It dynamically adjusts bit and power assignment to make sure that the noise margin of the line falls within a suitable range when the ADSL line changes in running process, ensuring the stability of the line. |

## 7.3 VDSL settings



This section is available when **WAN Mode** is set to **DSL**.

### 7.3.1 Overview

On this page, you can set up a VDSL connection using the information provided by your ISP. If the information is unclear, consult your ISP.

Change them only when you are instructed by your ISP or technical staff if your modem router fails to negotiate with the ISP in VDSL mode.

To access the page, choose **Advance > Internet Settings > VDSL Settings**.

You can use the following channel modes for VDSL connection.

| Channel Mode              | Description   |
|---------------------------|---|
| PPPoE (PPP over Ethernet) | Select this type if your ISP provides a user name and password to you for internet access.  |
| IPoE (IP over Ethernet)   | Dynamic IP (DHCP)<br>Select this type if your ISP does not provide any parameters to you for internet access.   |
|                           | Static IP (Fixed IP)<br>Select this type if your ISP provides a static IP address and other related information to you for internet access.   |
| Bridged                   | Select this type when this device only serves as a modem, and you want to set up a dial-up connection or enter other internet parameters directly on your computer for internet access. |
| 6rd                       | Select this type when you want to deploy IPv6 network rapidly based on IPv4 infrastructures.  |

### 7.3.2 Edit or create a VDSL link

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > VDSL Settings**.

**Step 2** Select the interface from the drop-down list or select **new link** to create an interface.

**Step 3** Select **Channel Mode** and other required parameters based on your need.

See [Parameter description](#) for details.

**Step 4** Click **Apply Changes** and wait for the parameters to take effect.

----End

### 7.3.3 Delete a VDSL link

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > VDSL Settings**.

**Step 2** Select the link to be deleted from the drop-down list.

**Step 3** Click **Delete**.

**Step 4** Click **OK** in the pop-up dialog box.

----End

### 7.3.4 Parameter description

#### General parameters

|                    |  |
|--------------------|--|
|                    | <input type="text" value="new link"/>                              |
| Enable VLAN:       | <input type="checkbox"/>   |
| VLAN ID:           | <input type="text"/>   |
| 802.1p_Mark:       | <input type="text" value="0"/>                                     |
| Channel Mode:      | <input type="text" value="Bridged"/>                               |
| Bridge Mode:       | <input type="text" value="Bridged Ethernet (Transparent Bridgir"/> |
| Enable NAPT:       | <input type="checkbox"/>   |
| Admin Status:      | <input checked="" type="checkbox"/>                                |
| Connection Type:   | <input type="text" value="Other"/>                                 |
| Enable IGMP-Proxy: | <input type="checkbox"/>   |

## Parameter description

| Name            | Description   |
|-----------------|---|
| nasx_x          | It specifies the WAN interface for the link.  |
| new link        | It is used to create an interface.  |
| Enable VLAN     | If your ISP provides you with the VLAN ID, select <b>Enable VLAN</b> and enter the <b>VLAN ID</b> provided by your ISP.   |
| VLAN ID         | If not, keep the default settings.  |
| 802.1p_Mark     | This parameter is available only when the <b>Enable VLAN</b> function is enabled. It specifies the 802.1P priority. Data with a larger priority value takes a higher priority to be processed.  |
| Channel Mode    | It specifies the channel mode for VDSL connection, including <b>Bridged</b> , <b>IPoE</b> , <b>PPPoE</b> and <b>6rd</b> . See <a href="#">Overview</a> for details.   |
| Bridge Mode     | It specifies the bridge mode for the bridge function, including <b>Bridged Ethernet (Transparent Bridging)</b> and <b>Bridged PPPoE (implies Bridged Ethernet)</b> .<br>If there is a computer connected to the modem router, and dial-up connection is used to access network, you are recommended to select <b>Bridged Ethernet</b> .   |
| Enable NAPT     | It applies to the <b>IPoE</b> , <b>PPPoE</b> and <b>6rd</b> channel modes.<br>Network Address Port Translation (NAPT) enables the port number and private IP address to be mapped from the internal host to one public IP address.<br>When the NAPT function is enabled, the devices in the LAN of the modem router can access the internet. Otherwise, only the modem router can access the internet.  |
| Admin Status    | It is used to enable or disable this WAN interface.   |
| Connection Type | It specifies the connection type for the VDSL link.<br><ul style="list-style-type: none"> <li>- When <b>Channel Mode</b> is set to <b>Bridged</b>, <b>INTERNET</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> <li>- When <b>Channel Mode</b> is set to <b>IPoE</b>, <b>PPPoE</b> or <b>6rd</b>, <b>TR069</b>, <b>INTERNET</b>, <b>INTERNET_TR069</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> </ul> |

| Name              | Description  |
|-------------------|--|
| MTU               | <p>Maximum transmission unit. It specifies the largest packet that the modem router transmits. MTU varies across connection types.</p> <p> <b>TIP</b></p> <p>Keep the default value unless you are sure modification is necessary for your ISP connection.</p>  |
| Enable IGMP-Proxy | <p>It applies to the <b>IPoE</b>, <b>PPPoE</b> and <b>6rd</b> channel modes.</p> <p>IGMP Proxy is used to manage multicast data and reduce traffic replication. IGMP proxy enables a device to issue IGMP host messages on behalf of its users, reduces IGMP messages and the load for uplink device.</p>  |
| MAC Clone         | <p>It applies to the <b>IPoE</b> and <b>PPPoE</b> channel modes.</p> <p>When you cannot access the internet after finishing other settings here except this option, consider whether it's the matter of the MAC address of your computer.</p> <p>Enable <b>MAC Clone</b> to clone the MAC address of your computer that can access the internet before using the modem router or the WAN MAC address of the original router.</p> |
| MAC Address       | <p>This parameter is available only when the <b>MAC Clone</b> function is enabled in the <b>IPoE</b> or <b>PPPoE</b> channel mode.</p> <p>It specifies the MAC address that the modem router cloned.</p>   |

## IP protocol

IP Protocol:

| Name        | Description   |
|-------------|---|
| IP Protocol | <p>It specifies the internet protocol type used by the modem router.</p> <ul style="list-style-type: none"> <li>- <b>IPv4</b>: Select this type if IPv4 is used for communication.</li> <li>- <b>IPv6</b>: Select this type if IPv6 is used for communication.</li> <li>- <b>IPv4/IPv6</b>: Select this type if both IPv4 and IPv6 are used for communication.</li> </ul> |

## PPP settings

PPP Settings:

UserName:

Password:

Type:  ▼

Idle Time (sec):

### Parameter description

| Name            | Description   |
|-----------------|---|
| UserName        | They specify the PPPoE user name/password provided by your ISP for internet connection.   |
| Password        |   |
| Type            | <p>It specifies the type of connection functions.</p> <ul style="list-style-type: none"> <li>- <b>Continuous:</b> After the network connection is established, it remains on.</li> <li>- <b>Connect on Demand:</b> The network connection terminates when the <b>Idle Time</b> expires.</li> <li>- <b>Manual:</b> Users should manually connect and disconnect the network connection.</li> </ul> |
| Idle Time (sec) | <p>This parameter is available only when <b>Connect on Demand</b> is selected.</p> <p>The idle timeout indicates how long the network connection keeps on when no device is using the network.</p>  |

## WAN IP settings

WAN IP Settings:

Type:  Fixed IP  DHCP

IP Address:

Subnet Mask:

Gateway:

Request DNS:

Primary DNS Server:

Secondary DNS Server:

### Parameter description

| Name                 | Description  |
|----------------------|--|
| Type                 | <p>It specifies the method to obtain WAN IP address.</p> <ul style="list-style-type: none"> <li>- <b>Fixed IP:</b> The IP address and related information provided by your ISP should be entered manually.</li> <li>- <b>DHCP:</b> The IP address is assigned by DHCP server from your ISP automatically.</li> </ul> |
| IP Address           |  |
| Subnet Mask          | If you select <b>Fixed IP</b> for <b>Type</b> , enter the IP address and related information provided by your ISP.   |
| Gateway              |  |
| Request DNS          | If the IP address is obtained through DHCP, you can select <b>Request DNS</b> to obtain DNS server address automatically.  |
| Primary DNS Server   | If the IP address obtaining type is <b>Fixed IP</b> or the <b>Request DNS</b> function is disabled when the IP address obtaining type is <b>DHCP</b> , enter the DNS server address provided by your ISP.  |
| Secondary DNS Server | <p> <b>TIP</b></p> <p>If the ISP provides only one DNS server address, you can leave the secondary DNS blank.</p>   |

## IPv6 WAN settings

IPv6 WAN Setting:

Address Mode:  Slaac  Static

IPv6 Address:

IPv6 Gateway:

Primary IPv6 DNS:

Secondary IPv6 DNS:

Enable DHCPv6 Client:

Request Options:  Request Address  
 Request Prefix

DS-Lite:

AFTR address mode:  DHCPv6  static

AFTR address:

### Parameter description

| Name         | Description  |
|--------------|--|
| Address Mode | <p>It specifies the method to obtain IPv6 WAN IP address. Two types are supported: <b>Slaac</b> and <b>Static</b>.</p> <ul style="list-style-type: none"> <li>- <b>Slaac</b>: Stateless address autoconfiguration. With <b>Slaac</b>, the IPv6 address can be configured automatically without a server.</li> <li>- <b>Static</b>: IP address and related network configuration information should be entered manually.</li> </ul> |
| IPv6 Address | If <b>Address Mode</b> is set to <b>Static</b> , enter the IP address and related information provided by your ISP.  |
| IPv6 Gateway |  |

| Name                 | Description   |
|----------------------|---|
| Primary IPv6 DNS     |  <b>TIP</b><br>If the ISP only provides one IPv6 DNS server address, you can leave the secondary IPv6 DNS blank.   |
| Secondary IPv6 DNS   |   |
| Enable DHCPv6 Client | With this function enabled, the modem router can request IPv6 WAN address or prefix as a DHCPv6 client.   |
| Request Options      | <ul style="list-style-type: none"> <li>- <b>Request Address:</b> The modem router obtains the IPv6 WAN address using the stateful DHCPv6 type.</li> <li>- <b>Request Prefix:</b> The modem router obtains the IPv6 prefix from the DHCPv6 server, and delivers it to its LAN ports.</li> </ul>  |
| DS-Lite              | It specifies whether the Dual-Stack Lite (DS-Lite) function is enabled.<br><br>DS-Lite is a technology that allows applications that use IPv4 to access the internet through IPv6. Enable it if both IPv4 and IPv6 communication is required.   |
| AFTR address mode    | It specifies how the Address Family Transition Router (AFTR) IPv6 address is obtained. The following two modes are supported: <ul style="list-style-type: none"> <li>- <b>DHCPv6:</b> The modem router obtains the AFTR name through DHCPv6 option, and translates the AFTR name to a specific IPv6 IP address through DNS.</li> <li>- <b>static:</b> The AFTR address needs to be set manually.</li> </ul> |
| AFTR address         | It is required when <b>AFTR address mode</b> is set to <b>static</b> . Set it to the IPv6 AFTR address.   |

## 6rd configuration

6rd Config:

Board Router v4 Address:

6rd IPv4 Mask Len:

6rd Prefix (EX:"2001:db8::"):

6rd Prefix length:

| Name                    | Description   |
|-------------------------|---|
| Board Router v4 Address | It specifies the Board Router IPv4 Address.   |
| 6rd IPv4 Mask Len       | It specifies the length of the IPv4 subnet mask used for 6rd connection. The WAN IPv4 addresses of both ends must be in the same segment.   |
| 6rd Prefix              | <p>It specifies the IPv6 prefix of the current network.</p> <ul style="list-style-type: none"> <li>- If the 6rd channel is used for communication between IPv6 islands, you can customize the IPv6 prefix here.</li> <li>- If the 6rd channel is used for accessing the ISP's IPv6 network, the IPv6 prefix must be provided by the ISP.</li> </ul> |
| 6rd Prefix length       | It specifies the 6rd prefix length.   |

## Port mapping

Port Mapping  LAN\_1  LAN\_2  LAN\_3  LAN\_4

Tenda\_803E7B\_5G

Tenda\_803E7B

## Parameter description

| Name         | Description  |
|--------------|--|
| Port Mapping | It specifies the port or Wi-Fi network for IPTV service. |

## 7.4 ADSL settings



This section is available when **WAN Mode** is set to **DSL**.

### 7.4.1 Overview

On this page, you can set up an ADSL connection and view related information. To set up an ADSL connection, you should use the information provided by your ISP. If the information is unclear, consult your ISP.

Change them only when you are instructed by your ISP or technical staff if your modem router fails to negotiate with the ISP in ADSL mode.

To access the page, choose **Advance > Internet Settings > ADSL Settings**.

You can use the following channel modes for ADSL connection.

| Channel Mode                                       | Description  |
|--|--|
| PPPoE (PPP over Ethernet),<br>PPPoA (PPP over ATM) | If your ISP provides a user name and password to you for internet access, your connection type may be PPPoE or PPPoA. Contact your ISP for details.  |
| IPoE (IP over Ethernet)                            | Dynamic IP (DHCP)<br>Select this type if your ISP does not provide any parameters to you for internet access.  |
| IPoE (IP over Ethernet), IPoA (IP over ATM)        | Static IP (Fixed IP)<br>If your ISP provides a static IP address and other related information to you for internet access, your connection type may be IPoE or IPoA. Contact your ISP for details. |
| Bridged  | Select this type when this device only serves as a modem, and you want to set up a dial-up connection or enter other internet parameters directly on your computer for internet access.            |
| 6rd  | Select this type when you want to deploy IPv6 network rapidly based on IPv4 infrastructures.   |

### 7.4.2 Create an ADSL link

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > ADSL Settings**.

**Step 2** Click **Add**.

- Step 3** Enter **VPI** and **VCI** provided by your ISP.
- Step 4** Select the **Encapsulation** and **Channel Mode** provided by your ISP.
- Step 5** Set **Connection Type** and other parameters based on your need.  
See [Parameter description](#) for details.
- Step 6** Click **Add**.  
----End

### 7.4.3 Delete an ADSL link

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > ADSL Settings**.
- Step 2** Locate the ADSL link to be deleted in **Current ATM VC Table** and click  at the end of the link.
- Step 3** Click **OK** in the pop-up dialog box.  
----End

## 7.4.4 Parameter description

### General parameters

|                    |   |
|--------------------|---|
| VPI:               | <input type="text" value="0"/>                                    |
| VCI:               | <input type="text"/>  |
| Encapsulation:     | <input checked="" type="radio"/> LLC <input type="radio"/> VC-Mux |
| Channel Mode:      | <input type="text" value="IPoE"/> ▼                               |
| Enable NAPT:       | <input checked="" type="checkbox"/>                               |
| Admin Status:      | <input checked="" type="checkbox"/>                               |
| Connection Type:   | <input type="text" value="INTERNET"/> ▼                           |
| Enable IGMP-Proxy: | <input type="checkbox"/>  |
| MAC Clone:         | <input type="checkbox"/>  |
| MAC Address:       | <input type="text"/>  |

### Parameter description

| Name          | Description   |
|---------------|---|
| VPI           | VPI and VCI are used to identify the data path for ADSL link. Their values are provided by your ISP.  |
| VCI           |   |
| Encapsulation | <p>It specifies the data encapsulation type in the ATM network. You can obtain the parameter value from your ISP.</p> <ul style="list-style-type: none"> <li>- <b>LLC:</b> In LLC encapsulation, the host uses a single virtual circuit for multiple protocols. This has the advantage of allowing all traffic over the same circuit, but the disadvantage of requiring each packet to contain octets that identify the protocol type, which adds overhead. The scheme also has the disadvantage that packets from all protocols travel with the same delay and priority.</li> <li>- <b>VC-Mux:</b> In VC Multiplexing (VC-MUX), the host agrees on the high-level protocol for a given circuit. It has the advantage of not requiring additional information in a packet, which minimizes the overhead.</li> </ul> |

| Name              | Description  |
|-------------------|--|
| Channel Mode      | It specifies the channel mode for ADSL connection, including <b>Bridged, IPoE, PPPoE, PPPoA, IPoA</b> and <b>6rd</b> .   |
| Enable NAPT       | <p>It applies to the <b>IPoE, PPPoE, PPPoA, IPoA</b> and <b>6rd</b> channel modes.</p> <p>NAPT enables the port number and private IP address to be mapped from the internal host to one public IP address. When the NAPT function is enabled, the devices in the LAN of the modem router can access the internet. Otherwise, only the modem router can access the internet.</p>   |
| Admin Status      | It is used to enable or disable this WAN interface.  |
| Connection Type   | <p>It specifies the connection type for the ADSL connection.</p> <ul style="list-style-type: none"> <li>- When <b>Channel Mode</b> is set to <b>Bridged, INTERNET</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> <li>- When <b>Channel Mode</b> is set to <b>IPoE, PPPoE, PPPoA, IPoA</b> or <b>6rd, TR069, INTERNET, INTERNET_TR069</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> </ul>    |
| Enable IGMP-Proxy | <p>It applies to the <b>IPoE, PPPoE, PPPoA, IPoA</b> and <b>6rd</b> channel modes.</p> <p>IGMP Proxy is used to manage multicast data and reduce traffic replication. IGMP proxy enables a device to issue IGMP host messages on behalf of its users, reduces IGMP messages and the load for uplink devices.</p>   |
| MAC Clone         | <p>It is used to enable or disable the <b>MAC Clone</b> function and applies to the <b>IPoE</b> and <b>PPPoE</b> channel modes.</p> <p>When you cannot access the internet after finishing other settings here except this option, consider whether it's the matter of the MAC address of your computer. Enable <b>MAC Clone</b> to clone the MAC address of your computer that can access the internet before using the modem router or the WAN MAC address of the original router.</p> |
| MAC Address       | This parameter is available only when the <b>MAC Clone</b> function is enabled in the <b>IPoE</b> or <b>PPPoE</b> channel mode. It specifies the MAC address that the modem router cloned.   |

## IP protocol

IP Protocol:

| Name        | Description   |
|-------------|---|
| IP Protocol | <p>It specifies the internet protocol type used by the modem router.</p> <ul style="list-style-type: none"> <li>- <b>IPv4</b>: Select this type if IPv4 is used for communication.</li> <li>- <b>IPv6</b>: Select this type if IPv6 is used for communication.</li> <li>- <b>IPv4/IPv6</b>: Select this type if both IPv4 and IPv6 are used for communication.</li> </ul> |

## PPP settings

PPP Settings:

UserName:

Password:

Type:

Idle Time (sec):

### Parameter description

| Name     | Description  |
|----------|--|
| UserName | They specify the PPPoE user name/password provided by your ISP for network connection. |
| Password |  |

| Name            | Description  |
|-----------------|--|
| Type            | <p>It specifies the type of how the connection functions.</p> <ul style="list-style-type: none"> <li>- <b>Continuous:</b> After the internet connection is established, it remains on.</li> <li>- <b>Connect on Demand:</b> The internet connection terminates when the <b>Idle Time</b> expires.</li> <li>- <b>Manual:</b> Users should manually connect and disconnect the internet connection.</li> </ul> |
| Idle Time (sec) | <p>This parameter is available only when <b>Connect on Demand</b> is selected.</p> <p>The idle timeout indicates how long the internet connection keeps on when no device is using the internet connection.</p>  |

## WAN IP settings

WAN IP Settings:

Type:  Fixed IP  DHCP

IP Address:

Subnet Mask:

Gateway:

Request DNS:

Primary DNS Server:

Secondary DNS Server:

### Parameter description

| Name | Description  |
|------|--|
| Type | <p>It specifies the method to obtain WAN IP address.</p> <ul style="list-style-type: none"> <li>- <b>Fixed IP:</b> The IP address and related information provided by your ISP should be entered manually.</li> <li>- <b>DHCP:</b> The IP address is assigned by DHCP server from your ISP automatically.</li> </ul> <p> <b>TIP</b></p> <p>When <b>Channel Mode</b> is set to <b>IPoA</b>, this parameter can be set to <b>Fixed IP</b> only.</p> |

| Name                 | Description   |
|----------------------|---|
| IP Address           | If <b>Type</b> is set to <b>Fixed IP</b> , enter the IP address and related information provided by your ISP.   |
| Subnet Mask          |  <b>TIP</b>  |
| Gateway              | When <b>Channel Mode</b> is set to <b>IPoA</b> , <b>Subnet Mask</b> is not applicable here.   |
| Request DNS          | If the IP address is obtained through DHCP, you can select <b>Request DNS</b> to obtain DNS server address automatically.   |
| Primary DNS Server   | If the IP address obtaining type is <b>Fixed IP</b> or <b>Request DNS</b> function is disabled when the IP address obtaining type is <b>DHCP</b> , enter the DNS server address provided by your ISP. |
| Secondary DNS Server |  <b>TIP</b><br>If the ISP only provides one DNS server address, you can leave the secondary DNS blank.               |

## IPv6 WAN settings

IPv6 WAN Setting:

Address Mode:  Slaac  Static

IPv6 Address:  /

IPv6 Gateway:

Primary IPv6 DNS:

Secondary IPv6 DNS:

Enable DHCPv6 Client:

Request Options:  Request Address

Request Prefix

DS-Lite:

AFTR address mode:  DHCPv6  static

AFTR address:

### Parameter description

| Name             | Description   |
|------------------|---|
| Address Mode     | <p>It specifies the method to obtain IPv6 WAN IP address.</p> <ul style="list-style-type: none"> <li>- <b>Slaac</b>: Stateless address autoconfiguration. With <b>Slaac</b>, the IPv6 address can be configured automatically without a server.</li> <li>- <b>Static</b>: IP address and related network configuration information should be entered manually.</li> </ul> |
| IPv6 Address     |   |
| IPv6 Gateway     | If <b>Address Mode</b> is set to <b>Static</b> , enter the IP address and related information provided by your ISP.   |
| Primary IPv6 DNS |   |

| Name                 | Description   |
|----------------------|---|
| Secondary IPv6 DNS   |  <b>TIP</b><br>If the ISP only provides one IPv6 DNS server address, you can leave the secondary IPv6 DNS blank.   |
| Enable DHCPv6 Client | With this function enabled, the modem router can request an IPv6 WAN address or prefix as a DHCPv6 client.  |
| Request Options      | <ul style="list-style-type: none"> <li>- <b>Request Address:</b> The modem router obtains the IPv6 WAN address using the stateful DHCPv6 type.</li> <li>- <b>Request Prefix:</b> The modem router obtains the IPv6 prefix from the DHCPv6 server, and delivers it to its LAN ports.</li> </ul>                                  |
| DS-Lite              | It specifies whether the DS-Lite function is enabled.<br>DS-Lite is a technology that allows applications that use IPv4 to access the internet through IPv6. Enable it if both IPv4 and IPv6 communication is required.   |
| AFTR address mode    | It specifies how the AFTR IPv6 address is obtained. <ul style="list-style-type: none"> <li>- <b>DHCPv6:</b> The modem router obtains the AFTR name through DHCPv6 option, and translates the AFTR name to specific IPv6 IP address through DNS.</li> <li>- <b>static:</b> The AFTR address needs to be set manually.</li> </ul> |
| AFTR address         | It is required when <b>AFTR address mode</b> is set to <b>static</b> . Set it to the IPv6 AFTR address.   |

## 6rd configuration

6rd Config:

Board Router v4 Address:

6rd IPv4 Mask Len:

6rd Prefix (EX:"2001:db8::"):

6rd Prefix length:

| Name                    | Description   |
|-------------------------|---|
| Board Router v4 Address | It specifies the IPv4 address of the WAN port of peer dual-stack router or 6rd router.  |
| 6rd IPv4 Mask Len       | It specifies the length of the IPv4 subnet mask used for 6rd connection. The WAN IPv4 addresses of both ends must be in the same segment.   |
| 6rd Prefix              | <p>It specifies the IPv6 prefix of the current network.</p> <ul style="list-style-type: none"> <li>- If the 6rd channel is used for communication between IPv6 islands, you can customize the IPv6 prefix here.</li> <li>- If the 6rd channel is used for accessing the ISP's IPv6 network, the IPv6 prefix must be provided by the ISP.</li> </ul> |
| 6rd Prefix length       | It specifies the 6rd prefix length.   |

## Port mapping

Port Mapping  LAN\_1  LAN\_2  LAN\_3  LAN\_4

Tenda\_803E6F\_5G

Tenda\_803E6F

## Parameter description

| Name         | Description  |
|--------------|--|
| Port Mapping | It specifies the port or Wi-Fi network for IPTV service. |

## 7.5 ADSL QoS settings



This section is available when **WAN Mode** is set to **DSL**.

With wider application of new services, such as video conference, remote education, Video-on-Demand (VoD) and video telephone, the network requirements are also higher, especially in bandwidth, delay and jitter. Quality of Service (QoS) is a technology to meet the above demands and improve the quality of service in the network.

This modem router supports the following four ATM service categories for QoS configuration.

- **CBR**

Constant Bit Rate. The CBR service supports real-time applications and is used for connections that transport traffic at a constant bit rate. It requires low cell delay and cell loss, supporting such applications as video conferencing, telephony (voice services) or any type of on-demand service.

- **rt\_VBR**

Real-Time Variable Bit Rate. The rt-VBR service supports real-time applications and is used for connections that transport traffic at variable rates. It requires low cell delay and cell loss, supporting such applications as compressed voice over IP (VoIP) and video conferencing. Compared to CBR, VBR-rt makes better use of bandwidth if the traffic is bursty.

- **nrt\_VBR**

Non Real-Time Variable Bit Rate. The nrt-VBR service supports non-real-time applications and is used for connections that transport traffic at variable rates. It has no reliance on time synchronization, but requires low cell loss.

- **UBR**

Unspecified bit rate. The UBR service supports non-real-time applications and is used for connections that transport variable bit rate traffic. It does not guarantee the traffic delay and service quality, so it is used for applications that are very tolerant of delay and cell loss. It is usually used for data transmission.

To access this page, choose **Advance > Internet Settings > ADSL QoS Settings**. You can click  to modify the QoS settings for each ADSL connection.

**Current ATM VC Table**

| VPI | VCI | QoS | PCR  | CDVT | SCR | MBS | Operate   |
|-----|-----|-----|------|------|-----|-----|---|
| 5   | 40  | UBR | 6000 | 0    | --- | --- |  |
| 1   | 33  | UBR | 6000 | 0    | --- | --- |  |

**Parameter description**

| Name | Description   |
|------|---|
| VPI  | VPI and VCI are used to identify the data path for ADSL connection.   |
| VCI  |   |
| QoS  | It specifies the ATM services for QoS configuration, including <b>UBR</b> , <b>CBR</b> , <b>nrt_VBR</b> and <b>rt_VBR</b> .   |
| PCR  | Peak Cell Rate. It specifies the maximum allowable rate at which cells can be transported along a connection in the ATM network. PCR applies to CBR and VBR and UBR services. |
| CDVT | Cell Delay Variation Tolerance. It specifies the level of jitter that is tolerable.   |
| SCR  | Sustainable Cell Rate. It specifies the calculation of the average allowable, long-term cell transfer rate on a specific connection. SCR applies to the VBR service.          |
| MBS  | Maximum Burst Size. It specifies the minimum number of cells that can be transported along an ATM connection. MBS applies to the VBR service.                                 |

## 7.6 Ethernet settings



This section is available when **WAN Mode** is set to **Ethernet**.

### 7.6.1 Overview

To access the page, choose **Advance > Internet Settings > Ethernet Settings**.

Ethernet settings support 4 connection types: **Bridged**, **IPoE**, **PPPoE** and **6rd**.

| Connection Type           | Description   |
|---------------------------|---|
| PPPoE (PPP over Ethernet) | Select this type if your ISP provides a user name and password to you for internet access.  |
| IPoE (IP over Ethernet)   | DHCP<br>Select this type if your ISP does not provide any parameters to you for internet access.  |
|                           | Fixed IP<br>Select this type if your ISP provides a static IP address and other related information to you for internet access.   |
| Bridged                   | Select this type when this device only serves as a modem, and you want to set up a dial-up connection or enter other internet parameters directly on your computer for internet access. |
| 6rd                       | Select this type when you want to deploy the IPv6 network rapidly based on IPv4 infrastructures.  |

### 7.6.2 Edit or create an Ethernet Link

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > Ethernet Settings**.
- Step 2** Select the interface from the drop-down list or select **new link** to create an interface.
- Step 3** Set **Channel Mode**, **Connection Type**, and other required parameters based on your need. See [Parameter description](#) for details.
- Step 4** Click **Apply Changes** and wait for the parameters to take effect.

----End

## 7.6.3 Delete an Ethernet Link

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Internet Settings > Ethernet Settings**.

**Step 2** Select the link to be deleted from the drop-down list.

**Step 3** Click **Delete**.

**Step 4** Click **OK** in the pop-up dialog box.

----End

## 7.6.4 Parameter description

### General parameters

### Ethernet Settings

|                    |   |
|--------------------|---|
|                    | <input type="text" value="nas0_0"/>   |
| Enable VLAN:       | <input type="checkbox"/>  |
| VLAN ID:           | <input type="text"/>  |
| 802.1p_Mark:       | <input type="text" value="0"/>  |
| Channel Mode:      | <input type="text" value="IPoE"/>   |
| Enable NAPT:       | <input checked="" type="checkbox"/>   |
| Admin Status:      | <input checked="" type="checkbox"/>   |
| Connection Type:   | <input type="text" value="Other"/>  |
| MTU:               | <input type="text" value="1500"/>   |
| Enable IGMP-Proxy: | <input type="checkbox"/>  |
| MAC Clone:         | <input type="checkbox"/>  |
| MAC Address:       | <input type="text" value="00:00:00:00:00:00"/> <input type="button" value="Clone MAC"/> |

## Parameter description

| Name            | Description  |
|-----------------|--|
| nasx_x          | It specifies the WAN interface for link.   |
| new link        | It is used to create an interface.   |
| Enable VLAN     | If your ISP provides you with the VLAN ID, select <b>Enable VLAN</b> and enter the <b>VLAN ID</b> provided by your ISP.  |
| VLAN ID         | If not, keep the default settings.   |
| 802.1p_Mark     | This parameter is available only when the <b>Enable VLAN</b> function is selected.<br>It specifies the 802.1P priority. Data with a larger priority value takes a higher priority to be processed.   |
| Channel Mode    | It specifies the channel mode for the link, including <b>Bridged</b> , <b>IPoE</b> , <b>PPPoE</b> , and <b>6rd</b> . See <a href="#">Overview</a> for details.   |
| Bridge Mode     | It specifies the bridge mode for the bridge function.<br>If there is a computer connected to the modem router, and dial-up connection is used to access network, you are recommended to select <b>Bridged Ethernet (Transparent Bridging)</b> .  |
| Enable NAPT     | It applies to the <b>IPoE</b> , <b>PPPoE</b> and <b>6rd</b> channel modes.<br>NAPT enables the port number and private IP address to be mapped from the internal host to one public IP address.<br>When the NAPT function is enabled, the devices in the LAN of the modem router can access the internet. Otherwise, only the modem router can access the internet.  |
| Admin Status    | It is used to enable or disable this WAN interface.  |
| Connection Type | It specifies the connection type for this link. <ul style="list-style-type: none"> <li>- When <b>Channel Mode</b> is set to <b>Bridged</b>, <b>INTERNET</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> <li>- When <b>Channel Mode</b> is set to <b>IPoE</b>, <b>PPPoE</b> or <b>6rd</b>, <b>TR069</b>, <b>INTERNET</b>, <b>INTERNET_TR069</b> and <b>Other</b> are available. For common internet access, select <b>INTERNET</b>.</li> </ul> |

| Name              | Description   |
|-------------------|---|
| MTU               | <p>Maximum transmission unit. It specifies the largest packet that the modem router transmits. MTU varies across connection types.</p> <p> <b>TIP</b></p> <p>Keep the default value unless you are sure modification is necessary for your ISP connection.</p>   |
| Enable IGMP-Proxy | <p>It applies to the <b>IPoE</b>, <b>PPPoE</b> and <b>6rd</b> channel modes.</p> <p>IGMP Proxy is used to manage multicast data and reduce traffic replication. IGMP proxy enables a device to issue IGMP host messages on behalf of its users, reduces IGMP messages and the load for uplink devices.</p>  |
| MAC Clone         | <p>It applies to the <b>IPoE</b> and <b>PPPoE</b> channel modes.</p> <p>When you cannot access the internet after finishing other settings here except this option, consider whether it's the matter of the MAC address of your modem router. Enable <b>MAC Clone</b> to clone the MAC address of your computer that can access the internet before using the modem router or the WAN MAC address of the original router.</p> |
| MAC Address       | <p>This parameter is available only when the <b>MAC Clone</b> function is enabled in the <b>IPoE</b> or <b>PPPoE</b> channel mode.</p> <p>It specifies the MAC address that the modem router cloned.</p>  |

## IP protocol

IP Protocol:

| Name        | Description   |
|-------------|---|
| IP Protocol | <p>It specifies the internet protocol type used by the modem router.</p> <ul style="list-style-type: none"> <li>- <b>IPv4</b>: Select this type if IPv4 is used for communication.</li> <li>- <b>IPv6</b>: Select this type if IPv6 is used for communication.</li> <li>- <b>IPv4/IPv6</b>: Select this type if both IPv4 and IPv6 are used for communication.</li> </ul> |

## PPP settings

PPP Settings:

UserName:

Password:

Type:  ▼

Idle Time (sec):

### Parameter description

| Name            | Description   |
|-----------------|---|
| UserName        | They specify the PPPoE user name/password provided by your ISP for network connection.  |
| Password        |   |
| Type            | <p>It specifies the type of how the connection functions.</p> <ul style="list-style-type: none"> <li>- <b>Continuous:</b> After the network connection is established, it remains on.</li> <li>- <b>Connect on Demand:</b> The network connection terminates when the <b>Idle Time</b> expires.</li> <li>- <b>Manual:</b> Users should manually connect and disconnect the network connection.</li> </ul> |
| Idle Time (sec) | <p>This parameter is available only when <b>Connect on Demand</b> is selected.</p> <p>The idle timeout indicates how long the network connection keeps on when no device is using the network.</p>  |

## WAN IP settings

WAN IP Settings:

Type:  Fixed IP  DHCP

IP Address:

Subnet Mask:

Gateway:

Request DNS:

Primary DNS Server:

Secondary DNS Server:

| Name                 | Description  |
|----------------------|--|
| Type                 | <p>It specifies the method to obtain WAN IP address.</p> <ul style="list-style-type: none"> <li>- <b>Fixed IP:</b> The IP address and related information provided by your ISP should be entered manually.</li> <li>- <b>DHCP:</b> The IP address is assigned by DHCP server from your ISP automatically.</li> </ul> |
| IP Address           |  |
| Subnet Mask          | If <b>Type</b> is set to <b>Fixed IP</b> , enter the IP address and related information provided by your ISP.  |
| Gateway              |  |
| Request DNS          | If the IP address is obtained through DHCP, you can select <b>Request DNS</b> to obtain the DNS server address automatically.  |
| Primary DNS Server   | If the IP address obtaining type is <b>Fixed IP</b> or <b>Request DNS</b> function is disabled when the IP address obtaining type is <b>DHCP</b> , enter the DNS server address provided by your ISP.  |
| Secondary DNS Server | <p> <b>TIP</b></p> <p>If the ISP only provides one DNS server address, you can leave the secondary DNS blank.</p>   |

## IPv6 WAN setting

IPv6 WAN Setting:

Address Mode:  Slaac  Static

IPv6 Address:

IPv6 Gateway:

Primary IPv6 DNS:

Secondary IPv6 DNS:

Enable DHCPv6 Client:

Request Options:  Request Address

Request Prefix

DS-Lite:

AFTR address mode:  DHCPv6  static

AFTR address:

| Name               | Description   |
|--------------------|---|
| Address Mode       | <p>It specifies the method to obtain IPv6 WAN IP address.</p> <ul style="list-style-type: none"> <li>- <b>Slaac</b>: Stateless address autoconfiguration. With <b>Slaac</b>, the IPv6 address can be configured automatically without a server.</li> <li>- <b>Static</b>: IP address and related network configuration information should be entered manually.</li> </ul> |
| IPv6 Address       | If <b>Address Mode</b> is set to <b>Static</b> , enter the IP address and related information provided by your ISP.   |
| IPv6 Gateway       |   |
| Primary IPv6 DNS   |  <b>TIP</b>  |
| Secondary IPv6 DNS | If the ISP only provides one IPv6 DNS server address, you can leave the secondary IPv6 DNS blank.   |

| Name                 | Description  |
|----------------------|--|
| Enable DHCPv6 Client | With this function enabled, the modem router can request IPv6 WAN address or prefix as a DHCPv6 client.  |
| Request Options      | <ul style="list-style-type: none"> <li>- <b>Request Address:</b> The modem router obtains the IPv6 WAN address using the stateful DHCPv6 type.</li> <li>- <b>Request Prefix:</b> The modem router obtains the IPv6 prefix from the DHCPv6 server, and delivers it to its LAN ports.</li> </ul>   |
| DS-Lite              | <p>It specifies whether the DS-Lite function is enabled.</p> <p>DS-Lite is a technology that allows applications that use IPv4 to access the internet through IPv6. Enable it if both IPv4 and IPv6 communication is required.</p>   |
| AFTR address mode    | <p>It specifies how the AFTR IPv6 address is obtained.</p> <ul style="list-style-type: none"> <li>- <b>DHCPv6:</b> The modem router obtains the AFTR name through the DHCPv6 option, and translates the AFTR name to a specific IPv6 IP address through DNS.</li> <li>- <b>static:</b> The AFTR address needs to be set manually.</li> </ul> |
| AFTR address         | It is required when <b>AFTR address mode</b> is set to <b>static</b> . Set it to the IPv6 AFTR address.  |

## 6rd configuration

6rd Config:

Board Router v4 Address:

6rd IPv4 Mask Len:

6rd Prefix (EX:"2001:db8::"):

6rd Prefix length:

| Name                    | Description   |
|-------------------------|---|
| Board Router v4 Address | It specifies the IPv4 address of the WAN port of peer dual-stack router or 6rd router.  |
| 6rd IPv4 Mask Len       | It specifies the length of the IPv4 subnet mask used for 6rd connection. The WAN IPv4 addresses of both ends must be in the same segment. |

| Name              | Description   |
|-------------------|---|
| 6rd Prefix        | <p>It specifies the IPv6 prefix of the current network.</p> <ul style="list-style-type: none"> <li>- If the 6rd channel is used for communication between IPv6 islands, you can customize the IPv6 prefix here.</li> <li>- If the 6rd channel is used for accessing the ISP's IPv6 network, the IPv6 prefix must be provided by the ISP.</li> </ul> |
| 6rd Prefix length | It specifies the 6rd prefix length.   |

## Port mapping

Port Mapping

LAN\_1
  LAN\_2
  LAN\_3
  LAN\_4

Tenda\_803E7B\_5G

Tenda\_803E7B

| Name         | Description  |
|--------------|--|
| Port Mapping | It specifies the port or Wi-Fi network for IPTV service. |

## 7.7 LAN settings

On this page, you can configure the LAN settings for the modem router. Choose **Advance > Internet Settings > LAN Settings** to enter the configuration page.

|                       |  |
|-----------------------|--|
| IP Address:           | <input type="text" value="192.168.1.1"/>                                     |
| Subnet Mask:          | <input type="text" value="255.255.255.0"/>                                   |
| IGMP Snooping:        | <input checked="" type="checkbox"/>  |
| DHCP Server:          | <input checked="" type="checkbox"/>  |
| IP Address Range:     | 192.168.1. <input type="text" value="2"/> ~ <input type="text" value="254"/> |
| Lease Time:           | <input type="text" value="1 day"/> ▼   |
| DNS Settings:         | <input checked="" type="checkbox"/>  |
| Primary DNS Server:   | <input type="text" value="0.0.0.0"/>   |
| Secondary DNS Server: | <input type="text" value="0.0.0.0"/>   |

### Parameter description

| Name          | Description   |
|---------------|---|
| IP Address    | It specifies the LAN IP address of the modem router, which is also the login address of the web UI of the modem router.   |
| Subnet Mask   | It specifies the LAN subnet mask of the LAN port.   |
| IGMP Snooping | It is used to enable or disable the IGMP Snooping function.<br>With this function enabled, the specified multicast data of multicast groups can be forwarded to the specified port. |
| DHCP Server   | It is used to enable or disable the DHCP Server.<br>With this function enabled, the modem router can assign IP addresses to connected devices.                                      |

| Name                 | Description  |
|----------------------|--|
| IP Address Range     | It specifies the IP address range assigned to connected devices.<br>With the DHCP Server function enabled, you need to enter the start IP address and end IP address of the IP address pool. |
| Lease Time           | It specifies the validity period of one IP address assigned to a device by the modem router.   |
| DNS Settings         |  |
| Primary DNS server   | With the DNS Settings function enabled, you can enter the primary DNS IP address and secondary DNS IP address assigned to connected devices.   |
| Secondary DNS server |  |

## 7.8 IPv6 LAN settings

On this page, you can configure the IPv6 LAN settings for the modem router. Choose **Advance > Internet Settings > IPv6 LAN Settings** to enter the configuration page.

### 7.8.1 RADVD

The Router Advertisement Daemon (RADVD) implements link-local advertisements of IPv6 router addresses and IPv6 routing prefixes using the Neighbor Discovery Protocol (NDP) and is used by system administrators for stateless auto configuration of network hosts on IPv6 networks.

**Radvd config**

MaxRtrAdvInterval:

MinRtrAdvInterval:

AdvManagedFlag:

AdvOtherConfigFlag:

Prefix Mode:

Prefix:  /64

AdvValid Lifetime:

RDNSS Settings:

RDNSS 1:

RDNSS 2:

MLD Snooping:

#### Parameter description

| Name              | Description   |
|-------------------|---|
| MaxRtrAdvInterval | It specifies the maximum interval to transmit advertisements. |
| MinRtrAdvInterval | It specifies the minimum interval to transmit advertisements. |

| Name               | Description   |
|--------------------|---|
| AdvManagedFlag     | It is used to enable or disable the AdvManagedFlag.   |
| AdvOtherConfigFlag | It is used to enable or disable the AdvOtherConfigFlag.   |
| Prefix Mode        | <p>This modem router supports two modes to obtain the prefix.</p> <ul style="list-style-type: none"> <li>- <b>Auto:</b> The prefix is generated by the modem router automatically.</li> <li>- <b>Manual:</b> Set the prefix manually.</li> </ul>  |
| Prefix             | If you select <b>Manual</b> as the Prefix mode, enter the prefix and set related parameters manually.   |
| AdvValid Lifetime  | It specifies the validity period of the prefix. If the lifetime of the prefix has expired, the client no longer uses the corresponding IPv6 address.  |
| RDNSS Settings     | It is used to enable the Recursive DNS Server (RDNSS) function.   |
| RDNSS 1            | It specifies the primary RDNSS address.   |
| RDNSS 2            | It specifies the alternative RDNSS address.   |
| MLD Snooping       | <p>Multicast Listener Discover (MLD) is used by IPv6 routers to discover multicast listeners on a directly attached link.</p> <p>If this function is disabled on layer-2 devices, IPv6 multicast data packets will be broadcast on the entire layer 2. If this function is enabled, these packets will be multicast to only specified receivers instead of being broadcast on the entire layer 2.</p> |

## 7.8.2 DHCPv6 config

Dynamic Host Configuration Protocol for IPv6 (DHCPv6) is used to assign IP addresses and prefixes to IPv6 hosts on a network. You can configure the DHCPv6 settings in this section.

**DHCPv6 config**

DHCPv6 Mode:

IP Address Range:  -

Valid Lifetime:

DNS Settings:

DNS Server 1:

DNS Server 2:

### Parameter description

| Name             | Description   |
|------------------|---|
| DHCPv6 Mode      | <p>It specifies the assignment type of DHCPv6 address for the clients connected to the modem router.</p> <ul style="list-style-type: none"> <li>- <b>Auto:</b> DHCPv6 stateless configuration. Clients obtain their IPv6 address through Router Advertisement (Stateless Auto Address Configuration) and other parameters are allocated by the DHCPv6 server.</li> <li>- <b>Manual:</b> DHCPv6 stateful configuration. The DHCPv6 server automatically assigns IPv6 addresses/prefixes and other network configuration parameters (for example, DNS server addresses) to clients. The user needs to manually configure the IP address range.</li> </ul> |
| IP Address Range | It specifies the IP address range assigned to connected devices.  |
| Valid Lifetime   | It specifies the valid lifetime of the IP addresses. When the time is out, the address is invalid.  |
| DNS Settings     | It is used to enable/disable the DNS settings function for DHCPv6.  |
| DNS Server 1     | It specifies the primary DNS IP addresses assigned to connected devices.  |
| DNS Server 2     | It specifies the secondary DNS IP addresses assigned to connected devices.  |

# 8 Wi-Fi Settings

## 8.1 Basic settings

This section allows you to configure the basic parameters of the wireless networks of the modem router. To access this page, choose **Advance > Wi-Fi Settings > Basic Settings**.

**2.4 GHz Network:**

Wireless SSID:   Hide

Encryption Mode:  ▼

Wireless Key:

**5 GHz Network:**

Wireless SSID:   Hide

Encryption Mode:  ▼

Wireless Key:

### Parameter description

| Name              | Description   |
|-------------------|---|
| 2.4/5 GHz Network | It is used to enable or disable the 2.4 GHz or 5 GHz network. |
| Wireless SSID     | It specifies the name of the Wi-Fi network.                   |

| Name            | Description   |
|-----------------|---|
| Hide            | Hide the Wi-Fi name. With this function enabled, the Wi-Fi name cannot be scanned automatically by the wireless clients, and users must manually enter the Wi-Fi name on the wireless clients to connect to the Wi-Fi network.  |
| Encryption Mode | It specifies the encryption mode of the Wi-Fi network. <ul style="list-style-type: none"><li>- <b>None:</b> The Wi-Fi network is not encrypted.</li><li>- <b>WPA:</b> The Wi-Fi network is encrypted using WPA-PSK/AES.</li><li>- <b>WPA2:</b> The Wi-Fi network is encrypted using WPA2-PSK/AES.</li><li>- <b>WPA-WPA2:</b> The Wi-Fi network is encrypted using both WPA-PSK/AES and WPA2-PSK/AES, meeting compatibility and security requirements.</li></ul> |
| Wireless Key    | It specifies the password of the Wi-Fi network.   |

## 8.2 Channel & Bandwidth

This section allows you to configure the channel and bandwidth for the 2.4 GHz wireless network and 5 GHz wireless network. To access this page, choose **Advance > Wi-Fi Settings > Channel & Bandwidth**.

**2.4 GHz Network:**

Network Mode:  ▼

Channel:  ▼

Bandwidth:  ▼

**5 GHz Network:**

Network Mode:  ▼

Channel:  ▼

Bandwidth:  ▼

## Parameter description

| Name         | Description  |
|--------------|--|
| Network Mode | <p>It specifies the wireless network mode of the modem router.</p> <p>In the 2.4 GHz network, the following network modes are supported:</p> <ul style="list-style-type: none"> <li>- <b>11b</b>: If 802.11b is selected, only 11b wireless devices can connect to the wireless network. The maximum wireless rate supported in this mode is 11 Mbps.</li> <li>- <b>11g</b>: If 802.11g is selected, only 11g wireless devices can connect to the wireless network. The maximum of 54 Mbps wireless rate is supported in this mode.</li> <li>- <b>11n</b>: If 802.11n is selected, only 11n wireless devices can connect to the wireless network. The maximum of 300 Mbps wireless rate is supported in this mode.</li> <li>- <b>11b/g mixed</b>: If 802.11b/g Mixed is selected, only 11b or 11g wireless devices can connect to the wireless network. The maximum of 54 Mbps wireless rate is supported in this mode.</li> <li>- <b>11g/n mixed</b>: If 802.11g/n Mixed is selected, only 11g or 11n wireless devices can connect to the wireless network. The maximum of 300 Mbps wireless rate is supported in this mode.</li> <li>- <b>11b/g/n mixed</b>: If 802.11b/g/n Mixed is selected, 11b, 11g or 11n wireless devices can connect to the wireless network. The maximum of 300 Mbps wireless rate is supported in this mode.</li> </ul> <p>In the 5 GHz network, the following network modes are supported:</p> <ul style="list-style-type: none"> <li>- <b>11a</b>: If 802.11a is selected, only 11a wireless devices can connect to the wireless network. The maximum of 54 Mbps wireless rate is supported in this mode.</li> <li>- <b>11n</b>: If 802.11n is selected, only 11n wireless devices can connect to the wireless network. The maximum of 300 Mbps wireless rate is supported in this mode.</li> <li>- <b>11ac</b>: If 802.11ac is selected, only 11ac wireless devices can connect to the wireless network. The maximum of 867 Mbps wireless rate is supported in this mode.</li> <li>- <b>11a/n mixed</b>: If 802.11a/n Mixed is selected, 11a or 11n wireless devices can connect to the wireless network. The maximum of 300 Mbps wireless rate is supported in this mode.</li> <li>- <b>11ac/n mixed</b>: If 802.11ac/n Mixed is selected, 11ac or 11n wireless devices can connect to the wireless network. The maximum of 867 Mbps wireless rate is supported in this mode.</li> <li>- <b>11a/n/ac mixed</b>: If 802.11a/n/ac Mixed is selected, 11a, 11n or 11ac wireless devices can connect to the wireless network. The maximum of 867 Mbps wireless rate is supported in this mode.</li> </ul> |

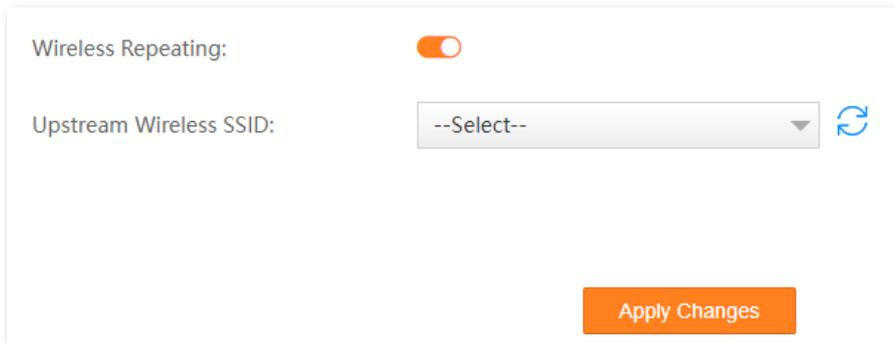
| Name      | Description   |
|-----------|---|
| Channel   | <p>It specifies the operating channel of modem router.</p> <p>If you select <b>Auto/Auto(DFS)</b>, the modem router automatically adjusts its operating channel according to the ambient environment.</p> <p>DFS: Dynamic Frequency Selection. With this function, the modem router will automatically detect the frequency of the radar system. When the modem router detects radar signals in the same frequency with the modem router itself, the modem router will automatically switch to another frequency to avoid interference with the radar system.</p>   |
| Bandwidth | <p>It specifies the channel bandwidth of the modem router.</p> <ul style="list-style-type: none"> <li>- <b>20</b>: It indicates that the channel bandwidth used by the modem router is 20 MHz.</li> <li>- <b>40</b>: It indicates that the channel bandwidth used by the modem router is 40 MHz.</li> <li>- <b>20/40</b>: It specifies that the modem router can switch its channel bandwidth between 20 MHz and 40 MHz based on the ambient environment.</li> <li>- <b>80</b>: It indicates that the channel bandwidth used by the modem router is 80 MHz. This option is available only at 5 GHz.</li> <li>- <b>20/40/80</b>: It specifies that the modem router can switch its channel bandwidth among 20 MHz, 40 MHz, and 80 MHz based on the ambient environment. This option is available only at 5 GHz.</li> </ul> |

## 8.3 Wireless repeating

### 8.3.1 Overview

With the wireless repeating function enabled, the modem router expands your existing Wi-Fi network for broader network coverage.

To access the configuration page, choose **Advance > Wi-Fi Settings > Wireless Repeating**.



Wireless Repeating:

Upstream Wireless SSID:  



- To use the wireless repeating function, the peer AP (Access Point) is required to support the Wireless Distribution System (WDS) function.
- When configuring the wireless repeating function, ensure that the Channel and Channel Bandwidth of both ends are the same.

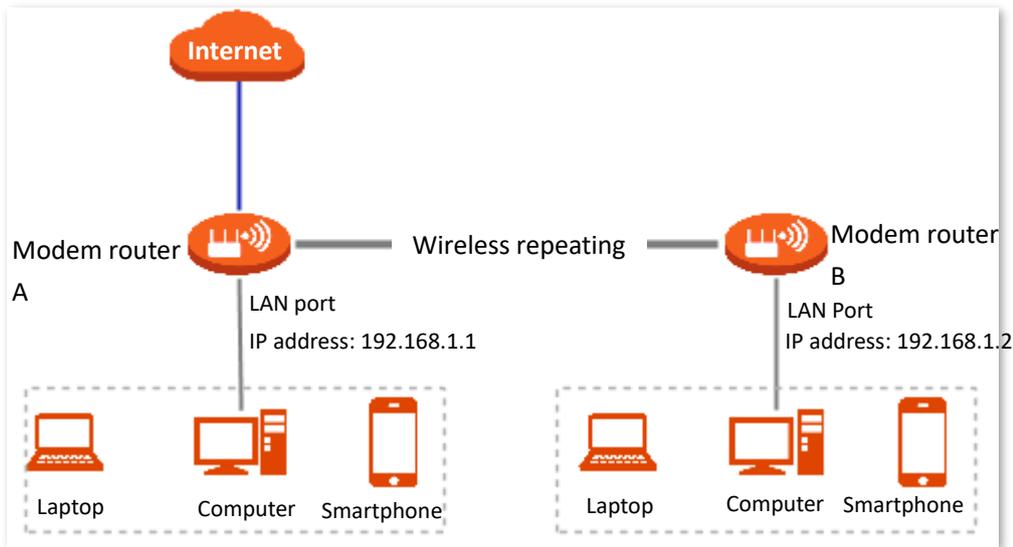
### 8.3.2 Example of using wireless repeating

#### Network requirements

You have established a wireless network using a modem router (A), now you want to expand the wireless network coverage using the modem router (B).

#### Solution

You can configure the wireless repeating function to meet the requirement. The topology is as shown below.



Assume that:

The 2.4 GHz radio band of the modem router is to be configured.

| Device         | Wi-Fi name | Wi-Fi password | Network Mode  | Channel | Bandwidth |
|----------------|------------|----------------|---------------|---------|-----------|
| Modem router A | My home    | MyHome123      | 11b/g/n mixed | 7       | 20        |
| Modem router B | My home    | MyHome123      | 11b/g/n mixed | 7       | 20        |

## Configuration procedure

**Step 1** Configure the modem router B.

1. Log in to the web UI of the modem router B.
2. Modify **Network Mode**, **Channel** and **Bandwidth**.
  - 1) Go to **Advance > Wi-Fi Settings > Channel & Bandwidth**.
  - 2) Set **Network Mode** to **11b/g/n mixed**.
  - 3) Set **Channel** to **Channel 7**.
  - 4) Set **Bandwidth** to **20**.

- 5) Click **Apply Changes**.

### Channel & Bandwidth

**2.4 GHz Network:**

Network Mode: 11b/g/n mixed ▼

Channel: Channel 7 ▼

Bandwidth: 20 ▼

**3. Configure the wireless repeating function.**

- 1) Go to **Advance > Wi-Fi Settings > Wireless Repeating**.
- 2) Turn on **Wireless Repeating**. Wait until the system completes scanning wireless networks.

Wireless Repeating:

Upstream Wireless SSID: Scanning... Please wait 10 seconds, do not jump to other pages

Apply Changes

- 3) Select the Wi-Fi name of modem router A from the **Upstream Wireless SSID** drop-down list.

Wireless Repeating:

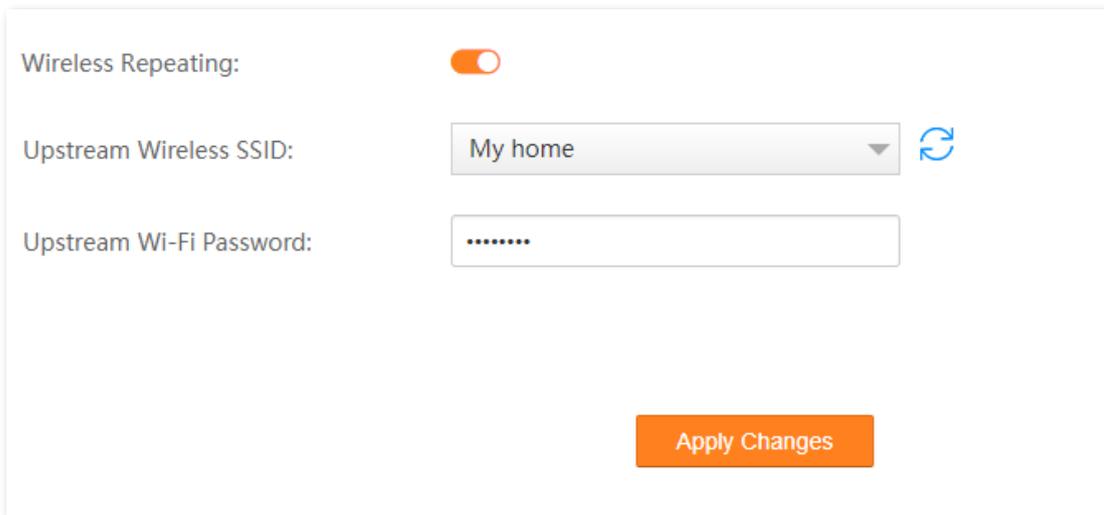
Upstream Wireless SSID: --Select-- ↻

Vendor: vendor\_wifi

- [blurred]
📶
- [blurred]
📶
- My home
🔒 📶
- [blurred]
🔒 📶
- [blurred]
📶
- [blurred]
🔒 📶

- 4) Enter the password of modem router A, which is **MyHome123** in this example.

- 5) Click **Apply Changes**.



Wireless Repeating:

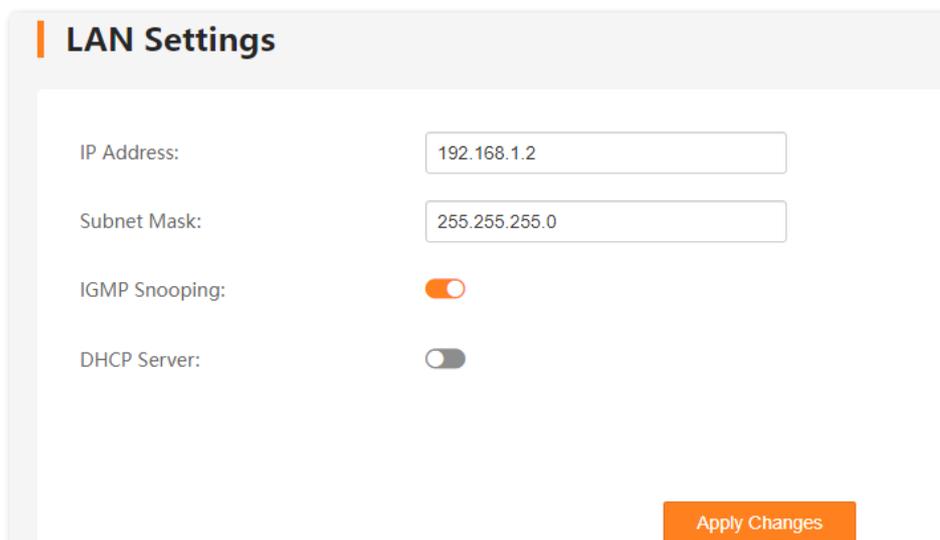
Upstream Wireless SSID:  

Upstream Wi-Fi Password:

**Apply Changes**

4. Modify **LAN IP address**, and disable the **DHCP server** function.

- 1) Go to **Advance > Internet Settings > LAN Settings**.
- 2) Set **IP address** to an unused IP address belonging to the same network segment as that of modem router A.  
For example, if the IP address of modem router A is **192.168.1.1**, you can set this device's IP address to **192.168.1.X** (X ranges from 2 to 254).
- 3) Set **Subnet Mask** to the same one of the modem router A.
- 4) Turn off **DHCP Server**.
- 5) Click **Apply Changes**.



### LAN Settings

IP Address:

Subnet Mask:

IGMP Snooping:

DHCP Server:

**Apply Changes**

- Step 2** Repeat **Step 1** to set the modem router A to Repeater mode while the following parameters differ:
- Select the SSID of modem router B, which is **My home** in this example.
  - Do not change the LAN IP address of modem router A.
  - Do not disable the DHCP server function of modem router A.

----End

## Verification

- Step 1** Log in to the web UI of modem router A, and go to **Advance > System Settings > Diagnostics**.
- Step 2** In the **Ping Diagnostics** module, set **Host Address** to the LAN IP address of the modem router B, and click **Go**.



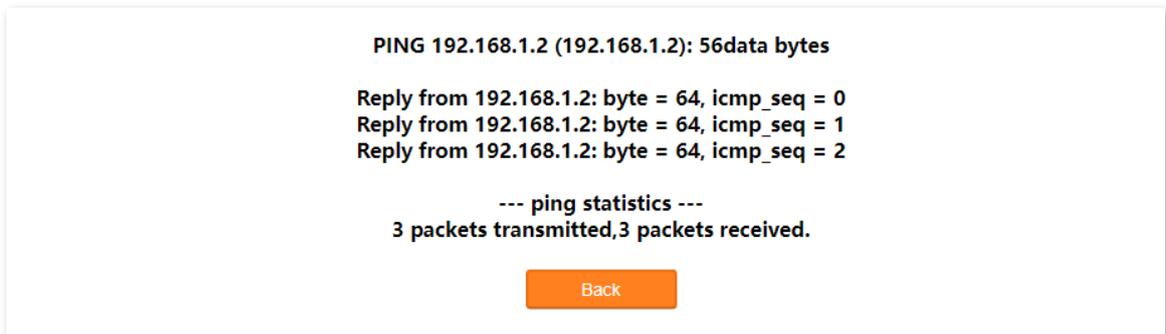
**Diagnostics**

**Ping Diagnostics**

Host Address:

----End

The wireless repeating is successful when the ping succeeds.



```
PING 192.168.1.2 (192.168.1.2): 56data bytes
Reply from 192.168.1.2: byte = 64, icmp_seq = 0
Reply from 192.168.1.2: byte = 64, icmp_seq = 1
Reply from 192.168.1.2: byte = 64, icmp_seq = 2

--- ping statistics ---
3 packets transmitted, 3 packets received.
```

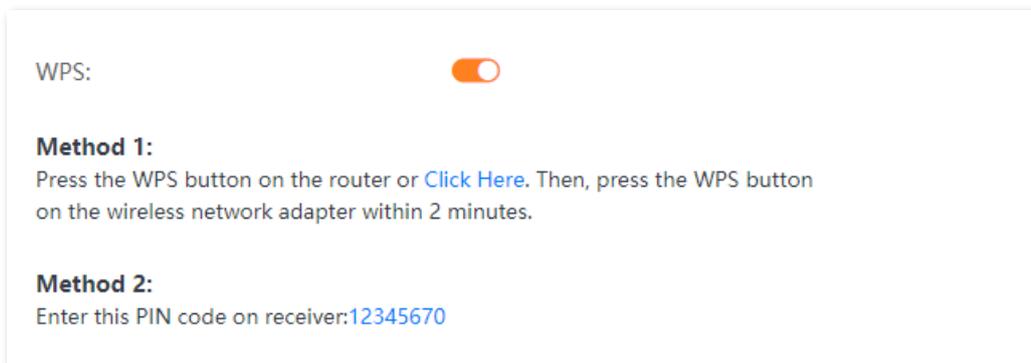
Now, the devices connected to the modem router B can access the internet.

## 8.4 WPS

### 8.4.1 Overview

Wi-Fi Protected Setup (WPS) makes it easy for home users who know little of wireless security to establish a home network, as well as to add new devices to an existing network without entering long passphrases or configuring complicated settings. Users can set up network connections simply by entering a PIN code or pressing the WPS button.

To access the configuration page, choose **Advance > Wi-Fi Settings > WPS**. Select **WPS** to enable the WPS function.

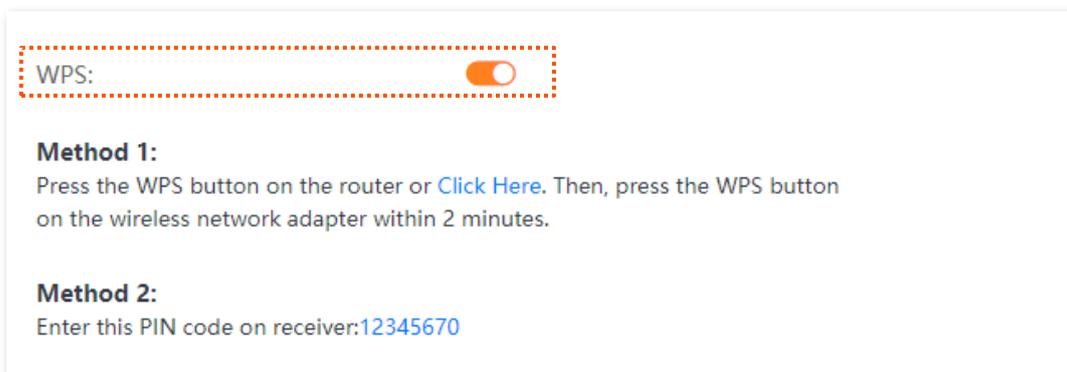


### 8.4.2 Connect the Wi-Fi networking using PBC negotiation

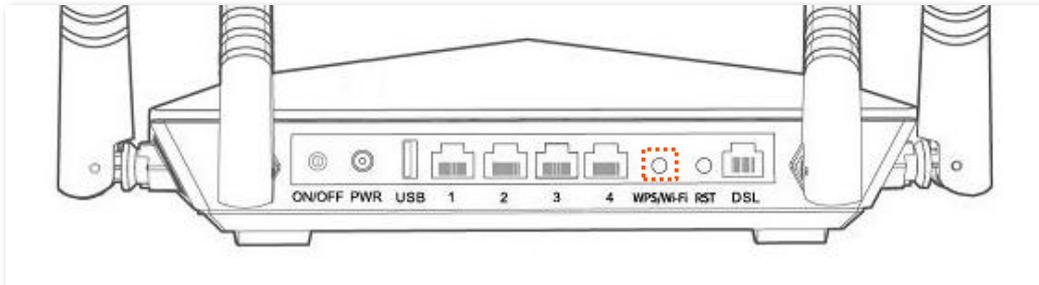
Use the WPS button on the modem router to connect clients to the modem router.

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Wi-Fi Settings > WPS** to enter the configuration page.

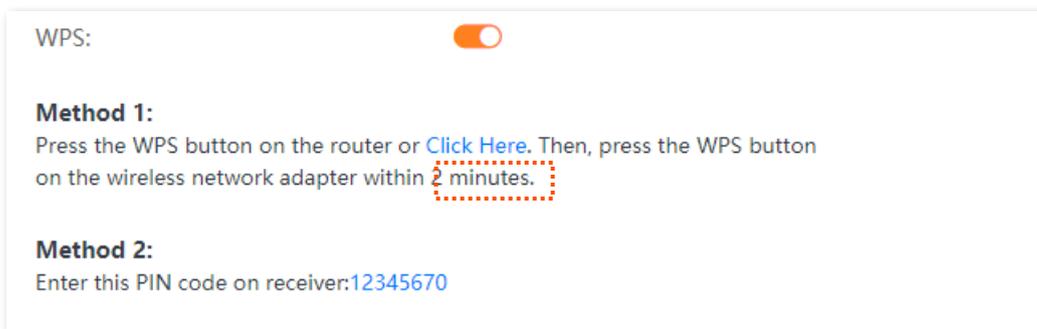
**Step 2** Turn on **WPS**.



- Step 3** Press the **WPS** button on the modem router for 3 seconds and then release it, or click **Click Here** under **Method 1** on the web UI. The **WPS** LED indicator starts blinking, indicating the devices are negotiating.



or



- Step 4** Within 2 minutes, enable the WPS negotiation function on your wireless device.

**----End**

When the WPS LED turns to solid green, it indicates that the PBC negotiation is successful. The wireless device is connected to the modem router, and the wireless network is encrypted.

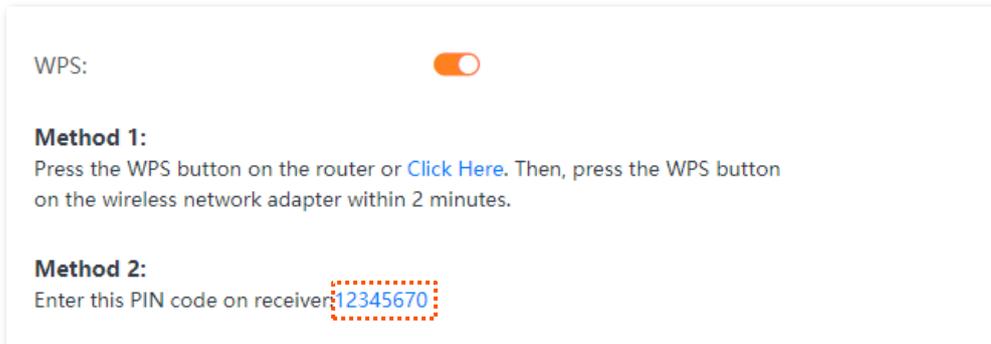
### 8.4.3 Connect the Wi-Fi networking using PIN code

Use the PIN code of the modem router to connect clients to the modem router.

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Wi-Fi Settings > WPS** to enter the configuration page.

**Step 2** Turn on **WPS**.

**Step 3** Check the PIN code of the modem router and enter it on your wireless device.



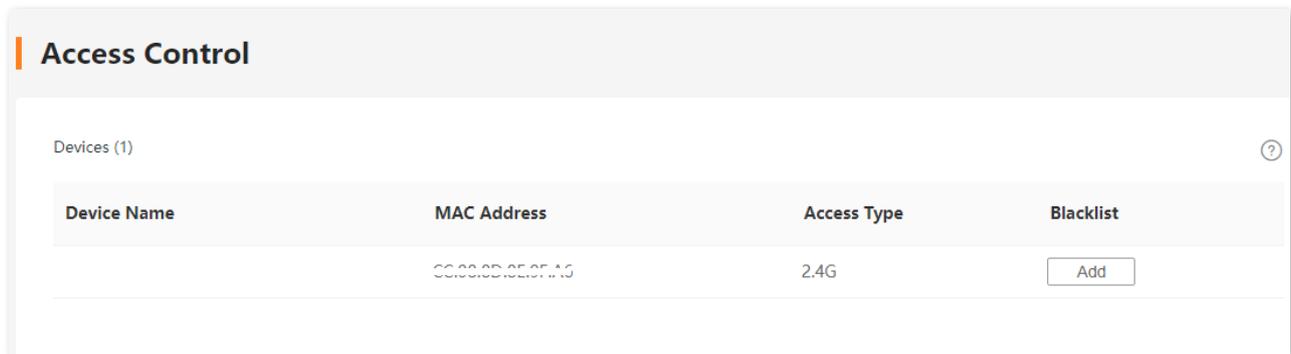
----End

Wait a moment until the WPS negotiation is completed, and the wireless device is connected to the Wi-Fi network.

## 8.5 Access control

This section allows you to block or allow clients to access the network.

To access the page, choose **Advance > Wi-Fi Settings > Access Control**.



### Parameter description

| Name        | Description  |
|-------------|--|
| Device Name | It specifies the name of the connected device.   |
| MAC Address | It specifies the MAC address of the connected device.  |
| Access Type | It specifies the way by which the client connects to the modem router.   |
| Blacklist   | It is used to add/remove the client to/from the blacklist. If a client is added to the blacklist, it cannot connect to the corresponding wireless network of the modem router. |

## 8.6 Guest network

### 8.6.1 Overview

This section allows you to configure the Guest Network function and change the guest network's Wi-Fi name and password. Devices connected to the guest network can access the internet and communicate with each other, but cannot access the modem router's web UI or the master network. This function not only enables guests to access the internet but also ensures the security of the master network.

To access the configuration page, choose **Advance > Wi-Fi Settings > Guest Network**.

Guest Network:

2.4 GHz Wireless SSID:

5 GHz Wireless SSID:

Guest Wireless Key:

Validity:

#### Parameter description

| Name                    | Description   |
|-------------------------|---|
| Guest Network           | It is used to enable/disable the guest network function. By default, this function is disabled.   |
| 2.4/5 GHz Wireless SSID | They specify the Wi-Fi names and password of the modem router's guest network. By default, <b>Tenda_VIP</b> is for a 2.4 GHz Wi-Fi network and <b>Tenda_VIP_5G</b> for a 5 GHz Wi-Fi network.   |
| Guest Wireless Key      | <p> <b>TIP</b></p> <p>For some versions (such as the Australian version), a maximum of four 2.4 GHz wireless SSIDs and four 5 GHz wireless SSIDs can be set. They are named from <b>Guest 2.4G-1</b> to <b>Guest 2.4G-4</b> and <b>Guest 5G-1</b> to <b>Guest 5G-4</b> by default. You can click  behind the SSIDs to enable or disable them.</p> |
| Validity                | It specifies the validity of the guest networks. The Guest Network function will be disabled automatically out of the specified time so wireless devices cannot search it. Please set the validity as needed.   |

## 8.6.2 Configure the guest network

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Wi-Fi Settings > Guest Network** to enter the configuration page.
- Step 2** Turn on **Guest Network**.
- Step 3** Configure **2.4 GHz Wireless SSID** and **5 GHz Wireless SSID**, which is **My home** and **My home\_5G** in this example.
- Step 4** Configure **Guest Wireless Key**, which is **MyHome123** in this example.
- Step 5** Set **Validity**, which is **Always** in this example.
- Step 6** Click **Apply Changes**.

Guest Network:

2.4 GHz Wireless SSID:

5 GHz Wireless SSID:

Guest Wireless Key:

Validity:  ▾

----End

# 9 Services

## 9.1 DDNS

### 9.1.1 Overview

If your ISP provides you with a static public IP address, you can register a domain name and have that name associated with your IP address by public DNS servers. However, if your ISP provides you with a dynamic public IP address, the address can change frequently. In this case, you can use the Dynamic DNS service, which can map the dynamic WAN IP address of the modem router to a domain name for dynamic domain name resolution, helping internet users (WAN side) access the modem router by a static domain name.

Enable:

DDNS Provider:  Register

Hostname:

User Name:

Password:

Connection Status: Cannot connecting to provider

[Apply Changes](#)

#### Parameter description

| Name   | Description                                     |
|--------|---|
| Enable | It is used to enable/disable the DDNS function. |

| Name              | Description  |
|-------------------|--|
| DDNS Provider     | It specifies the DDNS provider. This modem router supports two providers: <b>DynDNS.org</b> and <b>NO-IP.com</b> . |
| Hostname          | It specifies the DDNS domain name registered with your DDNS service provider.                                      |
| User Name         | They specify the user name/password registered with your DDNS service provider.                                    |
| Password          |  |
| Connection Status | It specifies whether the modem router connects to the DDNS provider.   |

## 9.1.2 Configure DDNS

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Services > DDNS** to enter the configuration page.
- Step 2** Turn on **Enable**.
- Step 3** Select a DDNS provider from the drop-down list.



**TIP**  
If you do not have a DDNS account, please select a service provider and click **Register** to have one on the website of the service provider.

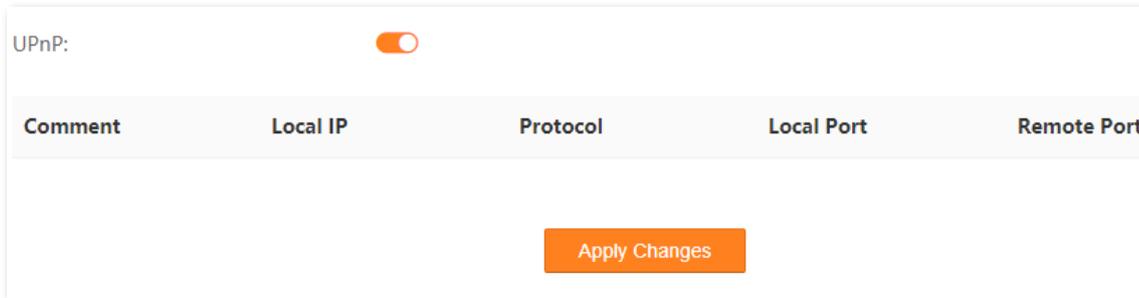
- Step 4** Set the **Hostname** to the DDNS domain name registered from the DDNS service provider.
- Step 5** Enter the **User Name** and **Password** applied from the DDNS service provider for logging in to the DDNS service.
- Step 6** Click **Apply Changes**.

----End

## 9.2 UPnP

UPnP is short for Universal Plug and Play. This function enables the modem router to open ports automatically for UPnP-based programs. It is generally used for P2P programs, such as BitComet and AnyChat, and helps increase the download speed.

Choose **Advance > Services > UPnP** to enter the page.



| Comment | Local IP | Protocol | Local Port | Remote Port |
|---------|----------|----------|------------|-------------|
|---------|----------|----------|------------|-------------|

Apply Changes

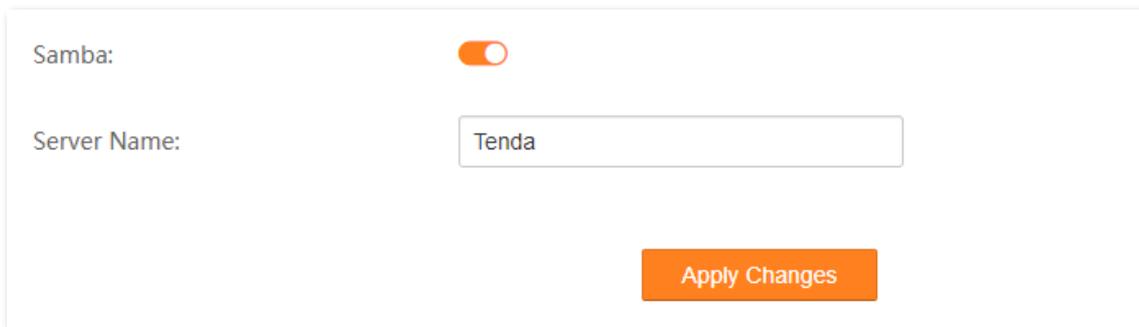
If the UPnP function is enabled, when UPnP-based programs, such as BitComet and AnyChat, are running on the local network, the external and internal mapping relationships are displayed on the page.

## 9.3 Samba

### 9.3.1 Overview

The modem router supports data sharing with a USB storage device over the LAN through Samba.

Choose **Advance** > **Services** > **Samba** to enter the page.



Samba:

Server Name:

[Apply Changes](#)

### 9.3.2 Example of configuring the storage service function

#### Network requirements

A V12 modem router is used to set up a LAN in an apartment. Users in the apartment need to share some pictures and videos over the LAN through Samba.

#### Solution

Connect a USB storage device with the pictures and videos to the USB port of the modem router. The modem router can function as a file server.

Assume that:

The server address is **192.168.1.1** (LAN IP address of the modem router).

#### Configuration procedure

- Step 1** Insert the USB storage device (compliant with USBV2.0 port) to the USB port of the modem router.
- Step 2** [Log in to the Advance page of the modem router](#), and choose **Advance** > **Services** > **Samba** to enter the configuration page.
- Step 3** Turn on **Samba**.
- Step 4** Set **Server Name**, which is **Tenda** in this example.

**Step 5** Click **Apply Changes**.

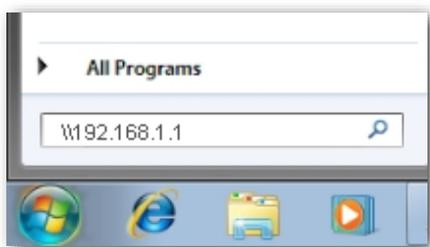


-----End

## Verification

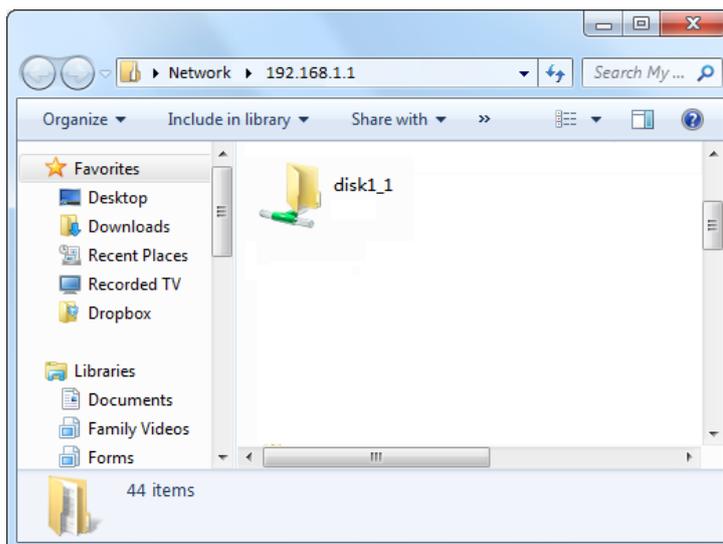
To access the USB storage device over the LAN through Samba, perform the following procedure:  
(Windows 7 used as an example)

**Step 1** Click  and enter \\192.168.1.1.



**Step 2** Press **Enter** on the keyboard.

**Step 3** Double-click the **disk1\_1** folder.



-----End

## 9.4 FTP server

### 9.4.1 Overview

Besides Samba, the modem router supports data sharing with a USB storage device over the LAN through FTP Server.

Choose **Advance** > **Services** > **FTP Server** to enter the page.

### 9.4.2 Example of configuring the storage service function

#### Network requirements

A V12 modem router is used to set up a LAN in an apartment. Users in the apartment need to share some pictures and videos over the LAN through the FTP server.

#### Solution

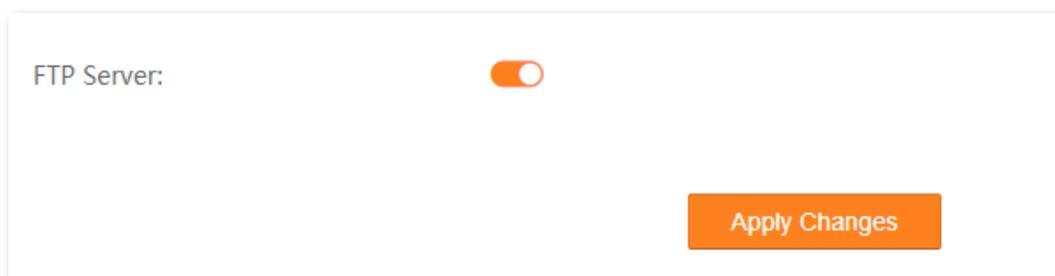
Connect a USB storage device with the pictures and videos to the USB port of the modem router. The modem router can function as a file server.

Assume that:

The server address is **192.168.1.1** (LAN IP address of the modem router).

#### Configuration procedure

- Step 1** Insert the USB storage device (compliant with USBV2.0 port) to the USB port of the modem router.
- Step 2** [Log in to the Advance page of the modem router](#), and choose **Advance** > **Services** > **FTP Server** to enter the configuration page.
- Step 3** Turn on **FTP Server**.
- Step 4** Click **Apply Changes**.



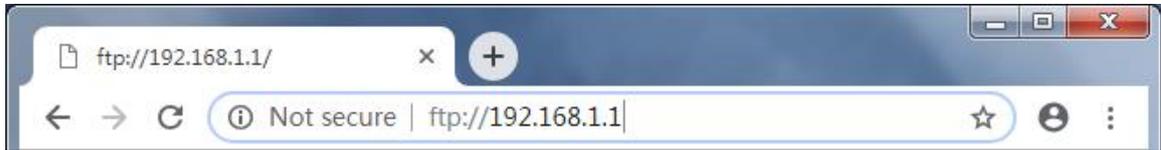
-----End

## Verification

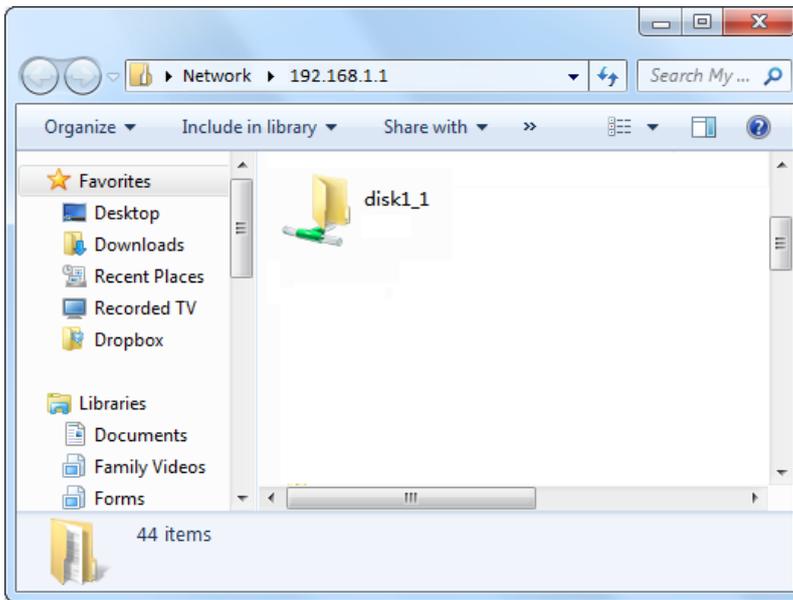
To access the USB storage device over the LAN through FTP, perform the following procedure:

**Step 1** Start a web browser (such as Chrome), and enter **ftp://192.168.1.1** in the address bar.

**Step 2** Press **Enter** on the keyboard.



**Step 3** Double-click the **disk1\_1** folder.



-----End

## 9.5 Port Forwarding

### 9.5.1 Overview

By default, internet users cannot actively access the LAN of the modem router.

The port forwarding function opens a port of the modem router, and binds the LAN server to the port using the server's IP address and intranet service port. All access requests to the WAN port of the modem router will be directed to the server. Therefore, the server within the LAN can be accessed by internet users and the LAN can be free from attacks from the internet.

For example, the port forwarding function enables internet users to access web servers or FTP servers within the LAN.

| Current Port Forwarding Table <span style="float: right;">?</span> |          |                            |          |         |
|--|----------|----------------------------|----------|---------|
| <a href="#">Add</a>  |          | <a href="#">Delete All</a> |          |         |
| Internal IP Address  | LAN Port | WAN Port                   | Protocol | Operate |

### 9.5.2 Example of configuring port forwarding

#### Network requirements

A V12 modem router is used to set up a LAN in an apartment, and you have set up an FTP server within the LAN. You want to open the FTP server to internet users and enable family members to access the resources of the FTP server when they are not at home.

#### Solution

You can configure the port forwarding function to reach the goal.

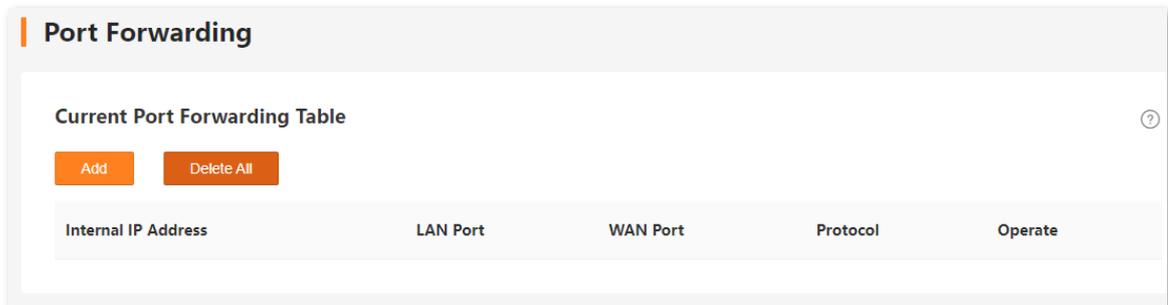
Assume that:

- IP Address of the FTP server: 192.168.1.100
- Service port of the FTP server in LAN: 21
- External port that this device enables for internet devices: 21
- WAN IP Address of the device: 202.105.11.22

## Configuration procedure

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Services > Port Forwarding** to enter the configuration page.

**Step 2** Click **Add**.



**Step 3** Enter the **Internal IP Address**, which is **192.168.1.100** in this example.

**Step 4** Set **LAN port** and **WAN port**, which are both **21** in this example.

**Step 5** Select **Protocol** from the drop-down list, which is **Both** in this example.

**Step 6** Click **Add**.

----End

### Parameter description

| Name                | Description  |
|---------------------|--|
| Internal IP Address | It specifies the IP address of a server that resides on the LAN. |
| LAN Port            | It specifies the service port number of the internal server.     |

| Name     | Description   |
|----------|---|
| WAN Port | It specifies the service port number for internet users to access a specified service.  |
| Protocol | It specifies the protocol that specified service uses, including <b>TCP</b> , <b>UDP</b> , and <b>Both</b> . <b>Both</b> indicates that both TCP and UDP are used. If you are uncertain about it, <b>Both</b> is recommended. |

## Verification

Enter **Protocol name://WAN port IP address:External port** in the address bar of a web browser on a computer over the internet to access the resources on the FTP server. In this example, enter **ftp://202.105.11.22:21**.



If internet users still cannot visit the FTP server in LAN after the configuration, try the following solutions:

- Ensure that the WAN IP address of the modem router is public, and the internal port you entered is correct.
- Security software, antivirus software, and the built-in OS firewall of the Server may cause port forwarding function failures. Disable them and try again.

## 9.6 DMZ

### 9.6.1 Overview

A Demilitarized Zone (DMZ) host on a LAN is free from restrictions when communicating with the internet. It is useful for getting a better and smoother experience in video conferences and online games. You can also set the host of a server within the LAN as a DMZ host when you need to access the server from the internet.



- A DMZ host is not protected by the firewall of the modem router. A hacker may leverage the DMZ host to attack your LAN. Therefore, enable the DMZ function only when necessary.
- Hackers may leverage the DMZ host to attack the local network. Do not use the DMZ host function randomly.
- Security software, antivirus software, and the built-in OS firewall of the computer (DMZ host) may cause DMZ function failures. Disable them when using the DMZ function. If the DMZ function is not required, it is recommended that you disable it and enable your firewall, security, and antivirus software.

### 9.6.2 Example of configuring DMZ

#### Network requirements

A V12 modem router is used to set up a LAN in an apartment. You want your friends to visit the resources on the web server in the LAN.

#### Solution

You can use the DMZ Host function to meet the requirement.

Assume that:

- WAN IP address of the device: 202.105.11.22
- IP address of the internal web server: 192.168.1.100
- Service port of the web server: 80

#### Configuration procedure

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Services > DMZ** to enter the configuration page.

**Step 2** Turn on **DMZ Host**.

**Step 3** Set **DMZ Host IP Address**, which is **192.168.1.100** in this example.

**Step 4** Click **Apply Changes**.

DMZ Host:

DMZ Host IP Address:

Apply Changes

----End

**Parameter description**

| Name                | Description  |
|---------------------|--|
| DMZ Host            | It is used to enable/disable the DMZ function.<br>If DMZ is enabled for a LAN host, the host is exposed over the internet for unlimited two-way communication. |
| DMZ Host IP Address | It specifies the IP address of the host that is to be set as the DMZ host.   |

**Verification**

Enter **Protocol name://WAN IP address:port number** in the address bar of a web browser on a computer over the internet to access the resources on the web server. In this example, enter **http://202.105.11.22:80**.

If the [DDNS](#) function is enabled, you can visit an address in the form of **Protocol name://domain name:port number**.



If the internet user still cannot visit the web server in LAN after the configuration, try the following solutions:

- Ensure that the WAN IP address is public. A private WAN IP address may invalidate the port forwarding function. Common IPv4 IP addresses include A, B, and C types: A type ranges from 10.0.0.0 to 10.255.255.255; B type ranges from 172.16.0.0 to 172.31.255.255; C type ranges from 192.168.0.0 to 192.168.255.255.
- Security software, antivirus software, and the built-in OS firewall of the DMZ host may cause port forwarding function failures. Disable them and try again.
- Assign a static IP address to the DMZ host in case of service interruption caused by the dynamic IP address.

## 9.7 IPTV

### 9.7.1 Overview

If the IPTV service is included in the broadband service you purchased, you can enable the IPTV function to enjoy both internet access and IPTV programs through the modem router at the same time.

To access this page, choose **IPTV** on the upper right corner of the **EasySet** page or choose **Advance > Service > IPTV**.

Enable IPTV:

Layer2 Interface:  ATM Interface  ETH Interface  PTM Interface

Port Mapping:  lan1  lan2  lan3  lan4  Tenda\_803E7B\_5G  Tenda\_803E7B

VPI:  [0-255]

VCI:  [0-65535]

#### Parameter description

| Name             | Description   |
|------------------|---|
| Enable IPTV      | It is used to enable/disable the IPTV function.   |
| Layer2 Interface | It is required when the IPTV function is enabled. The modem router provides the following three interfaces: <ul style="list-style-type: none"> <li>- <b>ATM Interface:</b> Used for ADSL broadband internet service.</li> <li>- <b>ETH Interface:</b> Used for connecting to the internet with an Ethernet cable.</li> <li>- <b>PTM Interface:</b> Used for accessing VDSL broadband internet service.</li> </ul> |
| Port Mapping     | It specifies the port or Wi-Fi network used for connecting an IPTV set-top-box (STB). After the configuration is complete, the port selected can be connected to the IPTV STB only.   |
| VPI              | They are required when <b>Layer2 Interface</b> is set to <b>ATM interface</b> . They specify the VPI and VCI of the ISP, which should be provided by your ISP.  |
| VCI              |   |

| Name                  | Description   |
|-----------------------|---|
| Enter 802.1P Priority | It is required when <b>Layer2 Interface</b> is set to <b>PTM interface</b> . It specifies a priority level between 0 and 7. <b>0</b> and <b>7</b> indicate lowest and highest levels, respectively.<br><br>The value of this parameter is provided by your ISP. |
| Enter 802.1Q VLAN ID  | It is required when <b>Layer2 Interface</b> is set to <b>PTM interface</b> . It specifies a VLAN ID number. The value of this parameter is provided by your ISP.  |

## 9.7.2 Example of configuring the IPTV function

### Network requirements

The IPTV service is included in your VDSL broadband service. You want to watch IPTV programs through the modem router.

### Solution

You can configure the IPTV function to meet the requirement.

Assume that:

- Layer 2 interface: PTM interface
- 802.1P Priority for IPTV service: 5
- 802.1Q VLAN ID for IPTV service: 2000

### Configuration procedure

**Step 1** Configure your modem router.

1. [Log in to the Advance page of the modem router](#), and choose **Advance > Services > IPTV** to enter the configuration page.
2. Turn on **Enable IPTV**.
3. Select **PTM Interface**.
4. Select a port to serve as an IPTV port for connection, which is **lan1** in this example.
5. Set **Enter 802.1P Priority**, which is **5** in this example.
6. Set **Enter 802.1Q VLAN ID**, which is **2000** in this example.

**7. Click Apply Changes.**

### IPTV

Enable IPTV:

Layer2 Interface:  ATM Interface  ETH Interface  PTM Interface

Port Mapping:  lan1  lan2  lan3  lan4  Tenda\_888888

Enter 802.1P Priority:  [0-7]

Enter 802.1Q VLAN ID:  [1-4094]

**Step 2** Connect your IPTV STB to port 1 of the modem router, and configure your IPTV STB.

-----End

## Verification

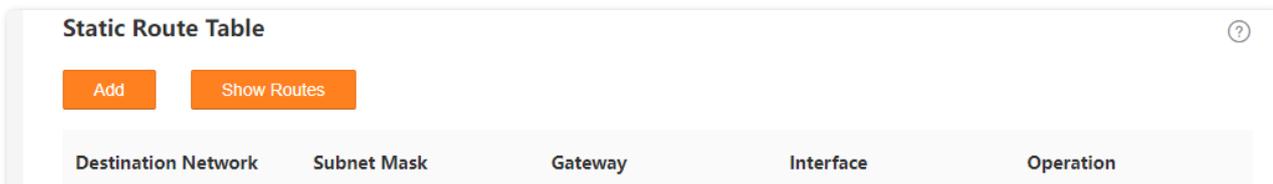
When completing the configurations, you can watch IPTV programs on your TV.

# 10 Advanced

## 10.1 Routing

This section allows you to view and configure routes for the modem router.

To access the configuration page, choose **Advance > Advanced > Routing**.



### Parameter description

| Name                | Description   |
|---------------------|---|
| Destination Network | It specifies the IP address of the target host or network.  |
| Subnet Mask         | It specifies the subnet mask of the destination address.  |
| Gateway             | It specifies the ingress IP address of the next hop route after the data packet exits from the interface of the modem router.   |
| Interface           | It specifies the interface for the outgoing data.<br><b>Any</b> indicates that the system automatically uses one of the WAN interfaces that can access the internet for the outgoing data.                                    |
| Operation           | The following two operations are available: <ul style="list-style-type: none"> <li>- <b>Add</b>: Used to add a route.</li> <li>- <b>Show Routes</b>: Used to display the commonly used routes of the modem router.</li> </ul> |



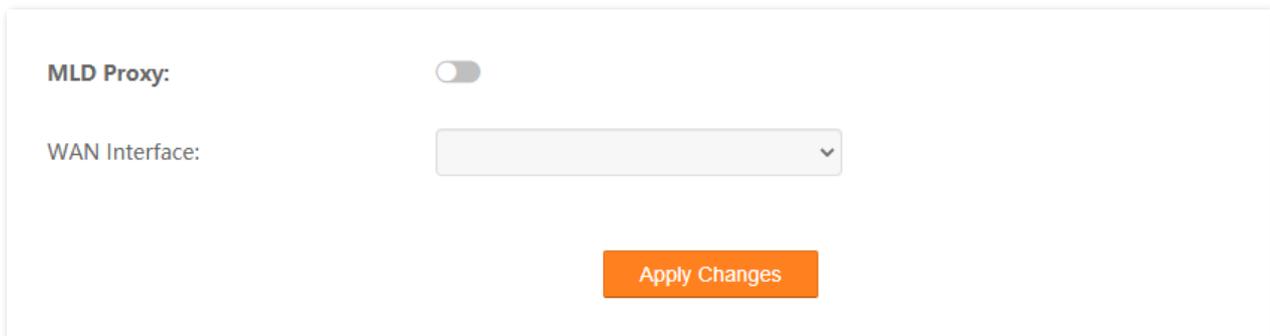
When **Destination Network** and **Subnet Mask** are both **0.0.0.0**, it indicates that this is the default route. When the route of packets cannot be found in the routing table, the modem router will forward the packets using the default route.

When **Gateway** is displayed as **\***, it indicates that the destination network is directly connected to the modem router.

## 10.2 MLD proxy

Multicast Listener Discovery (MLD) is used by IPv6 routers for discovering multicast listeners on a directly attached link. MLD proxy functions enable the modem router to learn proxy group membership information and forward membership report messages through the upstream interface.

To access the configuration page, choose **Advance > Advanced > MLD Proxy**.



MLD Proxy:

WAN Interface:

Apply Changes

## 10.3 SNMP

### 10.3.1 Overview

Simple Network Management Protocol (SNMP) is the most widely used network management protocol in TCP/IP networks. SNMP enables you to remotely manage all your network devices compliant with this protocol, such as monitoring the network status, changing network device settings, and receiving network event alarms.

SNMP allows automatic management of devices from various vendors regardless of physical differences among the devices.

#### SNMP Management Framework

The SNMP management framework consists of the SNMP manager, SNMP agent, and Management Information Base (MIB).

- SNMP manager: It is a system that controls and monitors network nodes using the SNMP protocol. The SNMP manager most widely used in network environments is Network Management System (NMS). An NMS can be a dedicated network management server, or an application that implements management functions in a network device.
- SNMP agent: It is a software module in a managed device. The module is used to manage data about the device and report the management data to an SNMP manager.
- MIB: It is a collection of managed objects. It defines a series of attributes of managed objects, including names, access permissions, and data types of objects. Each SNMP agent has its MIB. An SNMP manager can read and/or write objects in the MIB based on the permissions assigned to the SNMP manager.

An SNMP manager manages SNMP agents in an SNMP network. The SNMP manager exchanges management information with the SNMP agents using the SNMP protocol.

The modem router is compatible with SNMP V1 and SNMP V2C and adopts the community authentication mechanism.

To access the configuration page, choose **Advance > Advanced > SNMP**.

## SNMP

SNMP:

System Description:

System Contact:

System Name:

System Location:

System Object ID:

Trap IP Address:

Community name (read-only):

Community name (write-only):

[Apply Changes](#)

### Parameter description

| Name               | Description  |
|--------------------|--|
| SNMP               | It is used to enable or disable the SNMP function.   |
| System Description | It specifies the description of the modem router.  |
| System Contact     | It specifies the contact information of the modem router.  |
| System Name        | It specifies the device name of the modem router.  |
| System Location    | It specifies the location where the modem router is used.  |
| System Object ID   | It specifies the object ID of the modem router, which can be used by the SNMP manager to identify and manage the modem router. |

| Name                        | Description   |
|-----------------------------|---|
| Trap IP Address             | It specifies the IP address of the server or terminal where alarm information is sent to.                         |
| Community name (read-only)  | It specifies the read password shared between SNMP managers and this SNMP agent.<br>The default value is public.  |
| Community name (write-only) | It specifies the write password shared between SNMP managers and this SNMP agent.<br>The default value is public. |

## 10.3.2 Example of configuring SNMP

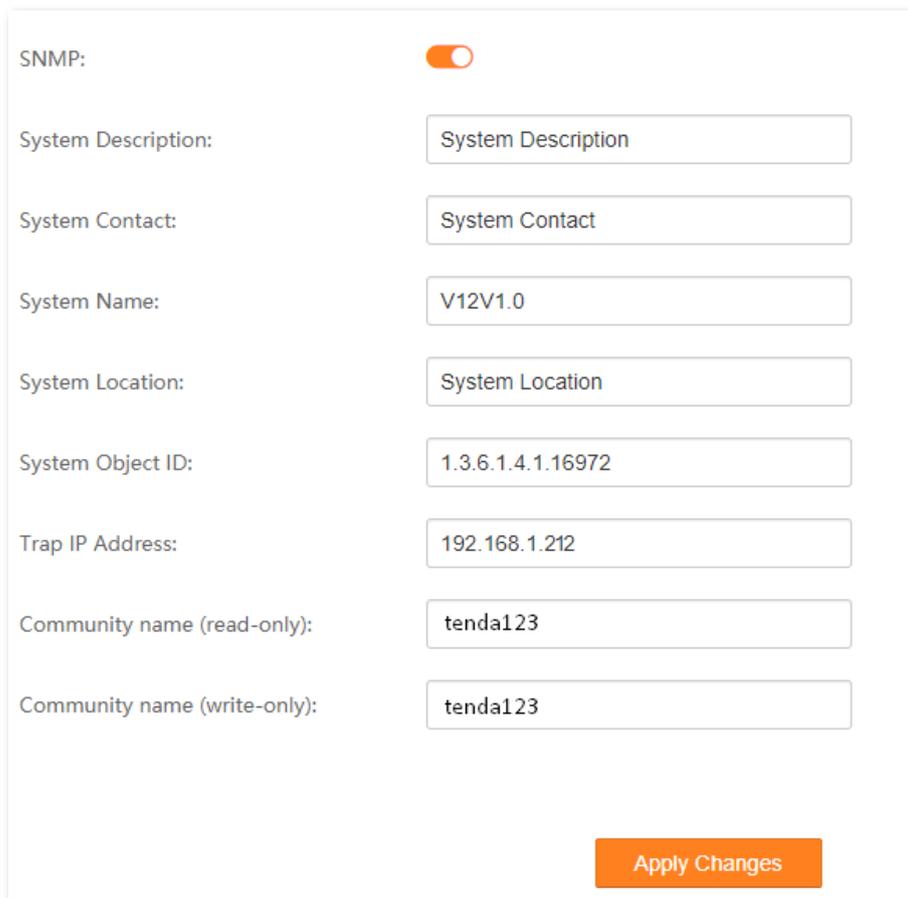
### Network requirements

- The modem router connects to an NMS over a LAN. The network address of the modem router is 192.168.1.1/24 and the network IP address of the NMS is 192.168.1.212/24.
- The NMS uses SNMP V1 or SNMP V2C to monitor and manage the modem router.
- Assume that Read Community is tenda, and Read/Write Community is tenda123.

### Configuration procedure

**Step 1** Configure the modem router.

1. [Log in to the \*\*Advance\*\* page of the modem router](#), and choose **Advance > Advanced > SNMP** to access the configuration page.
2. Turn on **SNMP**.
3. Set **System Description**, **System Contact**, **System Name** and **System Location** of the modem router.
4. Set **System Object ID** based on your need.
5. Set **Trap IP Address** to the IP address of the Trap Manager, which is **192.168.1.212** in this example.
6. Set **Community name (read-only)** to the password for reading data, which is **tenda123** in this example.
7. Set **Community name (write-only)** to the password for writing data, which is **tenda123** in this example.

**8. Click Apply Changes.**

SNMP:

System Description:

System Contact:

System Name:

System Location:

System Object ID:

Trap IP Address:

Community name (read-only):

Community name (write-only):

**Step 2** Configure the NMS.

On an NMS that uses SNMP V1 or SNMP V2C, set the read community to **tenda123** and read/write community to **tenda123**. For details about how to configure the NMS, refer to the configuration guide for the NMS.

----End

**Verification**

After the configuration, the NMS can connect to the SNMP agent of the modem router and you can query and set some parameters on the SNMP agent through the MIB.

## 10.4 TR069

The CPE WAN Management Protocol (TR-069) allows an Auto-Configuration Server (ACS) from the internet to perform auto-configuration, provision, collection, and diagnostics to the modem router.

To access the configuration page, choose **Advance > Advanced > TR069**.

|  |  |
|--|--|
| TR069 Daemon:                                | <input checked="" type="checkbox"/>    |
| <b>ACS</b>                                   |  |
| URL:   | <input type="text"/>                   |
| User Name:                                   | <input type="text" value="admin"/>     |
| Password:                                    | <input type="password" value="....."/> |
| Periodic Inform:                             | <input checked="" type="checkbox"/>    |
| Periodic Inform Interval:                    | <input type="text" value="300"/>       |
| <b>Connection Request:</b>                   |  |
| Authentication:                              | <input checked="" type="checkbox"/>    |
| User Name:                                   | <input type="text" value="admin"/>     |
| Password:                                    | <input type="password" value="....."/> |
| Port:  | <input type="text" value="58000"/>     |
| <input type="button" value="Apply Changes"/> |  |

**Parameter description**

| Name                     | Description   |
|--------------------------|---|
| TR069 Daemon             | It is used to enable or disable the TR069 function.   |
| URL                      | It specifies the domain name of the ACS.  |
| User Name                | It specifies the user name used to authenticate the modem router when the modem router connects to the ACS using the CPE WAN management protocol. |
| Password                 | It specifies the password used to authenticate the modem router when the modem router connects to the ACS using the CPE WAN management protocol.  |
| ACS                      | Periodic Inform   |
| Periodic Inform          | It is used to enable/disable the modem router to periodically inform ACS.   |
| Periodic Inform Interval | It specifies the interval at which the modem router sends messages to inform ACS.   |
| Authentication           | It specifies whether authentication is required for the ACS to connect the modem router.  |
| User Name                | It specifies the user name used to authenticate the ACS when it sends the connection request to the modem router.                                 |
| Password                 | It specifies the password used to authenticate the ACS when it sends the connection request to the modem router.                                  |
| Port                     | It specifies the port used to receive the connection request sent by the ACS.   |
| Connection Request       |   |

# 11 VPN

## 11.1 PPTP & L2TP VPN

### 11.1.1 Overview

A Virtual Private Network (VPN) is a private network built on a public network (usually the internet). This private network exists only logically and has no actual physical lines. VPN technology is widely used in corporate networks to share resources between corporate branches and headquarters, while ensuring that these resources are not exposed to other users on the internet.

This modem router can function as two kinds of VPN clients: Point to Point Tunneling Protocol (PPTP) or Layer 2 Tunneling Protocol (L2TP) client. The following section describes how to configure the modem router as a PPTP/L2TP client. If you set up a PPTP/L2TP server, you can enable the PPTP/L2TP client function to help you visit the PPTP/L2TP server.

|  |  |
|--|--|
| PPTP/L2TP Client:                      | <input checked="" type="checkbox"/>                              |
| Client Type:                           | <input checked="" type="radio"/> PPTP <input type="radio"/> L2TP |
| Server IP Address/Domain Name:         | <input type="text"/>   |
| User Name:                             | <input type="text"/>   |
| Password:                              | <input type="text"/>   |
| Default Gateway:                       | <input type="checkbox"/>   |
| Status:                                | Disconnected   |
| <input type="button" value="Connect"/> |  |

## Parameter description

| Name                          | Description  |
|-------------------------------|--|
| PPTP/L2TP Client              | It is used to enable or disable the PPTP/L2TP Client function.<br>This function allows the modem router to work as a VPN (PPTP/L2TP) client to establish a VPN connection with a VPN server. |
| Client Type                   | It specifies the client type that the modem router serves as, including either <b>PPTP</b> or <b>L2TP</b> .  |
| Server IP Address/Domain Name | It specifies the IP address or domain name of the VPN server to be connected.  |
| User Name                     | They specify the user name/password that the PPTP/L2TP server assigns to the PPTP/L2TP clients.  |
| Password                      |  |
| Default Gateway               | With this function enabled, the modem router uses this VPN tunnel to transfer all data.  |
| Status                        | It indicates the connection status of the VPN connection.  |

### 11.1.2 Example of configuring PPTP client

#### Network requirements

You have subscribed to the PPTP VPN service when purchasing the broadband service from your ISP. You can configure the PPTP/L2TP client function for your PPTP VPN service. Assume that:

- The IP address of the PPTP server is 113.88.112.220.
- The user name and password assigned by the PPTP server are both **Tenda123**.

#### Configuration procedure

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > VPN > PPTP & L2TP VPN** to enter the configuration page.
- Step 2** Turn on **PPTP/L2TP Client**.
- Step 3** Select **PPTP** for **Client Type**.
- Step 4** Set **Server IP Address/Domain Name**, which is **113.88.112.220** in this example.
- Step 5** Set **User Name** and **Password**, which are both **Tenda123** in this example.
- Step 6** Select **Default Gateway** based on your need.

**Step 7** Click **Connect**.

|                                |  |
|--------------------------------|--|
| PPTP/L2TP Client:              | <input checked="" type="checkbox"/>                              |
| Client Type:                   | <input checked="" type="radio"/> PPTP <input type="radio"/> L2TP |
| Server IP Address/Domain Name: | <input type="text" value="113.88.112.220"/>                      |
| User Name:                     | <input type="text" value="Tenda123"/>                            |
| Password:                      | <input type="password" value="....."/>                           |
| Default Gateway:               | <input checked="" type="checkbox"/>                              |
| Status:                        | Disconnected   |

----End

**Verification**

When **Connected** is shown in **Status**, you can access the VPN resources of your ISP.

## 11.2 IPsec VPN

### 11.2.1 Overview

IPsec, abbreviated for Internet Protocol Security, is a protocol suite for transmitting data over the internet in a secure and encrypted manner. The following terms will be used in this document to describe IPsec configurations.

#### ■ Encapsulation Mode

The modem router uses either Tunnel mode or Transport mode to encapsulate IP packets.

- Tunnel Mode: It is most commonly used between security gateways.
- Transport Mode: It is mainly used for end-to-end communications.

#### ■ Security gateway

It refers to a gateway (secure and encrypted router) with the IPsec functionality. IPsec is used to protect data exchanged between such gateways from being tampered and peeped.

#### ■ IPsec peer

The two IPsec terminals are called IPsec peers. The two peers (security gateways) can securely exchange data only after a Security Association (SA) is set up between them.

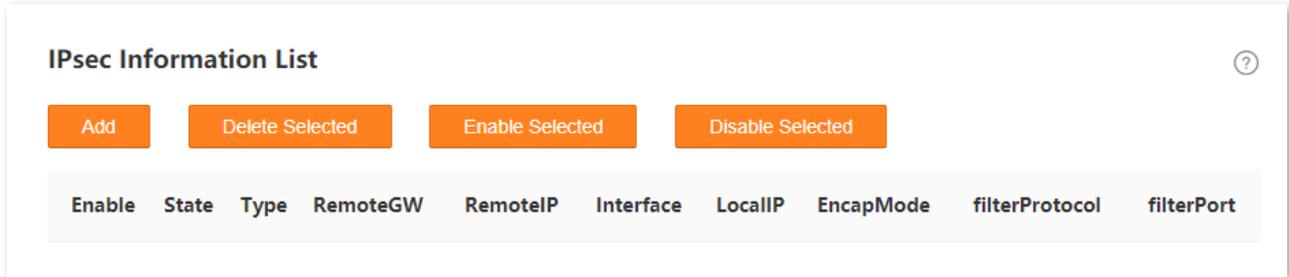
#### ■ SA

SA specifies some elements of the peers, such as the base protocol (AH, ESP, or both), encapsulation mode (transport or tunnel), cryptographic algorithm (DES, 3DES, or AES), shared key for data protection in specified flows, and life cycle of the key. SA has the following features:

- A triplet {SPI, Destination IP address, Security protocol identifier} is used as a unique ID.
- An SA specifies the protocol, algorithm, and key for processing packets.
- Each IPsec SA is unidirectional with a life cycle.
- An SA can be created manually or generated automatically using Internet Key Exchange (IKE).

## 11.2.2 Configure an IPsec VPN

To access the configuration page, choose **Advance > VPN > IPsec VPN**.



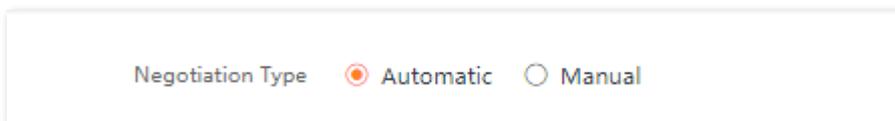
The following operations are available:

- **Add:** Used to add an IPsec VPN.
- **Delete Selected:** Used to delete selected IPsec VPNs.
- **Enable Selected:** Used to enable selected IPsec VPNs.
- **Disable Selected:** Used to disable selected IPsec VPNs.

## 11.2.3 Parameter description

### General parameters

#### Negotiation Type



| Name             | Description  |
|------------------|--|
| Negotiation Type | <p>It specifies the key negotiation type for the IPsec connection.</p> <ul style="list-style-type: none"> <li>- <b>Automatic:</b> It indicates that an SA is set up, maintained, and deleted automatically using IKE. This reduces configuration complexity and simplifies IPsec usage and management. Such an SA has a life cycle and is updated regularly, leading to higher security.</li> <li>- <b>Manual:</b> It indicates that an SA is set up by manually specifying encryption and authentication algorithms and keys. Such an SA does not have a life cycle, and therefore it remains valid unless being manually deleted, leading to security risks. Generally, this mode is used only for commissioning.</li> </ul> |

## Auto/Manual Configure

**Auto Configure:**

Mode

| Name | Description   |
|------|---|
| Mode | It specifies the encapsulation mode to encapsulate IP packets, including <a href="#">Tunnel Mode</a> and <a href="#">Transport Mode</a> . |

## Remote

**Remote:**

Tunnel Addr.

Internal IPAddr

Subnet Mask

| Name            | Description   |
|-----------------|---|
| Tunnel Addr.    | It specifies the tunnel address of the remote side.             |
| Internal IPAddr | It specifies the internal IP address on LAN of the remote side. |
| Subnet Mask     | It specifies the subnet mask of the remote side.                |

## Local

**Local:**

Tunnel Addr.

Internal IPAddr

Subnet Mask

| Name            | Description  |
|-----------------|--|
| Tunnel Addr.    | It specifies the tunnel address of the local side.             |
| Internal IPAddr | It specifies the internal IP address on LAN of the local side. |
| Subnet Mask     | It specifies the subnet mask of the local side.                |

### Security Option - Automatic Negotiation Type

**Security Option:**

Encapsulation Type:

IKE Auth Method:

Pre Shared Key:

Advanced Option:

| Name               | Description   |
|--------------------|---|
| Encapsulation Type | <p>It specifies the encapsulation type for the IPsec connection.</p> <ul style="list-style-type: none"> <li>- <b>ESP:</b> It specifies Encapsulating Security Payload. This protocol is used to test data integrity and encryption. Even the encrypted packet is intercepted, the third party also cannot obtain the correct message.</li> <li>- <b>AH:</b> It specifies Authentication Header. This protocol is used to test data integrity. If a packet is tampered during transmission, the receiver discards the packet when it performs data integrity test.</li> <li>- <b>ESP+AH:</b> It specifies Encapsulating Security Payload and Authentication Header.</li> </ul> |
| IKE Auth Method    | It specifies the authentication method, which is <b>Pre Shared Key</b> . Only authorized users can access the private network.  |
| Pre shared key     | It specifies an encryption key, which must be set to the same one for both communication sides.   |
| Advanced Option    | Refer to <a href="#">Advanced Option</a> .  |

## Security Option - Manual Negotiation Type

**Security Option:**

Encapsulation Type

ESP Encrypt Algorithm

ESP Encrypt Key

ESP Auth Algorithm

ESP Auth Key

AH Auth Algorithm

AH Auth Key

| Name                  | Description   |
|-----------------------|---|
| Encapsulation Type    | <p>It specifies the encapsulation type for the IPsec connection.</p> <ul style="list-style-type: none"> <li>- <b>ESP:</b> It specifies Encapsulating Security Payload. This protocol is used to test data integrity and encryption. Even the encrypted packet is intercepted, the third party also cannot obtain the correct message.</li> <li>- <b>AH:</b> It specifies Authentication Header. This protocol is used to test data integrity. If a packet is tampered during transmission, the receiver discards the packet when it performs data integrity test.</li> <li>- <b>ESP+AH:</b> It specifies Encapsulating Security Payload and Authentication Header.</li> </ul> |
| ESP Encrypt Algorithm | <p>When the <b>Encapsulation Type</b> is set to <b>ESP</b> or <b>ESP+AH</b>, the modem router supports the following ESP encryption algorithms.</p> <ul style="list-style-type: none"> <li>- <b>des-cbc:</b> It specifies Data Encryption Standard. A 56-bit key is used to encrypt 64-bit data. The last 8 bits of the 64-bit data are used for parity check.</li> <li>- <b>3des-cbc:</b> It specifies Triple DES. Three 56-bit keys are used for encryption.</li> <li>- <b>aes-cbc:</b> It specifies Advanced Encryption Standard. AES 128/192/256 indicates that 128/192/256-bit keys are used for encryption respectively.</li> </ul>                                     |
| ESP Encrypt Key       | It specifies the encryption key for ESP, which must be set to the same one for both communication sides.  |

| Name               | Description   |
|--------------------|---|
| ESP Auth Algorithm | <p>The modem router supports the following algorithms to check ESP key integrity.</p> <ul style="list-style-type: none"> <li>- <b>hmac-md5</b>: It specifies Hash-based Message Authentication Code-Message Digest Algorithm. A 128-bit message digest is generated to prevent message tampering.</li> <li>- <b>hmac-sha1</b>: It specifies Hash-based Message Authentication Code-Secure Hash Algorithm. A 160-bit message digest is generated to prevent message tampering, leading to higher security than MD5.</li> </ul> |
| ESP Auth Key       | <p>It specifies the authentication key for ESP. Both communication sides should set it to the same one.</p>   |
| AH Auth Algorithm  | <p>When <b>Encapsulation Type</b> is set to <b>AH</b> or <b>ESP+AH</b>, the modem router supports the following algorithms to check integrity:</p> <ul style="list-style-type: none"> <li>- <b>md5</b>: It specifies Message Digest Algorithm. The system generates a 128-bit message digest for a message.</li> <li>- <b>sha1</b>: It specifies Secure Hash Algorithm. The system generates a 160-bit message digest for a message, leading to higher security than MD5.</li> </ul>  |
| AH Auth Key        | <p>It specifies the authentication key for <b>AH</b>, which must be set to the same one for both communication sides.</p>   |

## SPI Configuration

**SPI Configuration:**

ESP outbound:

ESP inbound:

AH outbound:

AH inbound:

Advanced Option

| Name            | Description   |
|-----------------|---|
| ESP/AH outbound | <p>They specify the SPI parameter. These fields are available when the <b>Negotiation Type</b> is <b>Manual</b>.</p> <p>SPI is an identification tag added to the header while using IPsec for tunneling the IP traffic. This tag helps the kernel discern between two traffic streams where different encryption rules and algorithms may be in use.</p> |
| ESP/AH inbound  | <p>The outbound parameter should be the same for the inbound parameter of the IPsec peer side.</p> <p>This inbound parameter should be the same for outbound parameter of the IPsec peer side.</p>  |
| Advanced Option | Refer to <a href="#">Advanced Option</a> .  |

## Advanced Option

When you select **Advance Option**, the following page appears.

### Filter Option

**Filter Option:**

Protocol

Port

| Name     | Description   |
|----------|---|
| Protocol | It specifies the protocol to be filtered, which supports <b>TCP</b> , <b>UDP</b> , <b>ICMP</b> , and <b>Any</b> . |
| Port     | It specifies the port to be filtered.   |

## IKE Phase 1



This section is available when **Negotiation Type** is set to **Automatic**.

**IKE Phase 1:**

Negotiation Mode

seconds  
Keepalive Time

IKE Algorithm 1

IKE Algorithm 2

IKE Algorithm 3

IKE Algorithm 4

| Name             | Description  |
|------------------|--|
| Negotiation Mode | <p>It specifies the mode that IPsec ends use to exchange information in phrase 1. The mode should be set to the same one as that of the peer device.</p> <ul style="list-style-type: none"> <li>- <b>main</b>: This mode provides identity protection, and applies to high requirement situations for identity protection.</li> <li>- <b>aggressive</b>: This mode does not provide identity protection, and applies to situations with low requirements for identity protection.</li> </ul> |
| Keepalive Time   | It specifies the life cycle of IKE SA for phrase 1.  |
| IKE Algorithm 1  | <p>They specify the encryption algorithms and integrity verification algorithms supported by the modem router.</p> <ul style="list-style-type: none"> <li>- <b>des-md5-group1</b>: It specifies Data Encryption Standard and Message Digest Algorithm.</li> </ul>  |
| IKE Algorithm 2  |  |
| IKE Algorithm 3  |  |
| IKE Algorithm 4  |  |

| Name            | Description   |
|-----------------|---|
| IKE Algorithm 4 | <ul style="list-style-type: none"> <li>- <b>des-sha1-group1</b>: It specifies Data Encryption Standard and Secure Hash Algorithm.</li> <li>- <b>3des-md5-group2</b>: It specifies Triple DES and Message Digest.</li> <li>- <b>3des-sha1-group2</b>: It specifies Triple DES and Secure Hash Algorithm.</li> <li>- -----: It specifies no algorithm is selected.</li> </ul> |

## IKE Phase 2



This section is available when **Negotiation Type** is set to **Automatic**.

**IKE Phase 2:**

pfs\_group mode

Encrypt Algorithm  null\_enc  des  3des  aes

Auth Algorithm  non\_auth  md5  sha1

Keepalive Time  seconds

Keepalive Byte  KB

| Name              | Description  |
|-------------------|--|
| pfs_group mode    | It specifies Diffie-Hellman group for key establishment. Two groups are supported: <b>modp768</b> and <b>modp1024</b> .          |
| Encrypt Algorithm | It specifies the encryption algorithm for phrase 2, which supports <b>null_enc</b> , <b>des</b> , <b>3des</b> , and <b>aes</b> . |
| Auth Algorithm    | It specifies the authentication algorithm for phrase 2, which supports <b>non_auth</b> , <b>md5</b> , and <b>sha1</b> .          |
| Keepalive Time    | It specifies the life cycle of IKE SA for phrase 2.  |
| Keepalive Byte    | It specifies the valid bytes within a life circle.   |

# 12 Firewall

## 12.1 IP & port filtering

### 12.1.1 Overview

In this section, you can configure filtering rules to restrict certain types of data packets from passing through the modem router. The use of such filters can be helpful in securing or restricting your local network.

- **Outgoing:** By default, all outgoing traffic from LAN is allowed, but some can be blocked by setting up filtering rules. Outgoing filtering rules can block outgoing traffic by specifying some conditions.
- **Incoming:** By default, all incoming traffic is blocked. However, some traffic can access by setting up filtering rules. The incoming filtering rules allow traffic to come in by specifying some conditions.

To access the configuration page, choose **Advance > Firewall > IP & Port Filtering**.

The screenshot shows a configuration interface with two rows of radio buttons. The first row is labeled 'Outgoing Default Action' and has 'Deny' (unselected) and 'Allow' (selected) options. The second row is labeled 'Incoming Default Action' and has 'Deny' (selected) and 'Allow' (unselected) options. An orange 'Apply Changes' button is located at the bottom right of the form.

#### Parameter description

| Name                    | Description  |
|-------------------------|--|
| Outgoing Default Action | <p>It specifies the default action for the outgoing data.</p> <ul style="list-style-type: none"> <li>- <b>Deny:</b> Deny outgoing traffic which does not match the outgoing filter rule in the <b>Current Filter Table</b>.</li> <li>- <b>Allow:</b> Allow outgoing traffic which does not match the outgoing filter rule in the <b>Current Filter Table</b>.</li> </ul> |

| Name                    | Description   |
|-------------------------|---|
| Incoming Default Action | <p>It specifies the default action of the incoming data.</p> <ul style="list-style-type: none"> <li>- <b>Deny:</b> Deny incoming traffic which does not match the incoming filter rule in the <b>Current Filter Table</b>.</li> <li>- <b>Allow:</b> Allow incoming traffic which does not match the incoming filter rule in the <b>Current Filter Table</b>.</li> </ul> |

## 12.1.2 Configure a filter rule

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Firewall > IP & Port Filtering** to enter the configuration page.

**Step 2** Click **Add**.

Current Filter Table:

| Select | Direction | Protocol | Source IP Address | Source Port | Destination IP Address | Destination Port | Rule Action |
|--------|-----------|----------|-------------------|-------------|------------------------|------------------|-------------|
|--------|-----------|----------|-------------------|-------------|------------------------|------------------|-------------|

**Step 3** Select the **Direction** and **Protocol** for the data to be filtered.

**Step 4** Select **Deny** or **Allow** for **Rule Action**.

**Step 5** Set the required parameters.

**Step 6** Click **Add**.

Direction:

Protocol:

Rule Action:  Deny  Allow

Source IP Address:

Subnet Mask:

Port:  -

Destination IP Address:

Subnet Mask:

Port:  -

----End

## Parameter description

| Name                   | Description   |
|------------------------|---|
| Direction              | It specifies the direction of the data, including outgoing and incoming.  |
| Protocol               | It specifies the protocol for the filtering rule, including TCP, UDP and ICMP.  |
| Rule Action            | It specifies whether to deny or allow the data to pass through.   |
| Source IP Address      | <p>It specifies the source IP address of the packets. The settings of <b>Source IP Address</b> and <b>Subnet Mask</b> determine which computers are affected by this rule.</p> <ul style="list-style-type: none"> <li>- When <b>Direction</b> is set to <b>Outgoing</b>, this parameter specifies the LAN computer's IP address to be affected.</li> <li>- When <b>Direction</b> is set to <b>Incoming</b>, this parameter specifies the internet computer's IP address to be affected.</li> <li>- Leave it blank: All IP addresses are covered.</li> </ul>     |
| Subnet Mask            | It specifies the subnet mask of the source IP address.  |
| Port                   | <p>It specifies the source port of the packets.</p> <p>Source port is only for TCP/UDP protocol. If protocol ICMP is selected, this field is not required.</p> <p> <b>TIP</b></p> <p>Since the source port of the data packet is changeable, it is recommended that the port be set to 1 to 65535 or left blank.</p>   |
| Destination IP Address | <p>It specifies the destination IP address of the packets. The settings of <b>Destination IP Address</b> and <b>Subnet Mask</b> determine which servers are affected by this rule.</p> <ul style="list-style-type: none"> <li>- When <b>Direction</b> is set to <b>Outgoing</b>, this parameter specifies the internet server's IP address to be affected.</li> <li>- When <b>Direction</b> is set to <b>Incoming</b>, this parameter specifies the LAN server's IP address to be affected.</li> <li>- Leave it blank: All IP addresses are covered.</li> </ul> |
| Subnet Mask            | It specifies the subnet mask of the destination IP address.   |
| Port                   | <p>It specifies the destination port of the packets. Its setting determines which services are affected by this rule.</p> <p>The destination port is only for TCP/UDP protocol.</p>   |

## 12.2 IPv6/Port filtering

### 12.2.1 Overview

In this section, you can configure IPv6 filtering rules to restrict certain types of data packets through the gateway. The use of such filters can be helpful in securing or restricting your local network.

To access the configuration page, choose **Advance > Firewall > IPv6 & Port Filtering**.

The screenshot shows a configuration interface with two rows of radio buttons. The first row is labeled 'Outgoing Default Action' and has two options: 'Deny' (unselected) and 'Allow' (selected). The second row is labeled 'Incoming Default Action' and has two options: 'Deny' (selected) and 'Allow' (unselected). At the bottom right of the form is an orange button labeled 'Apply Changes'.

#### Parameter description

| Name                    | Description   |
|-------------------------|---|
| Outgoing Default Action | <p>It specifies the default action of the outgoing data.</p> <ul style="list-style-type: none"> <li>- <b>Deny:</b> Deny outgoing traffic which does not match the outgoing filter rule in the <b>Current Filter Table</b>.</li> <li>- <b>Allow:</b> Allow outgoing traffic which does not match the outgoing filter rule in the <b>Current Filter Table</b>.</li> </ul> |
| Incoming Default Action | <p>It specifies the default action of the incoming data.</p> <ul style="list-style-type: none"> <li>- <b>Deny:</b> Deny incoming traffic which does not match the incoming filter rule in the <b>Current Filter Table</b>.</li> <li>- <b>Allow:</b> Allow incoming traffic which does not match the incoming filter rule in the <b>Current Filter Table</b>.</li> </ul> |

### 12.2.2 Configure an IPv6 filter rule

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Firewall > IPv6 & Port Filtering** to enter the configuration page.

**Step 2** Click **Add**.

**Current Filter Table:**

Add
Delete Selected
Delete All

| Select | Direction | Protocol | Source IP Address | Source Port | Destination IP Address | Destination Port | Rule Action |
|--------|-----------|----------|-------------------|-------------|------------------------|------------------|-------------|
|--------|-----------|----------|-------------------|-------------|------------------------|------------------|-------------|

**Step 3** Select the **Direction** and **Protocol** for the data to be filtered.

**Step 4** Select **Deny** or **Allow** for **Rule Action**.

**Step 5** Set the required parameters.

**Step 6** Click **Add**.

Add ✕

Direction:

Protocol:

Rule Action:  Deny  Allow

Source Interface ID:

Destination Interface ID:

Source Port:  -

Destination Port:  -

Add

----End

### Parameter description

| Name      | Description  |
|-----------|--|
| Direction | It specifies the direction of the data, including outgoing and incoming. |

| Name                     | Description   |
|--------------------------|---|
| Protocol                 | It specifies the protocol for the filtering rule, including <b>TCP</b> , <b>UDP</b> and <b>ICMPv6</b> .   |
| Rule Action              | It specifies whether to deny or allow the data to pass through.   |
| Source Interface ID      | <p>It is available only when <b>Direction</b> is set to <b>Outgoing</b>.</p> <p>It specifies the source IPv6 address of the packets. Its setting determines which computer is affected by this rule.</p> <p>When it is left blank, all IPv6 addresses are covered.</p>  |
| Destination Interface ID | <p>It is available only when <b>Direction</b> is set to <b>Incoming</b>.</p> <p>It specifies the destination IPv6 address of the packets. Its setting determines which server is affected by this rule.</p> <p>When it is left blank, all IPv6 addresses are covered.</p>   |
| Source Port              | <p>It specifies the source port of the packets. It is only for the TCP/UDP protocol.</p> <p> <b>TIP</b></p> <p>Since the source port of the data packet is changeable, it is recommended that the port be set to 1 to 65535 or left blank.</p> |
| Destination Port         | <p>It specifies the destination port of the packets. Its setting determines which services are affected by this rule.</p> <p>The destination port is only for TCP/UDP protocol.</p>   |

## 12.3 URL blocking

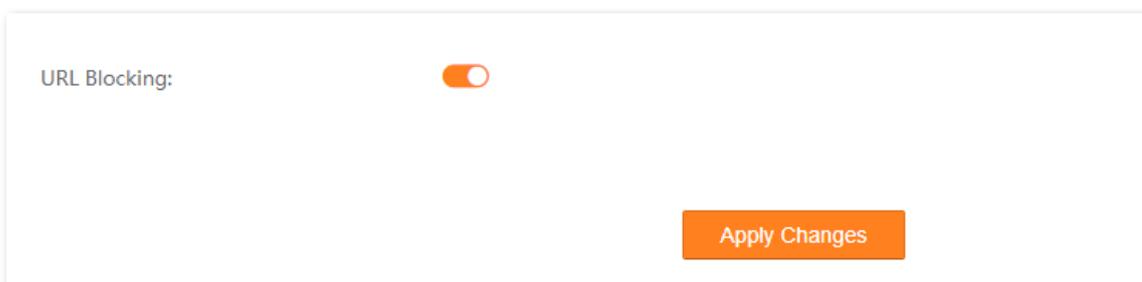
URL blocking allows you to specify URLs that cannot be accessed.

### Configuration procedure:

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > Firewall > URL Blocking** to enter the configuration page.

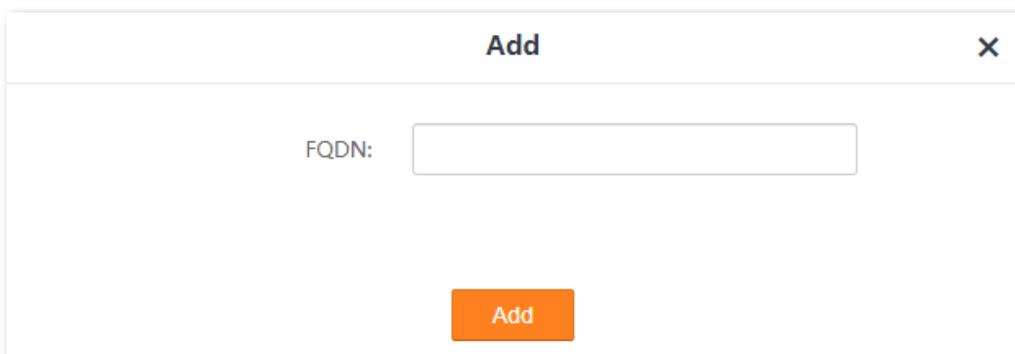
**Step 2** Enable the **URL Blocking** function.

1. Turn on **URL Blocking**.
2. Click **Apply Changes**.



**Step 3** Add the blocking URL.

1. In the **URL Blocking Table** module, click **Add**.
2. Enter an **FQDN** (Fully Qualified Domain Name). For example, set it to **www.google.com**.
3. Click **Add**.



----End

### Verification

Open a browser, enter [www.google.com](http://www.google.com) in the address bar, and press **Enter**. Now you cannot access [www.google.com](http://www.google.com) if the preceding configuration is successful.

## 12.4 DDOS

This section allows the modem router to defend against ICMP flood attacks, TCP flood attacks, and UDP flood attacks.

Choose **Advance > Firewall > DDOS** to enter the configuration page.

The screenshot shows a configuration interface with three rows of settings, each with a label and a toggle switch:

- ICMP Flood Attack Defense:
- TCP Flood Attack Defense:
- UDP Flood Attack Defense:

An orange button labeled "Apply Changes" is located at the bottom right of the configuration area.

### Parameter description

| Name                      | Description   |
|---------------------------|---|
| ICMP Flood Attack Defense | <p>It is used to enable or disable the ICMP flood attack defense.</p> <p>The ICMP flood attack means that, to implement attacks on the target host, the attacker sends a large number of ICMP Echo messages to the target host, which causes the target host to spend a lot of time and resources on processing ICMP Echo messages, but cannot process normal requests or responses.</p>  |
| TCP Flood Attack Defense  | <p>It is used to enable or disable the TCP flood attack defense.</p> <p>The TCP flood attack means that, to implement attacks on the target host, the attacker quickly initiates a large number of TCP connection requests in a short period, and then suspends in a semi-connected state, thereby occupying a large number of server resources until the server denies any services.</p> |
| UDP Flood Attack Defense  | <p>It is used to enable or disable the UDP flood attack defense.</p> <p>The UDP flood attack is implemented similarly with ICMP flood attack, during which the attacker sends a large number of UDP packets to the target host, causing the target host to be busy processing these UDP packets, but unable to process normal packet requests or responses.</p>                           |

## 12.5 ALG

Application Layer Gateway (ALG) allows you to enable/disable FTP, H323, RTSP, SIP functions and VPN pass through as required.

Choose **Advance > Firewall > ALG** to enter the configuration page.

The screenshot shows a configuration interface with the following settings:

| Parameter | Status |
|-----------|--------|
| ipsec:    | On     |
| l2tp:     | On     |
| pptp:     | On     |
| ftp:      | On     |
| h323:     | On     |
| rtsp:     | On     |
| sip:      | On     |

An orange button labeled "Apply Changes" is located at the bottom right of the configuration area.

### Parameter description

| Name  | Description   |
|-------|---|
| ipsec | If you select IPsec protocol when you create a VPN connection on your computer in the LAN of the modem router, it takes effect only when this checkbox is selected. |
| l2tp  | If you select L2TP protocol when you create a VPN connection on your computer in the LAN of the modem router, it takes effect only when this checkbox is selected.  |
| pptp  | If you select PPTP protocol when you create a VPN connection on your computer in the LAN of the modem router, it takes effect only when this checkbox is selected.  |
| ftp   | The users on LAN can share resources on the FTP server on WAN only when it is selected.   |

| <b>Name</b> | <b>Description</b>  |
|-------------|---|
| h323        | The IP phone and network conference function can be used on the computers connected to the modem router only when it is selected. |
| rtsp        | The users on LAN can view video on demand when it is selected.  |
| sip         | The IP phone function can be used on the computers connected to the modem router only when it is selected.                        |

## 12.6 ACL

### 12.6.1 Overview

Access Control List (ACL) is a collection of permit and deny rules that ensure security by blocking unauthorized users from and allowing authorized users to access the modem router.

Choose **Advance > Firewall > ACL** to enter the configuration page.

ACL Capability  Disable  Enable ?

**Apply Changes**

**ACL Table:**

**Add** **Delete Selected**

| Select                   | State  | Interface | IP Address     | Services        | Port   | Operate |
|--------------------------|--------|-----------|----------------|-----------------|--------|---------|
| <input type="checkbox"/> | Enable | LAN       | 192.168.1.1/24 | http,https,ping | 80,443 |         |

#### Parameter description

| Parameter      | Description  |
|----------------|--|
| ACL Capability | It is used to enable or disable the ACL function.  |
| Select         | It is used to select multiple ACL rules.   |
| State          | It specifies the control mode of the rule. If you deselect <b>Enable</b> when setting an ACL rule, the <b>State</b> shows <b>Disable</b> . |
| Interface      | It specifies the interface that the access control rule applies to, including <b>LAN</b> and <b>WAN</b> .                                  |
| IP Address     | It specifies the IP address range or a certain IP address that is controlled by the rule.  |
| Services       | It specifies the protocols adopted by the traffic, or the types of traffic.  |
| Port           | It specifies the default ports adopted by the corresponding services.  |

## 12.6.2 Configure an ACL rule

- Step 1** [Log in to the \*\*Advance\*\* page of the modem router](#), and choose **Advance > Firewall > ACL** to enter the configuration page.
- Step 2** Set **ACL Capability** to **Enable**, and click **Apply Changes**.
- Step 3** Click **Add**, and set parameters as required.

---End

### Parameter description

| Parameter | Description                                   |
|-----------|---|
| Enable    | It specifies whether the ACL rule is enabled. |

| Parameter        | Description   |
|------------------|---|
| Interface        | <p>It specifies the interface that the access control rule applies to, including <b>LAN</b> and <b>WAN</b>.</p> <ul style="list-style-type: none"> <li>- <b>LAN</b>: The modem router checks traffic from the LAN side according to the rule and decides to pass it or discard it.</li> <li>- <b>WAN</b>: The modem router checks traffic from the WAN side according to the rule and decides to pass it or discard it.</li> </ul>  |
| Start IP Address | They specify the IP address range or a certain IP address that is controlled by the rule.   |
| End IP Address   |   |
| ServiceName      | <p>It specifies the protocol adopted by the traffic, or the types of traffic.</p> <ul style="list-style-type: none"> <li>- <b>TELNET</b>: Telnet is a protocol that provides a command line interface for communication with a remote device or server, sometimes employed for remote management but also for initial device setup like network hardware.</li> <li>- <b>FTP</b>: File Transfer Protocol (FTP) is a standard network protocol used for the transfer of computer files between a client and server on a computer network.</li> <li>- <b>HTTP</b>: Hypertext Transfer Protocol (HTTP) is an application protocol and the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access.</li> <li>- <b>HTTPS</b>: Hypertext Transfer Protocol Secure (HTTPS) is an extension of HTTP. SNMP is used for secure communication over a computer network, and is widely used on the internet.</li> <li>- <b>SNMP</b>: Simple Network Management Protocol (SNMP) is the most widely used network management protocol in TCP/IP networks, which enables you to remotely manage all your network devices compliant with this protocol.</li> <li>- <b>PING</b>: Ping is a computer network administration software utility used to test the reachability of a host on an IP network.</li> </ul> |

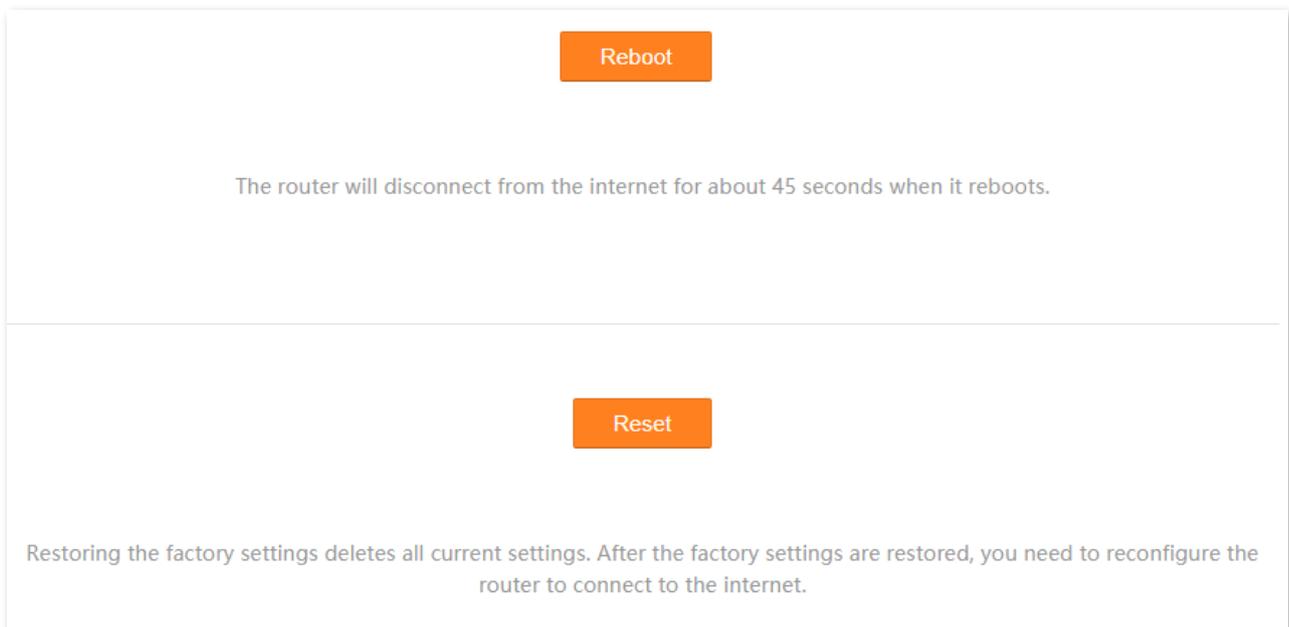
# 13 System settings

## 13.1 Reboot & reset

This section allows you to reboot or restore the modem router to factory settings on the web UI.

- **Reboot:** Used to restart the modem router.
- **Reset:** Used to restore the modem router to default settings. After the modem router is reset, you need to configure the modem router again for internet access.

Choose **Advance > System Settings > Reboot & Reset** to enter the page.



## 13.2 Auto system maintenance

Auto system maintenance enables you to restart the router regularly. It helps improve the stability and service life of the router.

Choose **Advance > System Settings > Auto System Maintenance** to enter the page.

Auto System Maintenance:  ?

Reboot at: 03 : 00

Repeat:  Sun.  Mon.  Tues.  Wed.  Thur.  Fri.  Sat.

Delay Reboot:  Delay the reboot if a client is connected and the traffic is higher than 3 KB/s

Automatic maintenance takes effect only if the system time is synchronized with the internet time.

**Apply Changes**

### Parameter description

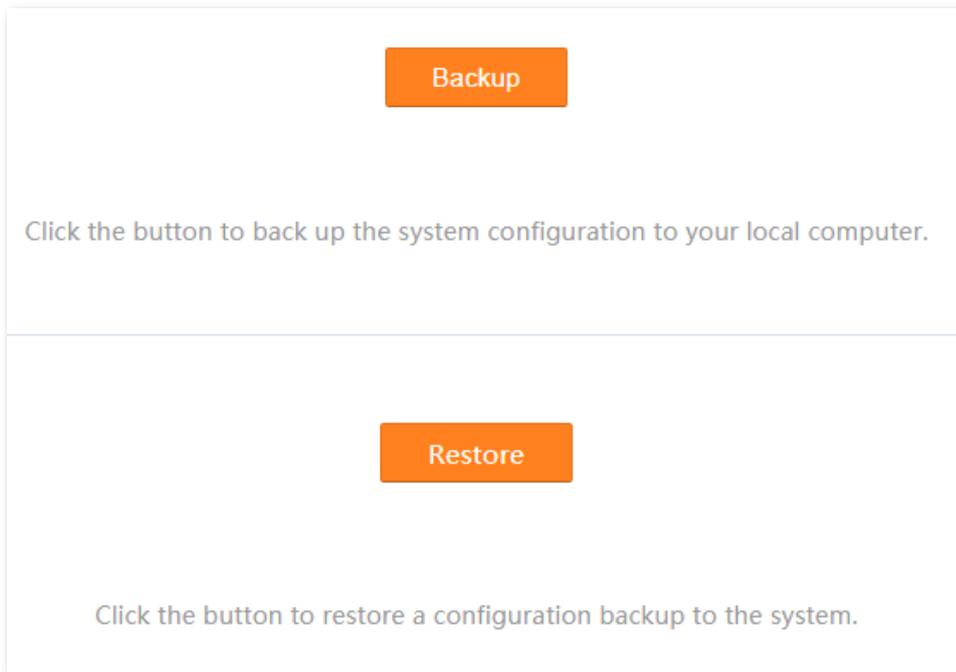
| Parameter               | Description   |
|-------------------------|---|
| Auto System Maintenance | It is used to enable or disable the auto system maintenance function.   |
| Reboot at               | They specify the time when the router reboots automatically.  |
| Repeat                  | It is used to enable or disable the reboot delay function.  |
| Delay Reboot            | <ul style="list-style-type: none"> <li>- Ticked: The function is enabled. When the time for rebooting approaches, if there is any user connected to the router and the traffic over the router's WAN port exceeds 3 KB/s, the router will delay rebooting.</li> <li>- Unticked: The function is disabled. The router reboots immediately when the specified time for rebooting approaches.</li> </ul> |

## 13.3 Backup & restore

### 13.3.1 Overview

This section allows you to back up or restore the configuration to the modem router on the web UI.

- **Backup:** Used to back up the current system configuration to your local computer, so that you can restore to the current settings if required in the future.
- **Restore:** Used to restore to the previous backup configuration if required.



### 13.3.2 Back up the configuration

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Backup & Restore** to enter the configuration page.

**Step 2** Click **Backup**.

----End

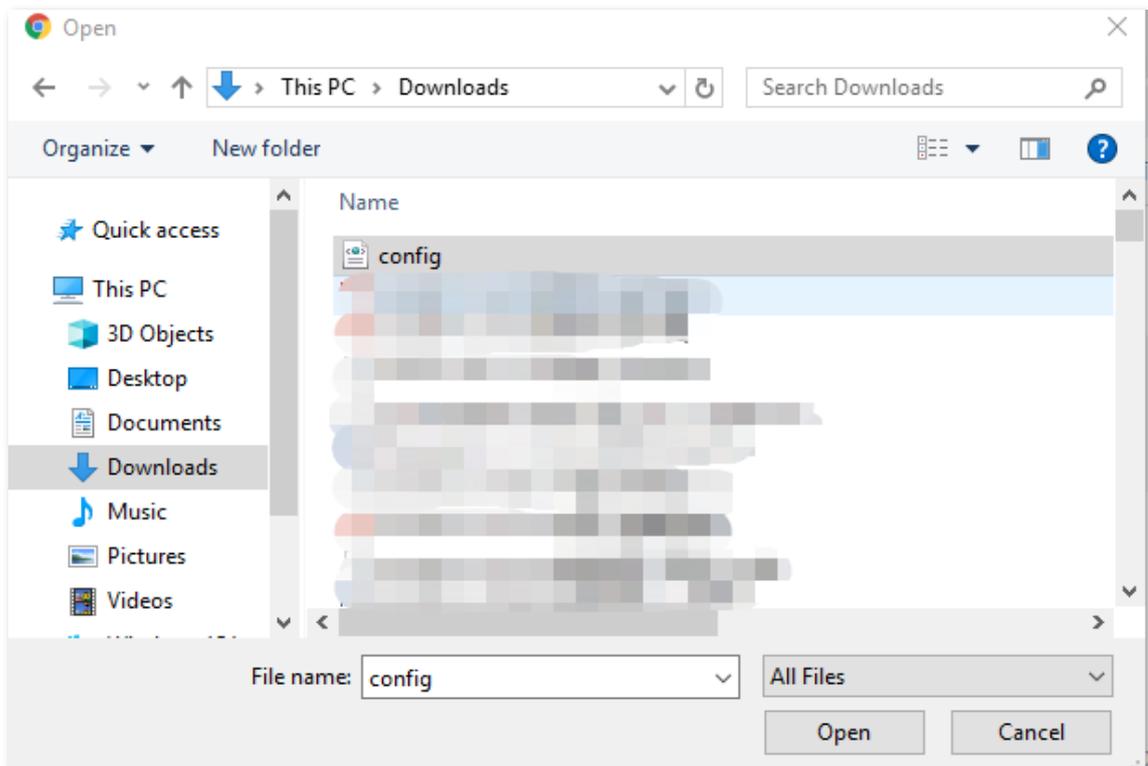
A file named **config.xml** is downloaded.

### 13.3.3 Restore the configuration

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Backup & Restore** to enter the configuration page.

**Step 2** Click **Restore**.

**Step 3** Select the configuration file you want to restore, and click **Open**.



**Step 4** Wait until the system completes rebooting.

----End

## 13.4 Firmware upgrade

This section allows you to upgrade the firmware of the modem router on the web UI.

Firmware upgrade is released periodically to improve the functionality of your modem router and also to add new features. If you run into a problem with a specific feature of the modem router, access our website ([www.tendacn.com](http://www.tendacn.com)) to download the latest firmware to update your modem router.

### Configuration procedure:



To prevent the modem router from being damaged:

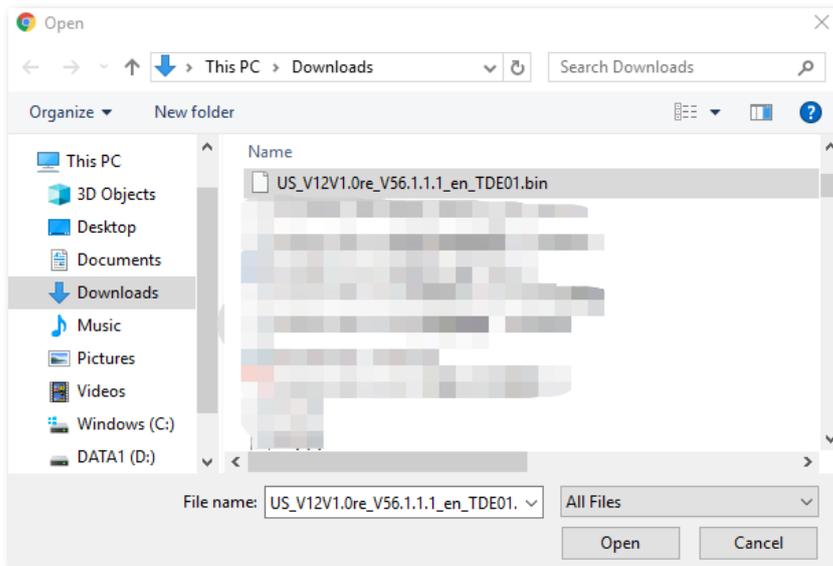
- Ensure that the firmware is applicable to the modem router.
- It is recommended to upgrade the firmware by connecting a LAN port to a computer and performing the upgrade on the web UI.
- Do not power off the modem router during firmware upgrade.

**Step 1** Go to **www.tendacn.com**. Download an applicable firmware of the modem router to your local computer and unzip it.

**Step 2** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Firmware Upgrade** to enter the configuration page.

The screenshot shows a web interface for firmware upgrade. It displays the current version as V56.1.1.1. Below this, there is a section for selecting an upgrade file, with a "Choose File" button and the text "No file chosen". At the bottom right, there is an orange "Upgrade" button.

**Step 3** Click **Choose File** and select the upgrade file suffixed with **.bin**. Then click **Open**.



**Step 4** Click **Upgrade**.

|  |  |
|--|--|
| Current Version:                       | V56.1.1.1  |
| Select Upgrade File:                   | <input type="button" value="Choose File"/> US_V12V1....n_TDE01.bin |
| <input type="button" value="Upgrade"/> |  |

**Step 5** Confirm the question on the pop-up window, and click **OK**.

|   |                                       |
|---|---------------------------------------|
| Do you really want to upgrade the firmware? |                                       |
| <input type="button" value="OK"/>           | <input type="button" value="Cancel"/> |

**-----End**

Wait until the progress bar is complete. [Log in to the Advance page of the modem router](#) again. Choose **Advance** > **System Settings** > **Firmware Upgrade** and check whether the upgrade is successful based on **Current Version**.



For better performance of the new firmware, it is recommended that the modem router be reset to factory default settings and re-configured when the upgrading is completed.

## 13.5 Password

This section allows you to change the login password of the modem router.

Choose **Advance > System Settings > Password** to enter the configuration page.

|                   |                      |
|-------------------|----------------------|
| Old Password:     | <input type="text"/> |
| New Password:     | <input type="text"/> |
| Confirm Password: | <input type="text"/> |

## 13.6 Time zone

### 13.6.1 Overview

This section allows you to calibrate the system time by synchronizing with the time server over the internet.



Ensure that the modem router can access the internet before synchronizing time with the internet time server.

Choose **Advance > System Settings > Time Zone** to enter the configuration page.

#### Parameter description

| Name                        | Description  |
|-----------------------------|--|
| Current Time                | It displays the current date and time of the modem router.   |
| Time Zone Select            | Select your time zone for time synchronization.  |
| Enable Daylight Saving Time | If you are in an area with daylight saving time, you can enable this function.   |
| Enable SNTP Client Update   | With this option enabled, the modem router automatically updates the time with the Simple Network Time Protocol (SNTP) server. |

| Name          | Description   |
|---------------|---|
| WAN Interface | <p>It specifies the WAN interface for time synchronization. <b>Any</b> indicates that the system automatically uses one of the WAN interfaces that can access the internet for time synchronization.</p> <p> <b>TIP</b></p> <p>To successfully synchronize time, please select the interface that can access the internet.</p> |
| SNTP Server   | It specifies the SNTP server used for time synchronization. You can select it from the drop-down list or enter it manually.   |

## 13.6.2 Synchronizing the system time with the internet

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Time Zone** to enter the configuration page.
- Step 2** Select the time zone that the modem router locates from the **Time Zone Select** drop-down list.
- Step 3** (Optional) If the modem router locates in an area with daylight saving time, turn on **Enable Daylight Saving Time**.
- Step 4** Select the WAN interface for calibration.
- Step 5** Select or enter an SNTP server address.
- Step 6** Click **Apply Changes**.
- End

After calibration, you can check whether the time is calibrated properly by checking **Current Time**.

## 13.6.3 Manually configure the time

- Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Time Zone** to enter the configuration page.
- Step 2** Select the time zone that the modem router locates from the **Time Zone Select** drop-down list.
- Step 3** Turn off **Enable SNTP Client Update**.
- Step 4** Input the date and time in **Current Time**.
- Step 5** Click **Apply Changes**.
- End

## 13.7 Diagnostics

### 13.7.1 Overview

The modem router supports two diagnosis methods: Ping diagnostics and ADSL connection diagnostics.

- Ping and Ping (IPv6) diagnostics can help test whether a host is reachable.
- ADSL connection diagnostics can help check your ADSL connection.

### 13.7.2 Ping and Ping IPv6 diagnostics

**TIP**

Ping diagnostics is used for example in this section. The operations for Ping and Ping IPv6 diagnostics are similar.

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Diagnostics** to enter the configuration page.

**Step 2** Enter the destination address to be pinged, which is **192.168.1.12** in this example.

**Ping Diagnostics**

Host Address:

**Step 3** Click **Go**.

**----End**

The diagnosis results are as shown below.

**PING 192.168.1.12 (192.168.1.12): 56 data bytes**

64 bytes from 192.168.1.12: icmp\_seq=0  
64 bytes from 192.168.1.12: icmp\_seq=1  
64 bytes from 192.168.1.12: icmp\_seq=2

--- ping statistics ---  
3 packets transmitted,3 packets received.

### 13.7.3 ADSL connection diagnostics

**Step 1** [Log in to the Advance page of the modem router](#), and choose **Advance > System Settings > Diagnostics** to enter the configuration page.

**Step 2** Select the ADSL connection to be tested.

#### ADSL Connection Diagnostics

Select the ADSL Connection:  Go

**Step 3** Click **Go**.

**----End**

The diagnosis results are as shown below.

#### ADSL Connection Diagnostics

Select the ADSL Connection:  Go

| ADSL Connection Check               |       |
|-------------------------------------|-------|
| Test ADSL Synchronization           | TURE  |
| Test ATM OAM F5 Segment Loopback    | FALSE |
| Test ATM OAM F5 End-to-end Loopback | FALSE |
| Test ATM OAM F4 Segment Loopback    | FALSE |
| Test ATM OAM F4 End-to-end Loopback | FALSE |
| Internet Connection Check           |       |
| Test PPP Server Connection          | PASS  |
| Test Authentication with ISP        | PASS  |
| Test the assigned IP Address        | PASS  |
| Ping Default Gateway                | PASS  |
| Ping Primary Domain Name Server     | PASS  |

## 13.8 System log

This section allows you to view, and export system logs, which helps you understand the operating conditions of the device.

System Log:

Log Level:

Display Level:

Save Log to File:

Clear Log:

### System Log

| Date/Time      | Facility | Level | Message  |
|----------------|----------|-------|--|
| Jan 3 01:31:20 | daemon   | info  | dnsmasq[2682]: read /var/tmp/hosts - 1 addresses |
| Jan 3 01:31:25 | daemon   | info  | dnsmasq[2682]: read /var/tmp/hosts - 1 addresses |
| Jan 3 01:31:30 | daemon   | info  | dnsmasq[2682]: read /var/tmp/hosts - 1 addresses |

### Parameter description

| Name             | Description  |
|------------------|--|
| System Log       | It is used to enable/disable the system log function.  |
| Log Level        | It specifies the log levels according to log importance, which include <b>Emergency, Alert, Critical, Error, Warning, Notice, Informational</b> and <b>Debugging</b> .   |
| Display Level    | It specifies the log level range that is displayed on the system log table. For example, if you select <b>Notice</b> , the logs from <b>Emergency</b> level to <b>Notice</b> level are displayed on the table. |
| Save Log to File | It is used to save the logs in a file. A log file named <b>messages</b> will be downloaded.  |
| Clear Log        | It is used to clear all system logs.   |

| <b>Name</b> | <b>Description</b>                                |
|-------------|---|
| Date/Time   | It specifies date and time of the log.            |
| Facility    | It specifies the facility that generates the log. |
| Level       | It specifies the level of the log.                |
| Message     | It specifies the message of the log.              |

# 14 Statistics

## 14.1 DHCP

### 14.1.1 DHCP clients

If the DHCP server function is enabled, this module shows detailed information about devices that obtain IP addresses from the DHCP server, including assigned IP addresses, MAC addresses, and expired time.

Choose **Statistics > DHCP** to enter the page.

| DHCP Clients |             |                   |
|--------------|-------------|-------------------|
| Assigned IP  | MAC address | Expired time(sec) |
| 192.168.10.2 | [REDACTED]  | 81119             |
| 192.168.10.3 | [REDACTED]  | 85279             |

#### Parameter description

| Parameter         | Description   |
|-------------------|---|
| Assigned IP       | It specifies the IP address assigned by the DHCP server.  |
| MAC address       | It specifies the MAC address of the DHCP client.  |
| Expired time(sec) | It specifies the valid time of the IP addresses assigned by the DHCP server of the modem router to the DHCP client. |

### 14.1.2 Address reservations

**Scenario:** You have an FTP server at home under the LAN of the modem router.

**Requirement:** You want to visit resources on the FTP server when you are not at home and avoid instability of services resulted from the dynamic IP address assigned by the modem router.

**Solution:** You can reserve a fixed IP address for the FTP server to reach the goal.

Assume that:

- Fixed IP address reserved for the FTP server: 192.168.1.136
- MAC address of the FTP server host: D4:61:DA:1B:CD:89

**Configuring procedure:**

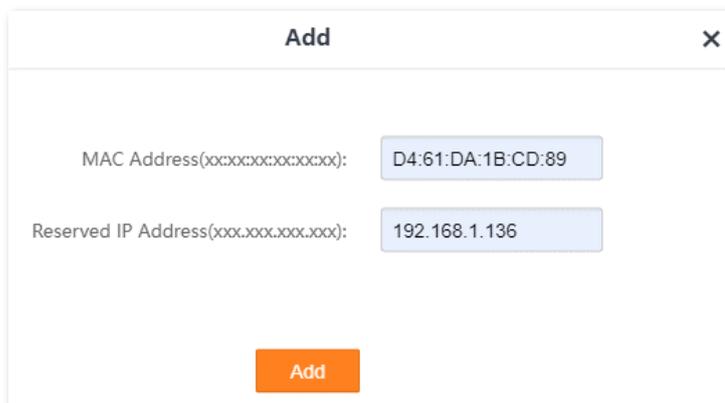
**Step 1** [Log in to the Advance page of the modem router](#), and choose **Statistics > DHCP**.

**Step 2** Click **Add** under **Address Reservations**.

**Step 3** Set **MAC Address** in the format of **D4:61:DA:1B:CD:89**.

**Step 4** Enter **192.168.1.136** in **Reserved IP Address**.

**Step 5** Click **Add**.



The screenshot shows a modal dialog box titled "Add" with a close button (X) in the top right corner. Inside the dialog, there are two input fields. The first is labeled "MAC Address (xx:xx:xx:xx:xx:xx):" and contains the text "D4:61:DA:1B:CD:89". The second is labeled "Reserved IP Address (xxx.xxx.xxx.xxx):" and contains the text "192.168.1.136". At the bottom center of the dialog is an orange button labeled "Add".

**----End**

Now you can access resources on the FTP server free from the influence of the dynamic IP address.

## 14.2 Interface

Here you can view the information of packets received and transmitted by each interface.

| Interface   | Rx pkt | Rx err | Rx drop | Tx pkt | Tx err | Tx drop |
|-------------|--------|--------|---------|--------|--------|---------|
| eth0.2      | 0      | 0      | 0       | 0      | 0      | 0       |
| eth0.3      | 18189  | 0      | 29      | 13307  | 0      | 0       |
| eth0.4      | 13382  | 0      | 157     | 5558   | 0      | 0       |
| eth0.5      | 0      | 0      | 0       | 0      | 0      | 0       |
| wlan0       | 1      | 0      | 0       | 0      | 0      | 0       |
| wlan1       | 36     | 0      | 0       | 0      | 0      | 0       |
| nas0_0      | 0      | 0      | 0       | 141    | 0      | 0       |
| nas0_1      | 5448   | 0      | 229     | 920    | 0      | 0       |
| nas0_2      | 362    | 0      | 0       | 7      | 0      | 0       |
| ppp9_pptp0  | 0      | 0      | 0       | 0      | 0      | 0       |
| ppp11_l2tp0 | 0      | 0      | 0       | 0      | 0      | 0       |

### Parameter description

| Name      | Description  |
|-----------|--|
| Interface | It specifies the interface name.   |
| Rx pkt    | It specifies the number of packets received by the interface.              |
| Rx err    | It specifies the number of error packets received by the interface.        |
| Rx drop   | It specifies the number of received packets discarded by the interface.    |
| Tx pkt    | It specifies the number of packets transmitted by the interface.           |
| Tx err    | It specifies the number of error packets transmitted by the interface.     |
| Tx drop   | It specifies the number of transmitted packets discarded by the interface. |

## 14.3 DSL

Here you can view the DSL link information.

| DSL         |                  |
|-------------|------------------|
| Mode        | ADSL2+ Annex M   |
| TPS-TC      | ATM              |
| Latency     | Fast             |
| Status      | SHOWTIME.        |
| Power Level | L0               |
| Uptime      | 2 days, 16:30:33 |
| G.Vector    | Off              |

|   | Downstream | Upstream |
|---|------------|----------|
| Trellis                                   | On         | On       |
| SNR Margin (dB)                           | 8.1        | 20.4     |
| Attenuation (dB)                          | 5.0        | 5.5      |
| Output Power (dBm)                        | 8.5        | -12.0    |
| Attainable Rate (Kbps)                    | 86100      | 106563   |
| G.INP                                     | Off        | Off      |
| Rate (Kbps)                               | 78229      | 60015    |
| R (number of check bytes in RS code word) | 16         | 0        |
| N (RS codeword size)                      | 255        | 240      |
| L (number of bits in DMT frame)           | 20972      | 15085    |
| S (RS code word size in DMT frame)        | 0.09       | 0.12     |
| D (interleaver depth)                     | 388        | 1        |
| Delay (msec)                              | 9.41       | 0.00     |
| INP (DMT frame)                           | 1.184      | 0.000    |
| FEC errors                                | 0          | 0        |
| OH Frame                                  | 484288     | 382398   |
| OH Frame errors                           | 0          | 1        |
| Total ES                                  | 0          | 1        |
| Total SES                                 | 0          | 0        |
| Total UAS                                 | 126        | 0        |
| Total LOSS                                | --         | --       |
| Last Link Rate                            | 0          | 0        |
| Full Init                                 | 0          |          |
| Failed Full Init                          | 0          |          |
| Synchronized time(Second)                 | 792        |          |
| Synchronized number                       | 2          |          |

# Appendix

## Factory default settings

The following table lists the factory settings of the modem router.

| Parameter     |                          | Default Setting                         |
|---------------|--------------------------|---|
| Login         | Login IP                 | 192.168.1.1                             |
|               | Login User name/Password | admin/admin                             |
| WAN Mode      |                          | DSL                                     |
| VDSL Settings | Enable VLAN              | Disabled                                |
|               | Channel Mode             | Bridged                                 |
|               | Bridge Mode              | Bridged Ethernet (Transparent Bridging) |
|               | Enable NAPT              | Disabled                                |
|               | Admin Status             | Enabled                                 |
|               | Connection Type          | Other                                   |
|               | Enable IGMP-Proxy        | Disabled                                |
| ADSL Settings | VPI                      | 0                                       |
|               | VCI                      | null                                    |
|               | Encapsulation            | LLC                                     |
|               | Channel Mode             | Bridged                                 |
|               | Enable NAPT              | Disabled                                |
|               | Admin Status             | Enabled                                 |

| Parameter          | Default Setting   |  |
|--------------------|-------------------|--|
| LAN Settings       | Connection Type   | Other  |
|                    | Enable IGMP-Proxy | Disabled   |
|                    | IP Address        | 192.168.1.1  |
|                    | Subnet Mask       | 255.255.255.0  |
|                    | IGMP Snooping     | Enabled  |
|                    | DHCP Server       | Enabled  |
|                    | IP Address Range  | 192.168.1.2 – 192.168.1.254  |
|                    | Lease Time        | 1 day  |
|                    | DNS Settings      | Disabled   |
|                    | IPv6 LAN Settings | MaxRtrAdvInterval  |
| MinRtrAdvInterval  |                   | 198  |
| AdvManagedFlag     |                   | Disabled   |
| AdvOtherConfigFlag |                   | Enabled  |
| Prefix Mode        |                   | Auto   |
| MLD Snooping       |                   | Disabled   |
| DHCPv6 Mode        |                   | Auto   |
| Wi-Fi Settings     | Wi-Fi Network     | Enabled  |
|                    | Hide              | Disabled   |
|                    | Wi-Fi Name        | 2.4 GHz Network: Tenda_XXXXXX<br>5 GHz Network: Tenda_XXXXXX_5G<br>XXXXXX is the last six characters of the MAC address of the modem router. |
|                    | Encryption Mode   | WPA2   |

| Parameter  | Default Setting    |   |
|------------|--------------------|---|
|            | Network Mode       | 2.4 GHz Network: 11b/g/n mixed<br>5 GHz Network: 11a/n/ac mixed |
|            | Channel            | 2.4 GHz Network: Auto<br>5 GHz Network: Auto (DFS)              |
|            | Bandwidth          | 2.4 GHz Network: 40<br>5 GHz Network: 80                        |
|            | Wireless Repeating | Disabled  |
|            | WPS                | Disabled  |
|            | Guest Network      | Disabled  |
|            | Services           | DDNS  |
| UPnP       |                    | Disabled  |
| Samba      |                    | Disabled  |
| FTP Server |                    | Disabled  |
| DMZ        |                    | Disabled  |
| IPTV       |                    | Disabled  |
| Advanced   |                    | MLD Proxy   |
|            | SNMP               | Disabled  |
|            | TR069 Daemon       | Enabled   |
| VPN        | PPTP/L2TP Client   | Disabled  |
| Firewall   | URL Blocking       | Disabled  |
|            | DDOS               | Disabled  |
|            | ALG                | Enabled   |

| <b>Parameter</b> |            | <b>Default Setting</b> |
|------------------|------------|------------------------|
|                  | ACL        | Enabled                |
| System Settings  | System log | Disabled               |

# Acronyms and Abbreviations

| Acronym or Abbreviation | Full Spelling                       |
|-------------------------|-------------------------------------|
| ACL                     | Access Control List                 |
| ACS                     | Auto-Configuration Server           |
| ADSL                    | Asymmetric Digital Subscriber Line  |
| AES                     | Advanced Encryption Standard        |
| AFTR                    | Address Family Transition Router    |
| AH                      | Authentication Header               |
| ALG                     | Application Layer Gateway           |
| ATM                     | Asynchronous Transfer Mode          |
| CBR                     | Constant bitrate                    |
| CDVT                    | Cell delay variation tolerance      |
| CPU                     | Central processing unit             |
| DDNS                    | Dynamic Domain Name System          |
| DDOS                    | Distributed denial-of-service       |
| DES                     | Data Encryption Standard            |
| DFS                     | Dynamic Frequency Selection         |
| DHCP                    | Dynamic Host Configuration Protocol |
| DMT                     | Discrete multitone modulation       |
| DMZ                     | Demilitarized zone                  |
| DNS                     | Domain Name System                  |
| DSL                     | Digital subscriber line             |

| <b>Acronym or Abbreviation</b> | <b>Full Spelling</b>               |
|--------------------------------|------------------------------------|
| DSP                            | Digital signal processor           |
| ESP                            | Encapsulating Security Payload     |
| FQDN                           | Fully qualified domain name        |
| FTP                            | File Transfer Protocol             |
| ICMP                           | Internet Control Message Protocol  |
| IGMP                           | Internet Group Management Protocol |
| IKE                            | Internet Key Exchange              |
| IP                             | Internet Protocol                  |
| IPsec                          | Internet Protocol Security         |
| IPoA                           | IP over ATM                        |
| IPoE                           | IP over Ethernet                   |
| IPTV                           | Internet Protocol television       |
| IPv4                           | Internet Protocol version 4        |
| IPv6                           | Internet Protocol version 6        |
| ISP                            | Internet service provider          |
| L2TP                           | Layer 2 Tunneling Protocol         |
| LAN                            | Local Area Network                 |
| LED                            | Light-emitting diode               |
| LLC                            | Logical link control               |
| MAC                            | Medium access control              |
| MBS                            | Maximum burst size                 |

| <b>Acronym or Abbreviation</b> | <b>Full Spelling</b>                  |
|--------------------------------|---------------------------------------|
| MD5                            | Message-digest algorithm              |
| MIB                            | Management information base           |
| MLD                            | Multicast Listener Discovery          |
| MTU                            | Maximum transmission unit             |
| NMS                            | Network management system             |
| NAPT                           | Network address port translation      |
| NDP                            | Neighbor Discovery Protocol           |
| NMS                            | Network management system             |
| PCR                            | Peak cell rate                        |
| PIN                            | Personal identification number        |
| POTS                           | Plain Old Telephone Service           |
| PPP                            | Point to Point Protocol               |
| PPPoA                          | PPP over ATM                          |
| PPPoE                          | Point-to-Point Protocol over Ethernet |
| PPTP                           | Point to Point Tunneling Protocol     |
| PVC                            | Permanent virtual circuit             |
| QoS                            | Quality of service                    |
| RADVD                          | Router Advertisement Daemon           |
| RDNSS                          | Recursive DNS Server                  |
| RTSP                           | Real Time Streaming Protocol          |
| SA                             | Security Association                  |

| <b>Acronym or Abbreviation</b> | <b>Full Spelling</b>                    |
|--------------------------------|---|
| SCR                            | Sustainable Cell Rate                   |
| SHA                            | Secure Hash Algorithm                   |
| SIP                            | Session Initiation Protocol             |
| SNMP                           | Simple Network Management Protocol      |
| SNTP                           | Simple Network Time Protocol            |
| SPI                            | Security Parameter Index                |
| SRA                            | Seamless Rate Adaptation                |
| SSID                           | Service set identifier                  |
| TCP                            | Transmission Control Protocol           |
| TR069                          | Technical Report - 069                  |
| UBR                            | Unspecified bit rate                    |
| UDP                            | User Datagram Protocol                  |
| UI                             | User interface                          |
| UPnP                           | Universal Plug and Play                 |
| URL                            | Uniform Resource Locator                |
| USB                            | Universal serial bus                    |
| VBR                            | Variable Bit Rate                       |
| VCI                            | Virtual Channel Identifier              |
| VDSL                           | Very high-speed digital subscriber line |
| VLAN                           | Virtual Local Area Network              |
| VoD                            | Video on demand                         |

| <b>Acronym or Abbreviation</b> | <b>Full Spelling</b>                  |
|--------------------------------|---------------------------------------|
| VoIP                           | Voice over IP                         |
| VPI                            | Virtual path identifier               |
| VPN                            | Virtual private network               |
| WAN                            | Wide Area Network                     |
| WDS                            | Wireless Distribution System          |
| WLAN                           | Wireless local area network           |
| WPA                            | Wi-Fi Protected Access                |
| WPA-PSK                        | Wi-Fi Protected Access Pre-Shared Key |
| WPS                            | Wi-Fi Protected Setup                 |