IP-COM

User Guide

Dual Band Gigabit Wi-Fi 6 Router

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Preface

This guide describes how to configure each feature of the following IP-COM Wireless router.

- X2LR Pro
- X12LR Pro

Note

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

Conventions

This guide is for reference only and does not imply that the product supports all functions in the guide.

The functions may differ with different product models or different versions of the same model. The actual product prevails.

The product figures and screenshots in this guide are for examples only. They may be different from the actual products you purchased, but do not affect the normal use.

In this guide, unless otherwise specified:

- The firmware version uses V16.03.51.11 of X2LR Pro as an example.
- **IPCOM Home** app version V1.0.0 is used as an example. The actual operation and UI interface of the App version prevail.
- The screenshots use the router mode as an example. For other working modes, the actual web UI prevails.
- The iOS system is used for illustration here.

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

Item	Presentation	Example
Cascading menus	>	Navigate to **System** > **Live Users**.
Parameter and value	Bold	Set **User Name** to **Tom**.
Variable	Italic	Format: *XX*:*XX*:*XX*:*XX*:*XX*:*XX*
UI control	Bold	On the **Policy** page, tap the **OK** button.

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

Symbol	Meaning
	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 the device.
	This format is used to highlight a procedure that will save time or resources.

More Information and Support

Visit www.ip-com.com.cn and search for the product model to get your questions answered and get the latest documents.

Revision History

IP-COM is constantly searching for ways to improve its products and documentation. The following table indicates any changes that might have been made since the user guide was released.

Version	Date	Description
V1.1	2025-02-13	Compatible Model: X12LR Pro
V1.0	2024-11-20	Original publication.

Contents

1 App Download and Installation

Download the **IPCOM Home** app onto your mobile device by scanning the **QR** code or by searching for **IPCOM Home** in **Google Play** or **App Store**. Then install the **IPCOM Home** app.

Or

IPCOM Home app

2 Registration and Binding

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

2.1 Register an IP-COM Account

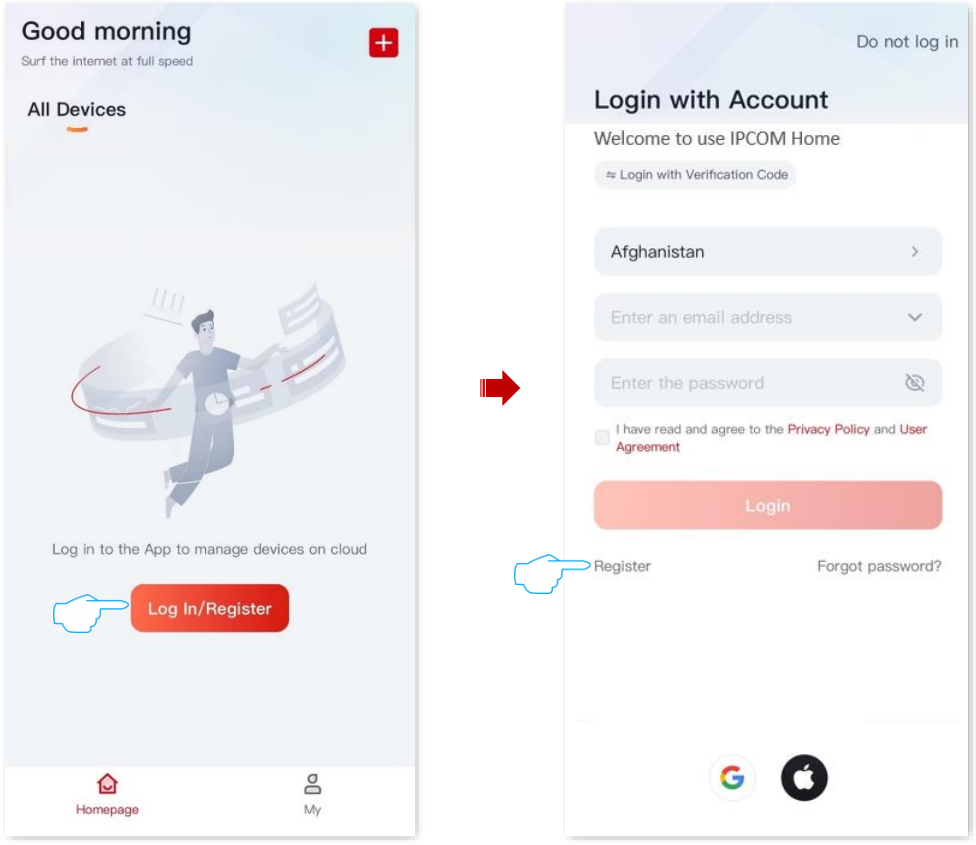
You can register an IP-COM account and log in with it to manage the wireless router.

Tip

To log in to the **IPCOM Home** app using a third-party account without registering an IP-COM account, see Log in to IPCOM Home App.

Procedure:

1. Run the **IPCOM Home** app, and tap **Log In/Register**.
2. Tap **Register**, and enter the relevant parameters for registration.



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After successful registration, the account will be automatically logged in.

Tip

If the on-screen prompts pop-up to allow the App to access the relevant permissions of the mobile clients (such as a smartphone), please allow it.

2.2 Log In to IPCOM Home App

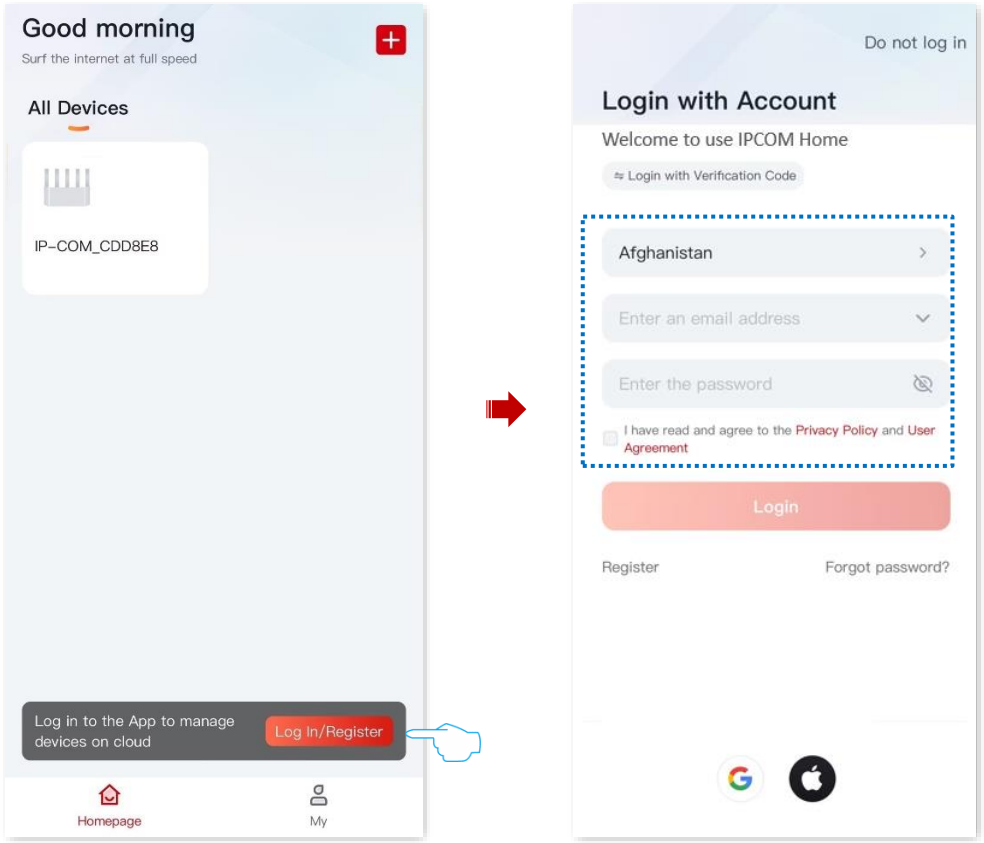
Log in to the **IPCOM Home** app, and the router is successfully managed by the **IPCOM Home** app. The router will be bound under the account, and you can manage the router anytime and anywhere.

Tip

If a router has been bound by one account, it cannot be bound by another account, and other accounts can only manage the router through authorized methods.

2.2.1 Login with Account

1. Run the **IPCOM Home** app, and tap **Log In/Register**. The following figure is for reference only.
2. Enter the username and password, tick **I have read and agree to the Privacy Policy and User Agreement**, and tap **Login**.



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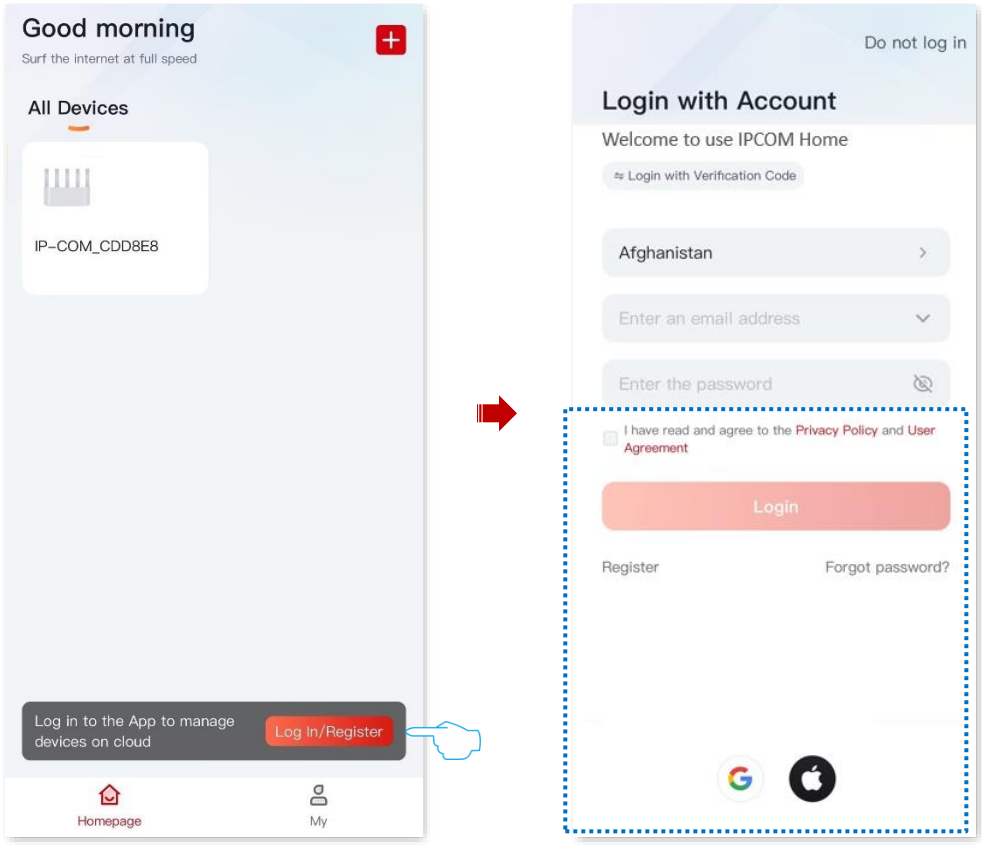
2.2.2 Login with the Third-party

1. Run the **IPCOM Home** app, and tap **Log In/Register**. The following figure is for reference only.
2. Tick **I have read and agree to the Privacy Policy and User Agreement**, select the third-party application to authorize login, and agree to login.



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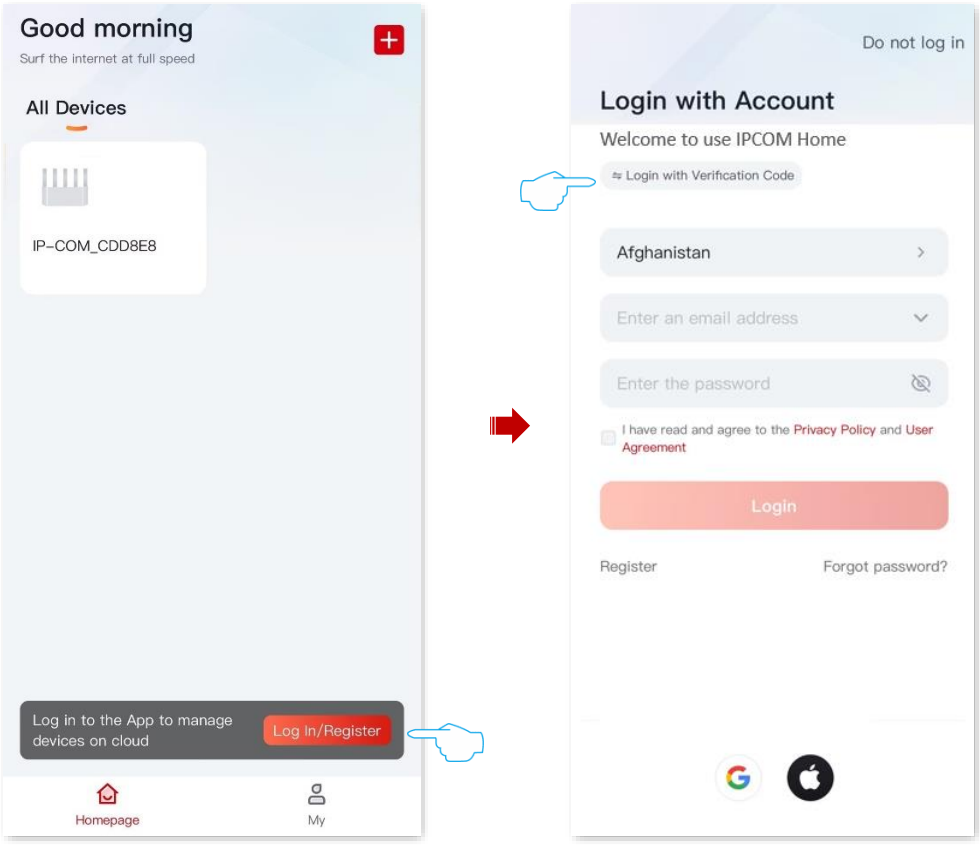
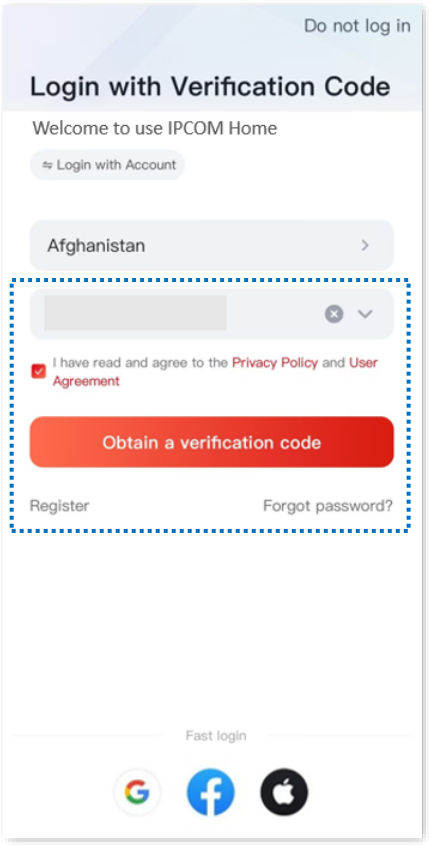
2.2.3 Login with Verification Code

1. Run the **IPCOM Home** app, and tap **Log In/Register**. The following figure is for reference only.
2. Tap **Login with Verification Code**.



3. Enter the email address, and tick **I have read and agree to the Privacy Policy and User Agreement**, and tap **Obtain a verification code**.

4. Enter the verification code to log in to the App.



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3 Add a Router for the First Time

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This section applies to configuring the router in factory status to the internet through the **IPCOM Home** app. After the router is managed through the **IPCOM Home** app, the router will be bound to the App account, and you can manage the router anytime and anywhere.

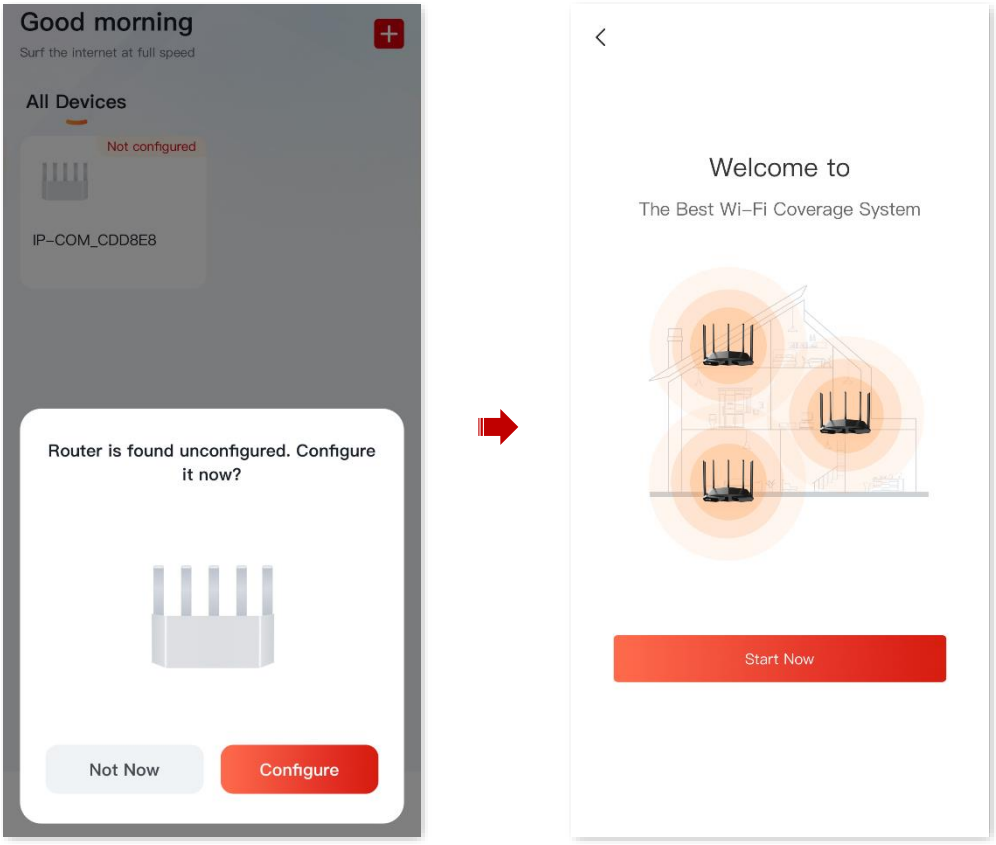
If you want to unbind a router managed by the App, refer to Q10 in the **FAQ**.

Tip

After unbound the router managed by the App, you cannot manage the router through the App anytime and anywhere.

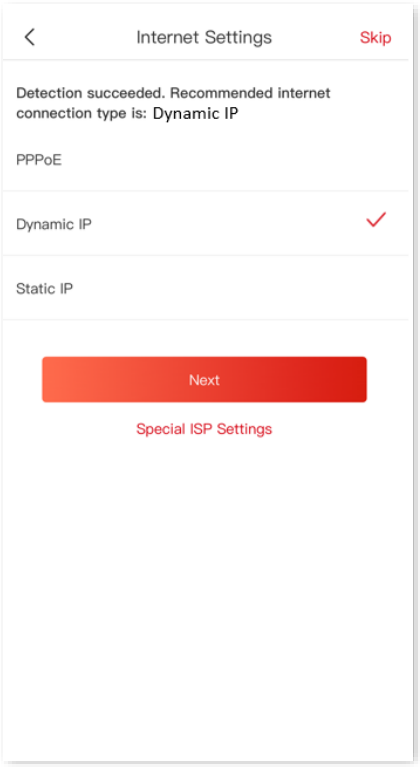
Configuration procedure:

1. Connect the smartphone to the router's Wi-Fi. The default Wi-Fi information can be found in the device label.
2. Run and log in to the **IPCOM Home** app.
3. Once the router is detected, tap **Configure**, then tap **Start Now**.

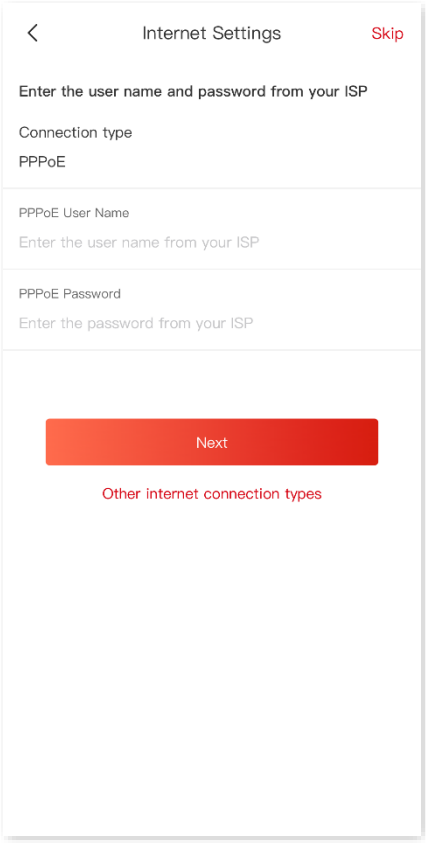


4. The router detects your connection type automatically. Enter the relevant networking parameters according to the prompts and tap **Next**.

Scenario 1: Your internet access is available without further configuration (for example, PPPoE connection through an optical modem is completed).



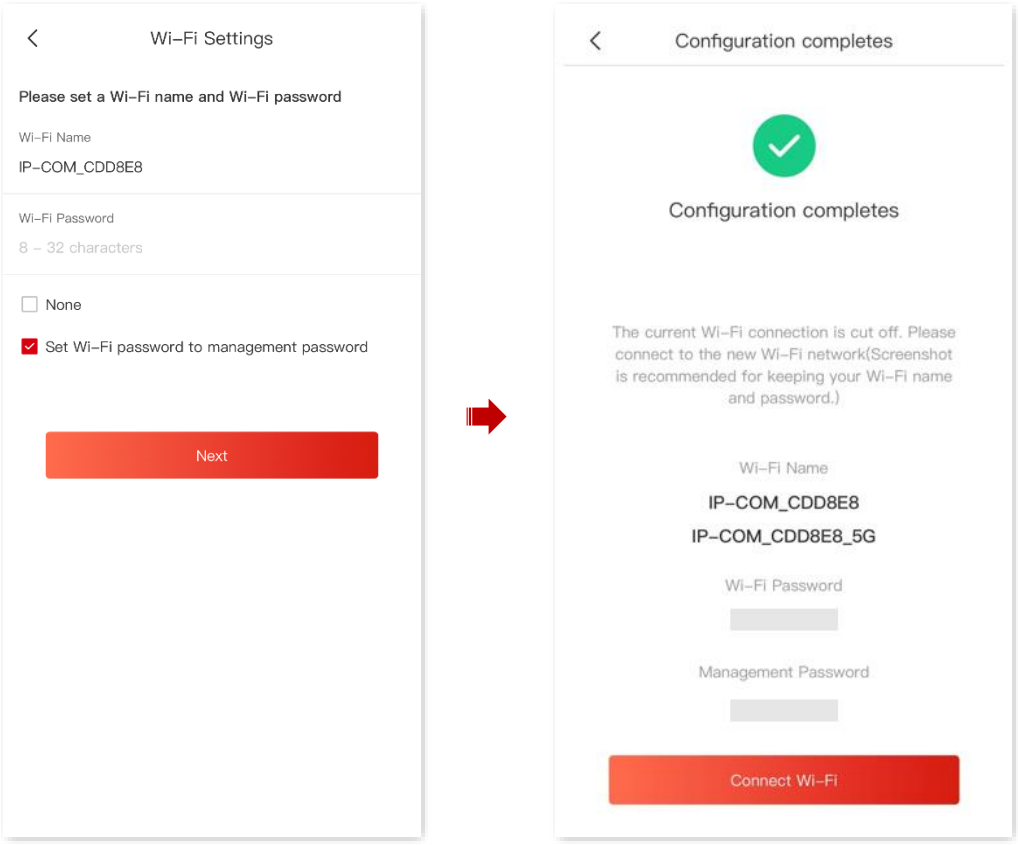
Scenario 2: Enter the PPPoE user name and password are required for internet access.



5. Customize the **Wi-Fi Name**, **Wi-Fi Password** and **Login Password**, and tap **Next**.

Tip

By default, the Wi-Fi password is set as the login password. To use different passwords for Wi-Fi access and web UI login, deselect **Set Wi-Fi password to management password**, and set **Wi-Fi Name** and **Wi-Fi Password** for Wi-Fi login, and set **Login Password** for web UI login.



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To access the internet with:

- **Wi-Fi-enabled devices:** Connect to the Wi-Fi network using Wi-Fi name and password you set. You can connect to any Wi-Fi. 5G Wi-Fi is recommended.
- **Wired devices:** Connect to a LAN port (such as **1, 2, 3/IPTV**) of the router using an Ethernet cable.

4 MESH Networking

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter introduces Mesh networking methods in the following sections:

4.1 Overview

IP-COM WiFi+ routers support Mesh networking. Mesh networking has such advantages as automatic networking, self-repair, multi-skip cascade, unified management network, node self-management, which can greatly reduce the cost and complexity of network deployment.

4.2 Set Up as an Add-on Node

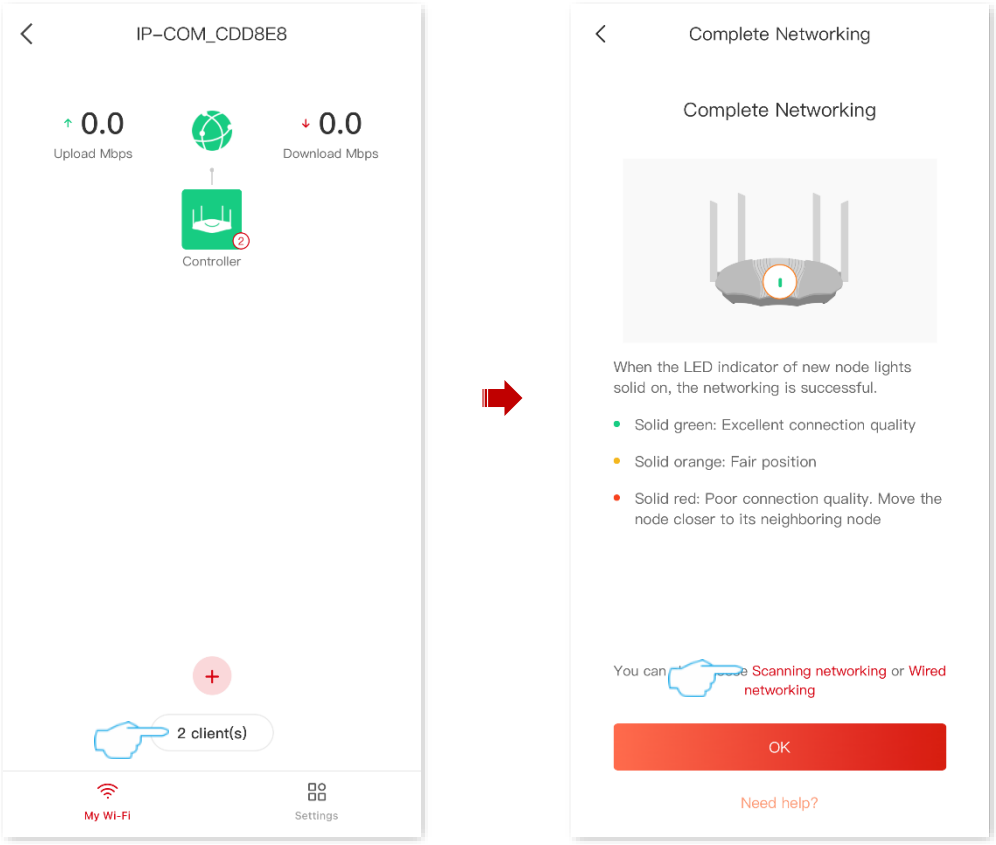
This section describes how to add a new router to extend the wireless network coverage when a router is connected to the internet.

If you are using the router for the first time or have restored the router to factory settings, follow the quick installation guide of the corresponding router model to configure the router to the internet.

Tip

- If there are more than two secondary nodes, place the primary node in the key area and ensure that no more than one node is between the primary node and the secondary node.
- Before using a new router to extend the network, ensure that the existing router (primary node) has been connected to the internet and the new router (secondary node) is restored to the factory settings.
- The router can be networked with **IP-COM WiFi+** routers. If the router fails to be added to an existing network, contact IP-COM customer service for help. The following uses two X2LR Pro routers as an example.

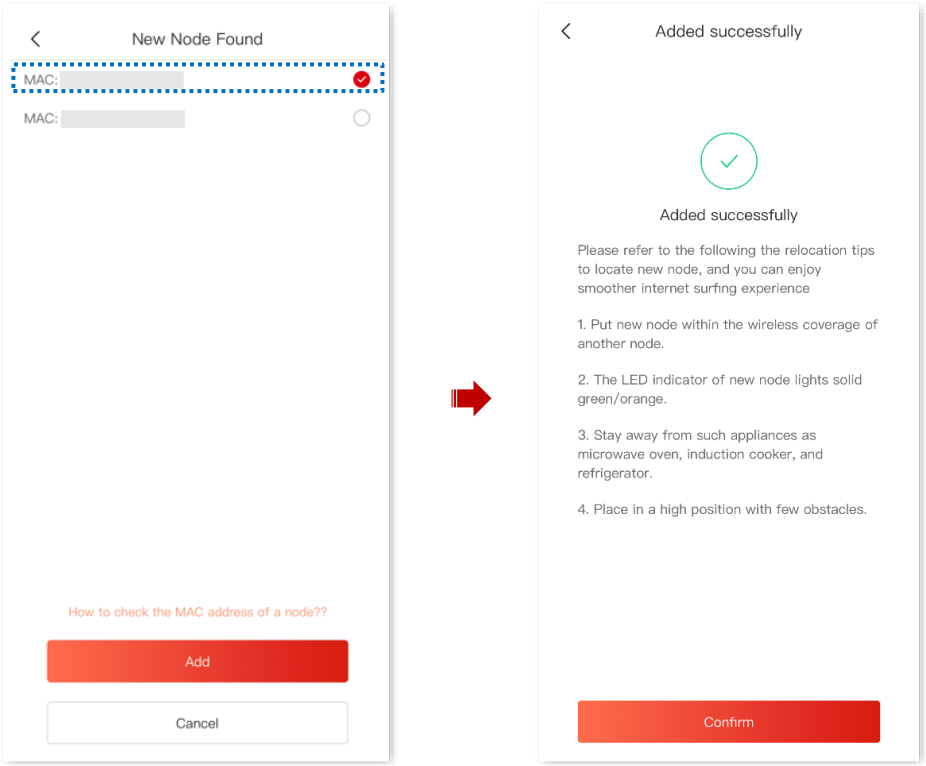
1. Place the new router near the existing router (within 3 meters) and power on. Wait until the startup of the new router is complete. The indicator blinks green slowly.
2. Use **IPCOM Home** app to manage the current network.
   - **Method 1:** Local Management. Wi-Fi-enabled devices such as smartphones (with App installed) are connected to the Wi-Fi of the current network.
   - **Method 2:** Remote Management. On the Wi-Fi-enabled devices such as smartphones that have been connected to the internet. Log in to the **IPCOM Home** app using the **IPCOM Home** app account used when managing the primary node of the router.
3. Log in to the **IPCOM Home** app, and add the router.
   1) Enter the configuration page of the router.
   2) Enter **My Wi-Fi** page, and tap + . The following figure is for reference only.
   3) Tap **Next** > **Next**, and ignore the button networking guidance. Tap **Scanning networking** in **Complete Networking** page.



4) The system discovers a new node, ensure that the MAC address or SN is the same as the MAC address or SN on the bottom label of the new router, select a node, and tap **Add**. Wait for a moment, add successfully, and tap **Confirm**. The following figure is for reference only.

Tip

- The MAC address and SN of the device can be found on the label of the device body.
- You can add only one node at a time by scanning.



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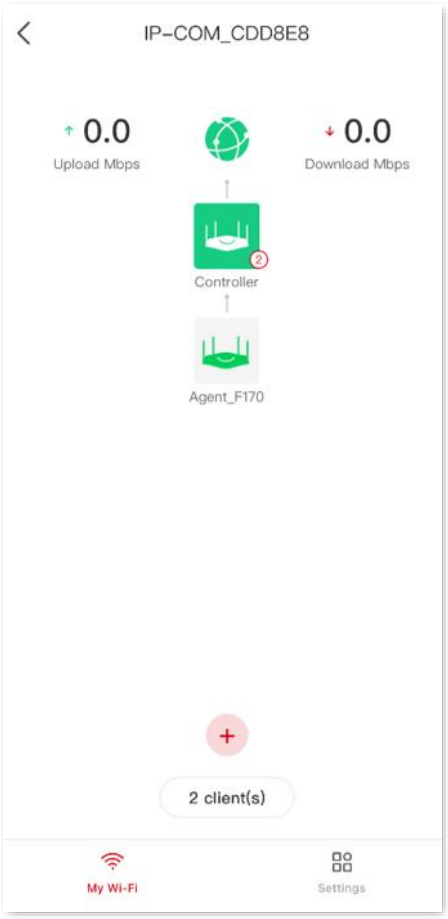
Back to the **My Wi-Fi** page, you can see that the X2LR Pro router has successfully joined the network as a secondary node.



To access the internet with:

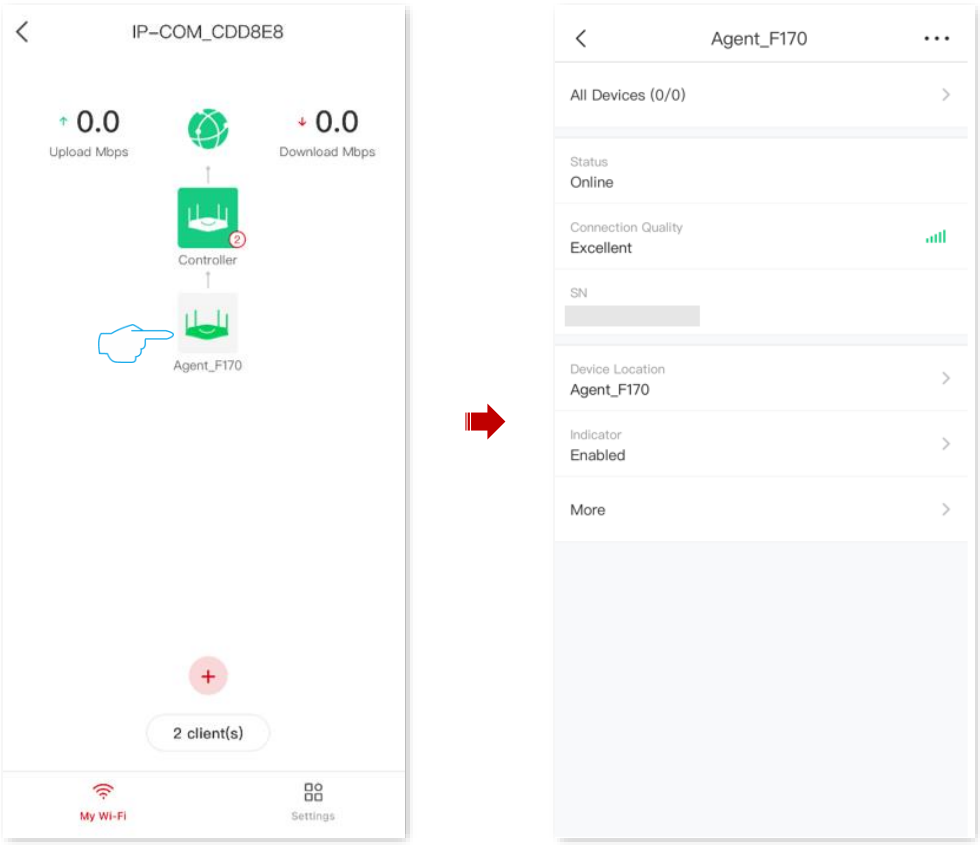
- **Wired devices:** Connect to a LAN port (such as 1, 2 or 3/IPTV) of the wireless router using an Ethernet cable.
- **Wi-Fi-enabled devices:** Connect to the Wi-Fi network using the Wi-Fi name and password you set. (The Wi-Fi name and Wi-Fi password of all nodes are the same.)

4.3 Remove the Secondary Node from the Network

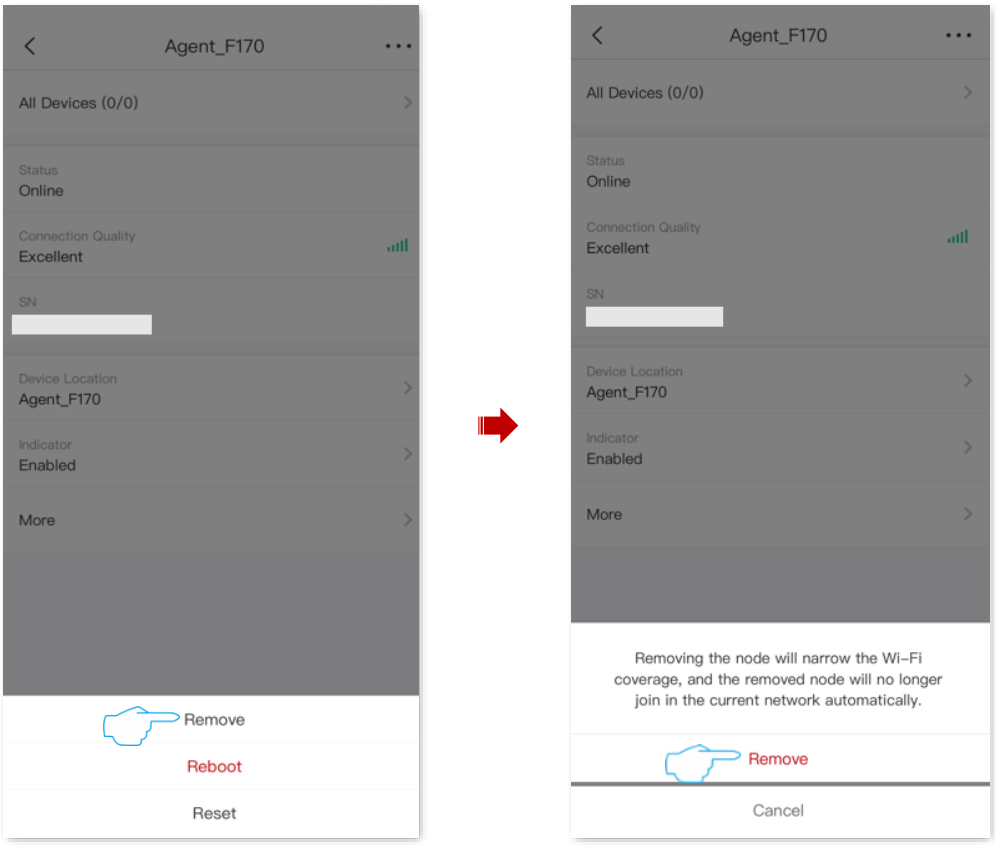
Remove the secondary node will reduce the network coverage and the node is no longer automatically added to the network.

Configuration procedure:

1. Enter the configuration page of the router.
2. Run the **IPCOM Home** app, and tap secondary node icon on **My Wi-Fi** page.
3. Tap ••• in the upper-right corner. The following figure is for reference only.



4. Tap **Remove**, read the prompt message, and tap **Remove**.



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5 Manage the Router

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

This series IP-COM router supports **IPCOM Home** app management, including local management and remote management, you can choose the management method as required.

5.1 Local Management

1. Connect the smartphone to the router's Wi-Fi. (The default Wi-Fi name can be found on the device label.)
2. Run the **IPCOM Home** app, and refer to the on-screen prompts to manage the router.

---End

5.2 Remote Management

Remote management indicates that you can use the **IPCOM Home** app to manage your router anytime and anywhere without connecting to the Wi-Fi network of the wireless router.

Prerequisites:

- Your router is connected to the internet.
- Your **IPCOM Home** app account is bound to the corresponding router.

Configuration procedure:

1. Connect the smartphone to the internet.
2. Run and log in to the **IPCOM Home** app, and manage the router that is bound or authorized to be managed.

Tip

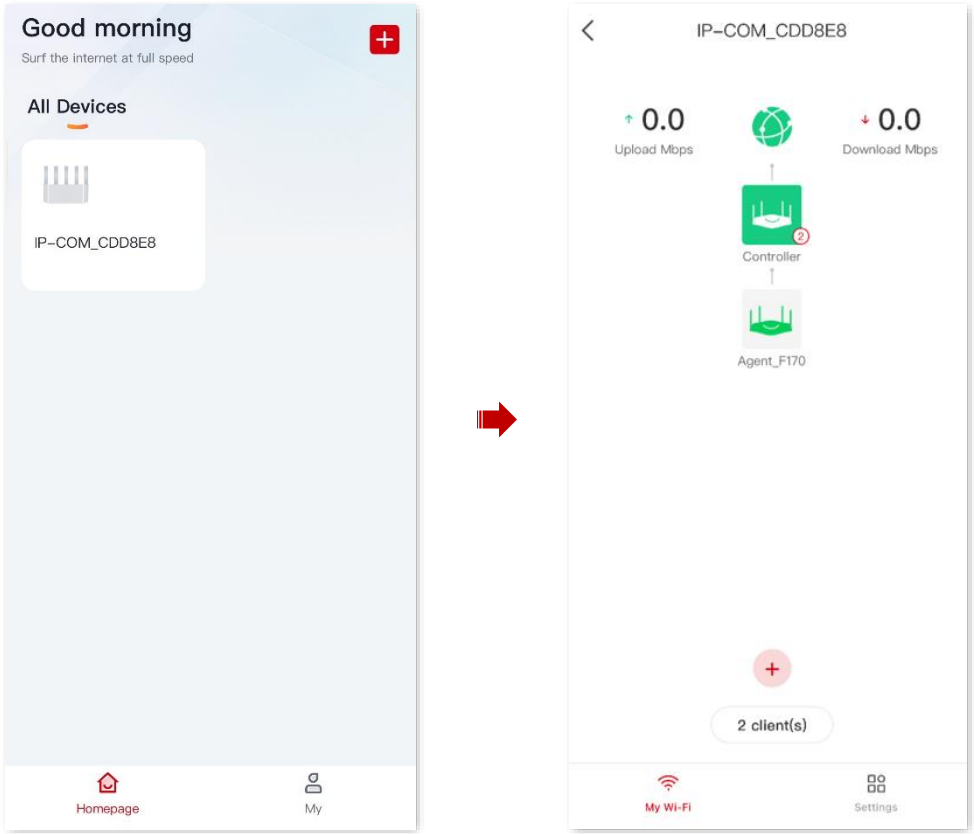
If the router is bound, it can only be managed using an administrator account or with authorization.

---End

6 Enter the Router's Configuration Page

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

Run the **IPCOM Home** app, after the router is successfully managed, and tap the corresponding device icon on the **Homepage** to enter the router's configuration page. The following figure is for reference only.



7 Internet Settings

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following parts:

7.1 IPv4 Internet Settings

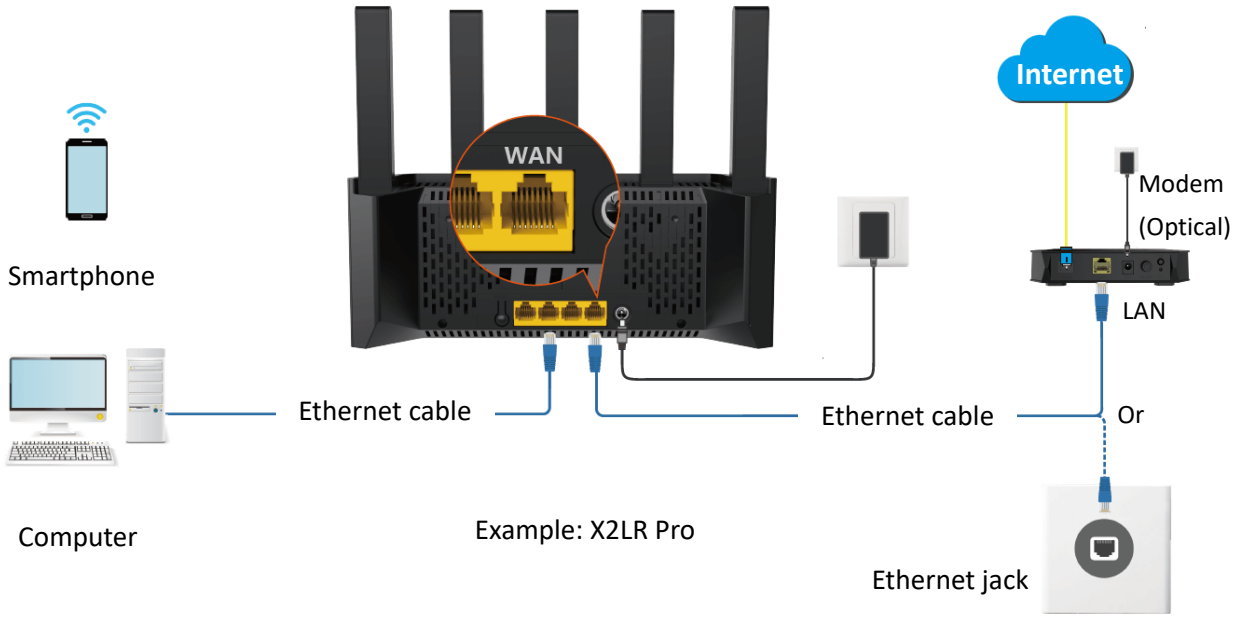
By configuring the internet settings, you can achieve shared internet access (IPv4) for multiple users within the LAN.

Tip

Parameters for internet access are provided by your ISP. Contact your ISP for any doubt.

7.1.1 Access the Internet with a PPPoE Account

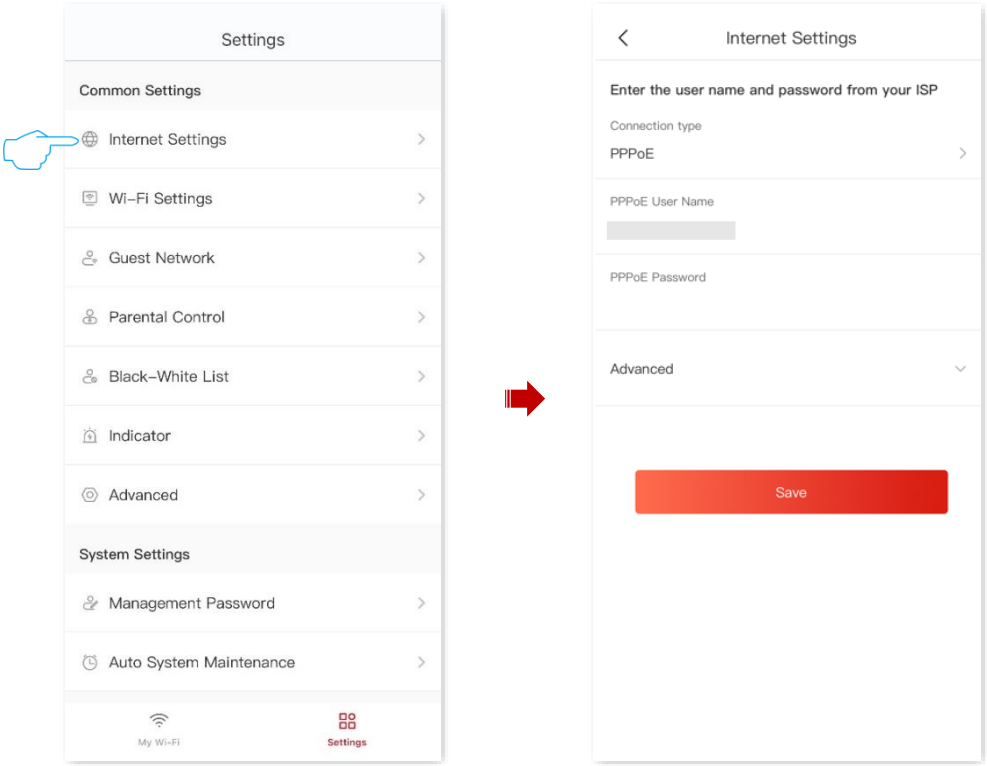
If the ISP provides you with the PPPoE user name and password, you can choose this connection type to access the internet. The application scenario is shown below.



To access the internet with a PPPoE account:

1. Enter the configuration page of the router, and navigate to **Settings** > **Internet Settings**.
2. Set **Connection type** to **PPPoE**, and tap **Next**.
3. Enter the **PPPoE User Name** and **PPPoE Password** provided by your ISP.
4. Perform advanced settings as required.

   If the ISP provides **Server Name** and **Service Name**, enter the corresponding parameters. If not, keep it as default.
5. Tap **Save**.



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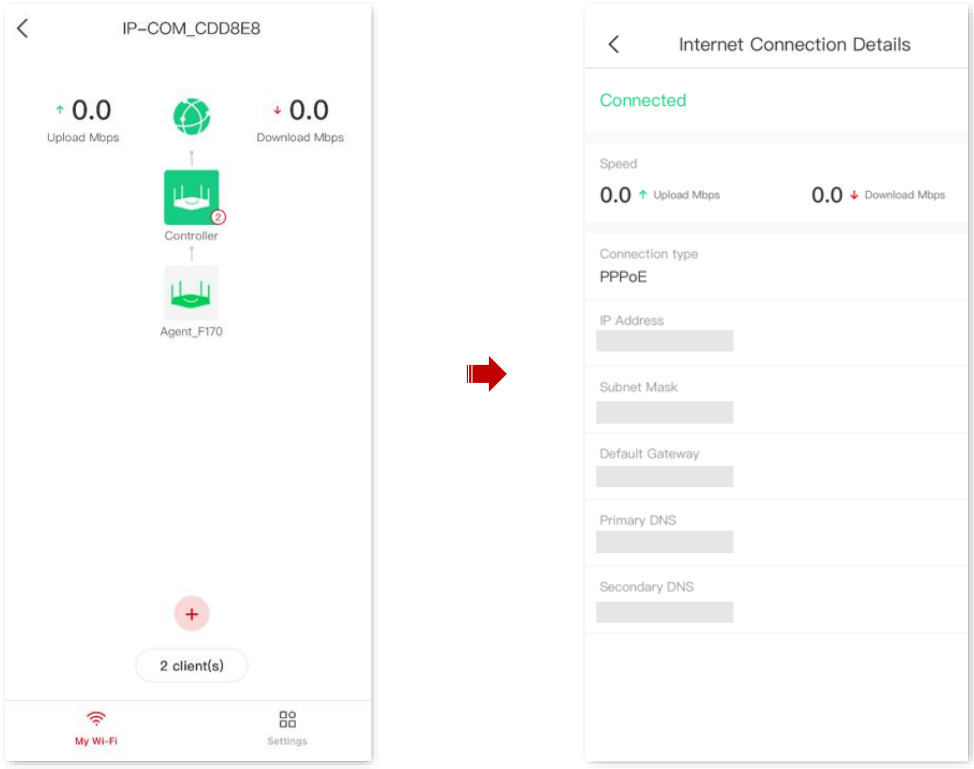
After the settings are completed, you can go to the **My Wi-Fi** page and tap  to view the internet connection details. The following figure is for reference only.

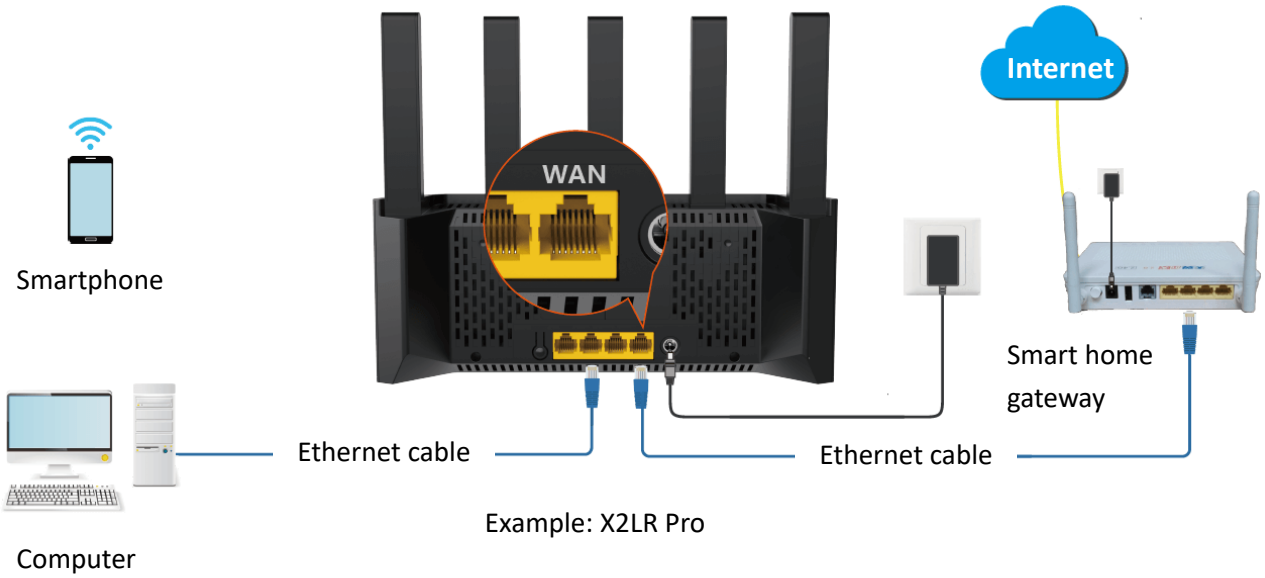


7.1.2 Access the Internet through Dynamic IP

Generally, accessing the internet through dynamic IP is applicable in the following situations:

- Your ISP does not provide the PPPoE user name and password, or any other information including IP address, subnet mask, default gateway and DNS server.
- You already have a router with internet access and want to add another router.

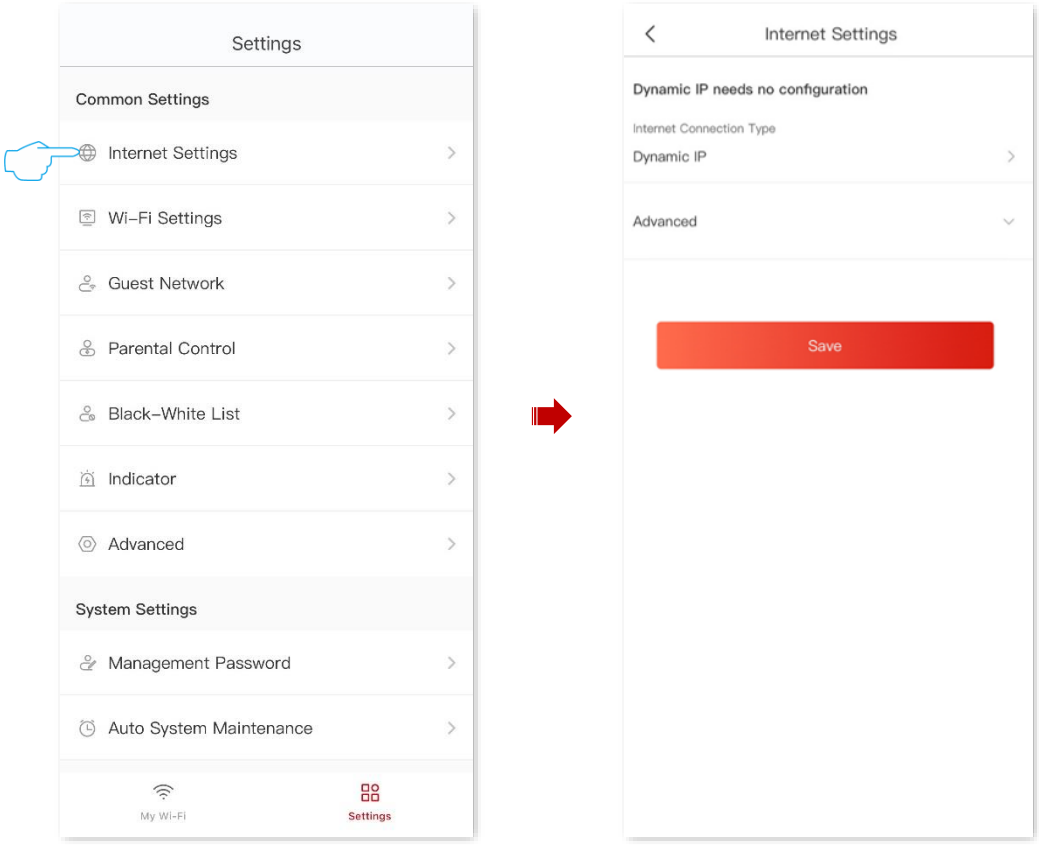
The application scenario is shown below.



Example: X2LR Pro

To access the internet through dynamic IP address:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Internet Settings**.
3. Set **Internet Connection Type** to **Dynamic IP**, and tap **Next**.
4. Tap **Save**.



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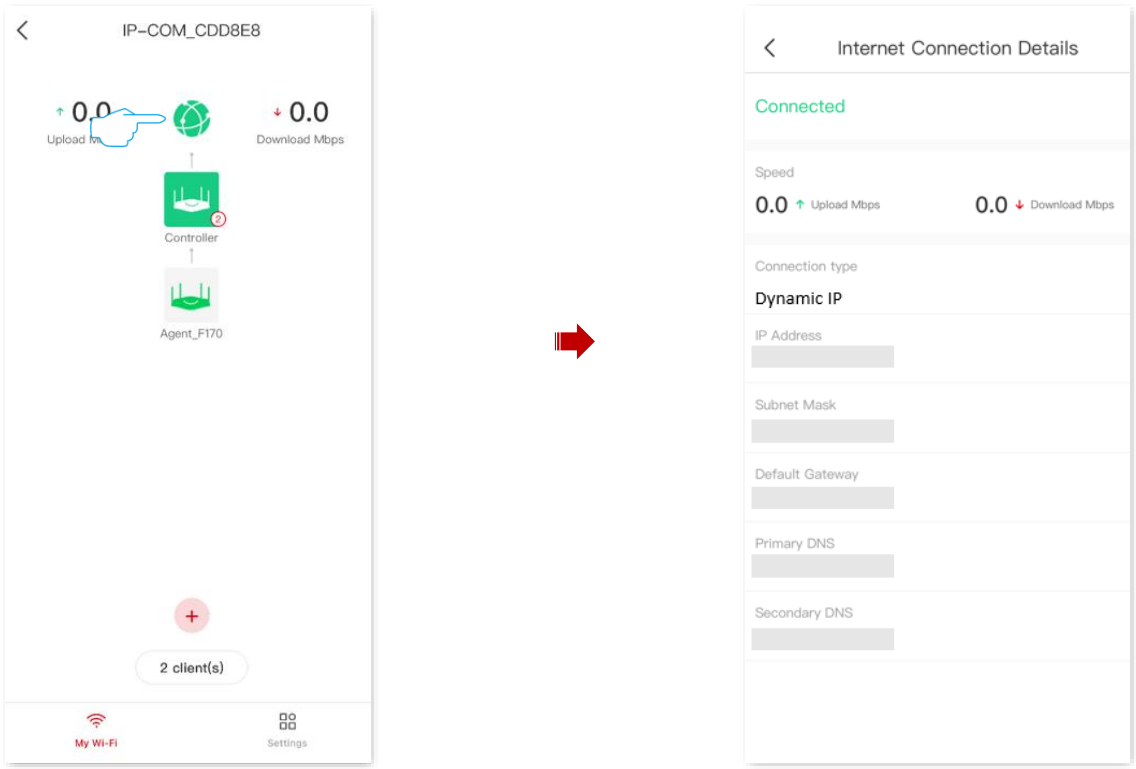
After the settings are completed, you can go to the **My Wi-Fi** page and tap to view the internet connection details. The following figure is for reference only.

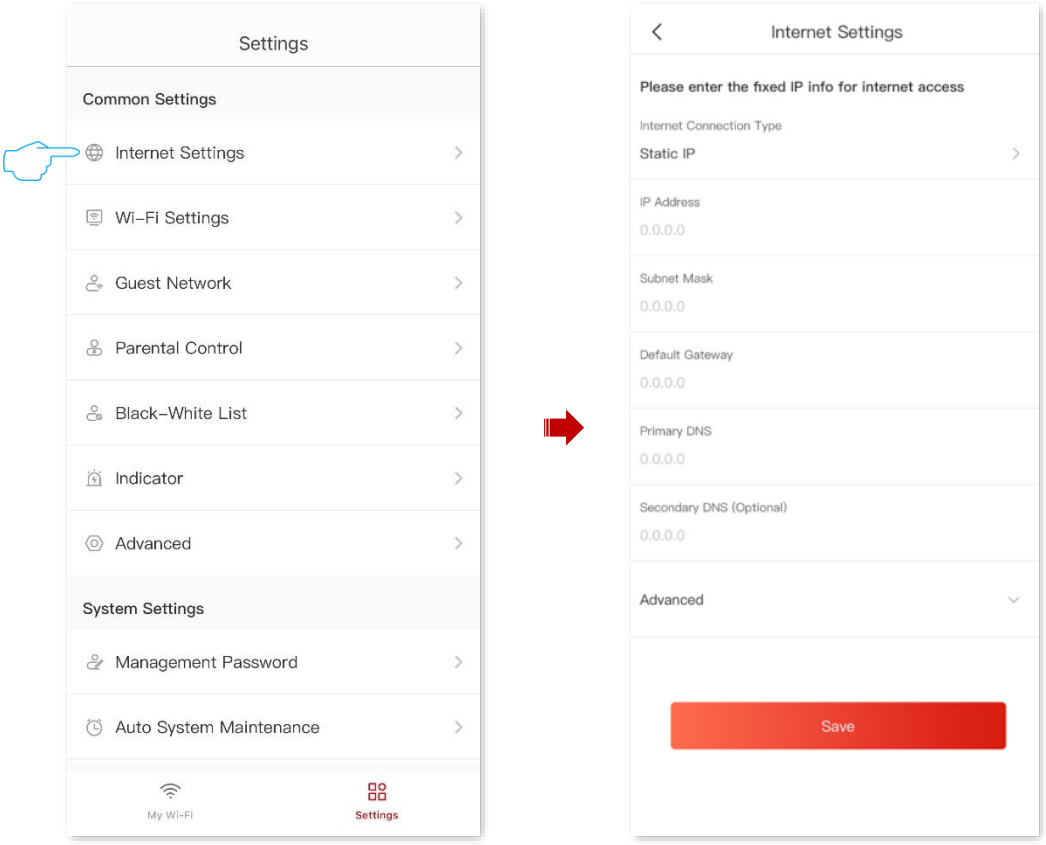


7.1.3 Access the Internet with a Set of Static IP Address Information

When your ISP provides you with information including IP address, subnet mask, default gateway and DNS server, you can choose this connection type to access the internet.

To access the internet with a set of static IP address information:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Internet Settings**.
3. Set **Internet Connection Type** to **Static IP**, and tap **Next**.
4. Set **IP Address**, **Subnet Mask**, **Default gateway** and **Primary DNS**, and **Secondary DNS** with the information provided by your ISP.
5. Tap **Save**.



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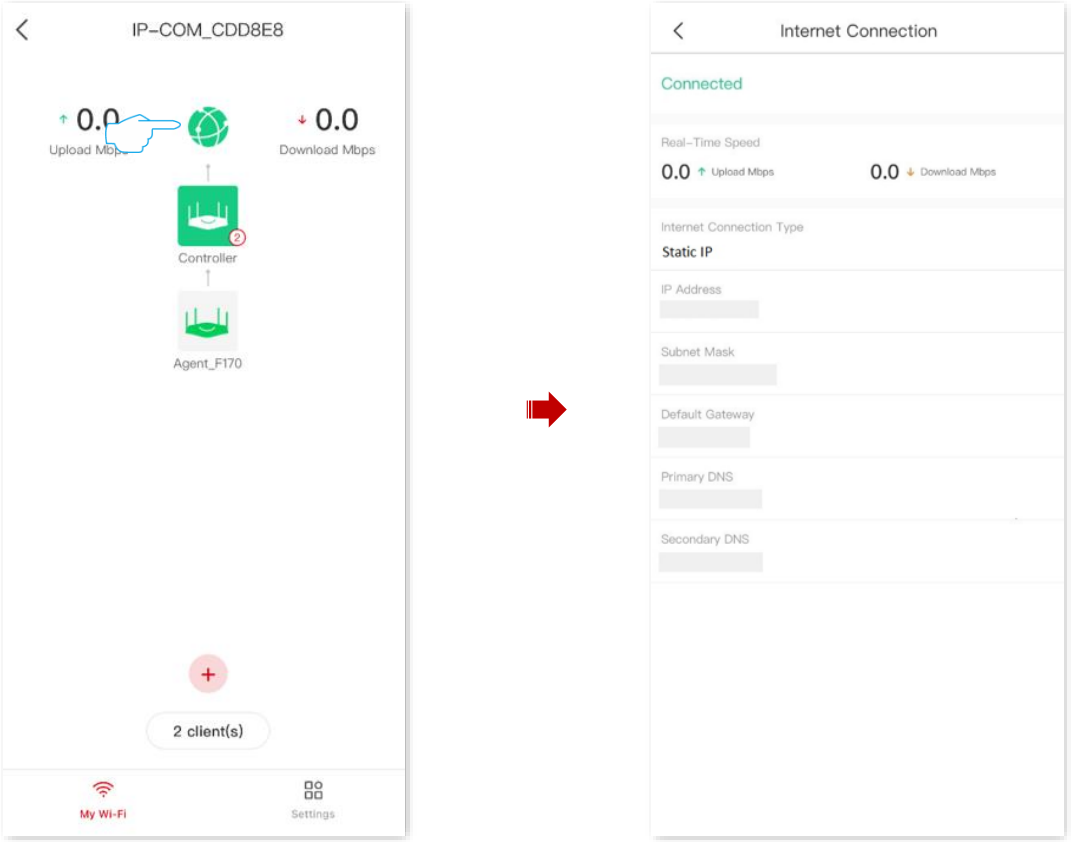
After the settings are completed, you can go to the **My Wi-Fi** page and tap to view the internet connection details. The following figure is for reference only.

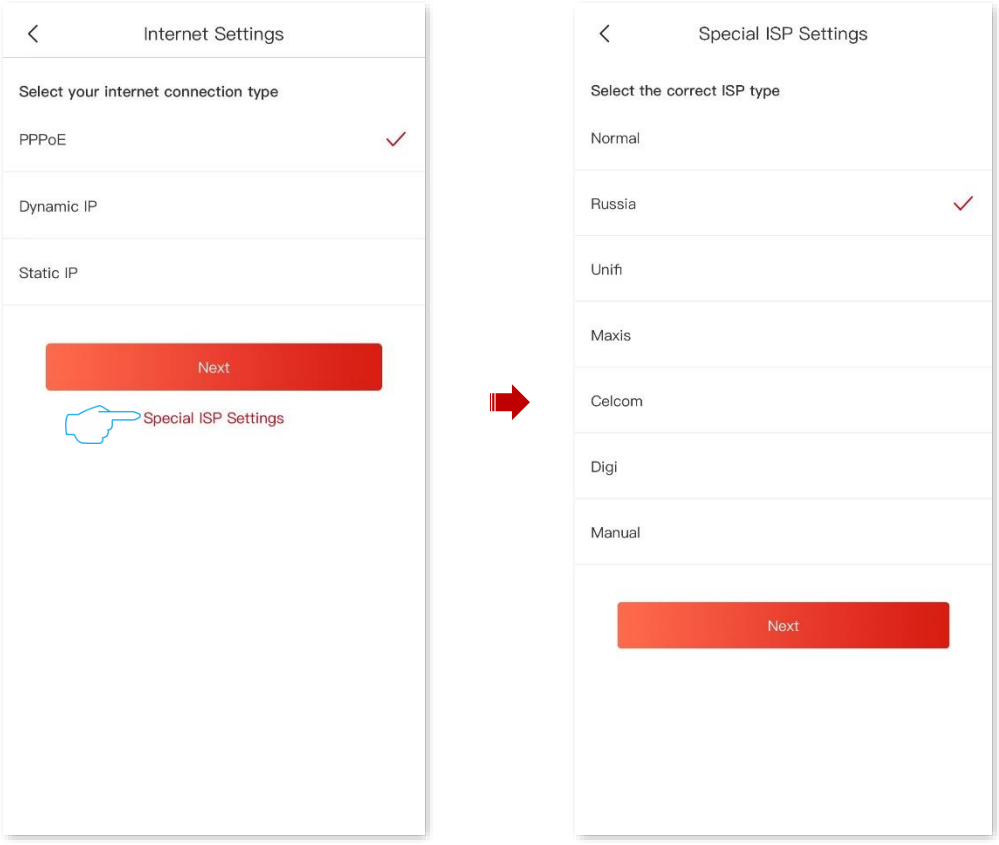


7.1.4 Set Up Dual Access Connection

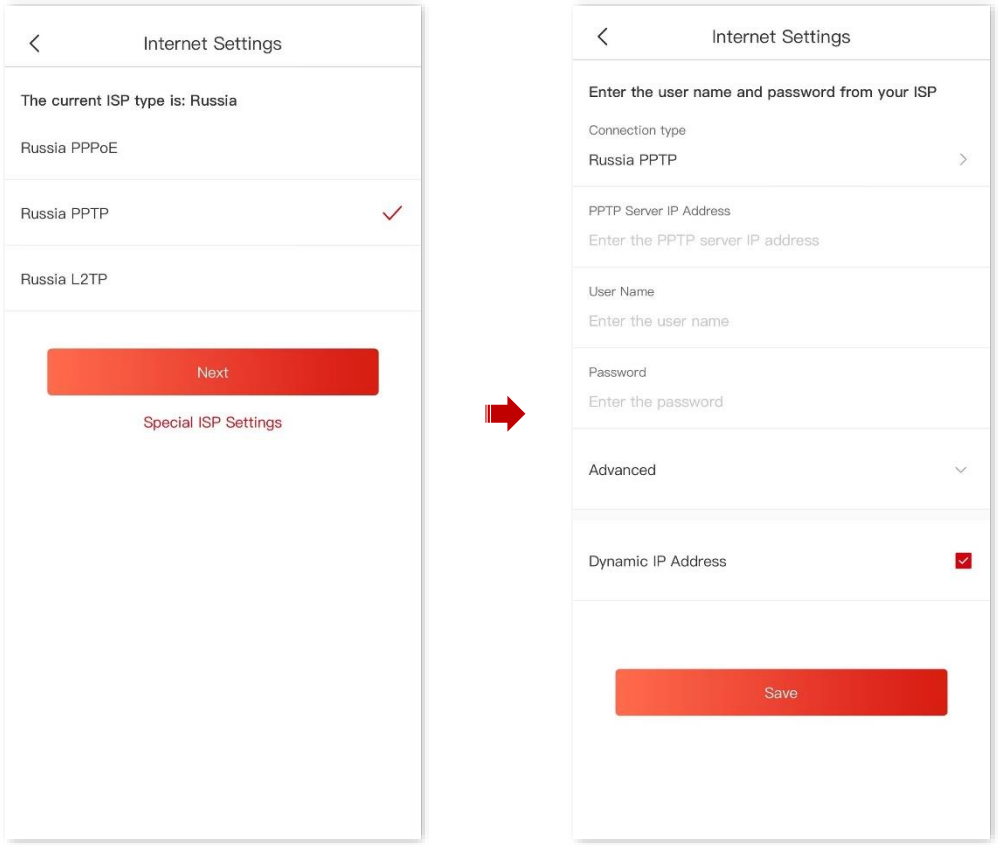
In countries like Russia, the ISP may require you to set up dual access. One is for access to the internet through PPPoE, PPTP or L2TP, and the other is for access to the **local** resources where the ISP is located through DHCP or static IP address. If your ISP provides such connection information, you can set up dual access to access the internet.

To set up dual access connection:

1. Enter the configuration page of the router.
2. Navigate to **Internet Settings**.
3. Set **Connection Type**, and tap **Special ISP Settings**.
4. Select **Russia**, and tap **Next**.



5. Select an internet connection type, which is **Russia PPTP** in this example, fill in required parameters, and tap **Save**.



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Now you can access the internet.

7.2 IPv6 Settings

7.2.1 Overview

IPv6, abbreviated for Internet Protocol Version 6, is the second-generation network layer protocol. IPv6 is an upgraded version of Internet Protocol version 4 (IPv4), which is the solution that addresses the relatively limited number of IP addresses possible under IPv4.

An IPv6 address is 128 bits long and is arranged in eight groups, each of which is 16 bits. Each group is expressed as four hexadecimal digits and the groups are separated by colons. An IPv6 address is split into two parts:

- Network Prefix: n bits, equivalent to the network ID in the IPv4 address.
- Interface Identifier: 128-n bits, equivalent to the host ID in the IPv4 address.

This router supports IPv4 and IPv6. You can connect to the IPv6 network of ISPs through IPv6 WAN settings.

The router can access the IPv6 network of ISPs through three connection types. Choose the connection type by referring to the following chart.

Scenario	Connection Type
- The ISP does not provide any PPPoEv6 user name and password and information about the IPv6 address. - You have a router that can access the IPv6 network.	DHCPv6
IPv6 service is included in the PPPoE user name and password.	PPPoEv6
The ISP provides you with a set of information including IPv6 address, subnet mask, default gateway and DNS server.	Static IPv6 address

Tip

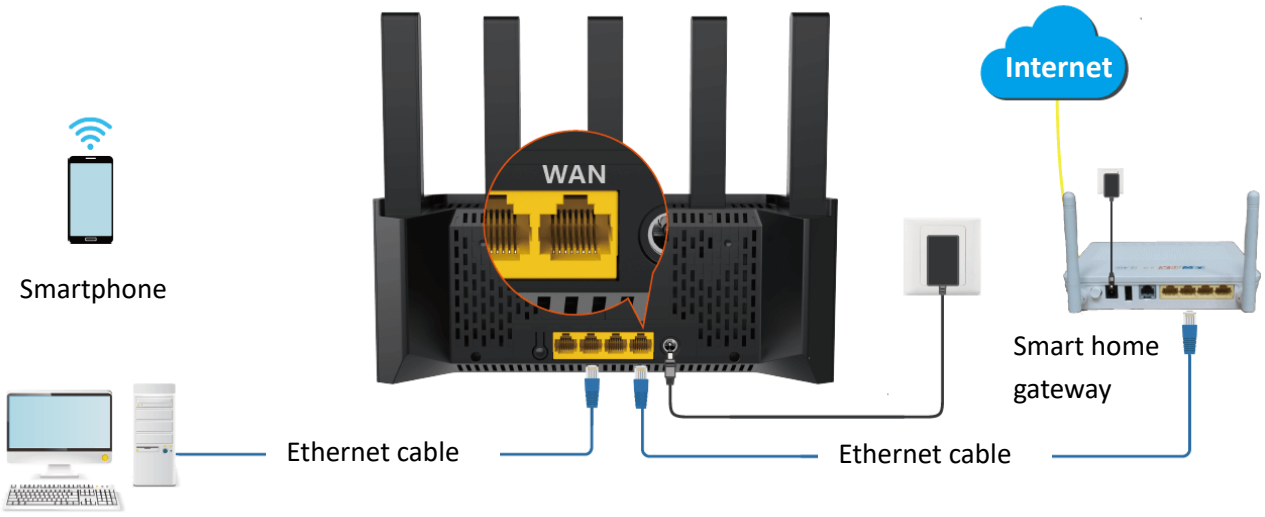
- IPv6 settings are not supported when managing the router remotely through the **IPCOM Home** app.
- Before configuring the IPv6 function, ensure that you are within the coverage of the IPv6 network and already subscribe to the IPv6 internet service. Contact your ISP for any doubt about it.
- The router supports automatic NAT66. If the LAN port cannot obtain a prefix after IPv6 is configured, the upstream device may not support PD prefix delivery. In this case, the router automatically enables the NAT66 function.

7.2.2 DHCPv6

DHCPv6 enables the router to obtain an IPv6 address from the DHCPv6 server to access the internet. It is applicable in the following scenarios:

- The ISP does not provide any PPPoEv6 user name and password and information about the IPv6 address.
- You have a router that can access the IPv6 network.

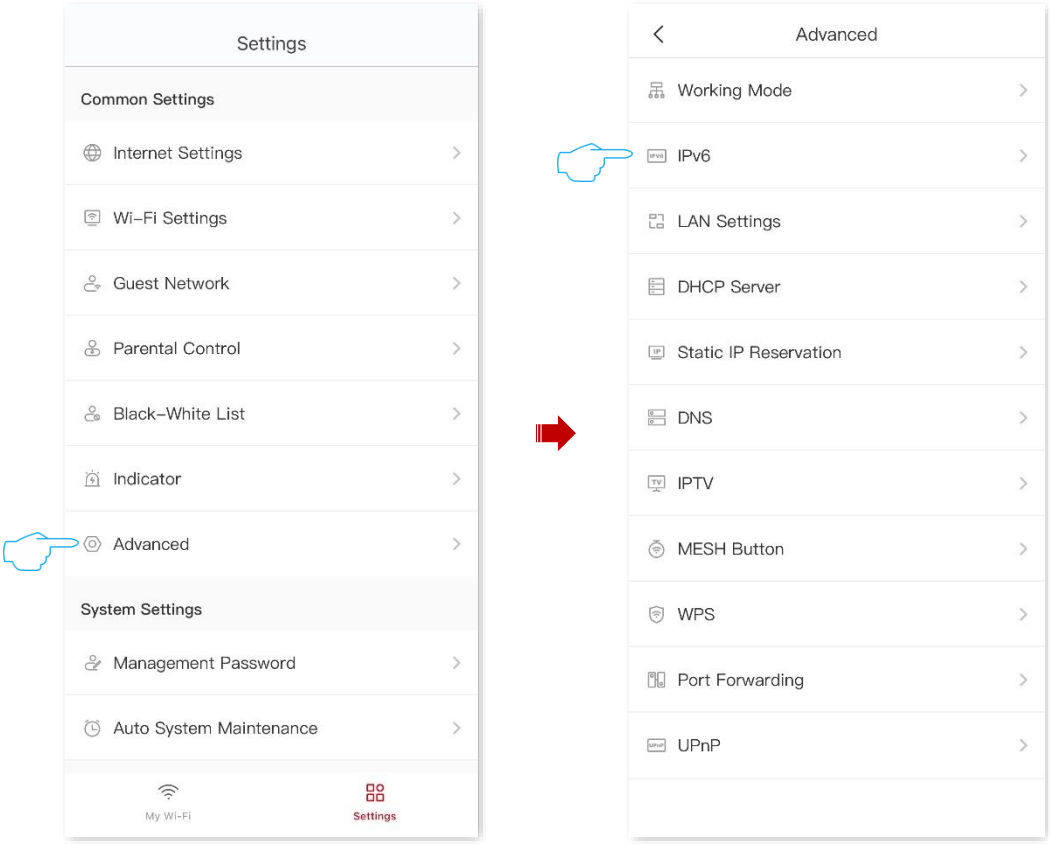
The application scenario is shown below.



Example: X2LR Pro

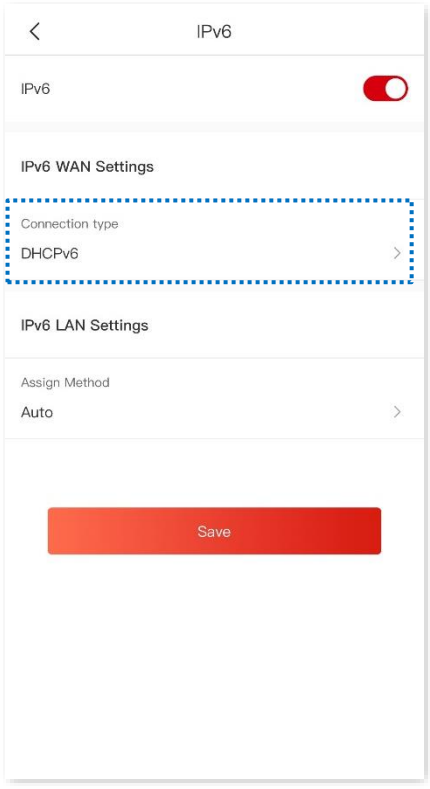
Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **IPv6**.



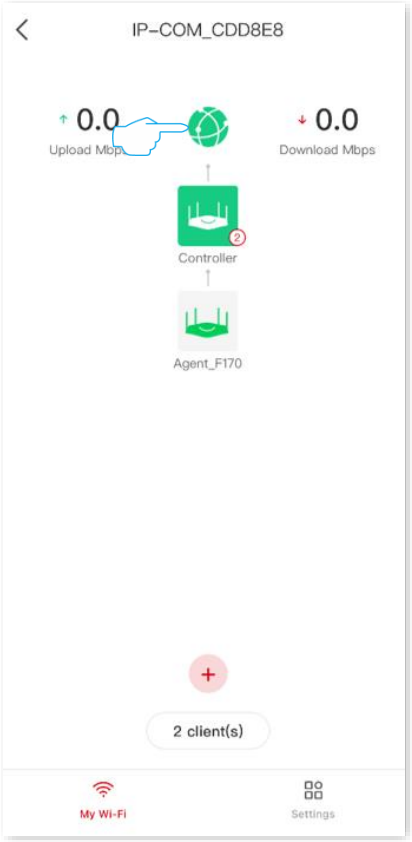
3. Enable the **IPv6** function.

4. Set **Connection Type** to **DHCPv6**, and tap **Save**.



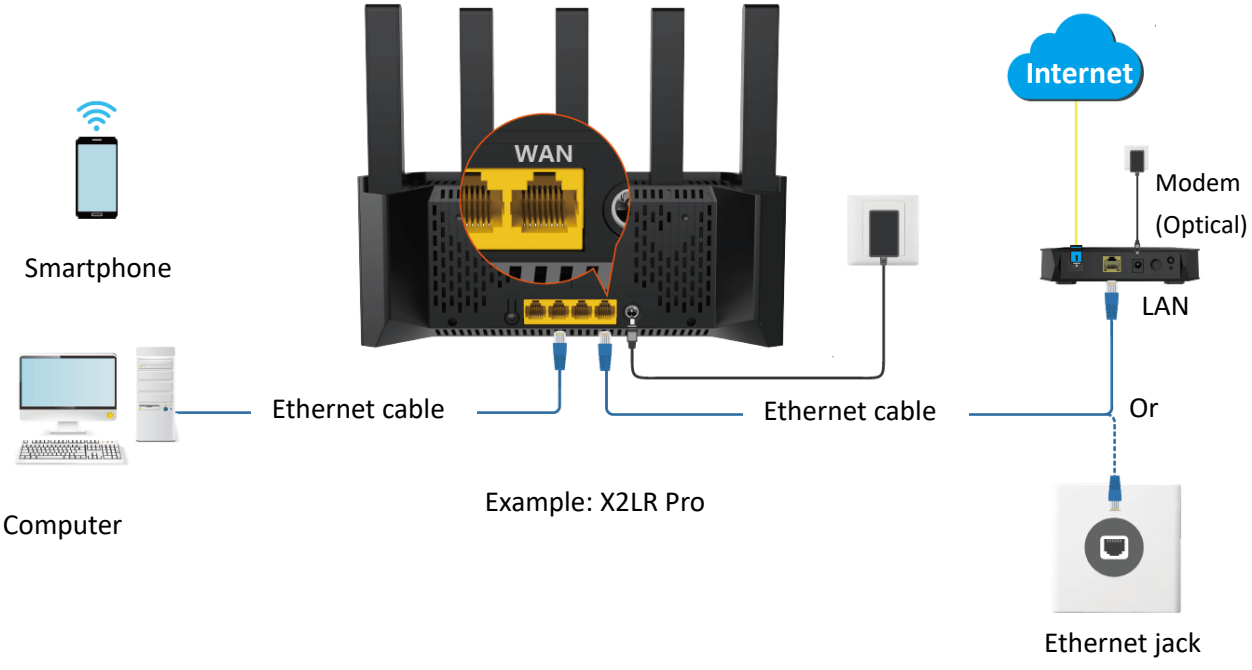
---End

After the settings are completed, you can go to the **My Wi-Fi** page and tap to view the IPv6 address obtained by the WAN port.



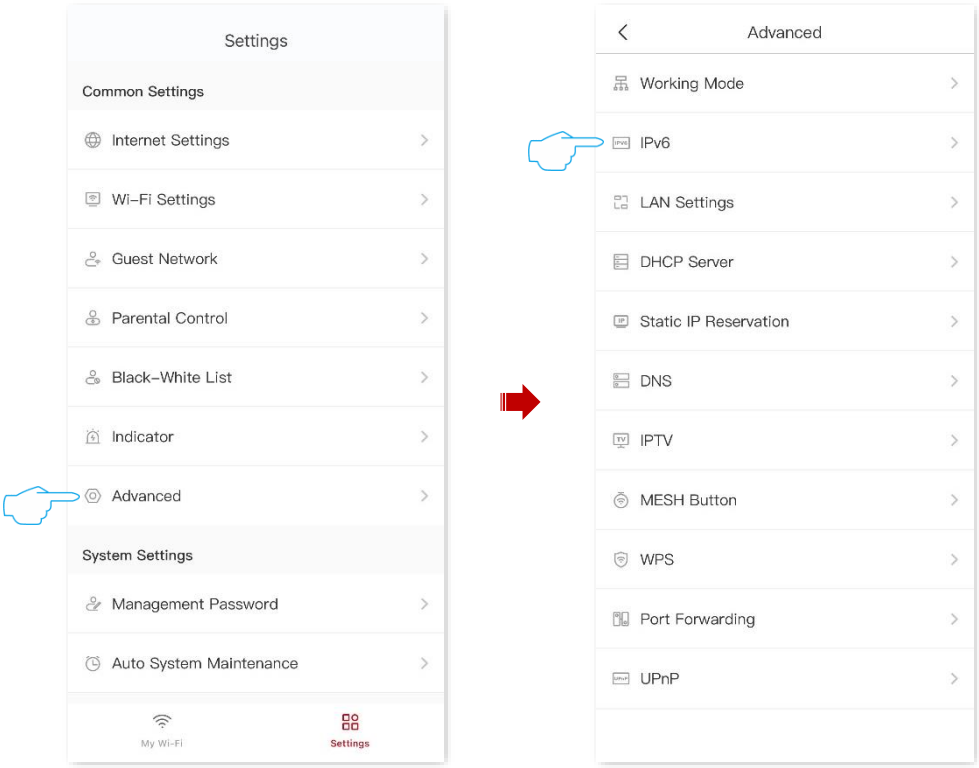
7.2.3 PPPoEv6

If your ISP provides you with the PPPoE user name and password with IPv6 service, you can choose PPPoEv6 to access the internet.



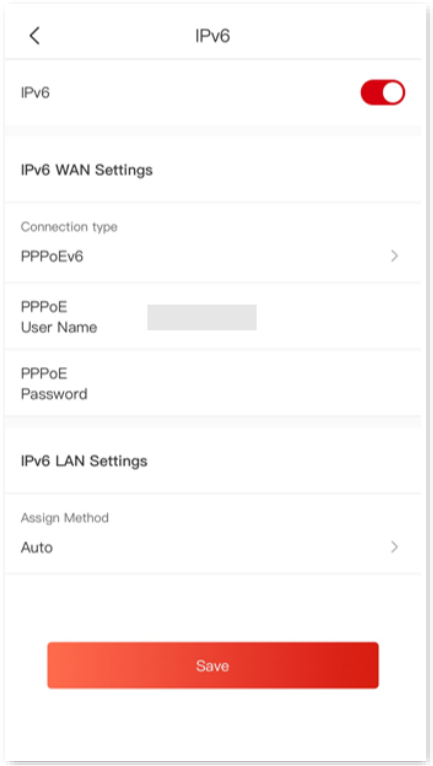
Configuration procedure:

1. Enter the configuration page of the router, and navigate to **Settings** > **Advanced** > **IPv6**.



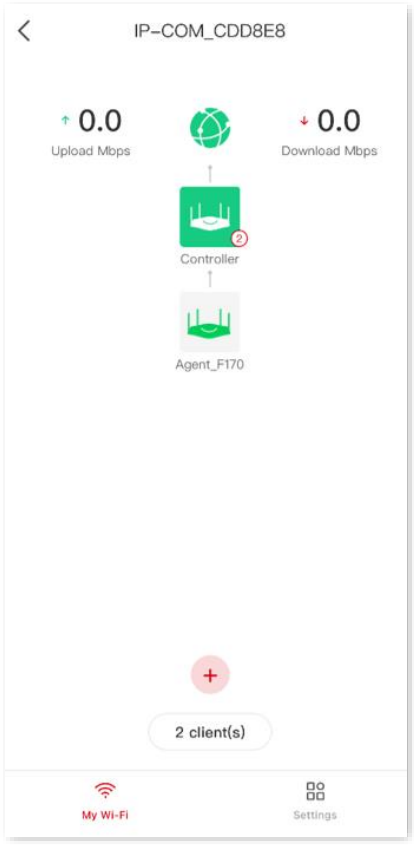
2. Enable the **IPv6** function.
3. Set **Internet Connection Type** to **PPPoEv6**.
4. Set **PPPoE Username** and **PPPoE Password**, and tap **Save**.

   Generally, IPv4 and IPv6 services share a single PPPoE user name and password.



---End

After the settings are completed, you can go to the **My Wi-Fi** page and tap  to view the IPv6 address obtained by the WAN port.

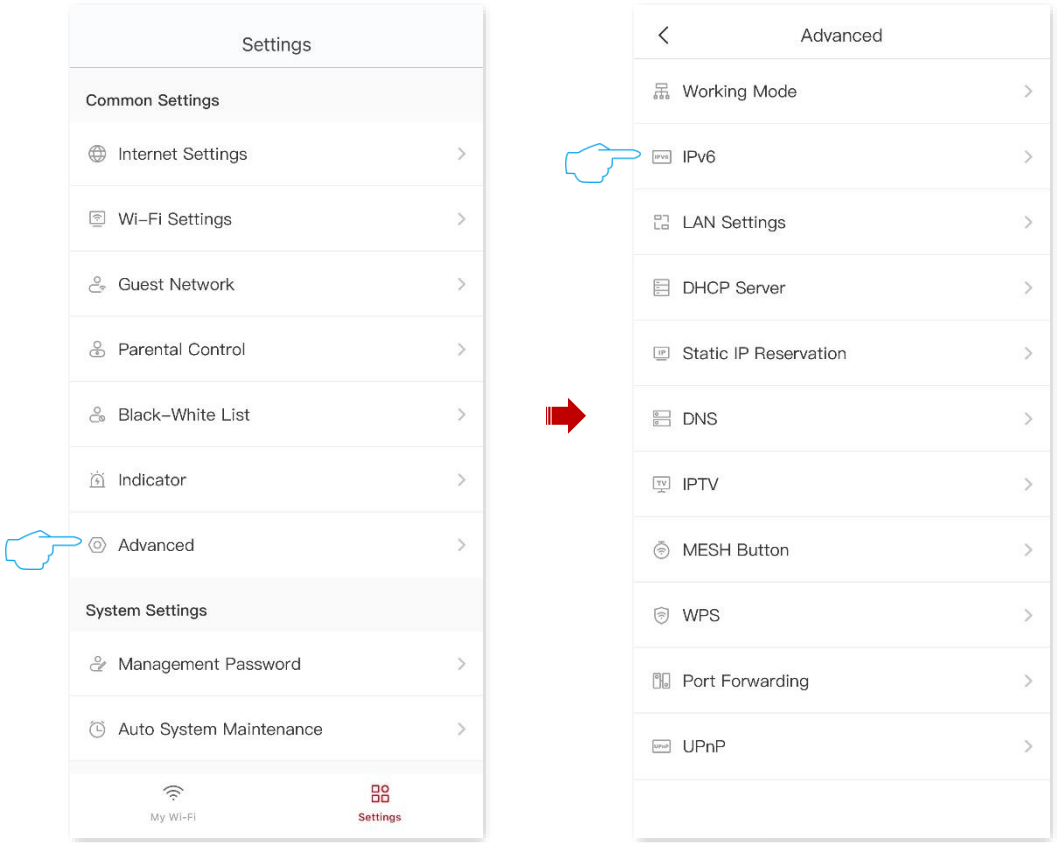


7.2.4 Static IPv6 Address

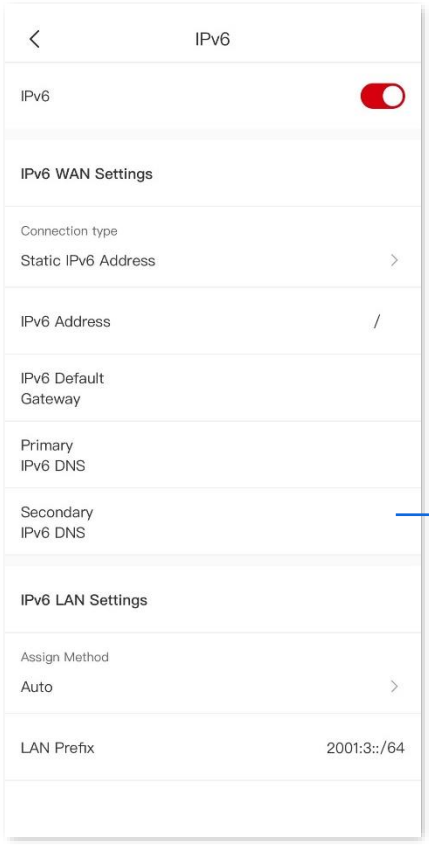
When your ISP provides you with information including IPv6 address, subnet mask, default gateway and DNS server, you can choose this connection type to access the internet with IPv6.

Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **IPv6**.



3. Enable the **IPv6** function.
4. Set the **Connection Type** to **Static IPv6 Address**.
5. Enter the required parameters under **IPv6 WAN Settings**, and tap **Save**.



If your ISP only provides a single DNS address, **Secondary IPv6 DNS** can be left blank.

---End

7.3 Modify MTU

Maximum Transmission Unit (MTU) is the largest data packet that a network device transmits. Generally, keep the default MTU value. Try to change the MTU value when:

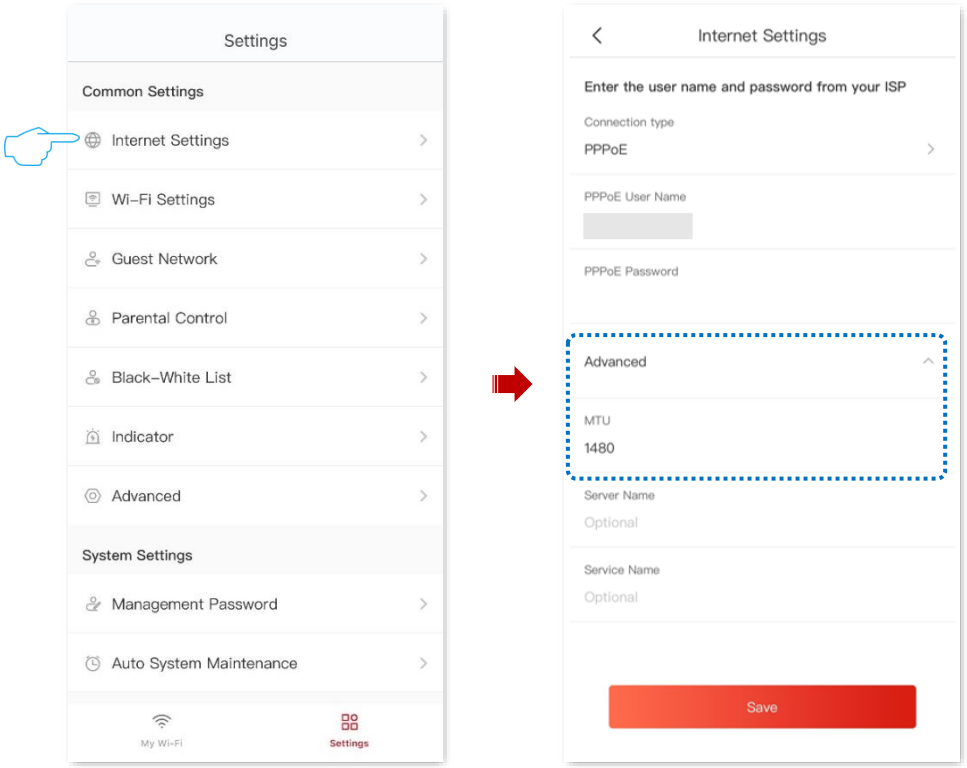
- You cannot access some specific websites or encrypted websites (such as E-banking or PayPal websites).
- You cannot receive and send Emails or access an FTP or POP server.

You can try reducing the value of MTU gradually from 1500 until the problem is resolved (The recommended range is 1400 to 1500).

MTU application description

MTU	Application
1500	Used for the most common settings in non-PPPoE connections and non-VPN connections.
1492, 1480	Used for PPPoE connections.
1472	It is the maximum value for the ping command. A packet with a larger size is fragmented.
1468	Used for DHCP connections.
1436	Used for VPN connections.

1. Enter the configuration page of the router, navigate to **Settings** > **Internet Settings**, and tap **Advanced**.
2. Set **MTU**, and tap **Save**.



---End

7.4 Change the Device Working Mode

By default, the device works in routing mode. You can select a working mode based on the following scenarios:

- Router mode: The wired network provided by the ISP is converted into Wi-Fi signal, and the LAN users can share the internet.
- AP mode: Used as an AP to extend the network coverage by connecting the upstream devices through Ethernet cables.

7.4.1 AP Mode

When you have a smart home gateway that only provides wired internet access, you can set the router to work in AP mode to provide wireless coverage.

Tip

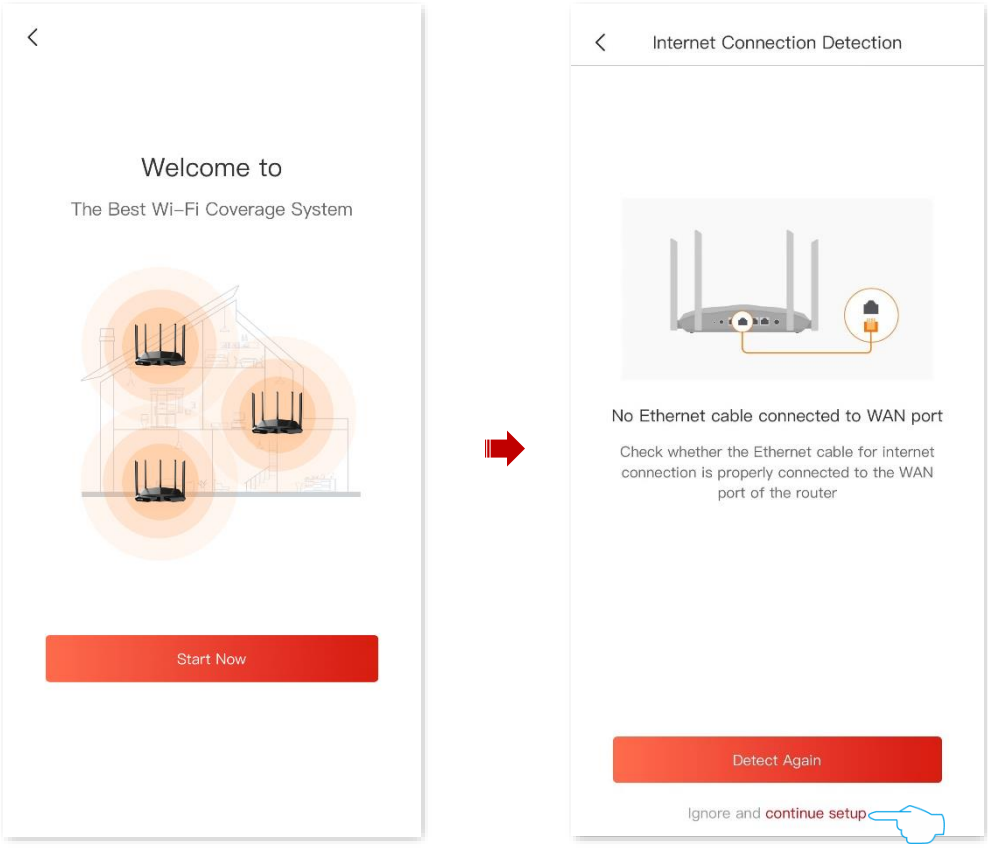
When the router is set to AP mode:

- Every physical port can be used as a LAN port.
- The router's LAN IP address will change. If you want to log in to the web UI of the router, please use the **ipcwifi.com** to log in.
- Functions, such as bandwidth control and port mapping will be unavailable. Refer to the web UI for available functions.

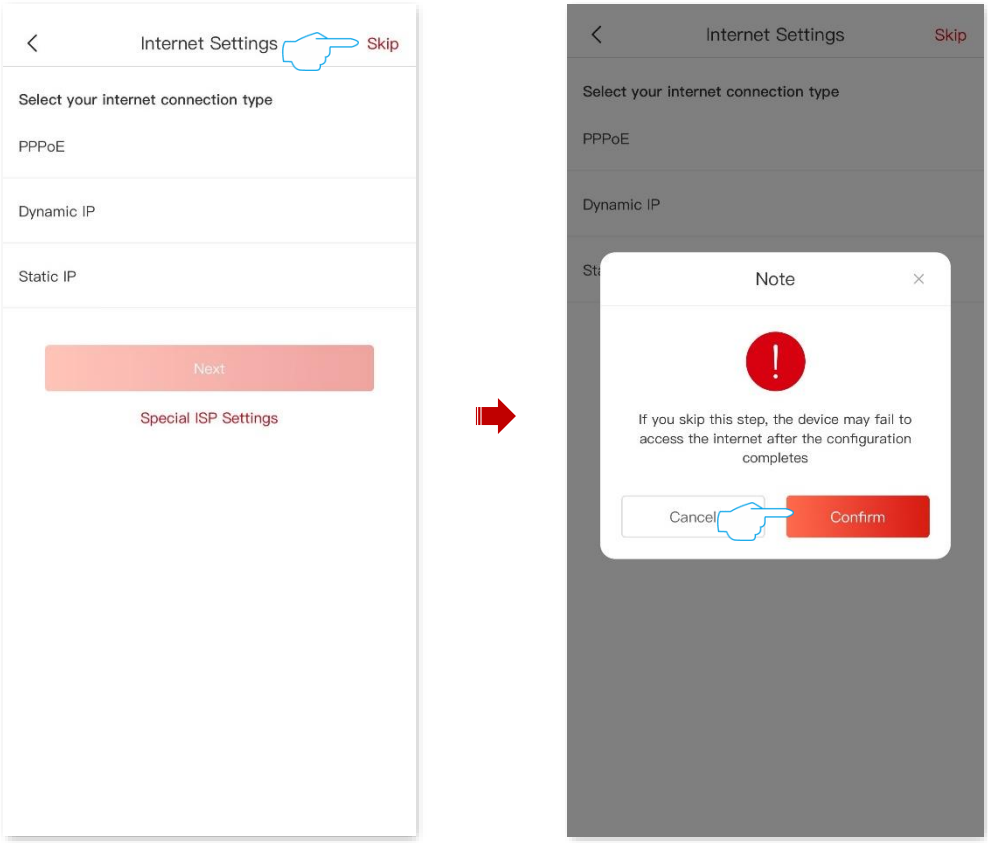
- If you are setting up your router for the first time or have already restored the router to factory settings, see below to configure.
- If you have already set up your router, start with step 4.

To switch the working mode to AP mode:

1. Connect your Wi-Fi-enabled device such as smartphone to the router’s Wi-Fi.
2. Set the router to skip quick setup.
   1) Run the **IPCOM Home** app.
   2) Tap **Start Now**, and tap **Ignore and continue setup**.



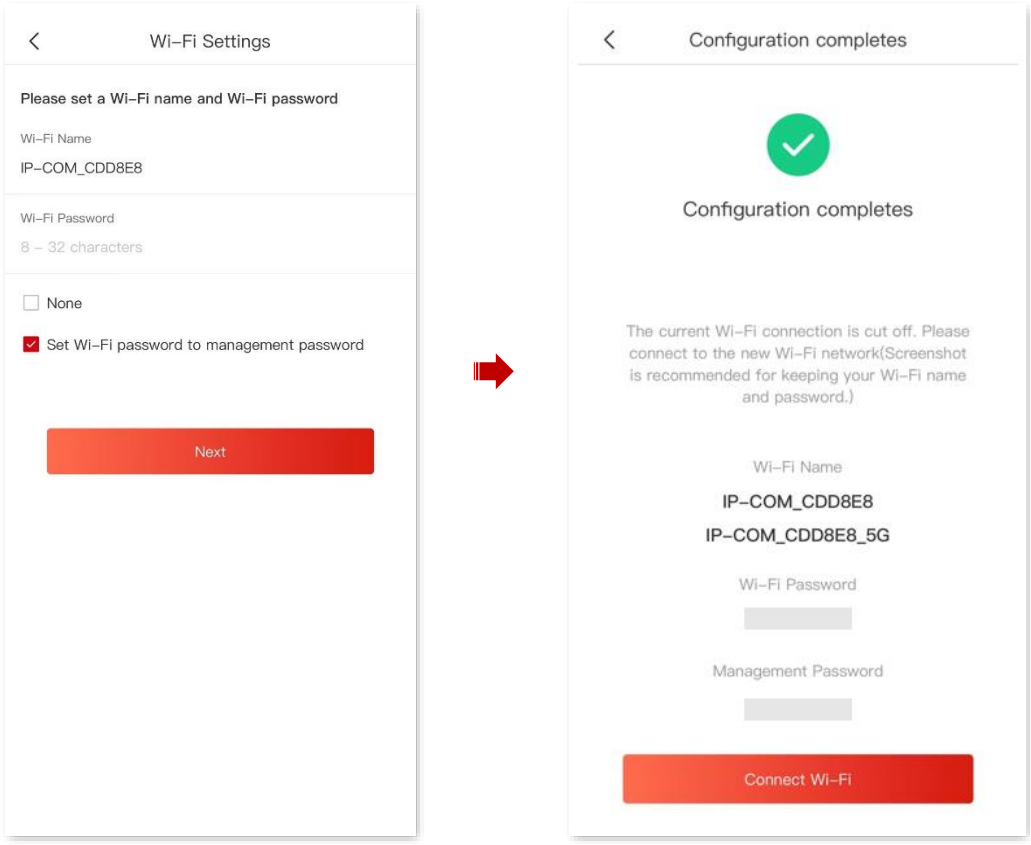
3) Tap **Skip** in the upper-right corner, confirm the prompt message, and tap **Confirm**.



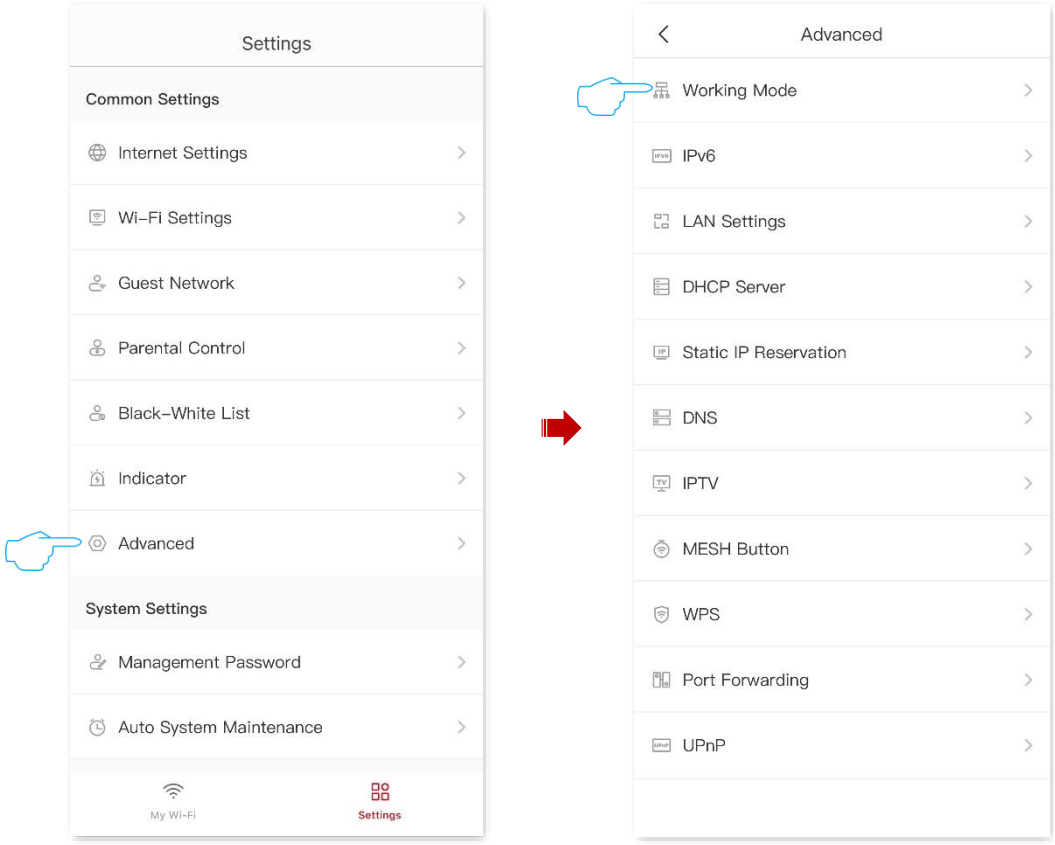
4) Customize the **Wi-Fi Name**, **Wi-Fi Password** and **Login Password**, and tap **Next**.

Tip

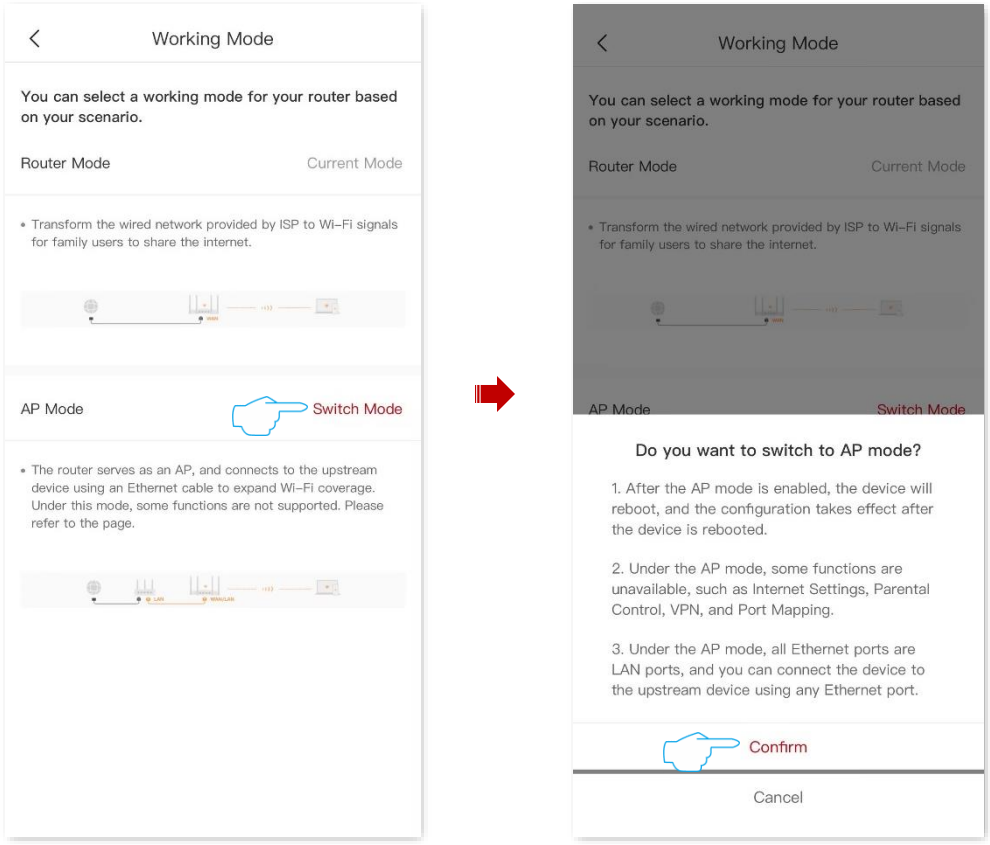
By default, the Wi-Fi password is set as the login password. To use different passwords for Wi-Fi access and web UI login, deselect **Set Wi-Fi password to management password**, and set **Wi-Fi Name** and **Wi-Fi Password** for Wi-Fi login and **Login Password** for web UI login.



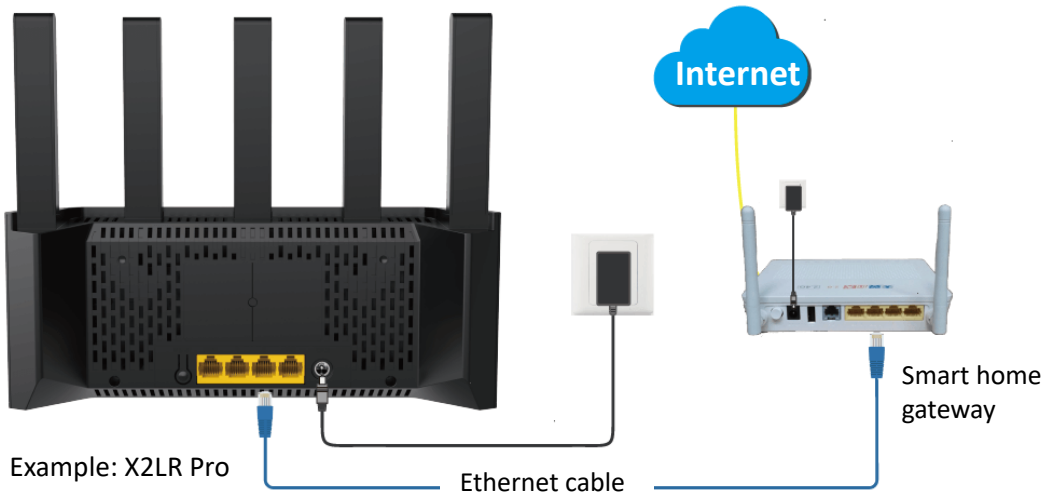
3. Reconnect the Wi-Fi-enabled devices such as smartphone to the router's Wi-Fi.
4. Set the router to **AP Mode**.
   1) Enter the configuration page of the router.
   2) Navigate to **Settings** > **Advanced** > **Working Mode**.



3) Locate the **AP Mode**, and tap **Switch Mode**. Confirm the prompt message, and tap **Confirm**. The page will be prompted to reboot. Please wait with patient.



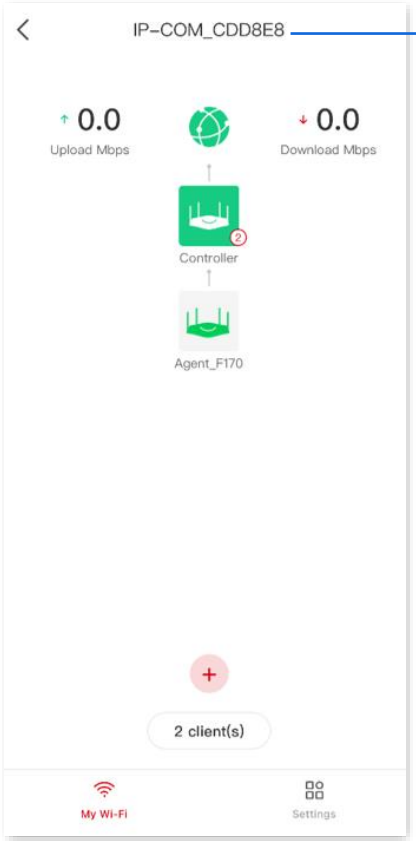
4) Connect the upstream device, such as a gateway, to any port of the router.



---End

Enter the configuration page of the router again, and navigate to **My Wi-Fi** page to check whether the AP mode is configured successfully as shown below.

You can access the internet by connecting the computers to any Ethernet port of the router, or connecting the Wi-Fi-enabled devices such as smartphones to the router's Wi-Fi.



2.4 GHz Wi-Fi name of the router

Tip

If you cannot access the internet, try the following solutions:

- Ensure that the existing router is connected to the internet successfully.
- Ensure that your Wi-Fi-enabled devices are connected to the correct Wi-Fi network of the router.
- If the computer connected to the router cannot access the internet, ensure that the computer is set to **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

7.4.2 Router Mode

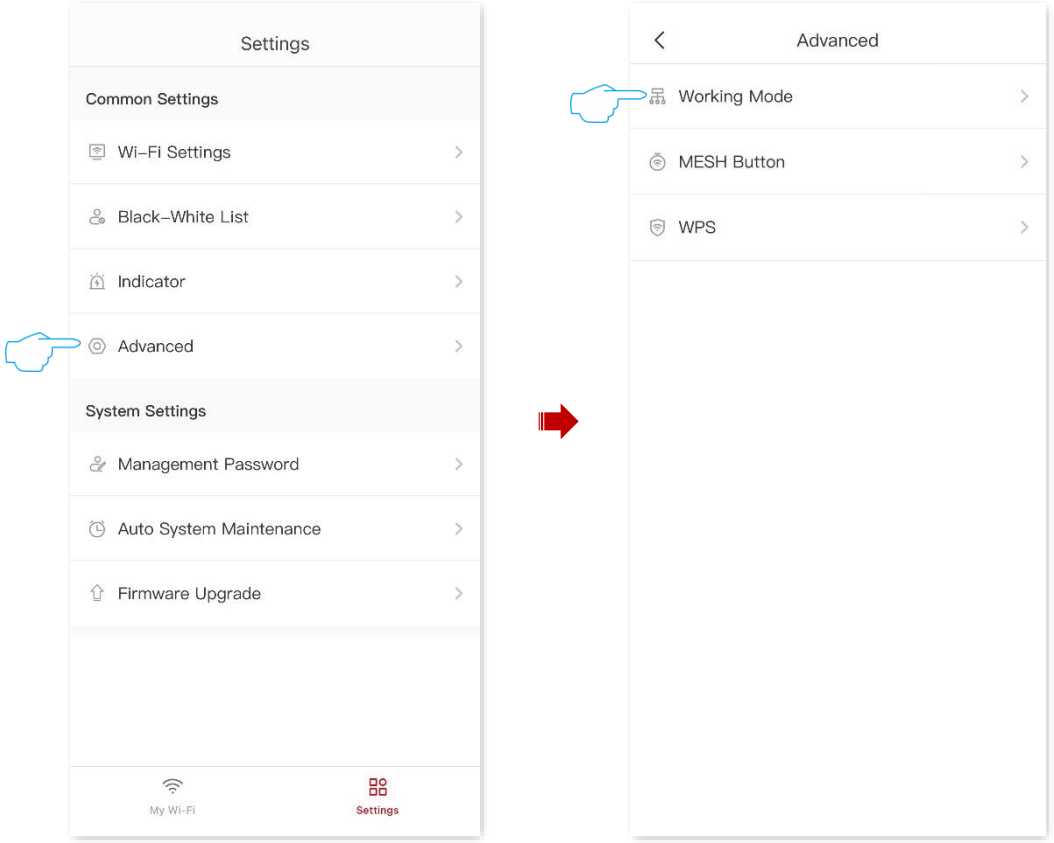
Scenario: The router is working in AP mode.

Goal: Now you have moved to a new home, the ISP provides a PPPoE username and password for internet access, or provides internet access information such as an IP address, subnet mask, default gateway, and DNS server.

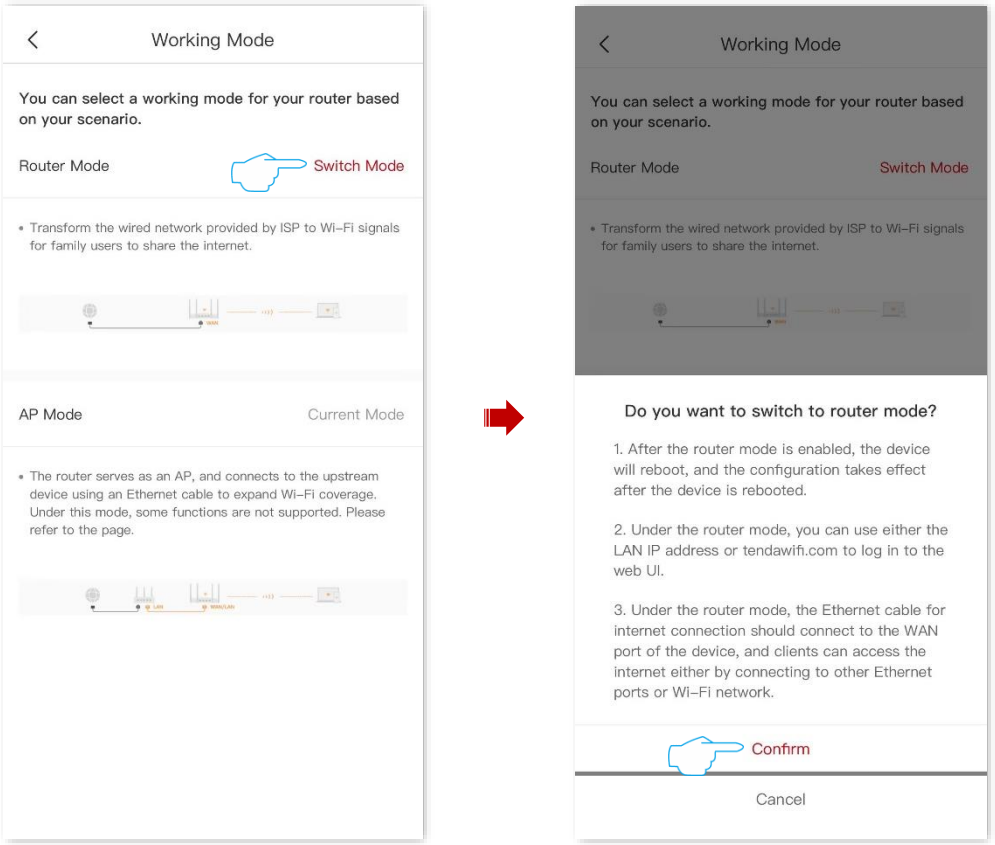
Solution: Reconfigure the router and set its working mode to **Router Mode**.

To switch the working mode from the other modes to router mode:

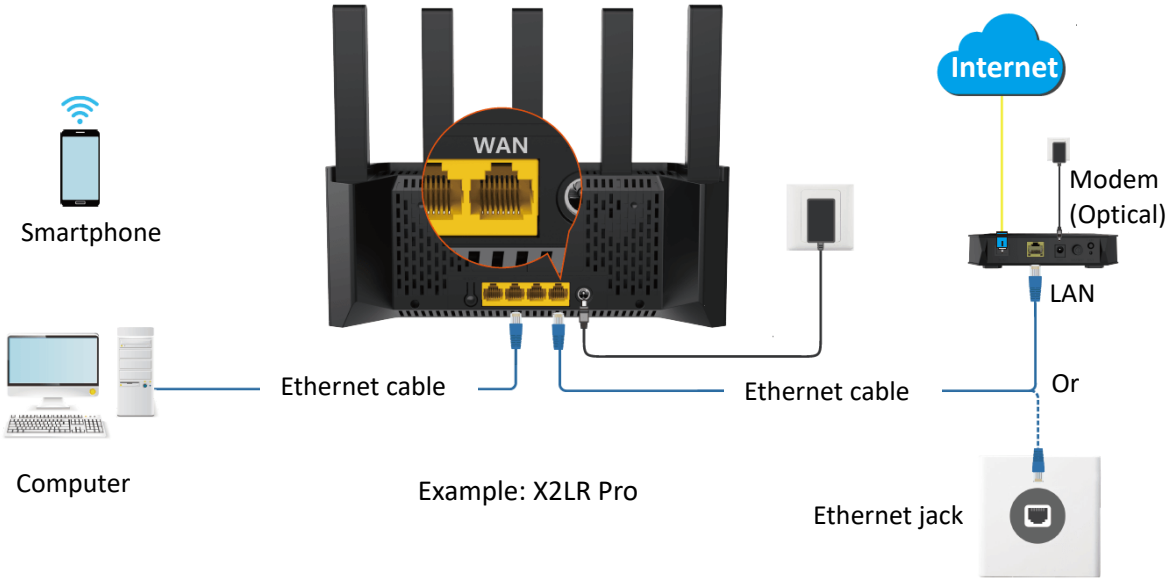
1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **Working Mode**.



3. Locate the **Router Mode**, and tap **Switch Mode**. Confirm the prompt message, and tap **Confirm**. The page will be prompted to reboot. Please wait with patient.



4. Connect the WAN port of the router to the Ethernet jack or the LAN port of the Modem using an Ethernet cable.



5. Configure the router to the internet. For details, see Internet Settings.

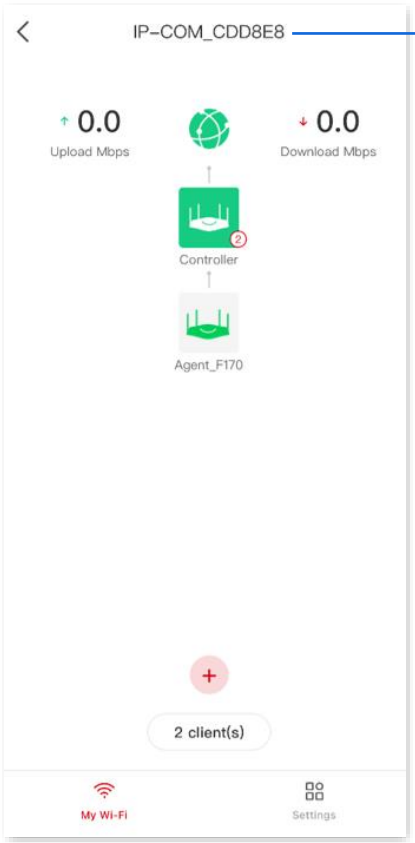
Tip

If the App shows that the router is offline, ensure that the Wi-Fi-enabled devices such as the smartphone is connected to the router's Wi-Fi, then exit the **IPCOM Home** app and run it again.

---End

Enter the configuration page of the router again, and navigate to **My Wi-Fi** page to check whether the AP mode is configured successfully as shown below.

You can access the internet by connecting the computers to the router's LAN port (such as 1, 2, 3/IPTV), or connecting the Wi-Fi-enabled devices such as smartphones to the router's Wi-Fi.



2.4 GHz Wi-Fi name of the router

Tip

If you cannot access the internet, try the following solutions:

- Ensure that your Wi-Fi-enabled devices are connected to the correct Wi-Fi network of the router.
- If the computer connected to the router cannot access the internet, ensure that the computer is set to **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

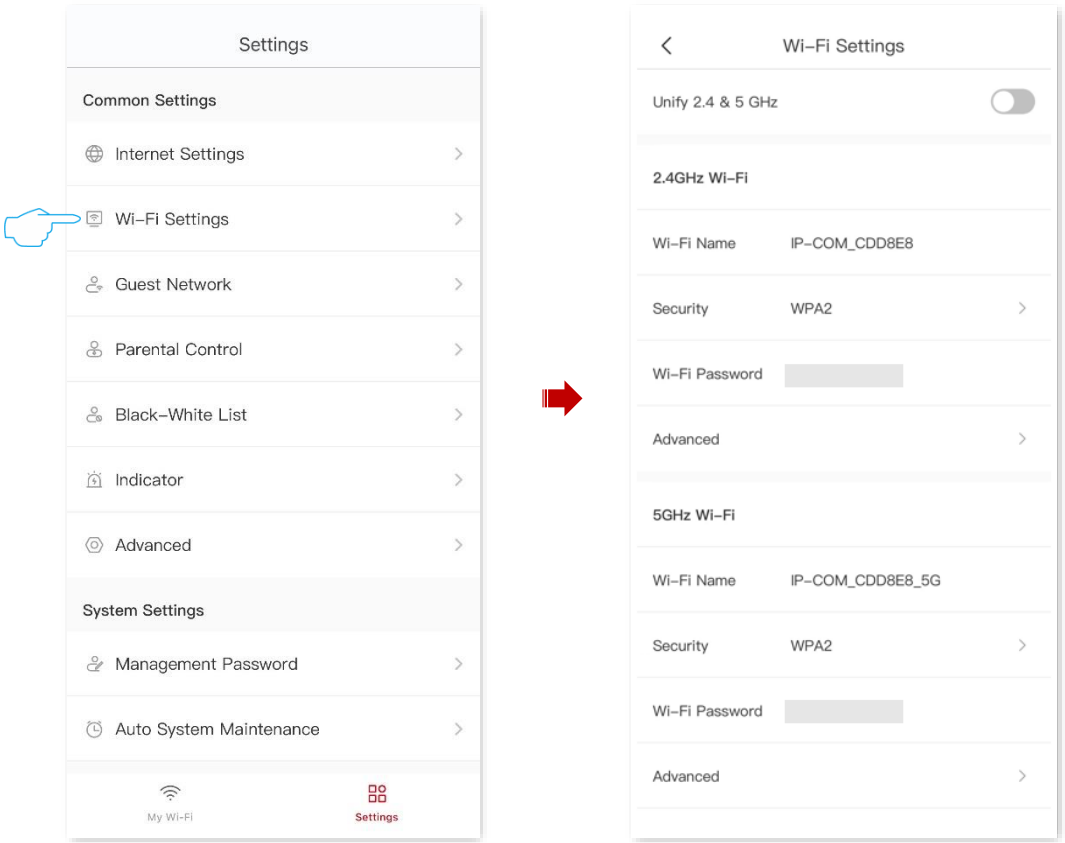
8 Wi-Fi Settings

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

8.1 Change Wi-Fi Name and Wi-Fi Password

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Wi-Fi Settings**.
3. Enable or disable the **Unify 2.4 & 5 GHz** as required. The following figure shows an example of enabling the **Unify 2.4 & 5 GHz**.
   - Enable **Unify 2.4 & 5 GHz**: The Wi-Fi name and password of the 2.4 GHz and 5 GHz network on the router are the same, and only one Wi-Fi name is displayed. When you connect to your router's wireless network, you will automatically connect to the best quality Wi-Fi.
   - Disable **Unify 2.4 & 5 GHz**: The 2.4 GHz and 5 GHz networks on the router are displayed separately. You can access the internet through either wireless network. If you have wireless devices that only support 2.4GHz networks, you need to connect to the router's Wi-Fi network, such as security cameras, you are recommended to disable the **Unify 2.4 & 5 GHz**.
4. Set **Wi-Fi Name**, **Security**, and **Wi-Fi Password** as required.
5. Tap **Save**.



---End

After the settings are completed, your Wi-Fi-enabled devices (such as smartphone) need to connect to the new wireless network to access the internet.

Parameter description

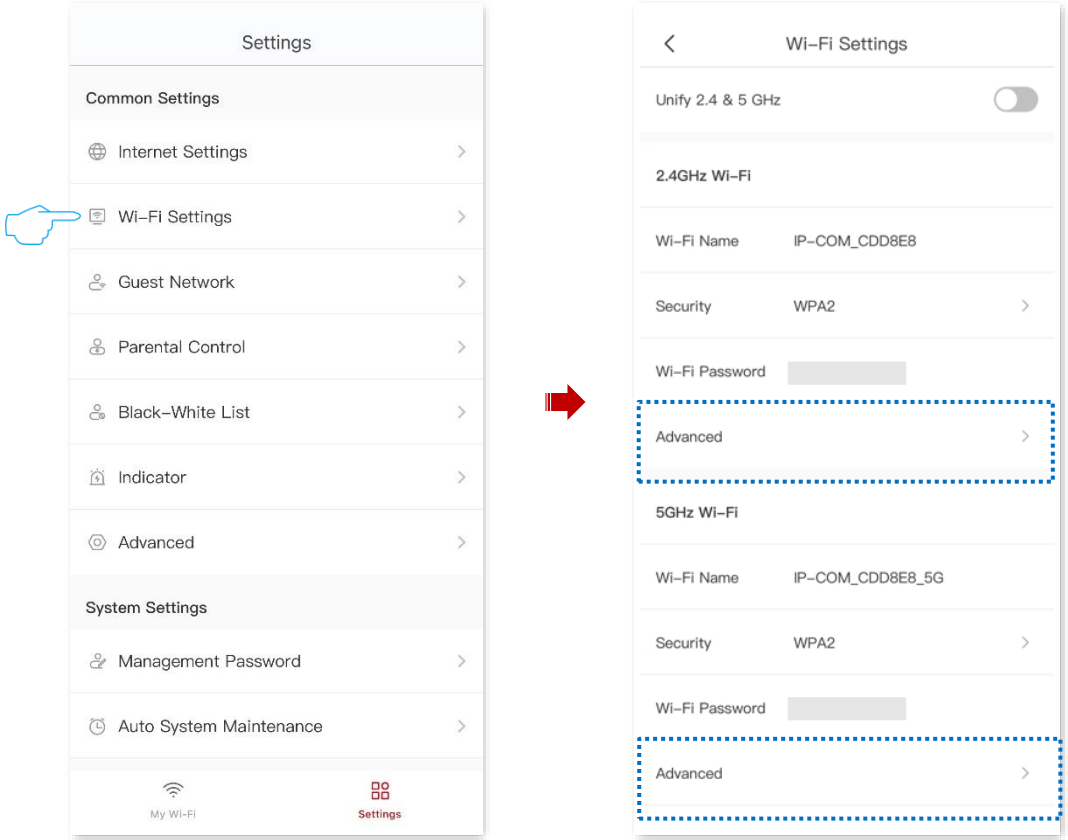
Parameter	Description
Unify 2.4 & 5 GHz	Used to enable or disable the Unify 2.4 & 5 GHz function. When this function is enabled, the 2.4 GHz and 5 GHz Wi-Fi networks share the same SSID and password. Wi-Fi-enabled clients connected to it will use the frequency with better connection quality.
2.4GHz Wi-Fi 5GHz Wi-Fi	Used to configure 2.4 GHz Wi-Fi and 5 GHz Wi-Fi related parameters separately. Only available for the Unify 2.4 & 5 GHz function is disabled. • If a Wi-Fi-enabled device such as a smartphone is far away from the router or there is a wall between the device and the router, it is recommended to connect to 2.4 GHz Wi-Fi. • If a Wi-Fi-enabled device such as smartphone is close to the router, it is recommended to connect to 5 GHz Wi-Fi.
Wi-Fi Name	Specifies the Wi-Fi network name (SSID) of the corresponding Wi-Fi network.
Security	Specifies the encryption mode supported by the router, including: • **None**: Specifies that the Wi-Fi network is not encrypted and any clients can access the network without a password. This option is not recommended as it leads to low network security. • **WPA2**: The network is encrypted with WPA2-PSK/AES. • **WPA3-SAE/WPA2 mixed**: The network is encrypted with both WPA3-SAE and WPA2-PSK, improving both security and compatibility. WPA3-SAE/AES uses Simultaneous Authentication of Equals (SAE) and supports Protected Management Frames (PMF), which can resist dictionary burst attacks and prevent information leakage. Users do not need to set complex and difficult passwords. Tip WPA3-SAE is the upgraded version of WPA2-PSK. If your Wi-Fi-enabled client does not support WPA3-SAE, or you get poor Wi-Fi experience, it is recommended to use **WPA2**.
Wi-Fi Password	Specifies the password for connecting to the Wi-Fi network. You are strongly recommended to set a Wi-Fi password for security. Tip It is recommended to use the combination of numbers, uppercase letters, lowercase letters and special symbols in the password to enhance the security of the Wi-Fi network.

8.2 Change Network Mode, Channel and Bandwidth

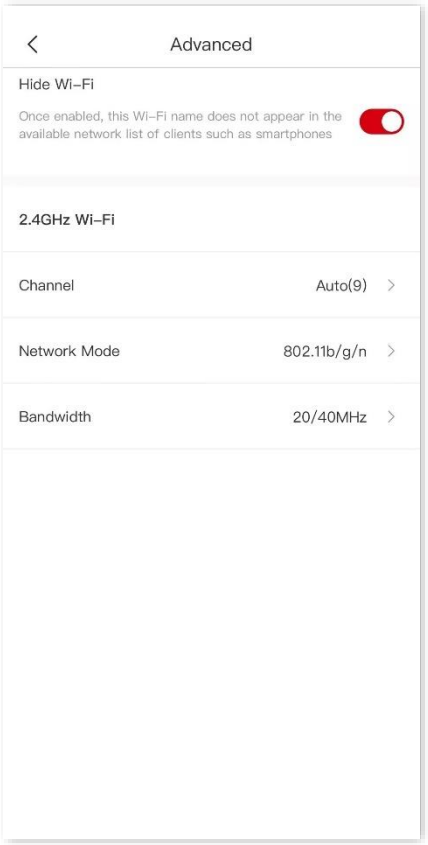
In this section, you can change the network mode, Wi-Fi channel, and Wi-Fi bandwidth of 2.4 GHz and 5 GHz Wi-Fi networks. To ensure the wireless performance, it is recommended to maintain the default settings on this page without professional instructions.

Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Wi-Fi Settings**.
3. Tap **Advanced**. The following figure shows an example of disabling the **Unify 2.4 & 5 GHz**.



4. Set **Channel**, **Network Mode** and **Bandwidth** as required. The following figure is for reference only.



---End

Parameter description

Parameter	Description
Channel	Specifies the channel in which the Wi-Fi network works. By default, the wireless channel is **Auto**, which indicates that the router selects a channel for the Wi-Fi network automatically. You are recommended to choose a channel with less interference for better wireless transmission efficiency. You can use a third-party tool to scan the Wi-Fi signals nearby to understand the channel usage situations.

Parameter	Description
Network Mode	Specifies various protocols used for wireless transmission. 2.4 GHz Wi-Fi network supports the 802.11b/g/n Mixed and 802.11b/g/n/ax Mixed modes. • **802.11b/g/n**: Indicates that devices compliant with the IEEE 802.11b or IEEE 802.11g protocol, and devices working at 2.4 GHz and compliant with the IEEE 802.11n can connect to the 2.4 GHz Wi-Fi network of the router. • **802.11b/g/n/ax**: Indicates that devices compliant with the IEEE 802.11b or IEEE 802.11g protocol, and devices working at 2.4 GHz and compliant with the IEEE 802.11n or IEEE 802.11ax protocol can connect to the 2.4 GHz Wi-Fi network of the router. 5 GHz Wi-Fi network supports the 802.11a/n Mixed, 802.11a/n/ac Mixed and 802.11a/n/ac/ax Mixed modes. • **802.11a/n**: Indicates that devices compliant with the IEEE 802.11a protocol, and devices working at 5 GHz and compliant with the IEEE 802.11n can connect to the router. • **802.11a/n/ac**: Indicates that devices compliant with the IEEE 802.11a or IEEE 802.11ac protocol, and devices working at 5 GHz and compliant with the IEEE 802.11n can connect to the router. • **802.11a/n/ac/ax**: Indicates that devices compliant with the IEEE 802.11a or IEEE 802.11ac protocol, and devices working at 5 GHz and compliant with the IEEE 802.11n or IEEE 802.11ax protocol can connect to the router. Tip The above maximum wireless transmission speed is taken as an example of X2LR Pro. For different products, please visit www.ip-com.com.cn and refer to the **Datasheet** of the corresponding product.
Bandwidth	Specifies the bandwidth of the wireless channel of a Wi-Fi network. Please change the default settings only when necessary. • **20MHz**: Indicates that the channel bandwidth used by the router is 20 MHz. • **40MHz**: Indicates that the channel bandwidth used by the router is 40 MHz. • **20/40MHz**: Specifies that a router can switch its channel bandwidth between 20 MHz and 40 MHz based on the ambient environment. This option is available only at 2.4 GHz. • **80MHz**: Indicates that the channel bandwidth used by the router is 80 MHz. This option is available only at 5 GHz. • **160MHz**: Indicates that the channel bandwidth used by the router is 160 MHz. This option is available only at 5 GHz. • **20/40/80/160MHz**: Specifies that a router can switch its channel bandwidth among 20 MHz, 40 MHz, 80 MHz and 160 MHz based on the ambient environment. This option is available only at 5 GHz.

8.3 Set up a Guest Wi-Fi

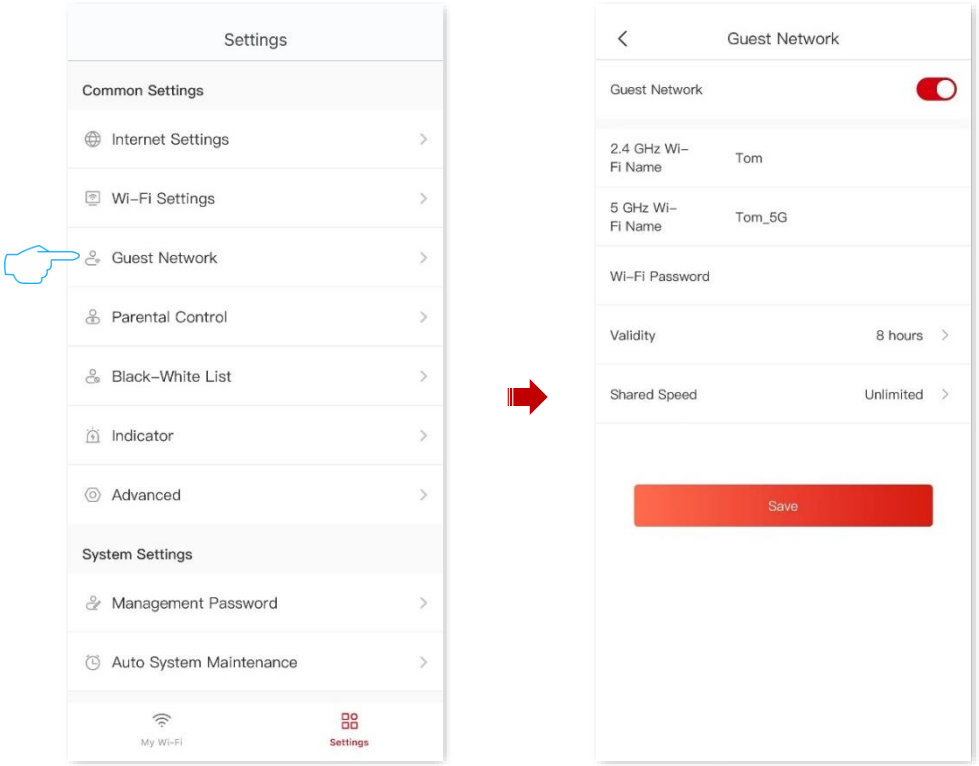
The router's guest Wi-Fi is isolated from other networks. The clients connected to the guest Wi-Fi can access the internet, but cannot access the router's web UI or other networks.

This function is disabled by default. Assume that:

- Wi-Fi names for 2.4 GHz and 5 GHz networks: **Tom** and **Tom_5G**.
- Wi-Fi password for 2.4 GHz and 5 GHz networks: **IP-COM+245**.

Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Guest Network**, and toggle on the **Guest Network**.
3. Set **2.4 GHz Wi-Fi Name**, which is **Tom** in this example.
4. Set **5 GHz Wi-Fi Name**, which is **Tom_5G** in this example.
5. Set **Wi-Fi Password**, which is **IP-COM+245** in this example. Tap **Save**.



---End

After the settings are completed, the guest's smartphone and other Wi-Fi-enabled devices can connect to the guest Wi-Fi for internet access you set, and the validity period is 8 hours.

Parameter description

Parameter	Description
Guest Wi-Fi	Used to enable or disable the guest network function.
2.4 GHz Wi-Fi Name	Specify the Wi-Fi name of the router's guest network.  You can change the Wi-Fi names (SSIDs) as required. To distinguish the guest network from the main network, you are recommended to set different Wi-Fi network names.
5 GHz Wi-Fi Name	
Wi-Fi Password	Specifies the password for the router's guest network.  A Wi-Fi password that contains multiple characters, such as digits, uppercase and lowercase letters, can improve Wi-Fi security.
Validity	Specifies the validity period of the guest networks. The guest network function will be disabled automatically (The Wi-Fi enabled devices cannot scan the router's guest Wi-Fi.) out of the validity period. If the guest's visit is 8 hours, it can be set to 8 hours.
Shared Speed	Allows you to specify the maximum upload and download speed for all clients connected to the guest networks. By default, the bandwidth is **Unlimited**. You can modify it as required.

9 Network Status

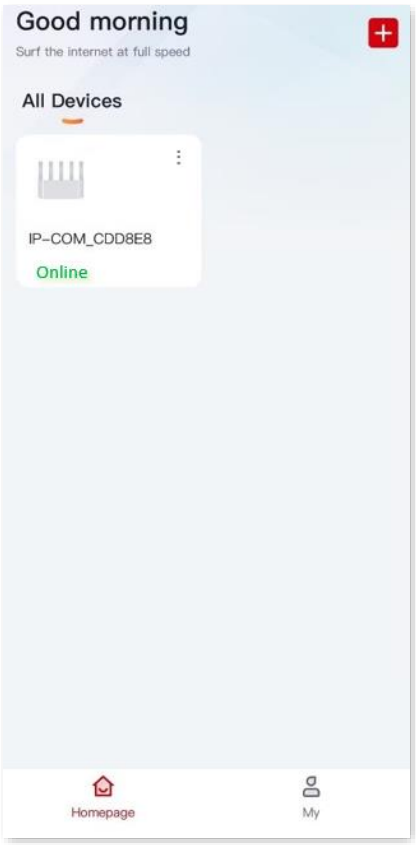
Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

9.1 View or Modify the Routers You Want to Manage

Run and log in to the **IPCOM Home** app, and manage the router as required. The following figure is for reference only.

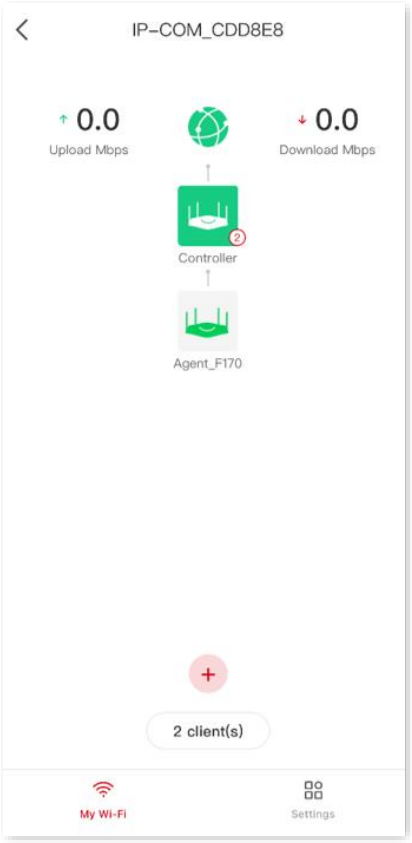
- Tap  in the upper-right corner to add the routers you want to manage.
- Tap  in the upper-right corner of the corresponding device icon to set the router remarks (only supported by the administrator account), or unbind the router.



9.2 View Network Status

9.2.1 Router Connected to Internet

After entering the configuration page of the router, if the page does not show the internet connection exception, it means that the internet connection is normal. You can connect to the router to access the internet. The following figure is for reference only.



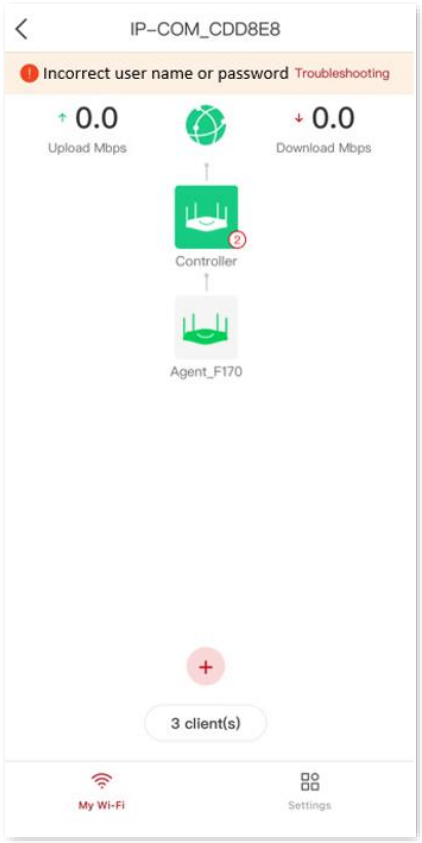
9.2.2 Router Disconnected from the Internet

No Ethernet Cable is Connected to the WAN Port

After entering the configuration page of the router, if No Ethernet cable is connected to the WAN port is displayed on the page, tap **Troubleshooting** to direct to the diagnosis page, and then follow the on-screen prompts to try to solve it.

Incorrect PPPoE Username or Password

After entering the configuration page of the router, if Incorrect user name or password is displayed on the page, tap **Troubleshooting** to direct to the diagnosis page, and then follow the on-screen prompts to try to solve it.



Note

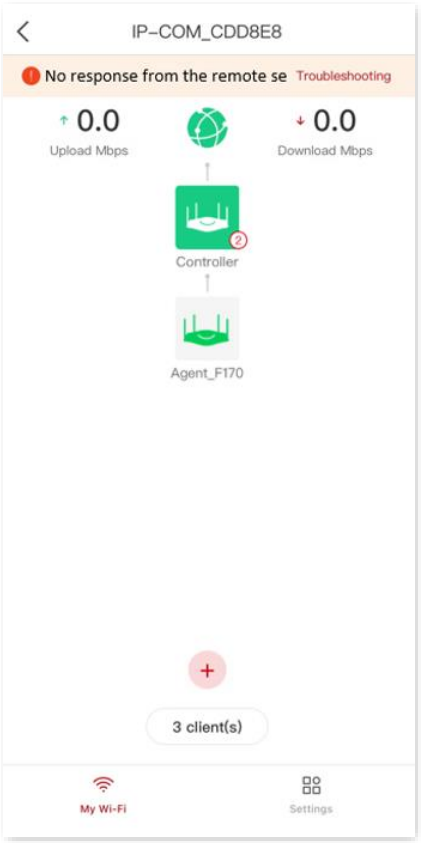
Note the following when entering the PPPoE username and password:

- Case sensitive, such as "Z" and "z".
- Distinguish between similar letters and numbers, such as the letter "l" and the number "1".
- Enter the complete PPPoE username, such as "0755000513@163.gd", not only "0755000513".

If the problem persists, contact your ISP for help.

No Response from the Remote Server

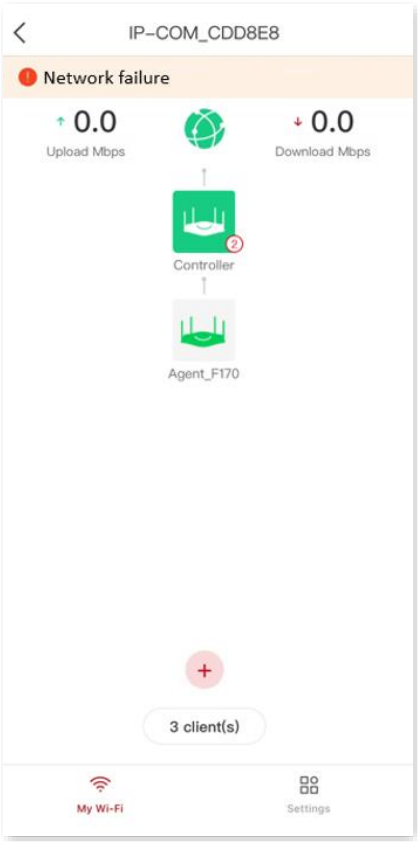
After entering the configuration page of the router, if the No response from the remote server is displayed on the page, as shown in the following figure. Tap **Troubleshooting** to direct to the diagnosis page, and try to solve the problem according to the on-screen prompts.



Disconnectd

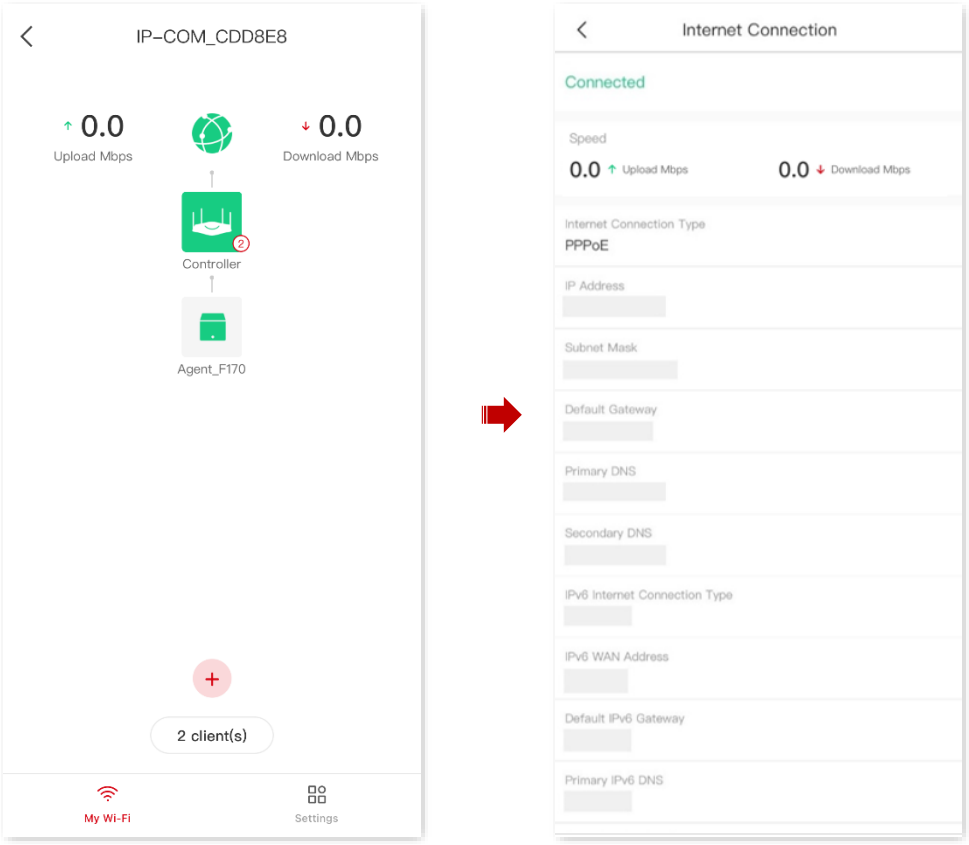
After entering the configuration page of the router, if the Network failure is displayed on the page, as shown in the following figure. Try the following solutions.

- Ensure that your network services are still valid.
- Change the configuration of mobile terminal devices (such as smartphone), and then configure again.
- If the problem persists, contact your ISP for help.



9.3 View Internet Connection

After entering the configuration page of the router, tap  in **My Wi-Fi** page to view internet connection details. The following figure is for reference only.



Parameter description

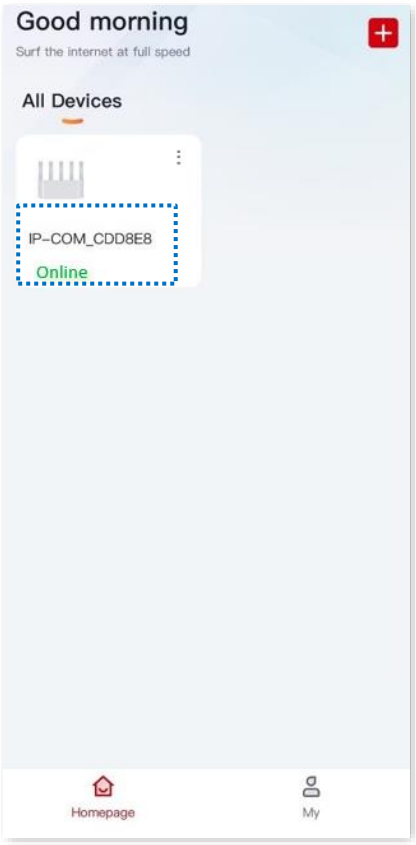
Parameter	Description
Internet Status	Specifies the network status of the router's WAN port.
Real-Time Speed	Specifies the upload or download speed of the router's WAN port.
Internet Connection Type	Specifies the IPv4 internet connection type currently used by the router's WAN port.
IP Address	Specifies the router's WAN IPv4 address.
Subnet Mask	Specifies the router's subnet mask.
Default Gateway	Specifies the router's IPv4 gateway address.
Primary DNS	Specify the router’s primary or secondary IPv4 DNS server address.

Parameter	Description
Secondary DNS	
IPv6 Internet Connection Type	Specifies the IPv6 internet connection type currently used by the router’s WAN port.
IPv6 WAN Address	Specifies the router's WAN IPv6 address.
Default IPv6 Gateway	Specifies the router's WAN IPv6 gateway address.
Primary IPv6 DNS	Specify the router's primary or secondary IPv6 DNS server address.
Secondary IPv6 DNS	
IPv6 LAN Address	Specifies the router's LAN IPv6 address. After the IPv6 is configured, the router's LAN port will generate IPv6 global unicast address.

9.4 View Wi-Fi Name

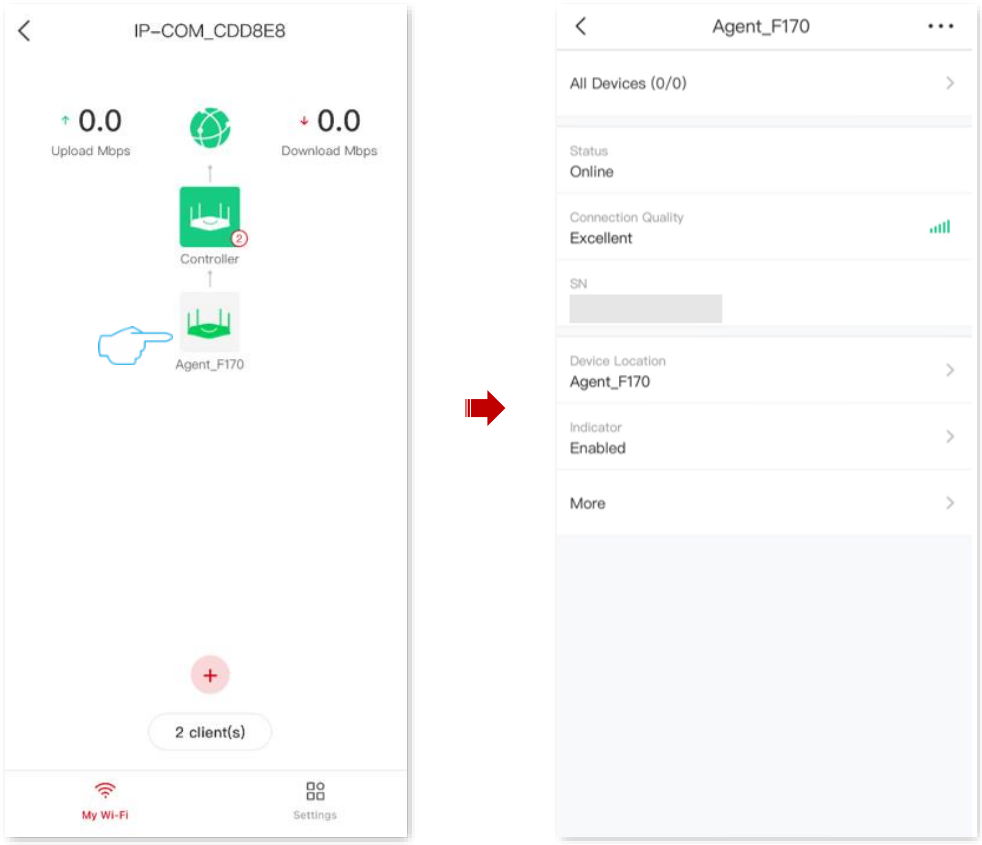
After entering the configuration page of the router, the 2.4 GHz Wi-Fi name of the primary network will be displayed below the device icon on the **Homepage**.

If you want to view or set up more wireless information, refer to Wi-Fi settings.



9.5 View the Networking Information

After entering the configuration page of the router, you can tap the icon of any node to view the networking quality of the node device, as well as the detailed information of the node device, including IP address, MAC address, and client information connected to the node device. The following figure is for reference only.



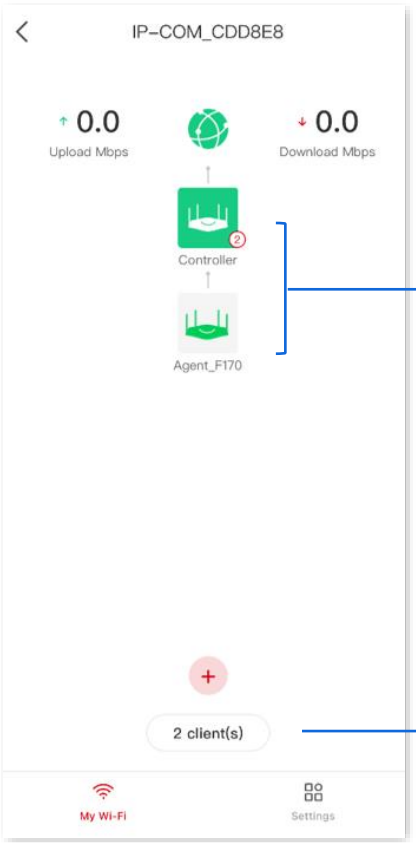
Parameter description

Parameter	Description
● ● ●	Tap it to reboot the router, restore the router to factory settings, and remove the router (only for secondary nodes).
All Devices	Specifies the total number of clients connected to the router, including online and offline clients. Tap to view the detailed information of **Online** devices and **Offline** devices.
Status	Specifies the router's status. If the status is **Offline**, follow the prompts on the page.
Connection Quality	Specifies the quality of the router's network connection.
SN	Specifies the router's serial number.

Parameter		Description
Device Location		Specifies the router location information. For ease of management, it is recommended to set to the current installation location of the router. You can choose the location information preset by the system or customize it.
Indicator		Specifies the router's indicator status. Tap to turn on or off the router's indicator.
More	Firmware Version	Specifies the version number of the router system firmware.
	IP Address	Specifies the router's LAN port IPv4 address.
	WAN MAC address	Specifies the router's WAN port MAC address.
	LAN MAC address	Specifies the router's LAN port MAC address.
	2.4 GHz MAC address	Specifies the router's 2.4 GHz wireless interface MAC address.
	5 GHz MAC address	Specifies the router's 5 GHz wireless interface MAC address.

9.6 View the Number of the Clients

After entering the configuration page of the router, the number of clients connected to a node can be viewed, as well as the number of all clients connected to the current network. The following figure is for reference only.

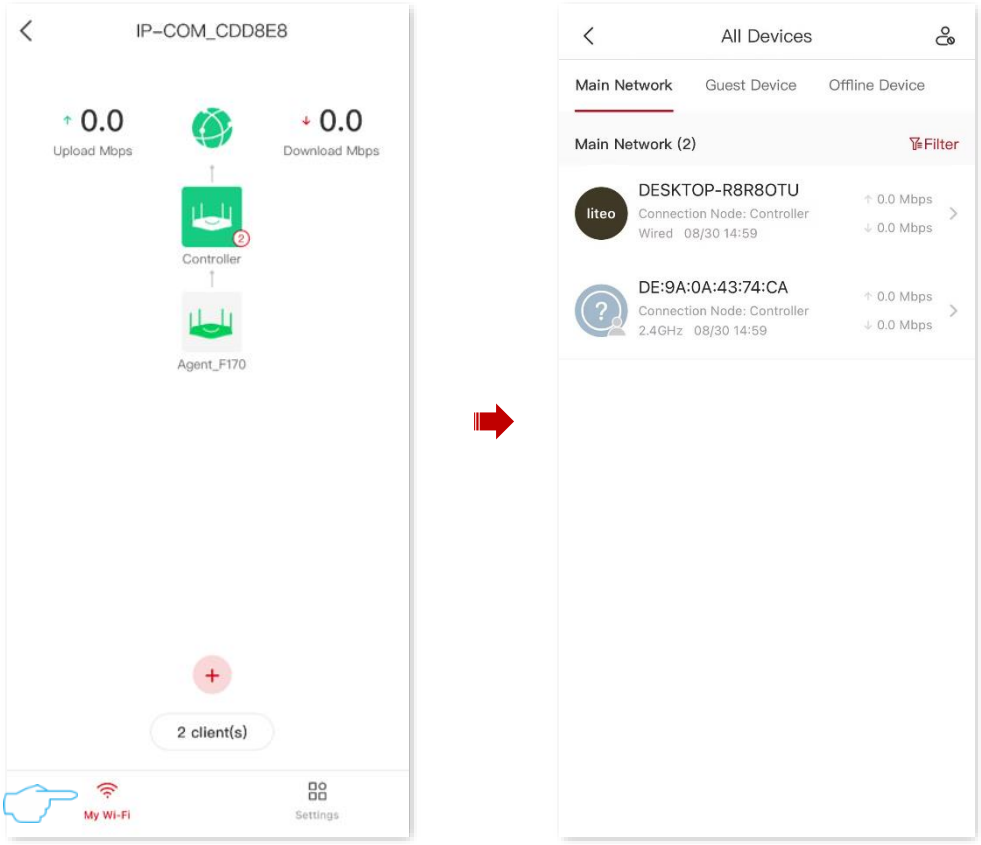


The number in the upper-right corner of the node icon indicates the number of clients connected to the node.

Specifies the number of all clients connected to the current network.

9.7 View Client Details

After entering the configuration page of the router, tap ***X* client(s)** at the bottom of the page in **My Wi-Fi** page to view or manage client devices. The following figure is for reference only.



Parameter description

Parameter	Description
Main Network	Tap the clients for detailed settings, including modifying remarks, setting family groups, limiting upload and download speeds, viewing client details, and adding blacklists. Tip The client with icon at the lower-right of the device icon is the device currently managing the router and cannot be added to the blacklist.
Guest Device	Specifies the information about the clients currently connected to the guest Wi-Fi, including device name, connected node name, access method, access time, upload and download speed. Tap client for detailed settings, including modifying remarks, viewing client details, and adding blacklist.
Offline Device	Specifies the information about offline clients, including device name, offline time, and MAC address.

Parameter	Description
Filter	Used to display the specific client according to the filter criteria.
Delete	Used to delete the selected offline device.
	Used to view, add or remove blacklist.

10 Network Control

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

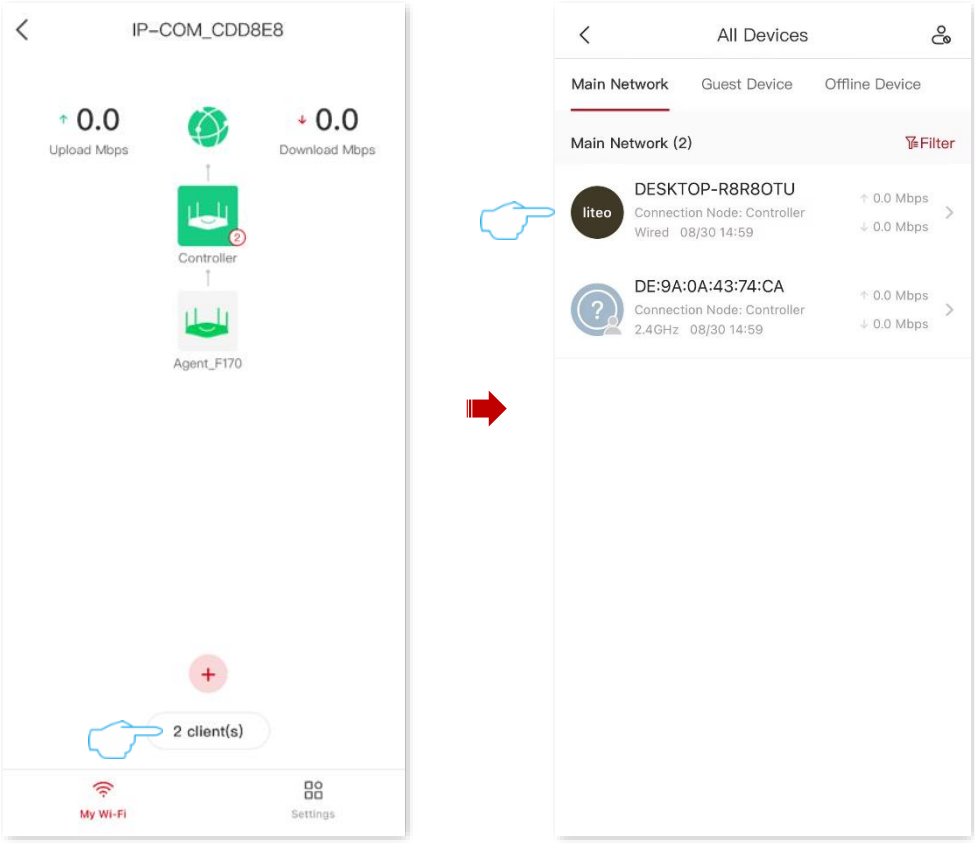
This chapter describes how to manage your clients, including:

10.1 Add a Client to the Blacklist

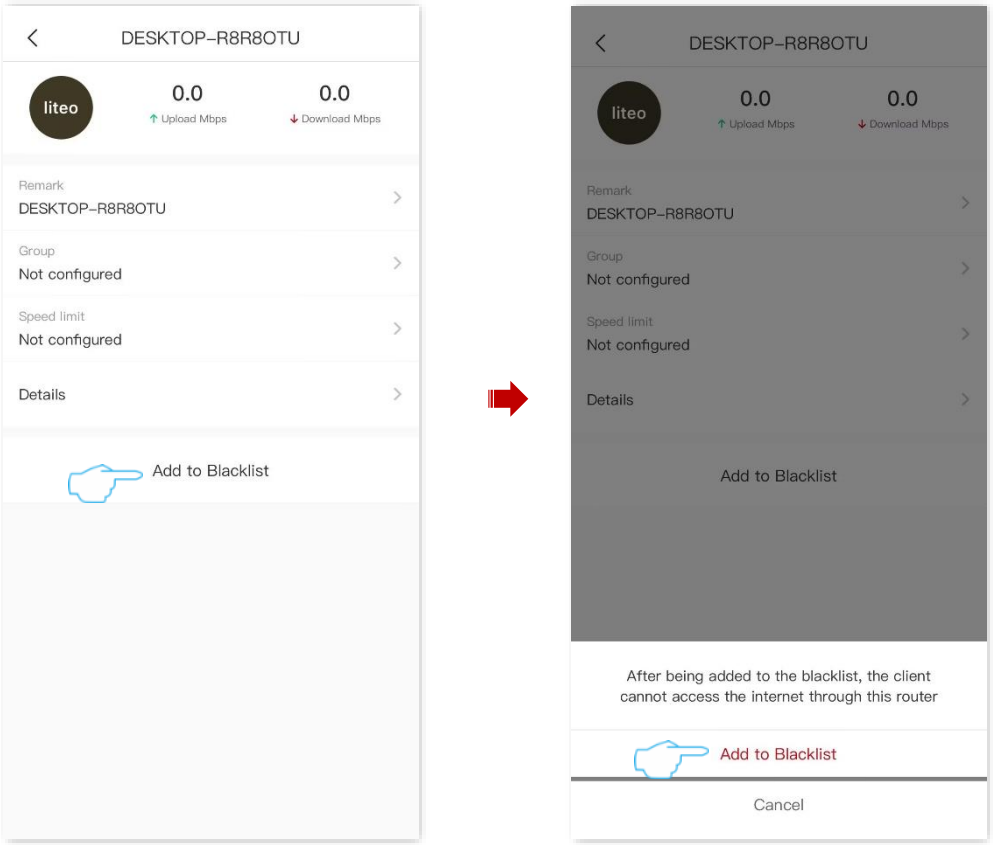
The blacklisted devices cannot access the internet through the router.

10.1.1 Method 1

1. Enter the configuration page of the router, and tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page. The following figure is for reference only.
2. Tap **Main Network** or **Guest Device** tab, locate and tap the client to be added to the blacklist. The following figure is for reference only.



3. Tap **Add to Blacklist**, confirm the prompt message and tap **Add to Blacklist**. The following figure is for reference only.

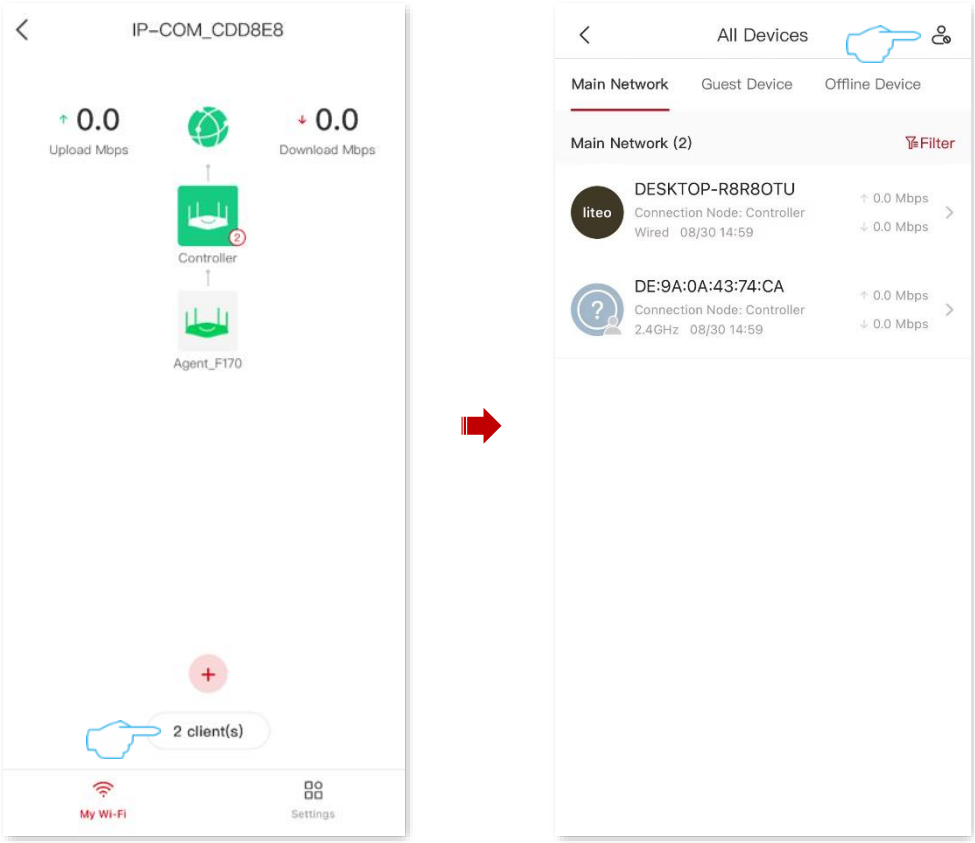


---End

Added the device to the blacklist.

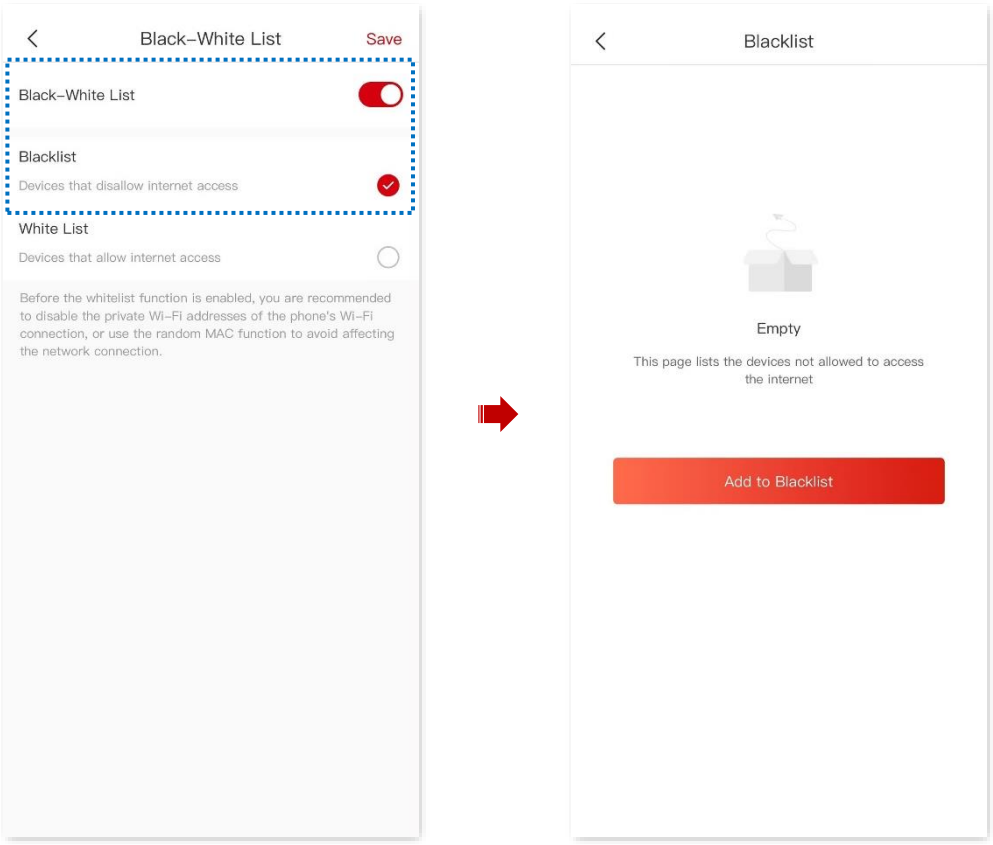
10.1.2 Method 2

1. Enter the configuration page of the router, tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page, and tap in the upper-right corner. The following figure is for reference only.



2. Enable **Black-White List**, and tap **Blacklist**.

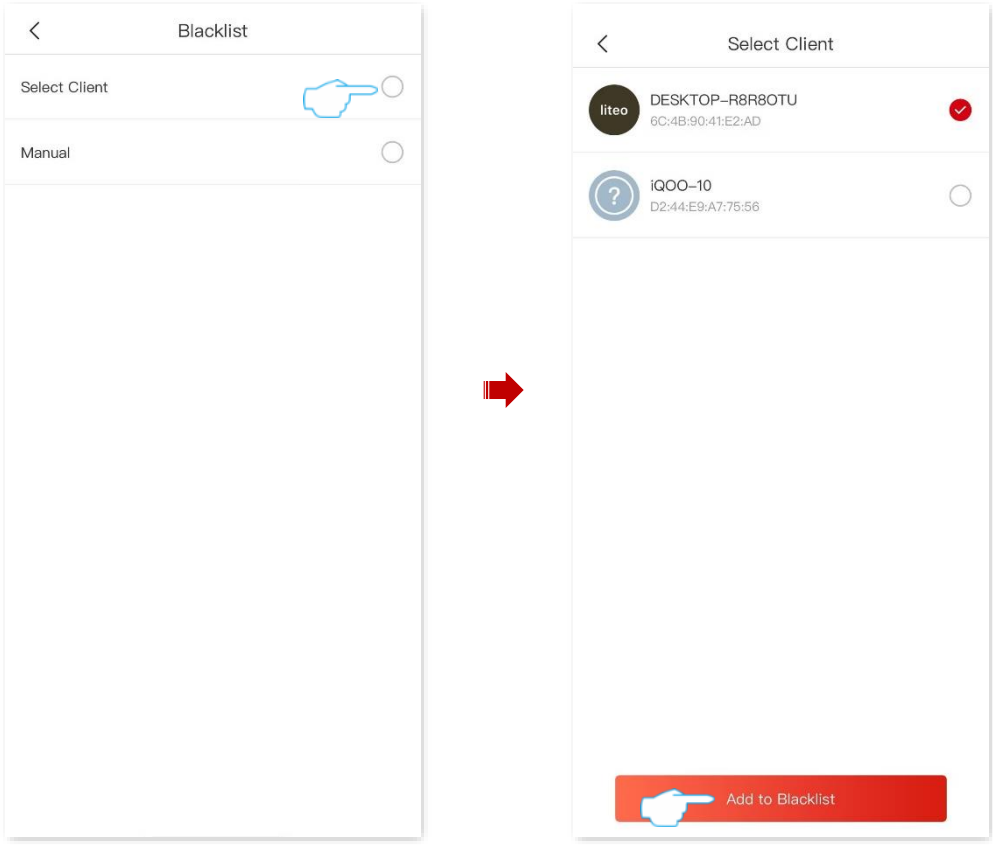
3. Tap **Add to Blacklist**.



4. Select the method to add the client to the blacklist.

   - **Select Client:** Select the client to be blacklisted from all clients (including primary network devices, guest devices, and offline devices).
   - **Manual:** Manually enter the information of the client to be added to the blacklist, including the device name and MAC address.

5. Select the client to be added to the blacklist and tap **Add to Blacklist**. The **Select Client** is taken as an example. The following figure is for reference only.

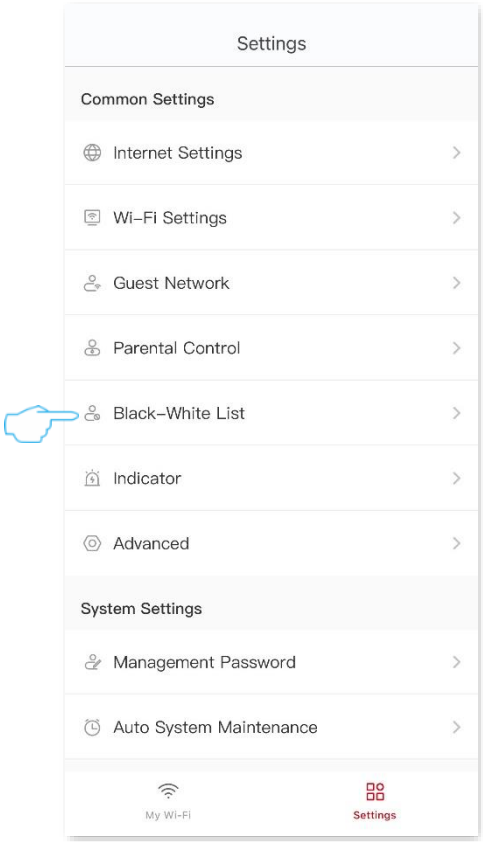


---End

Added the device to the blacklist.

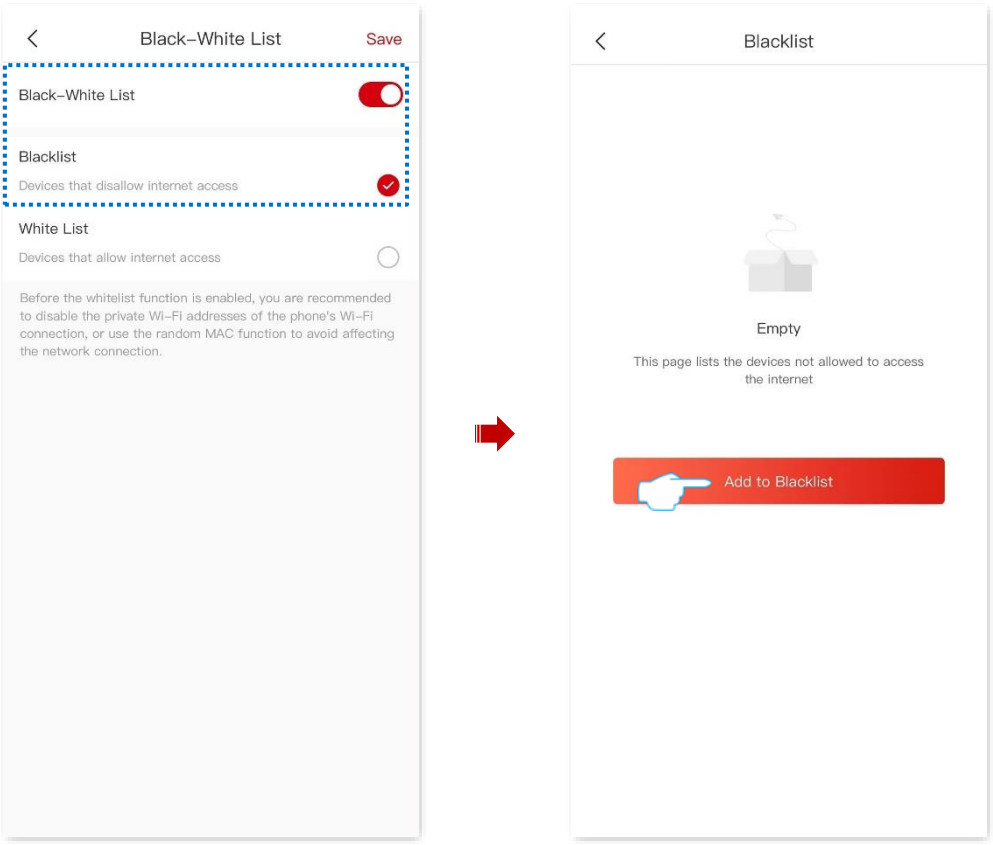
10.1.3 Method 3

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Black-White List**.



3. Enable **Black-White List**, and tap **Blacklist**.

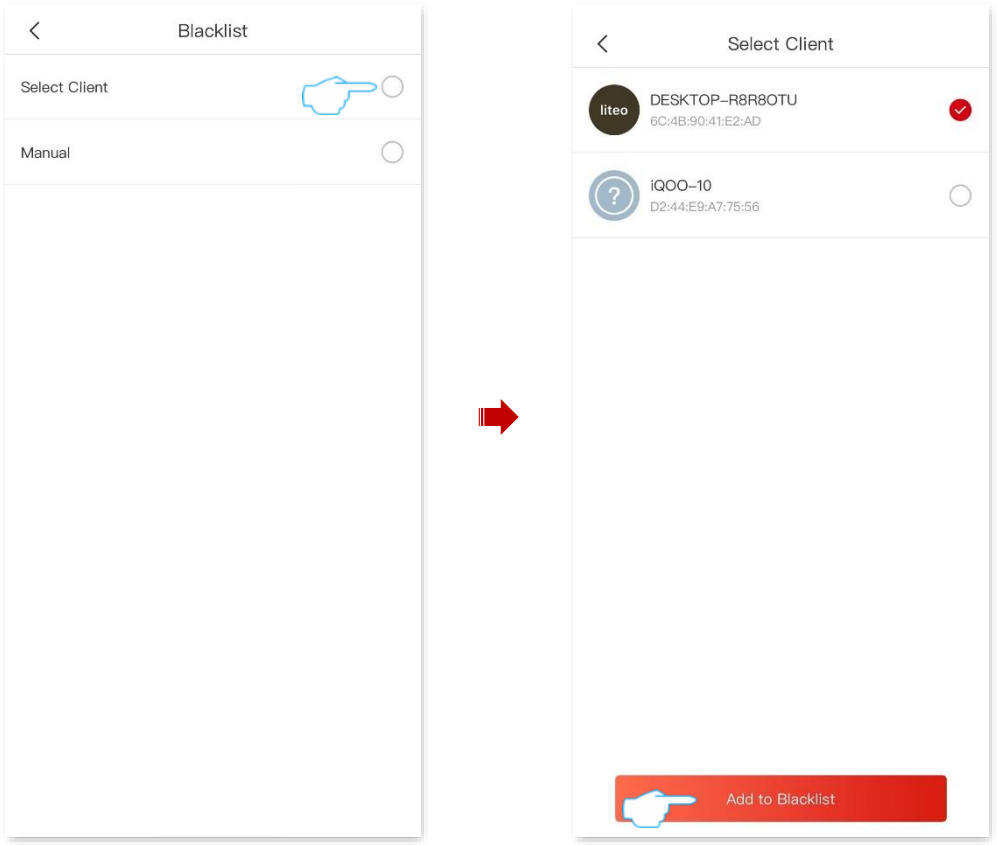
4. Tap **Add to Blacklist**.



5. Select the method to add the client to the blacklist.

   - **Select Client:** Select the client to be blacklisted from all clients (including primary network devices, guest devices, and offline devices).
   - **Manual:** Manually enter the information of the client to be added to the blacklist, including the device name and MAC address.

6. Select the client to be added to the blacklist and tap **Add to Blacklist**. The **Select Client** is taken as an example. The following figure is for reference only.



---End

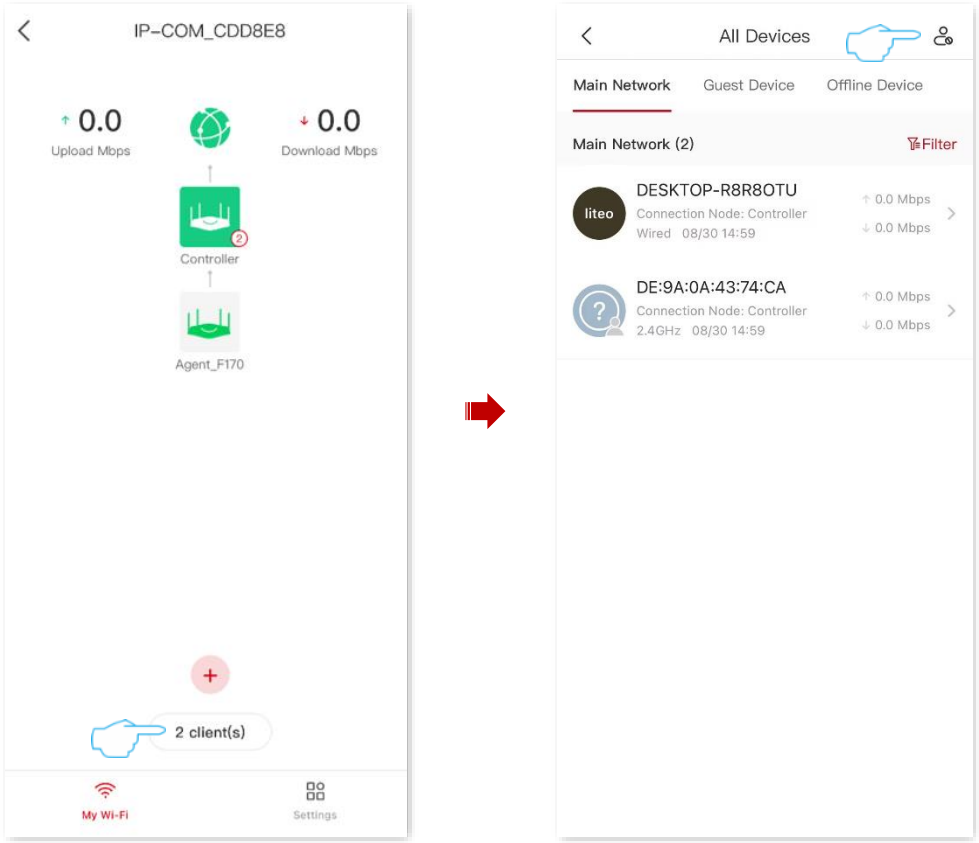
Added the device to the blacklist.

10.2 Add the Device to the Whitelist

The whitelisted devices can access the internet through the router, while other devices cannot access the internet through the router.

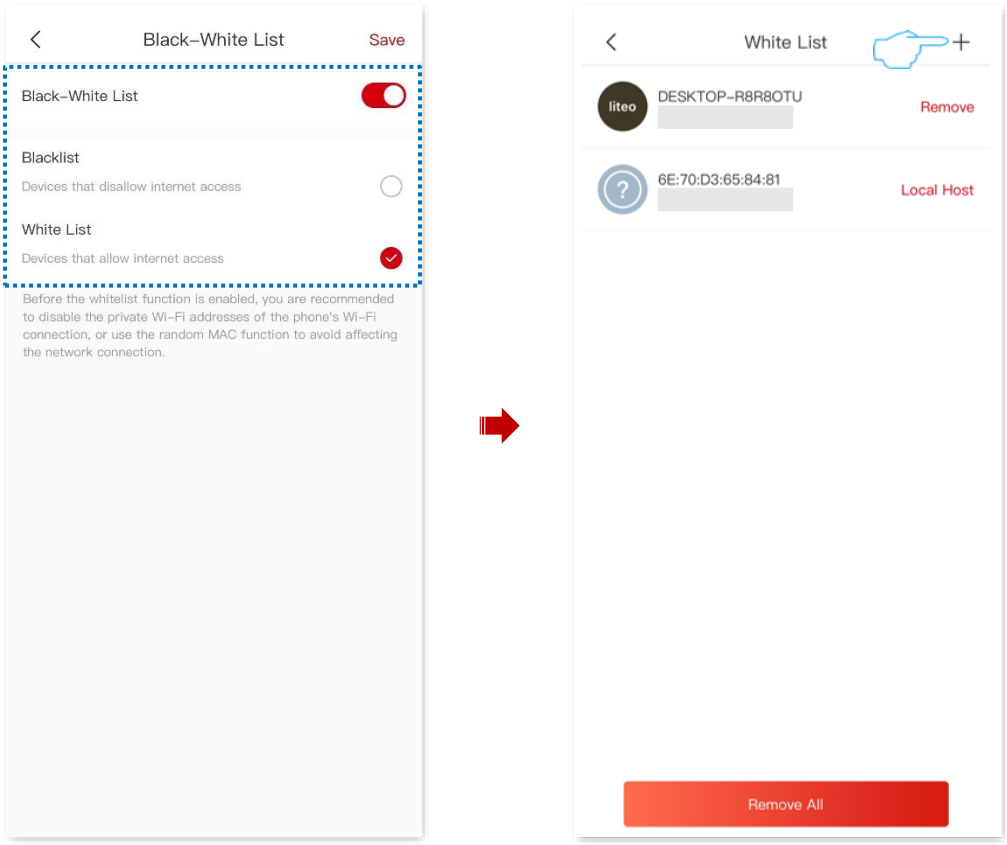
10.2.1 Method 1

1. Enter the configuration page of the router, tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page, and tap in the upper-right corner. The following figure is for reference only.



2. Enable **Black-White List**, and tap **White List**.

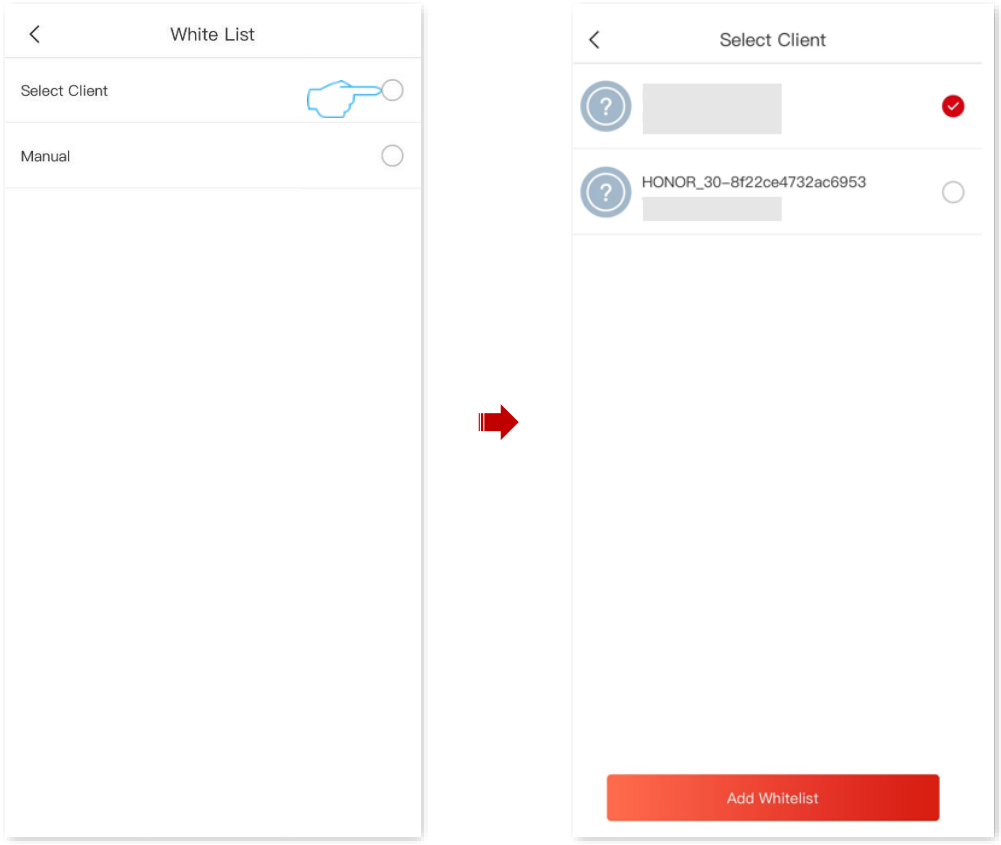
3. Tap + in the upper-right corner.



4. Select the method to add the client to the whitelist.

   - **Select Client:** Select the client to be whitelisted from all clients (including primary network devices, guest devices, and offline devices).
   - **Manual:** Manually enter the information of the client to be added to the whitelist, including the device name and MAC address.

5. Select the client to be added to the whitelist and tap **Add Whitelist**. The **Select Client** is taken as an example. The following figure is for reference only.

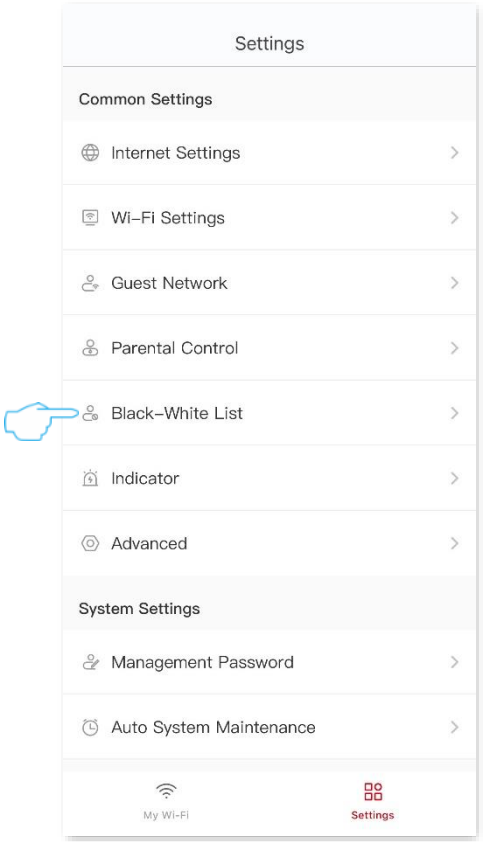


---End

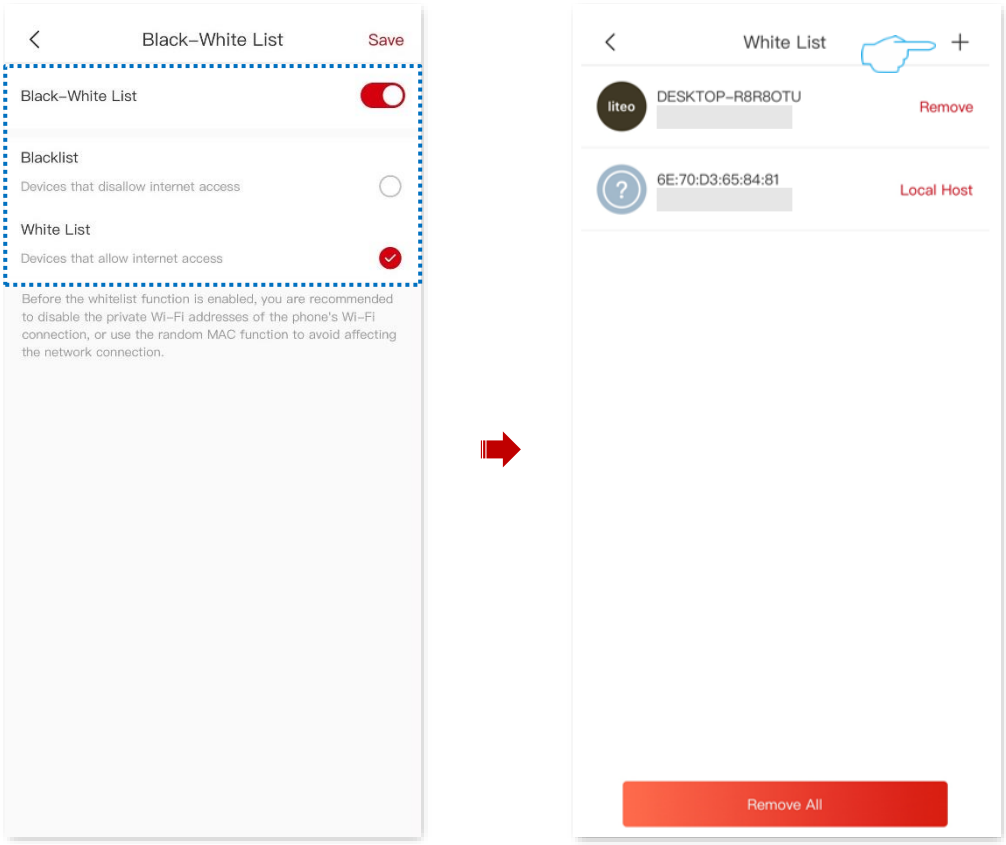
Added the device to the whitelist.

10.2.2 Method 2

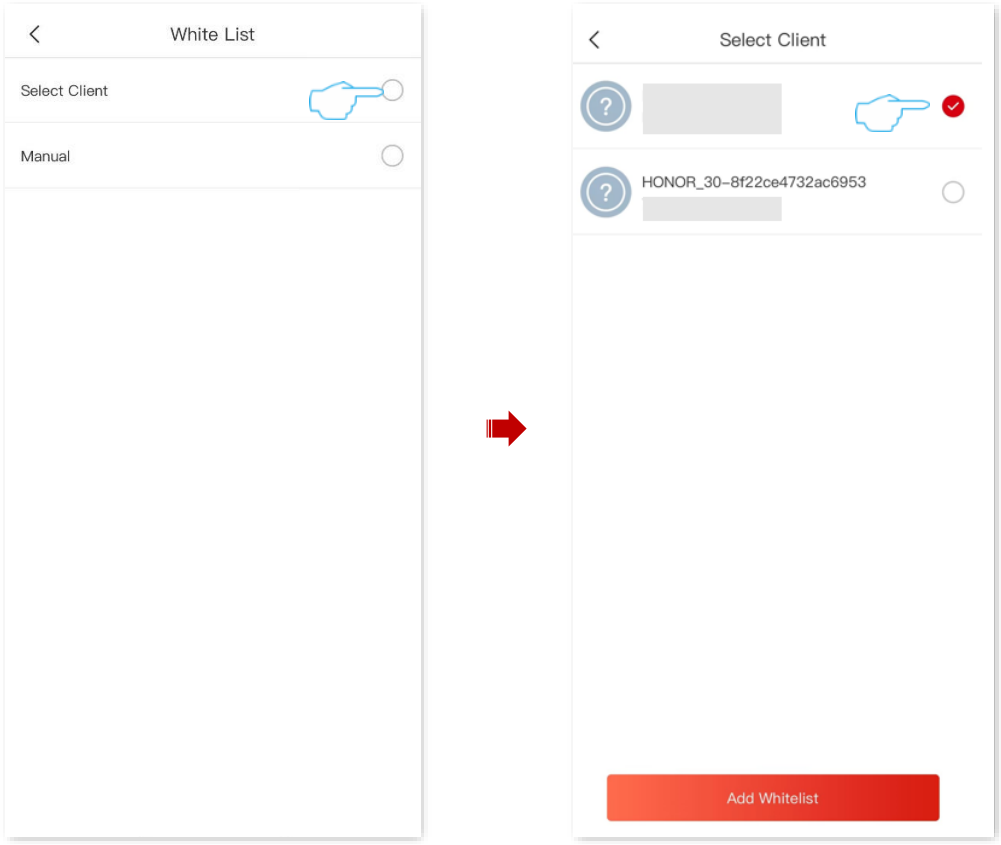
1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Black-White List**.



3. Enable **Black-White List**, and tap **White List**.
4. Tap + in the upper-right corner.



5. Select the method to add the client to the whitelist.
   - **Select Client:** Select the client to be whitelisted from all clients (including primary network devices, guest devices, and offline devices).
   - **Manual:** Manually enter the information of the client to be added to the whitelist, including the device name and MAC address.
6. Select the client to be added to the whitelist and tap **Add Whitelist**. The **Select Client** is taken as an example. The following figure is for reference only.



---End

Added the device to the whitelist.

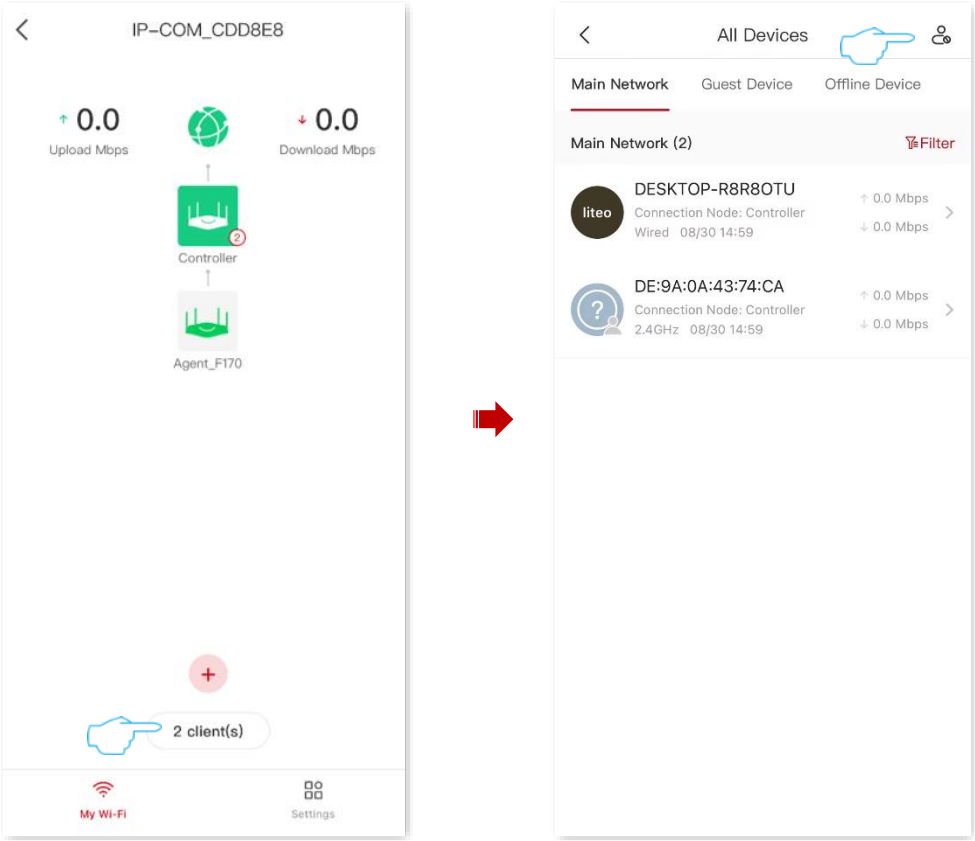
10.3 Remove a Client from the Blacklist or Whitelist

Devices removed from the blacklist can be reconnected to the router to access the internet.
Devices removed from the whitelist cannot be connected to the router to access the internet.

Removing a blacklist or whitelist is similar. Removing a blacklist is taken as an example.

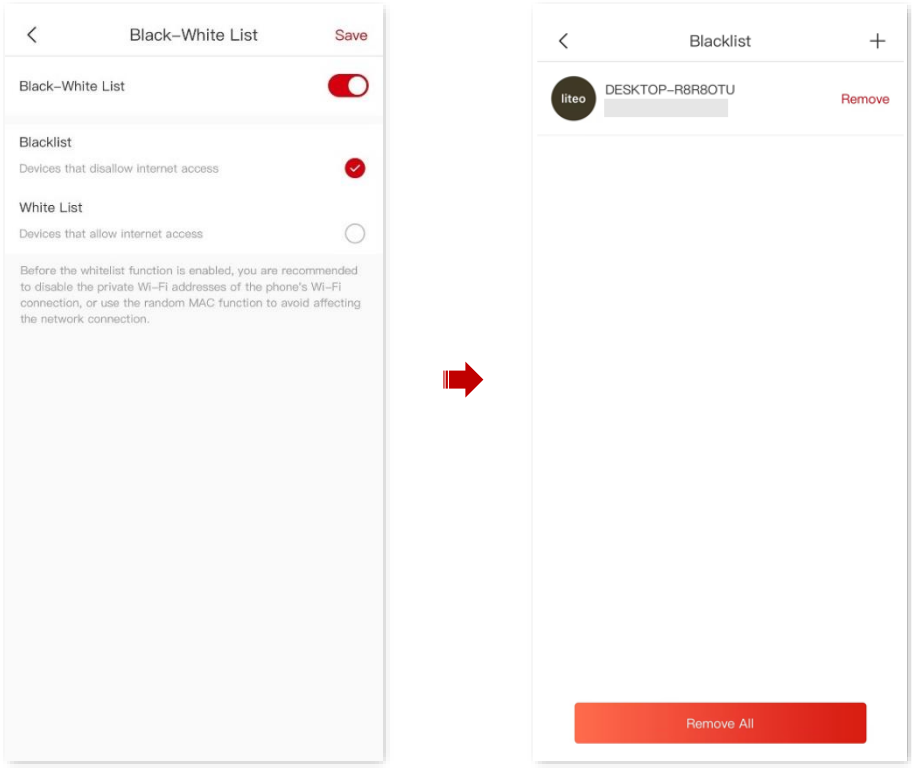
10.3.1 Method 1

1. Enter the configuration page of the router, tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page, and tap in the upper-right corner. The following figure is for reference only.



2. Tap **Blacklist**.

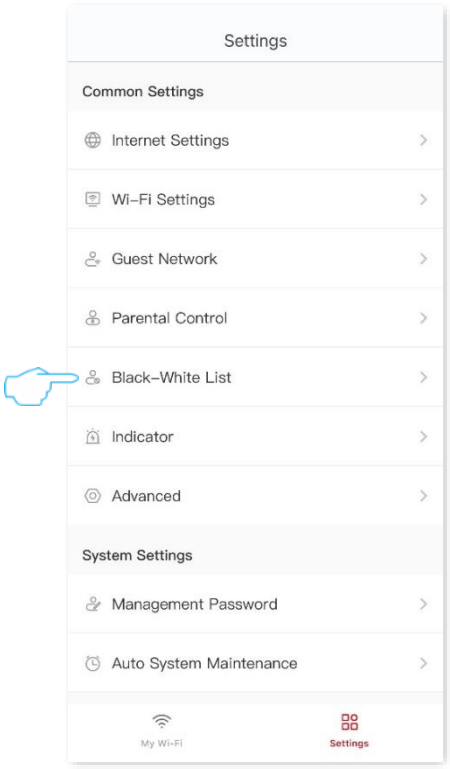
3. Locate the device you want to remove from the blacklist and tap **Remove**, or tap **Remove All**. The following figure is for reference only.



---End

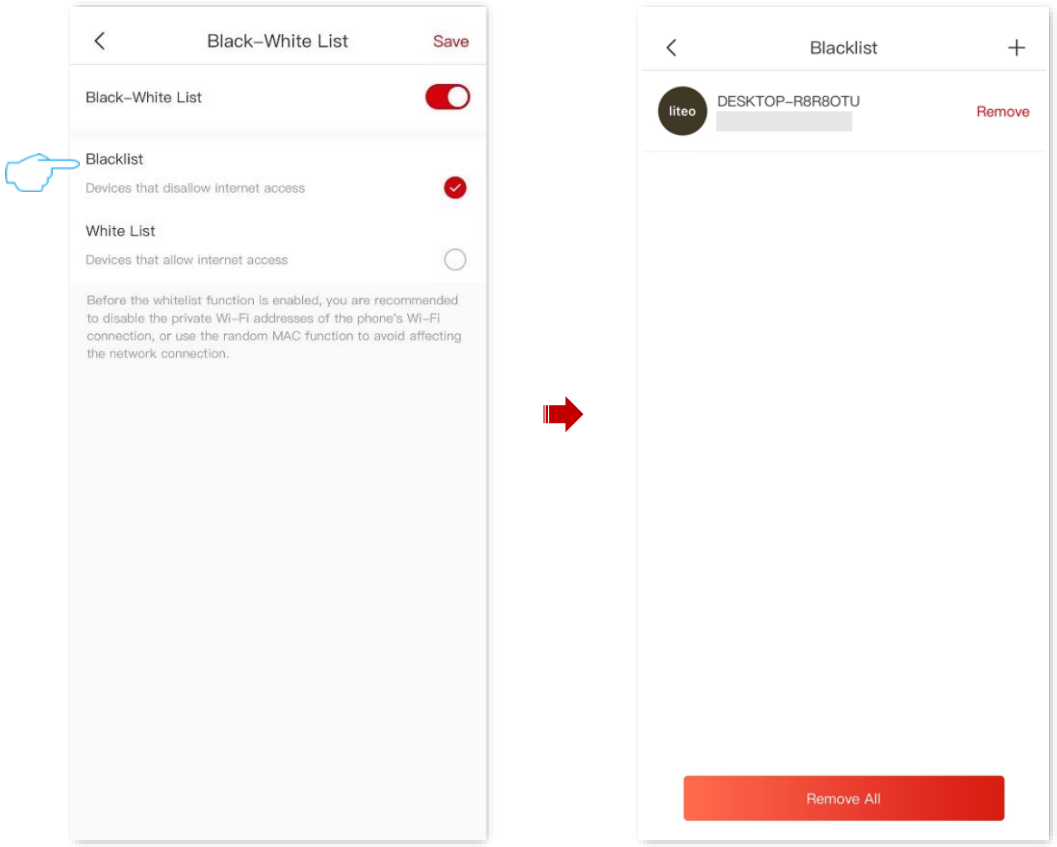
10.3.2 Method 2

1. Enter the configuration page of the router, and navigate to **Settings** > **Black-White List**.



2. Tap **Blacklist**.

3. Locate the device you want to remove from the blacklist and tap **Remove**, or tap **Remove All**. The following figure is for reference only.

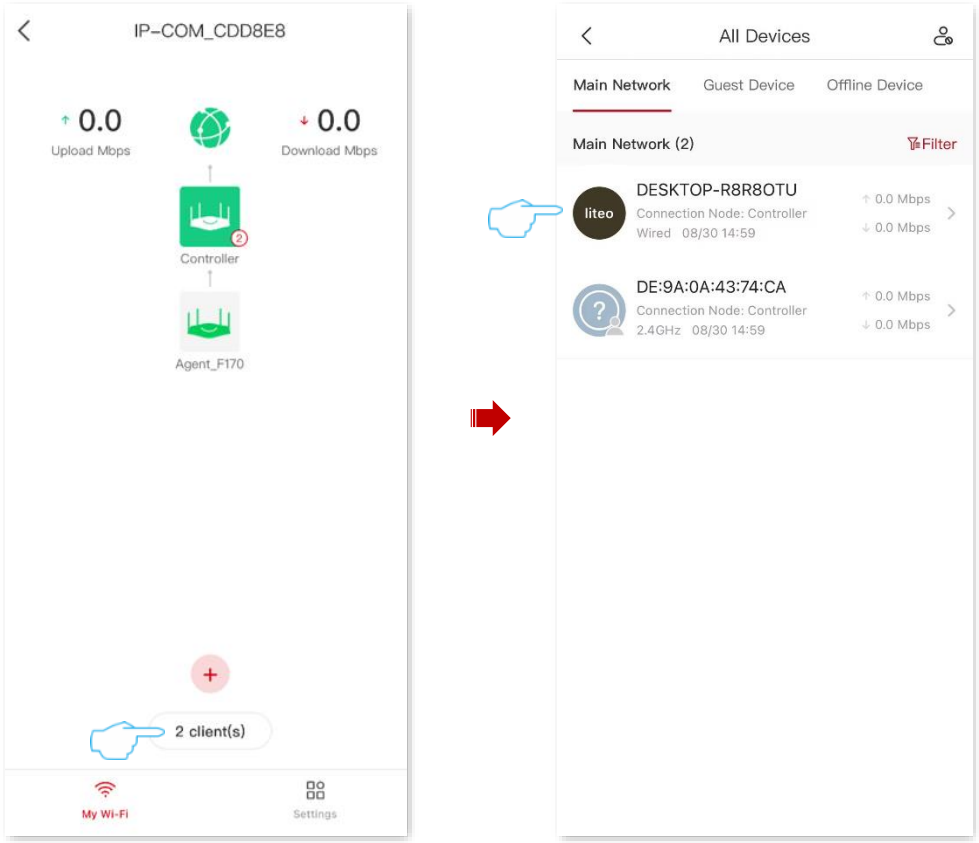


---End

10.4 Network Speed Control

1. Enter the configuration page of the router, and tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page. The following figure is for reference only.

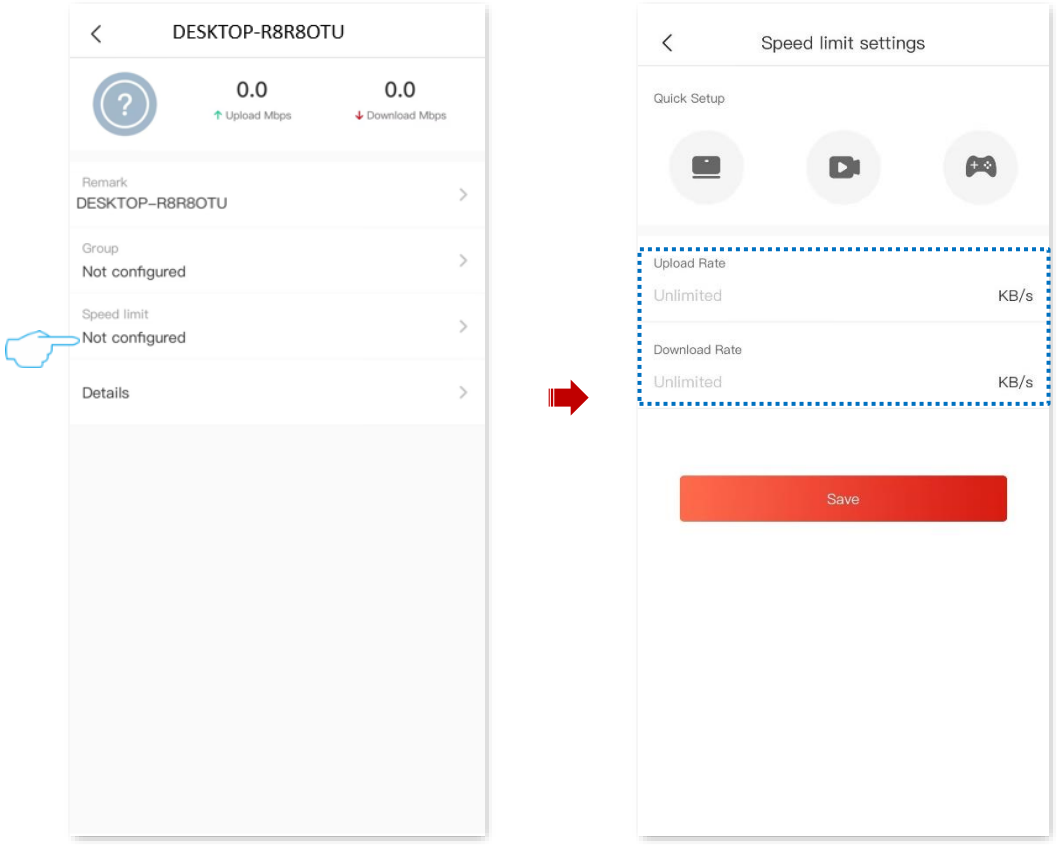
2. Tap **Main Network** or **Guest** tab, locate and tap the client to be limited the network speed. The following figure is for reference only.



3. Set the maximum upload and download rate for this client.

4. You can select the apps (including web browsing, video and games) to limit in the **Quick Setup** module, and the corresponding upload and download speed limit values will be filled automatically, or you can customize them.

5. Tap **Save**.



---End

10.5 Internet Access Control

With parental control function, you can configure various parental control rules to control access to certain websites or block certain clients from accessing the internet.

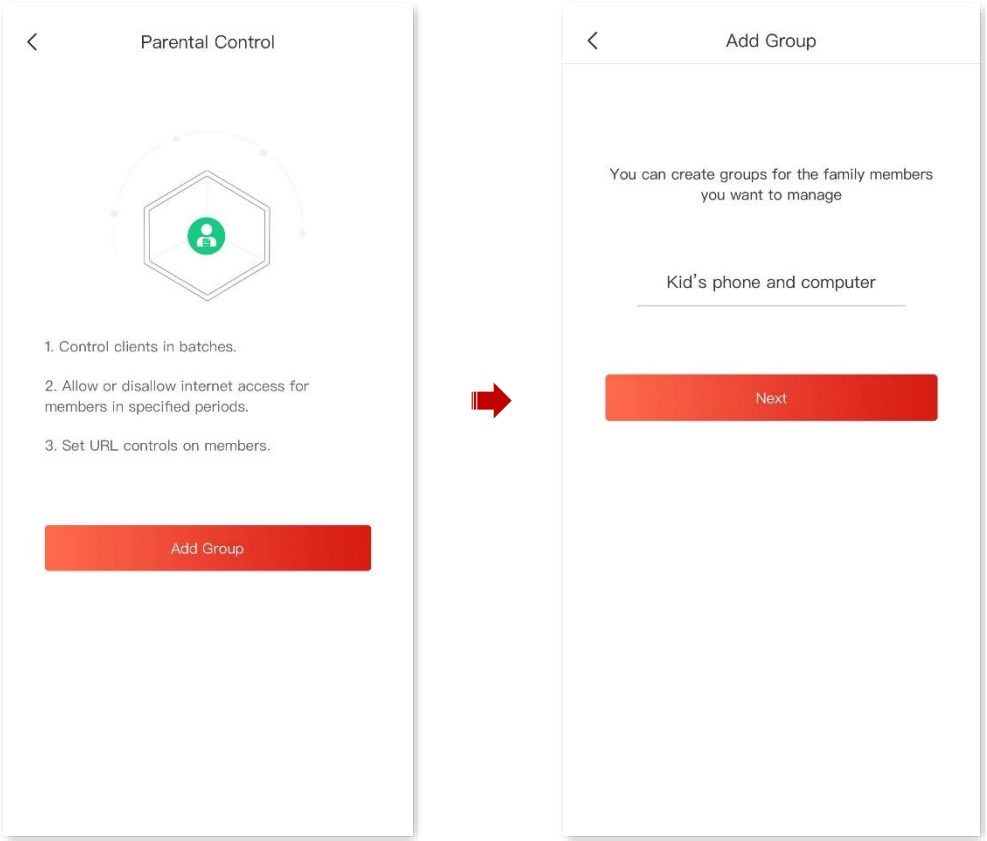
Scenario: You want to configure your kid's internet access through the router. Your kid cannot access such websites as Facebook, Twitter, YouTube and Instagram from 8:00 to 22:00 on Sunday.

Goal: Devices cannot access to websites include kid's phones and computers.

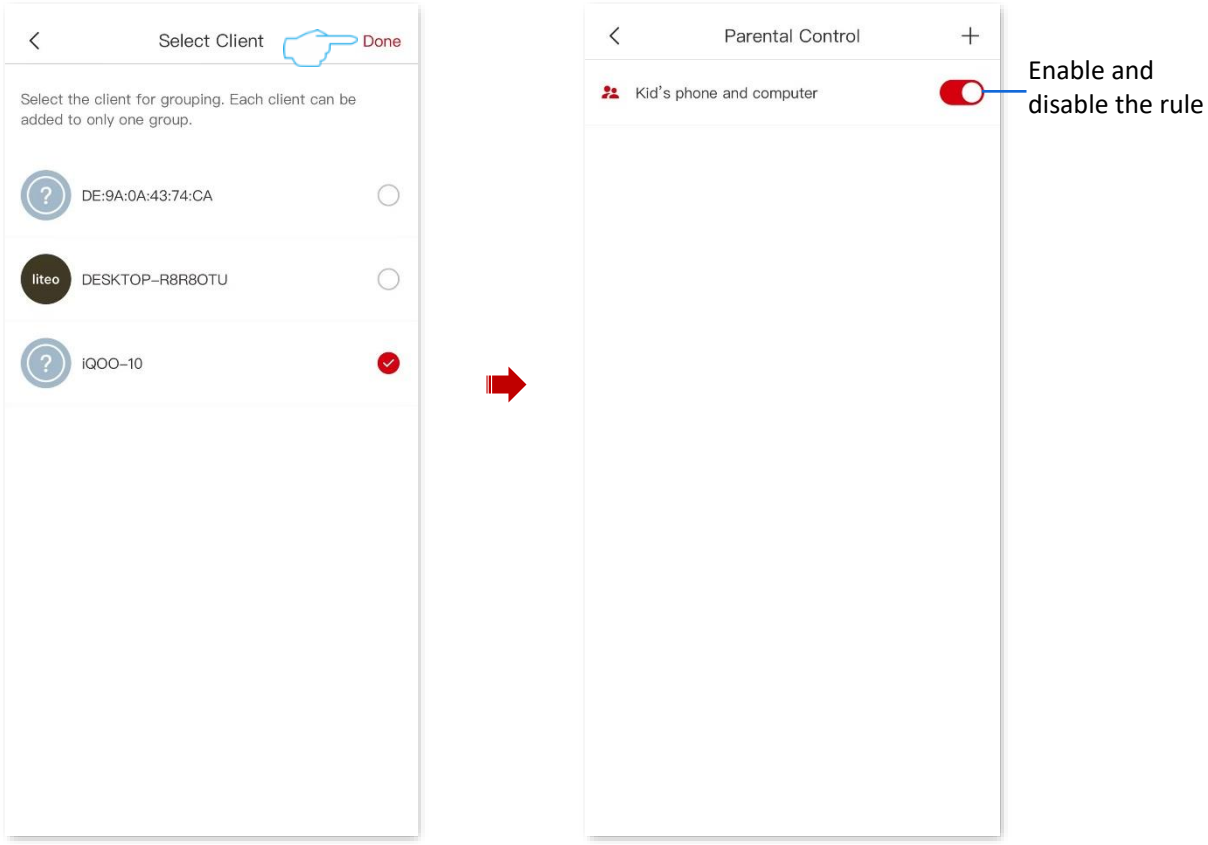
Solution: You can configure a parental control rule to reach the goal.

To add such a rule:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Parental Control**.
3. Set group and add the client.
   1) Tap **Add Group** or ＋ in the upper-right corner.
   2) Set group name, which is **Kid's phone and computer** in this example, and tap **Next**.



3) Select the client that you want to join the group, which is **Kid's phone and computer** in this example, and tap **Done** in the upper-right corner. The following figure is for reference only.

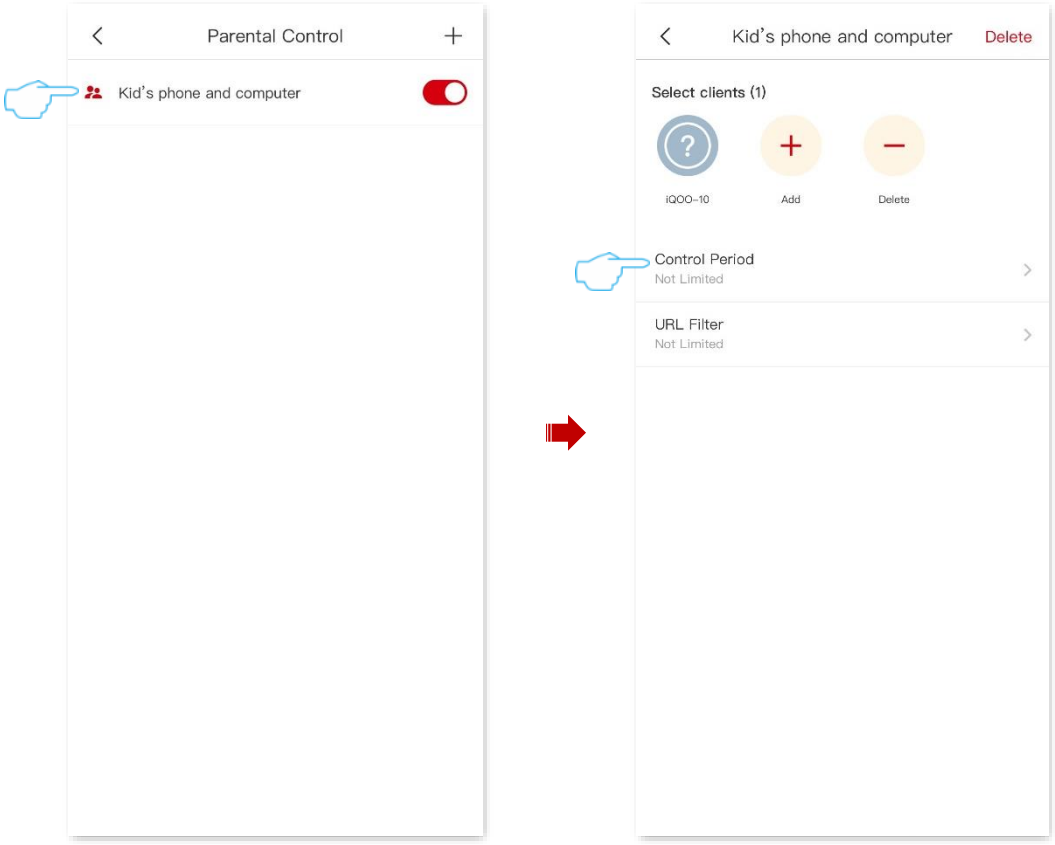


4. Set the time when the client can access the internet.

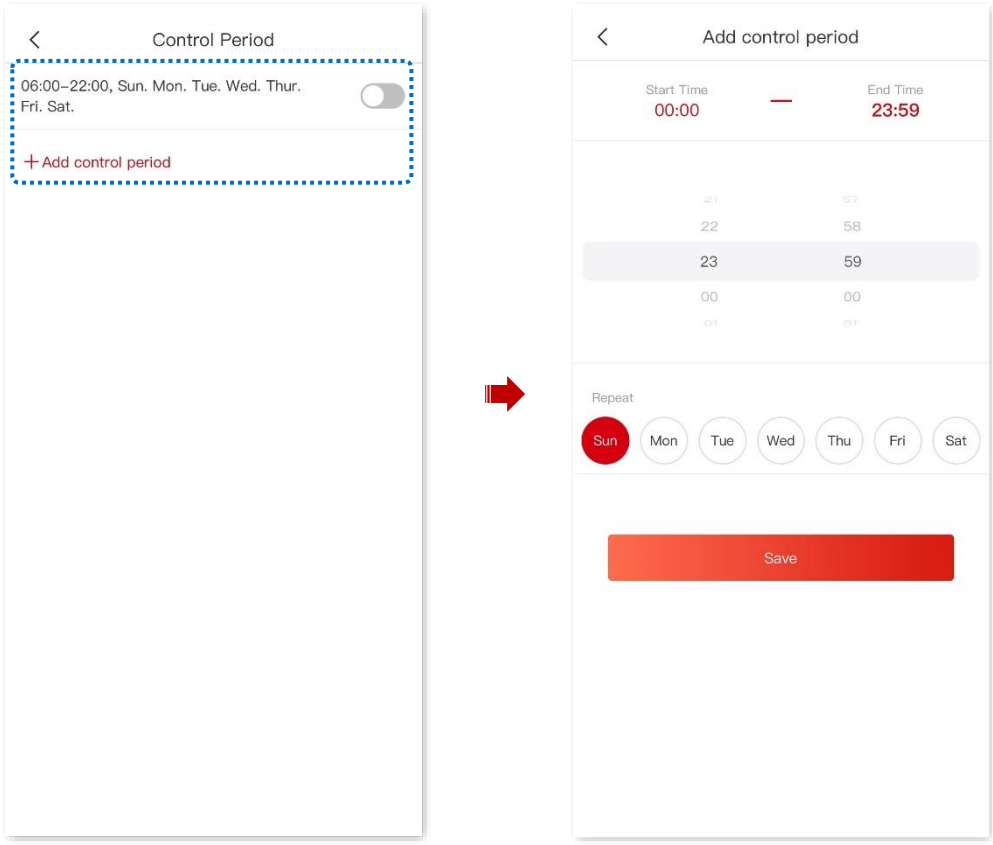
1) Tap the group you have added, which is **Kid's phone and computer** in this example, and tap **Control Period**.

Tip

Tap + or − to add or remove clients from a group, and tap **Delete** to delete the group.

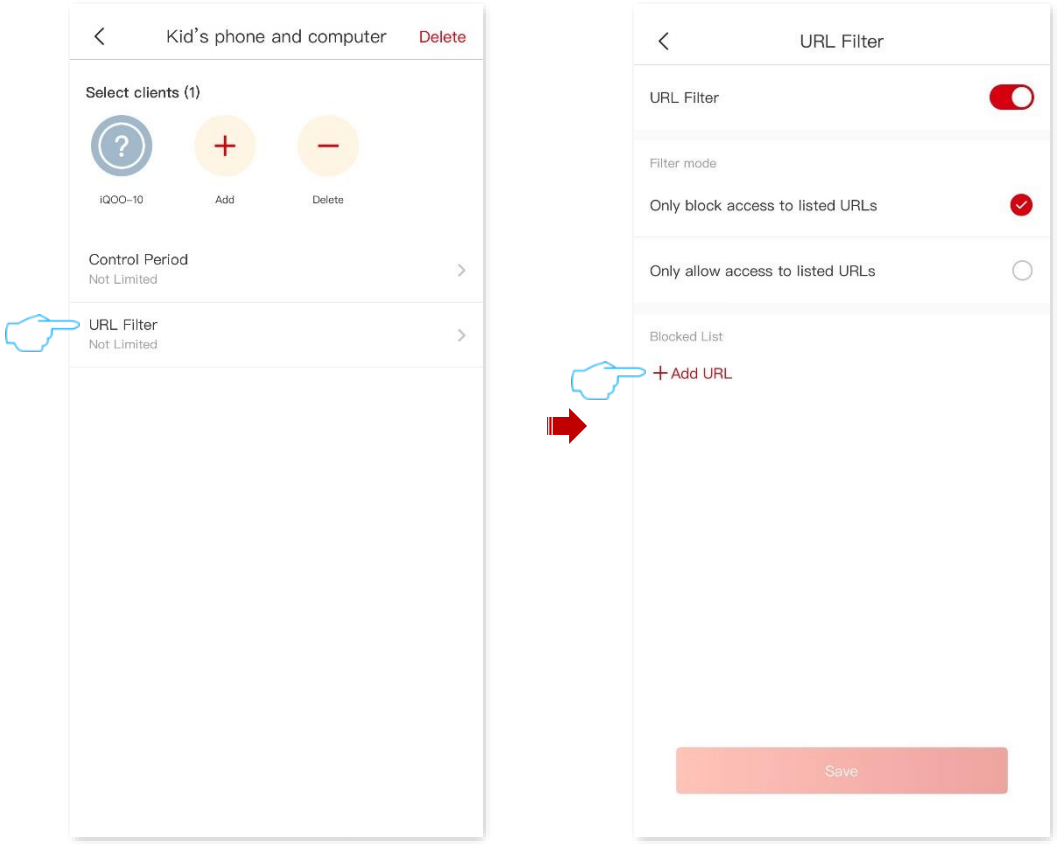


2) Set the time when the client can access the internet, which are **00:00-23:59** and **Sun** in this example, and tap **Save**.



5. Set the websites that the client is forbidden to access.

1) Go back to the group rules page and tap **URL Filter**.
2) Enable the **URL Filter**, and select **Filter mode** to **Only block access the listed URLs**.
3) Tap **+ Add URL**.

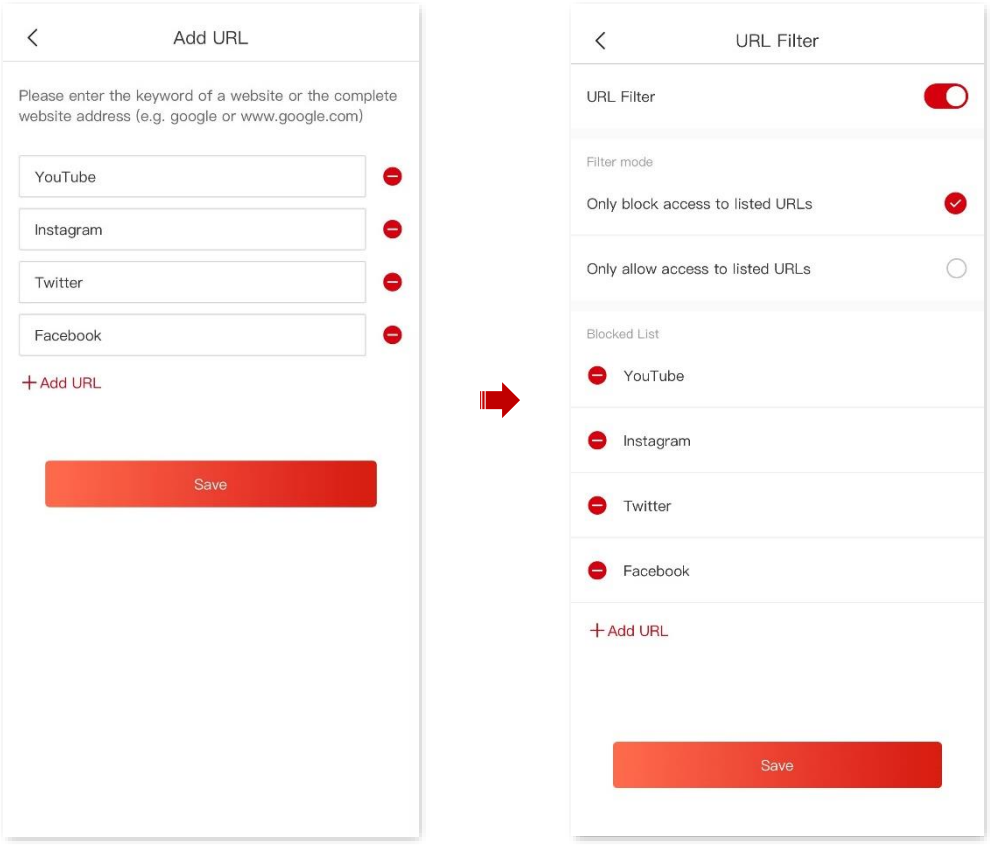


4) Enter **Facebook**, **Twitter**, **YouTube**, and **Instagram** for URL, and tap **Save**.

Tip

Enter multiple URLs requires tapping **+ Add URL** multiple times.

5) Go back to the **URL Filter** page and tap **Save**.



---End

After the settings are completed, your kid's phone and computer can access any websites except for Facebook, Twitter, YouTube and Instagram from 00:00 to 23:59 on Sunday.

11 Network Security

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

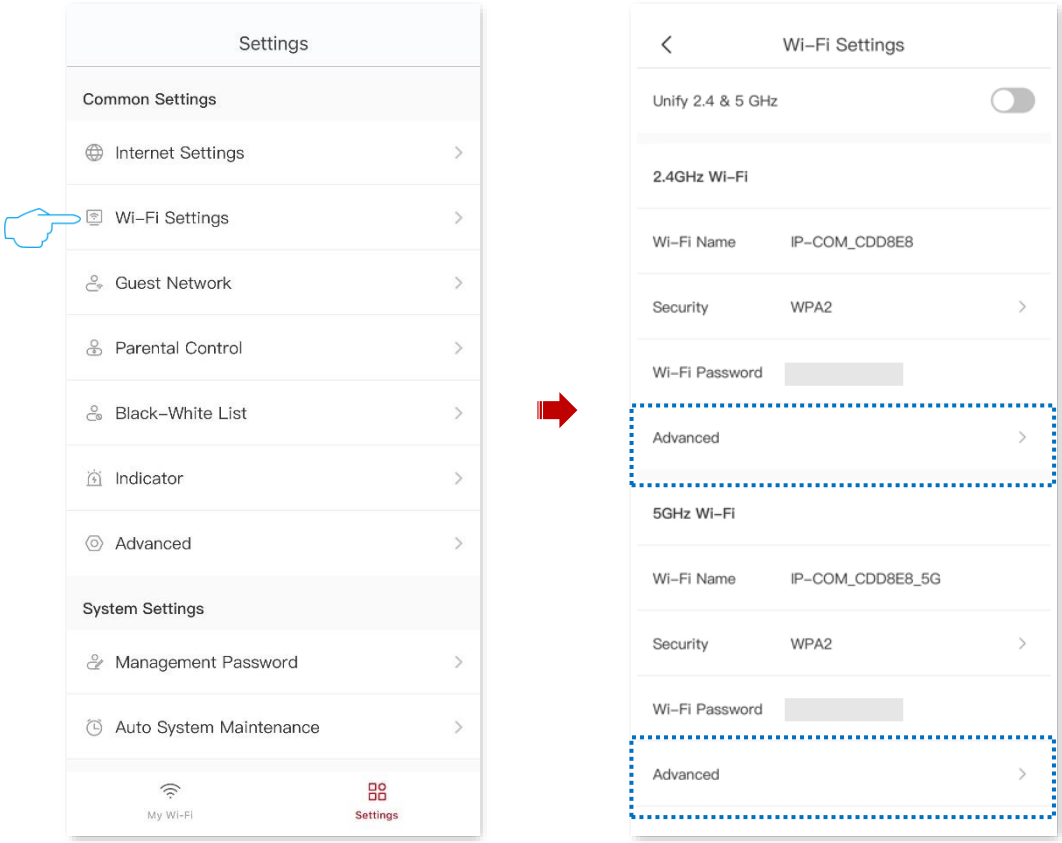
This chapter includes the following sections:

11.1 Hide the Wi-Fi Network

The hidden Wi-Fi networks are invisible to Wi-Fi-enabled devices, thus improving the security of the networks.

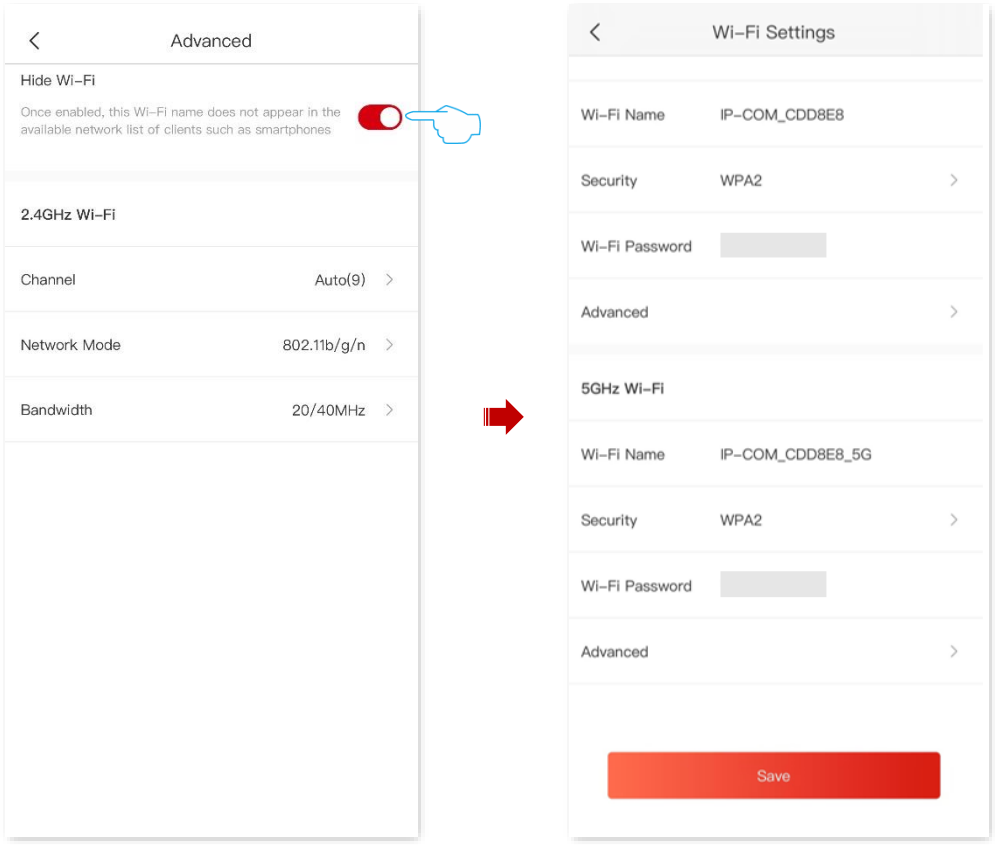
Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Wi-Fi Settings**.
3. Tap **Advanced**. The **Unify 2.4 & 5 GHz** function is disabled. The following figure is for reference only.


Settings
Common Settings
Internet Settings
Wi-Fi Settings
Guest Network
Parental Control
Black-White List
Indicator
Advanced
System Settings
Management Password
Auto System Maintenance
My Wi-Fi
Settings
Wi-Fi Settings
Unify 2.4 & 5 GHz
2.4GHz Wi-Fi
Wi-Fi Name
IP-COM_CDD8E8
Security
WPA2
Wi-Fi Password
Advanced
5GHz Wi-Fi
Wi-Fi Name
IP-COM_CDD8E8_5G
Security
WPA2
Wi-Fi Password
Advanced

4. Enable the **Hide Wi-Fi**. The following figure is for reference only.

5. Tap < back to **Wi-Fi Settings** page, and tap **Save**.



---End

After the settings are completed, the corresponding Wi-Fi network is invisible to Wi-Fi-enabled devices. If you want to connect to a hidden wireless network, you need to manually enter the wireless network name on a Wi-Fi-enabled device such as a smartphone. For details, see Connect to a hidden Wi-Fi Network.

11.2 Enable or Disable MESH Button

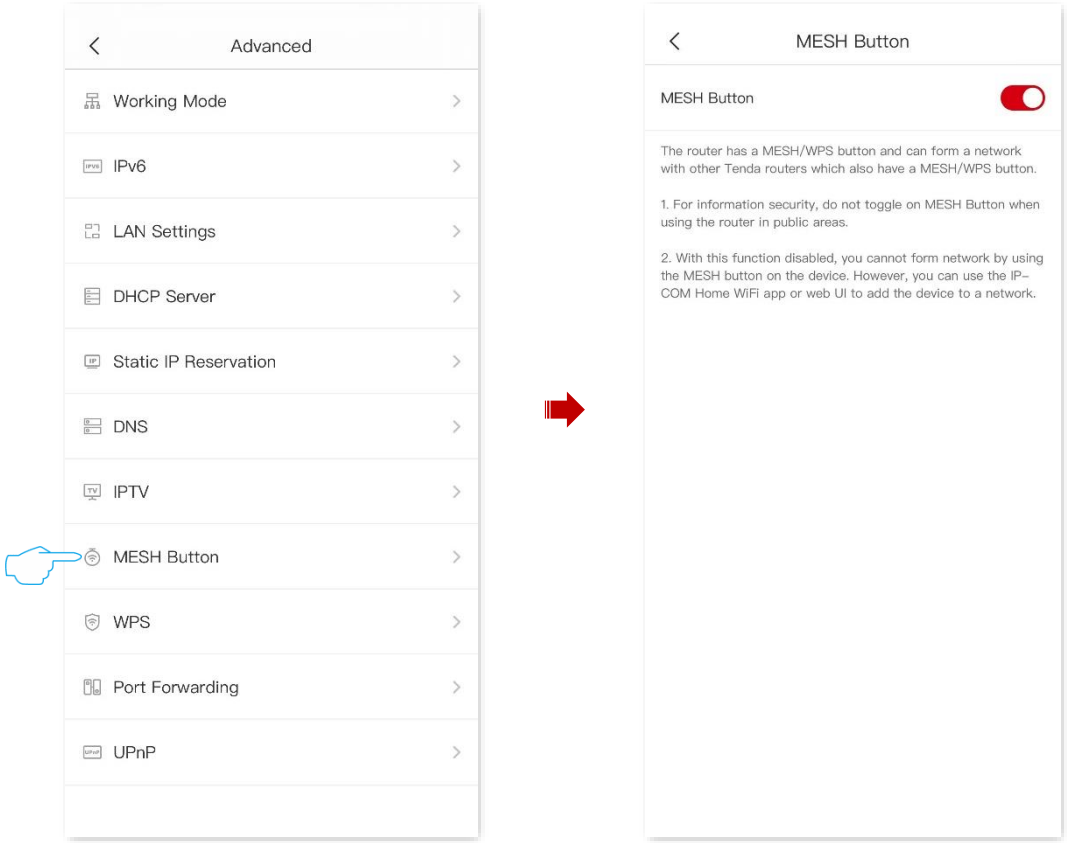
After entering the configuration page of the router, and navigate to **Settings** > **Advanced** > **MESH Button**.

You can enable or disable the MESH button networking function. This function is enabled by default.

- After enabled, the router can network with other IP-COM Wi-Fi+ routers through the networking button (WPS or MESH) on the body.
- After disabled, the router cannot be networked through the networking button (WPS or MESH) on the body, but can be networked through the scanning networking and wired networking.

Note

If you use this router in a public place, do not enable the MESH button function to ensure information security.



11.3 Change the Management Password

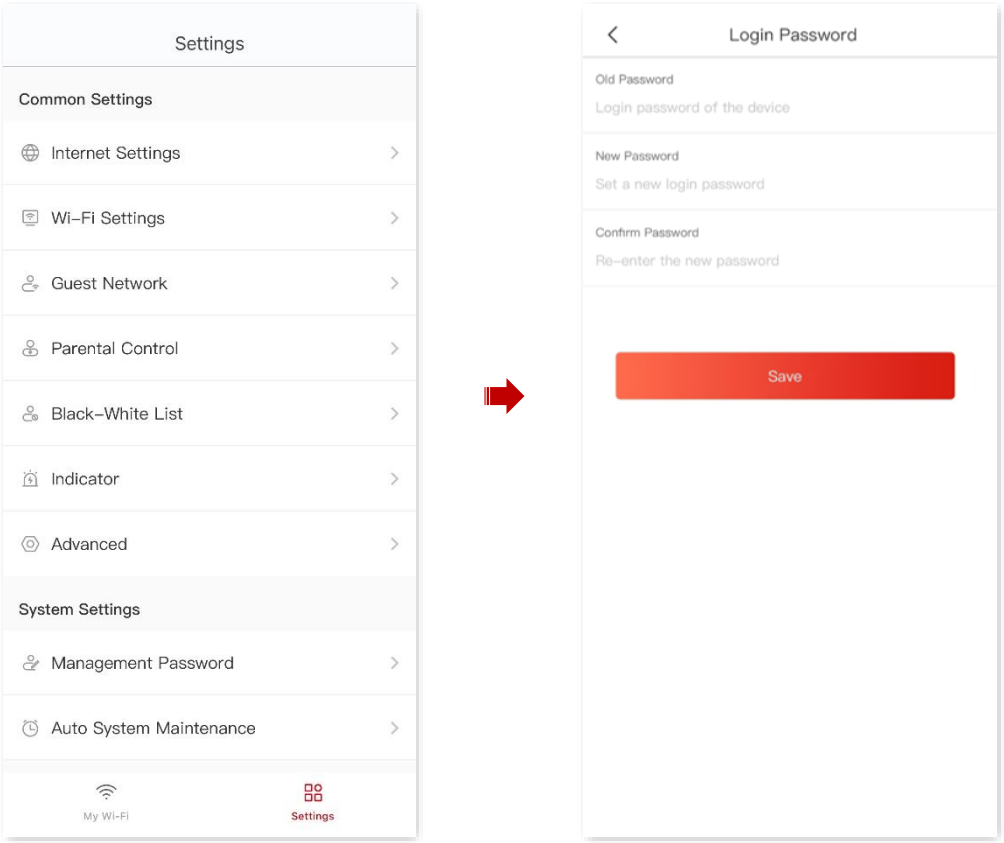
After entering the configuration page of the router, and navigate to **Settings** > **Management Password**.

Here, you can change the router's login password, that is, the login password for the web UI.

To ensure network security, a login password is recommended. A login password consisting of more types of characters, such as uppercase and lowercase letters, brings higher security.

Tip

- If you did not set a password before, you can set a login password on this page.
- If you have already set a login password, you can change the password on this page and the original password is required.



12 Advanced

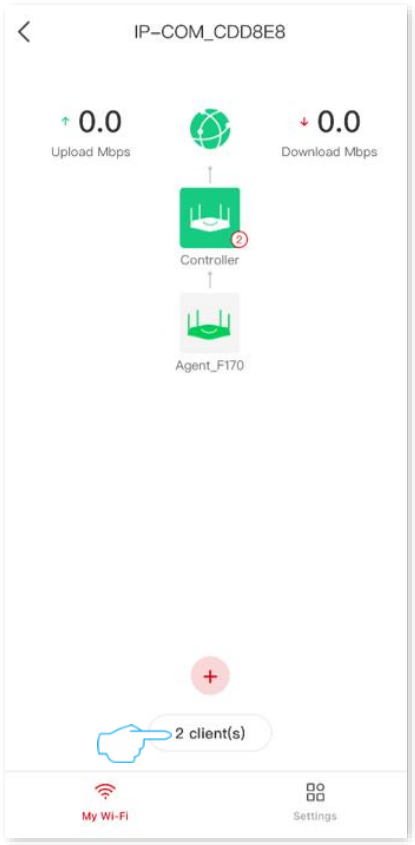
Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

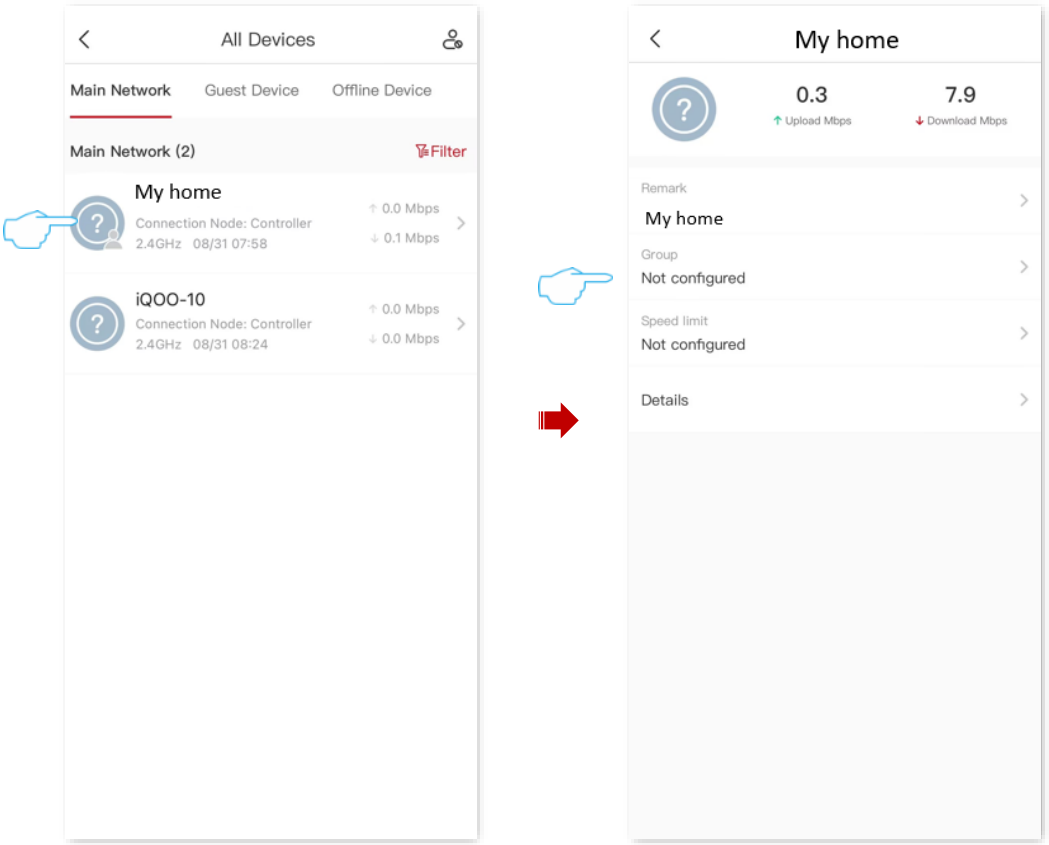
12.1 Set the Clients Family Group

The family group, that is, the parent control rule group. You can use parental control rules to set the internet access rights of the clients, including the internet access time, the allowed and prohibited websites, and so on. After the client is added to a certain family group, the client will be restricted by the family group.

1. Enter the configuration page of the router, and tap ***X* client(s)** in the lower-right corner of the **My Wi-Fi** page.

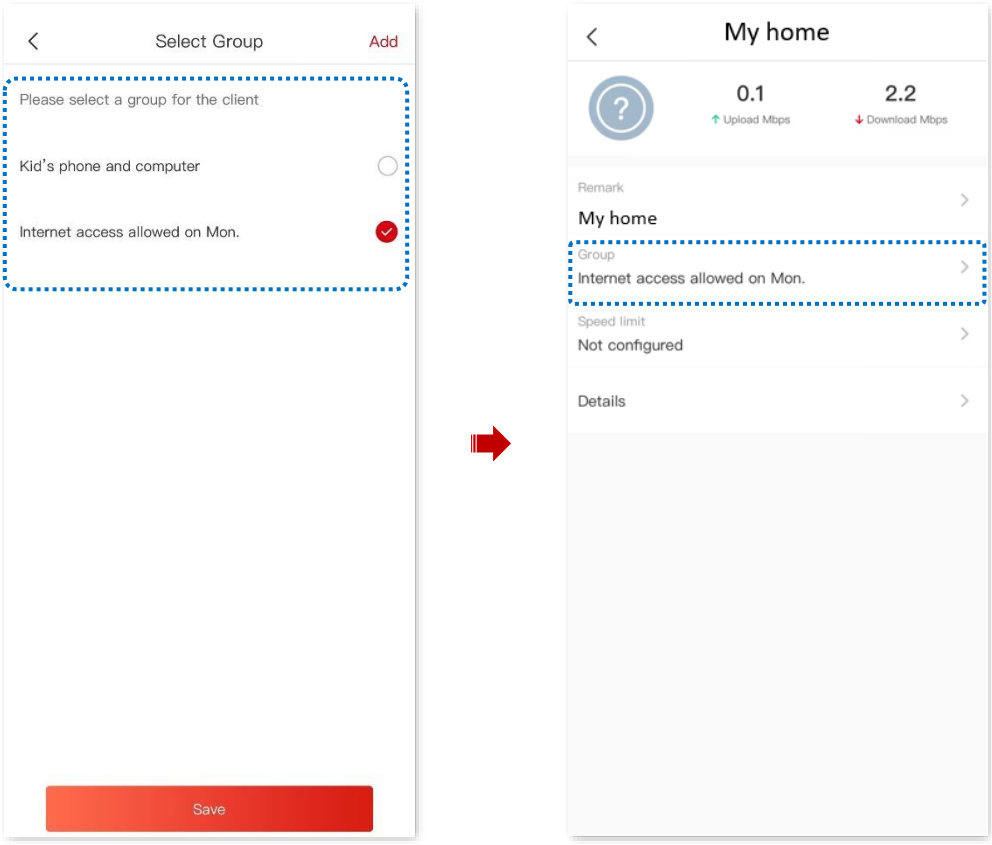


2. Locate and tap the client to be added to the family group, and tap **Group**. The following figure is for reference only.



3. Sets the family group that the client wants to join. The following figure is for reference only.

   - If a parent control group has already been added, find the corresponding parent control group and add it.
   - If there is no parent control group to join, tap **Add Group** or **Add** at the upper-right, and then set the family group name. You can also set parental control rules for that family group as required, see Parental control for details.


Select Group
Add
Please select a group for the client
Kid's phone and computer
Internet access allowed on Mon.
Save
My home
0.1
Upload Mbps
2.2
Download Mbps
Remark
My home
Group
Internet access allowed on Mon.
Speed limit
Not configured
Details

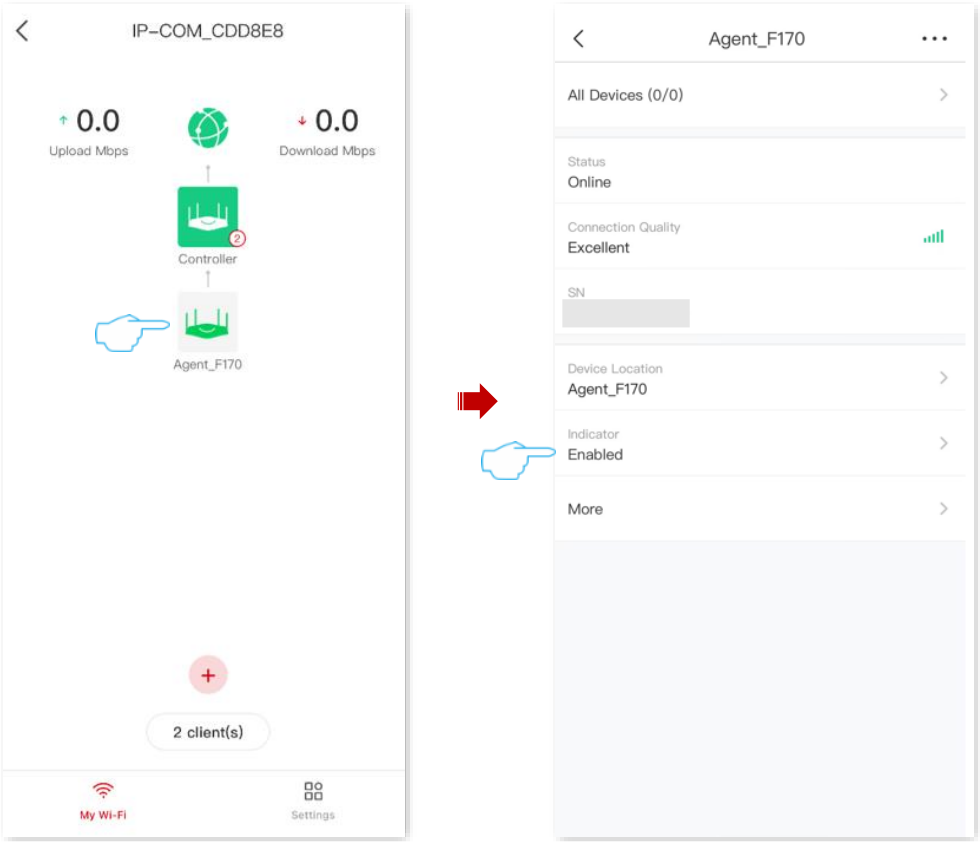
---End

12.2 Turn On or Turn Off the Indicator of Router

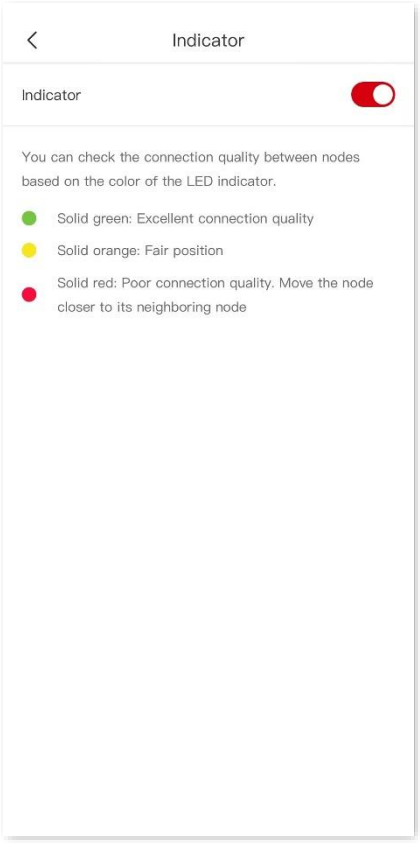
12.2.1 Turn On or Turn Off the Indicators of All Nodes

Method 1

1. Enter the configuration page of the router, tap the node device icon that you want to turn on the indicator, and then tap **Indicator**. The following figure is for reference only.



2. Turn on or turn off the indicator of the router as required.



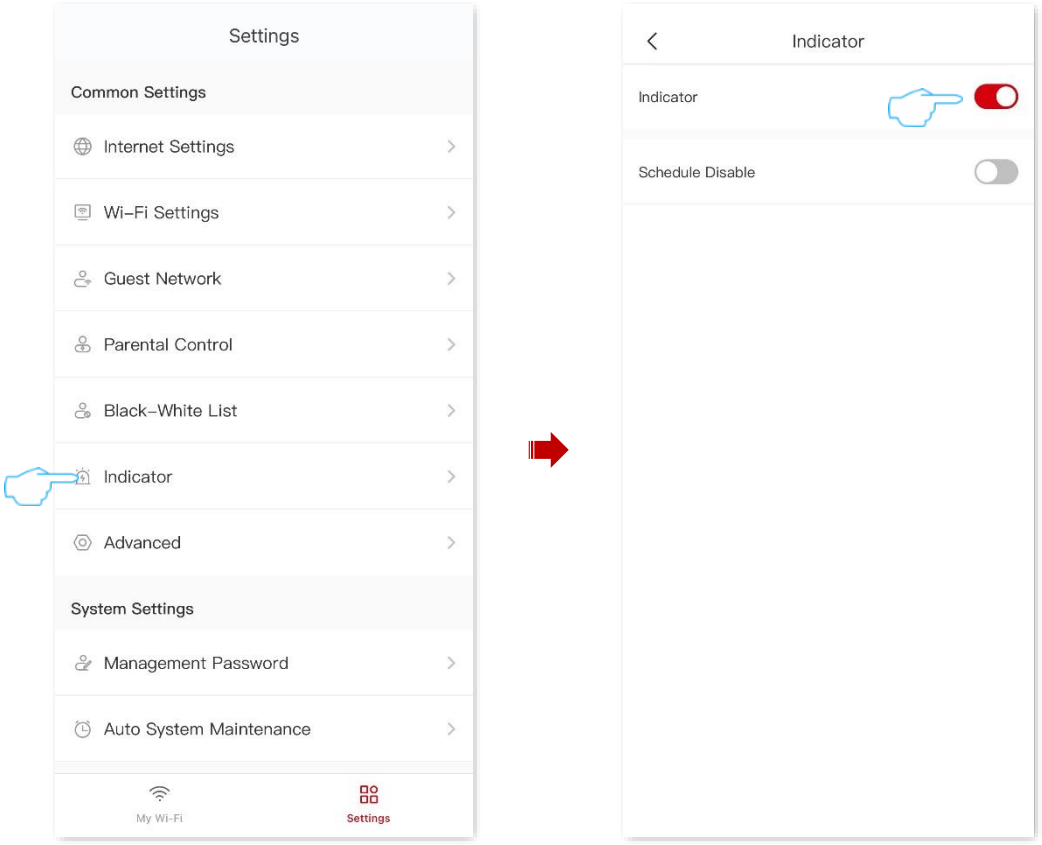
---End

Method 2

Tip

If the router supports Mesh networking and is already networking with other Mesh devices, turning on or off the indicator by this method will turn on or off the indicator for all nodes.

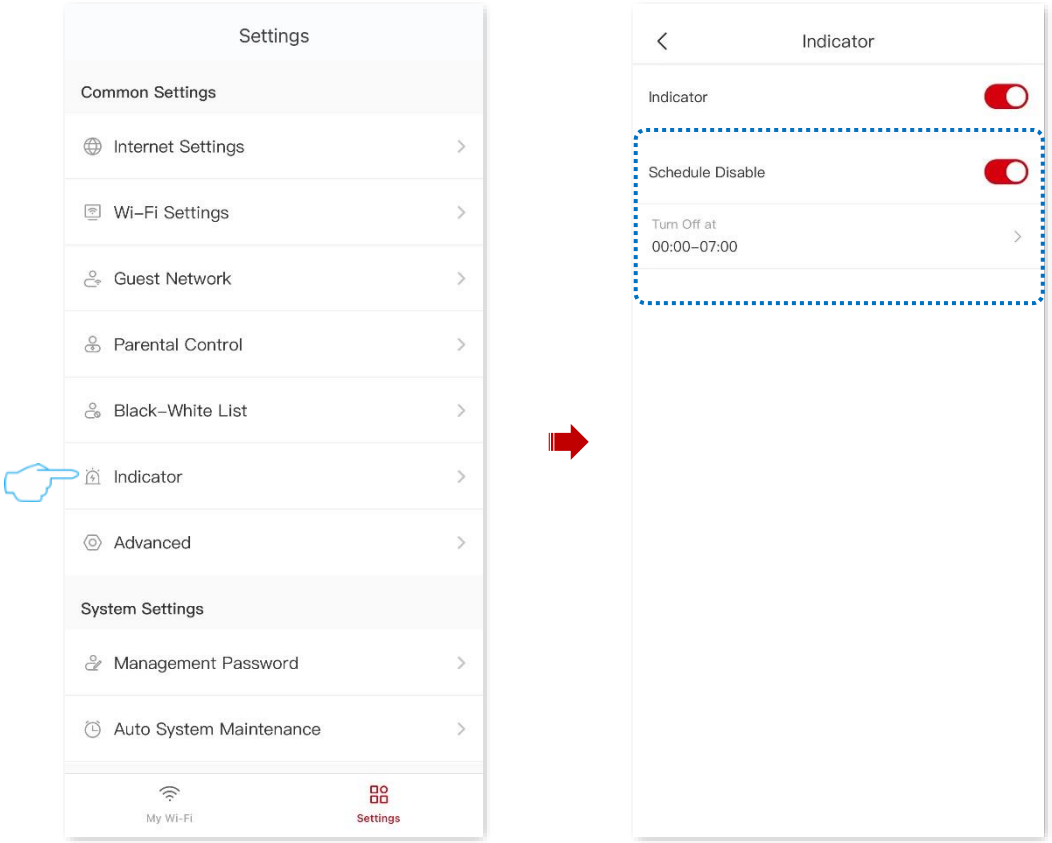
1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Indicator**.
3. Turn on or turn off the indicators of all nodes as required.



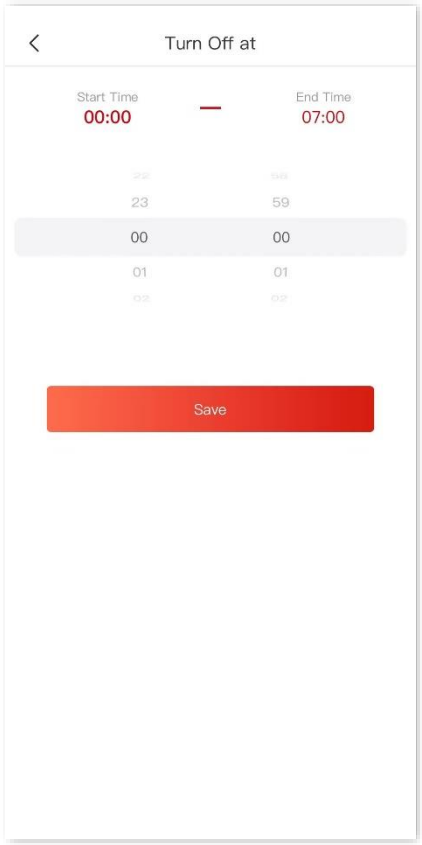
---End

12.2.2 Schedule Turn Off the Indicators of All Nodes

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Indicator**.
3. Enable the **Schedule Disable**, and tap **Turn Off at**.



4. Set the period for the router's indicator to be off, and tap **Save**. The following figure is for reference only.



---End

After the settings are completed, the indicator of all nodes goes off during the set off period. Outside this period, each indicator works normally.

Tip

If the router supports Mesh networking and has been networking with other Mesh devices, the indicator of all nodes is turned off during the set off period. Outside this period, the indicator of all nodes works normally.

12.3 Change LAN IP Address

The LAN IP address is the router's IP address to the LAN and also the router's management IP address. LAN users can log in to the web UI of the router using this IP address.

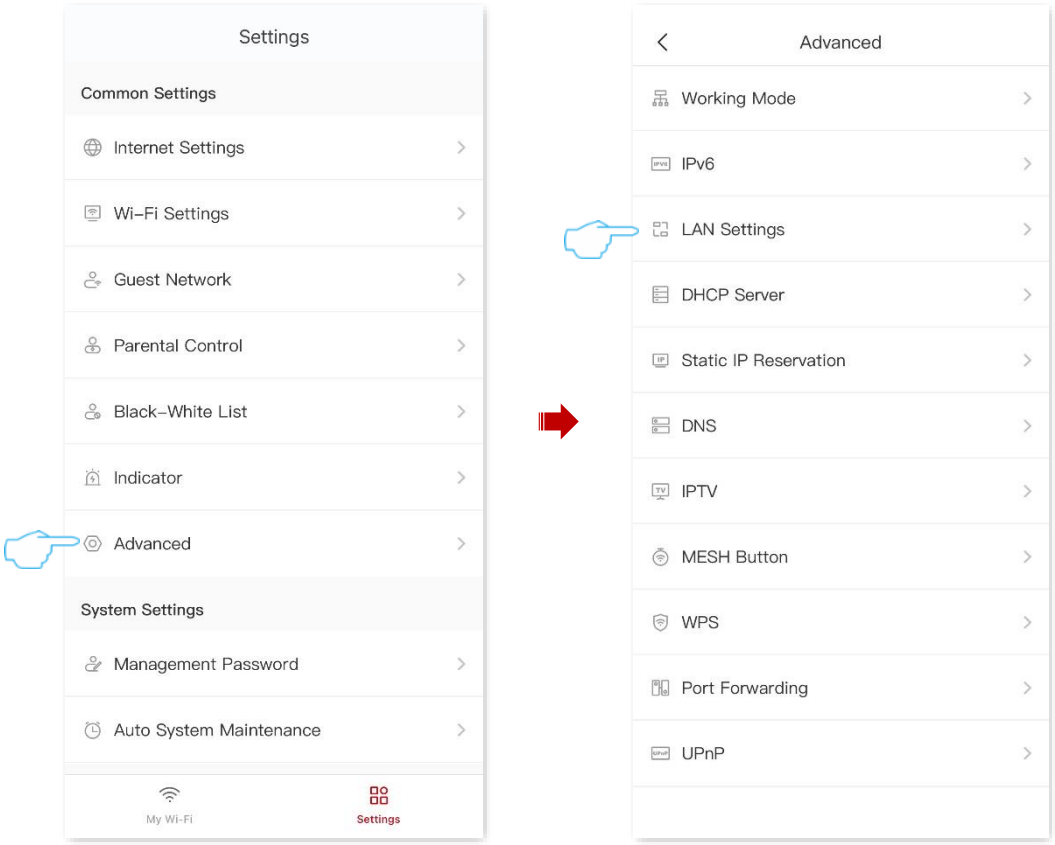
The default router's LAN IP address is 192.168.0.1 and the subnet mask is 255.255.255.0. Generally, you do not need to change the LAN port settings unless IP address conflicts occur.

Tip

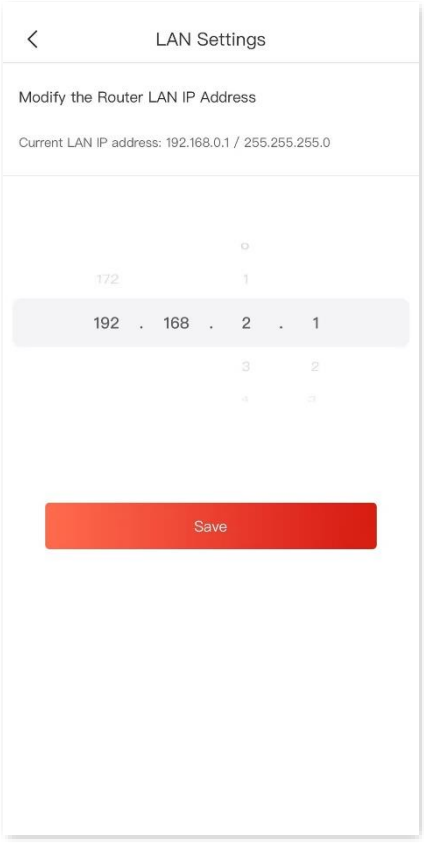
If the router's WAN port IP address is in the same network segment as its LAN port IP address, the LAN port IP network segment will be automatically incremented by 1. If the current LAN IP address is 192.168.0.1, it will be changed to 192.168.1.1 after automatic modification.

Change LAN IP address:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **LAN Settings**.



3. Change the LAN IP address, which is **192.168.2.1** in this example.
4. Confirm the prompt message, and tap **Save**.



---End

12.4 DHCP Server

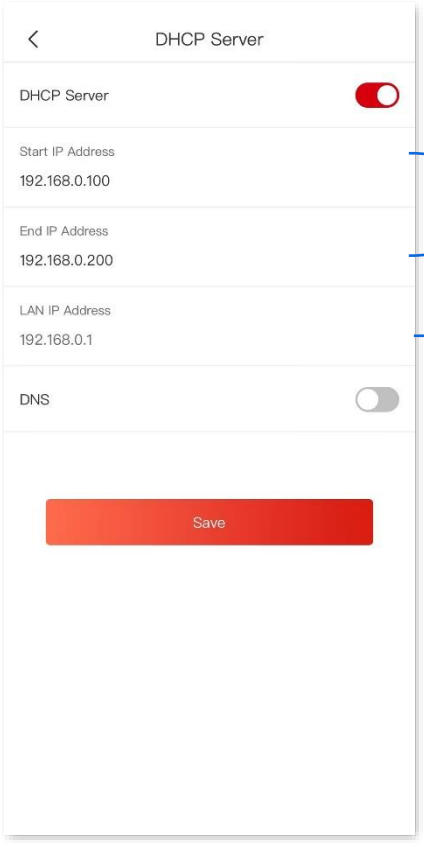
After entering the configuration page of the router, and navigate to **Advanced** > **DHCP Server.**

DHCP is short for Dynamic Host Configuration Protocol. The DHCP server can automatically assign IP addresses, subnet masks, gateways, and DNS information to clients on the LAN.

If this function is disabled, you need to manually configure an IP address on the client to access the internet. Unless other specified, keep the DHCP server enabled.

Tip

If the new LAN IP address and the original LAN IP address are not in the same network segment when the LAN IP address is changed, the system will automatically change the DHCP address pool to be in the same network segment as the new LAN IP address.



The range of IP addresses that a DHCP server can assign.

The IP address of the router's LAN port. The LAN user can use the IP address to log in to the web UI of the router.

12.5 Configure Client DNS

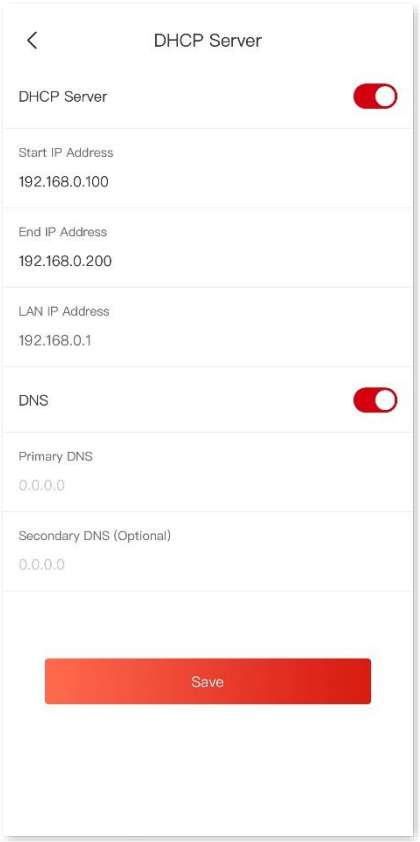
After entering the configuration page of the router, and navigate to **Advanced** > **DHCP Server.**

You can configure the specified DNS for the client.

This function is disabled by default. If you want to assign the specified DNS to the client of the LAN, you can enable this function and set DNS.

Tip

If the LAN clients cannot access the website, but the chat software can be used normally, it may be that DNS resolution has failed. It is recommended to try to change DNS to solve the problem.



The DHCP servers assign primary and secondary DNS server IP addresses to clients.

Tip

For the LAN device can access the internet properly, ensure that the primary DNS server is the correct DNS server or DNS proxy IP address.

12.6 Assign Static IP Address to LAN Client

The DHCP Reservation function enables the DHCP server to always assign a fixed IP address to the client, preventing IP address-based functions, such as network bandwidth control and port mapping, from becoming invalid when the client IP address changes. This function takes effect only when DHCP Server is enabled.

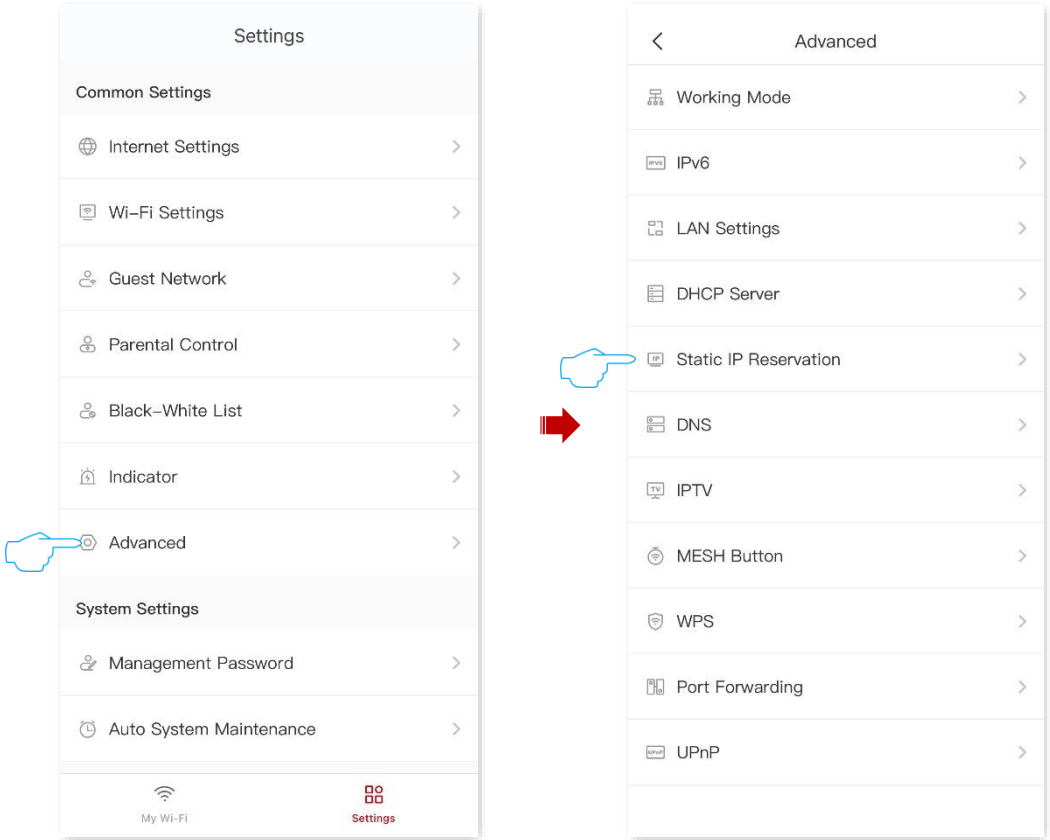
Scenario: You have set up an FTP server within your LAN.

Goal: To prevent the failure to access the FTP server due to IP address changes, you must assign a fixed IP address to the FTP server.

Solution: You can configure the static IP reservation function to reach the goal.

Configuration procedure:

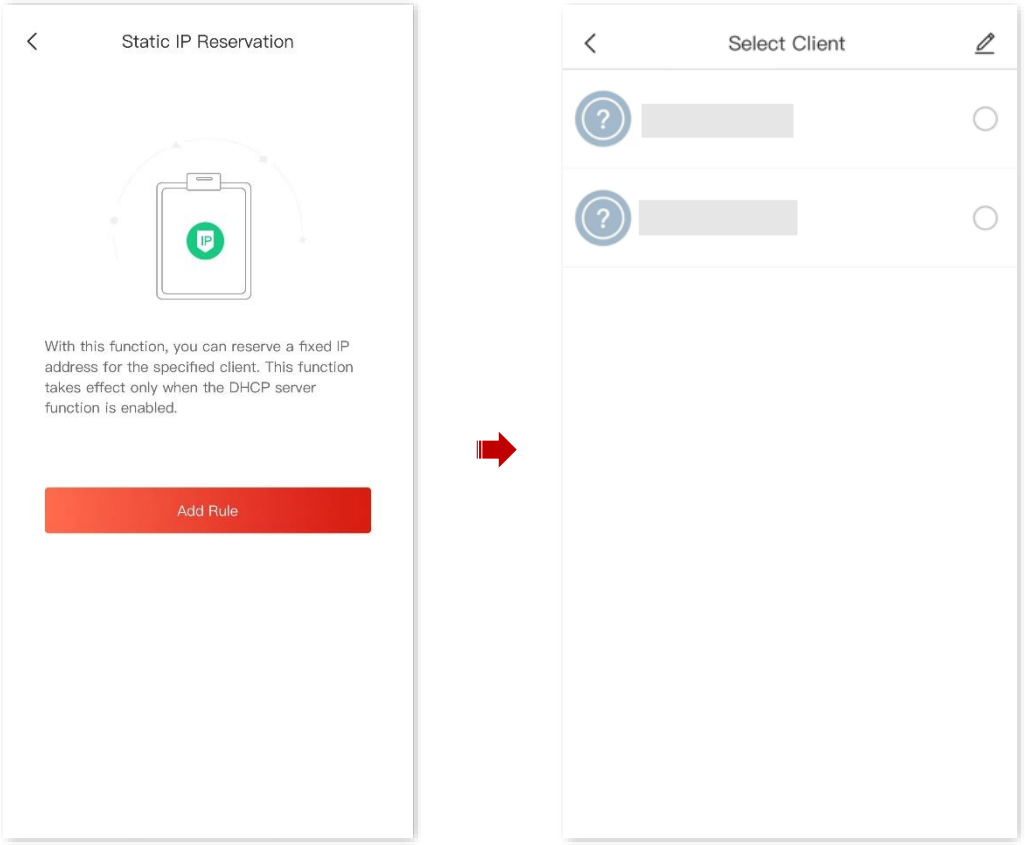
1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **Static IP Reservation**.



3. Tap **Add Rule** or ＋ in the upper-right corner.

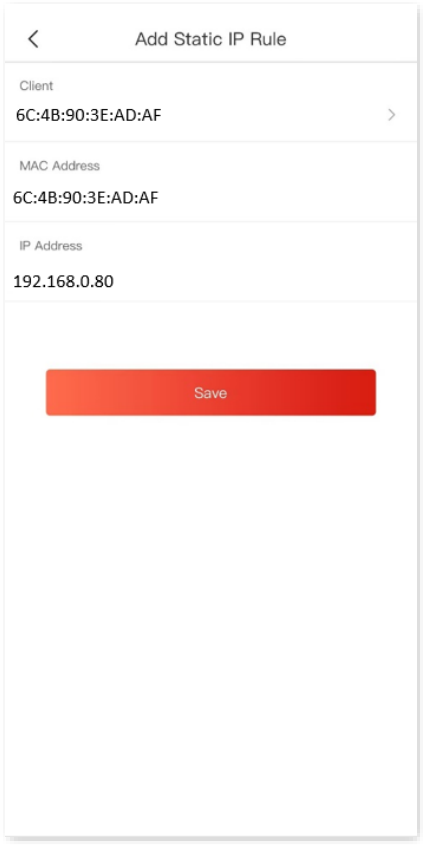
4. Select the method to assign a fixed IP address to FTP server.

   - If the FTP server is connected to a router, select the device on the **Select Client** page.
   - If the FTP server is not connected to a router, tap ✎ on the upper-right corner of the **Select Client** page to manually configure the relevant parameters.

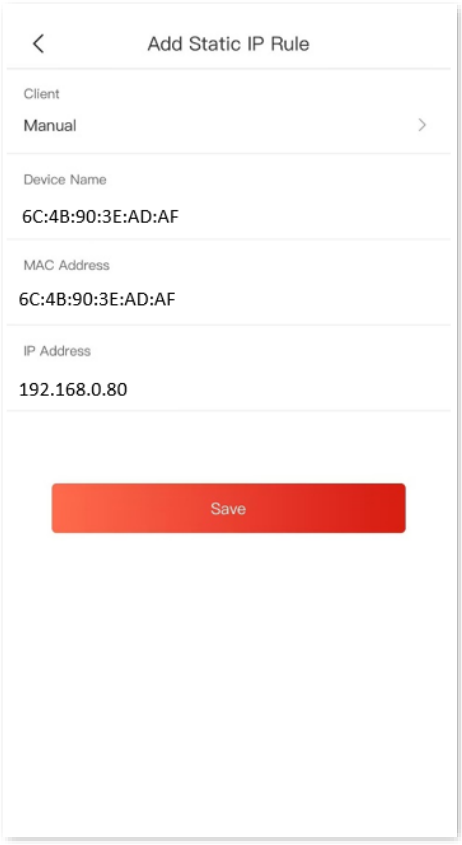


5. Configure the parameters of the static IP reservation rule.

   - **Select Client:** After assigning the current IP address to the client, tap **Save**.
   - **Manual:** Manually enter the FTP server name, MAC address, and IP address to be assigned, and tap **Save**.

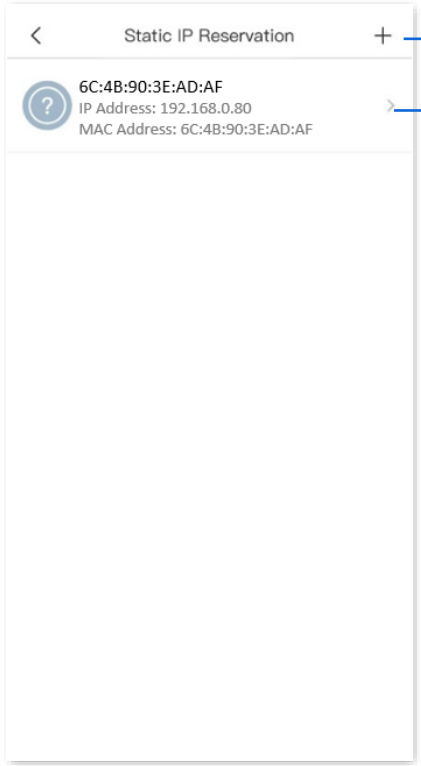


Or



---End

After the static IP reservation rule is successfully added, the following figure is displayed. After the host with the MAC address 6C:4B:90:3E:AD:AF is connected to the router, it always obtains the IP address 192.168.0.80.

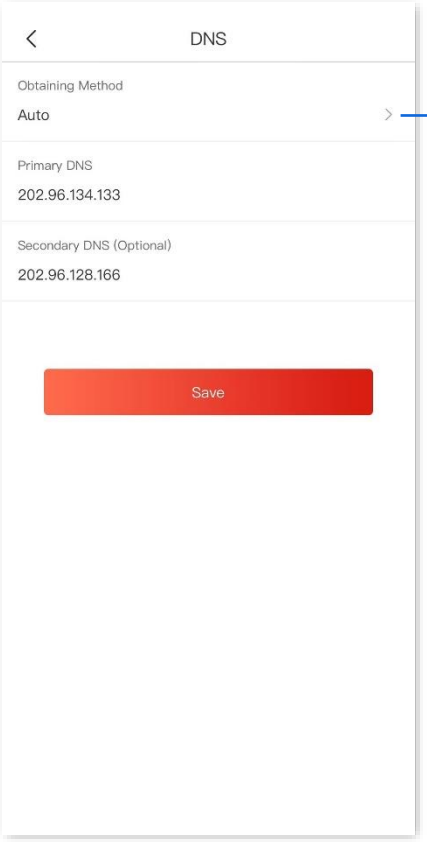


12.7 Configure WAN Port DNS

After entering the configuration page of the router, and navigate to **Advanced** > **DNS.**

You can configure the WAN port DNS here.

DNS changes may only be necessary if the internet connection type is **PPPoE** or **Static IP**. By default, the DNS obtaining type is **Auto**. Do not make changes unless necessary. If you already know the DNS you use to access the internet, you can change it to **Manual**, and enter the DNS.



The obtain type of the router's WAN port DNS.

- **Auto:** DNS server addresses are automatically obtained from DHCP servers or PPPoE servers in the upstream network.
- **Manual:** Manually set the DNS server address.

12.8 IPTV

IPTV is the technology integrating internet, multimedia, telecommunication and many other technologies to provide interactive services, including digital TV, for family users by internet broadband lines.

You can set the multicast and STB functions here.

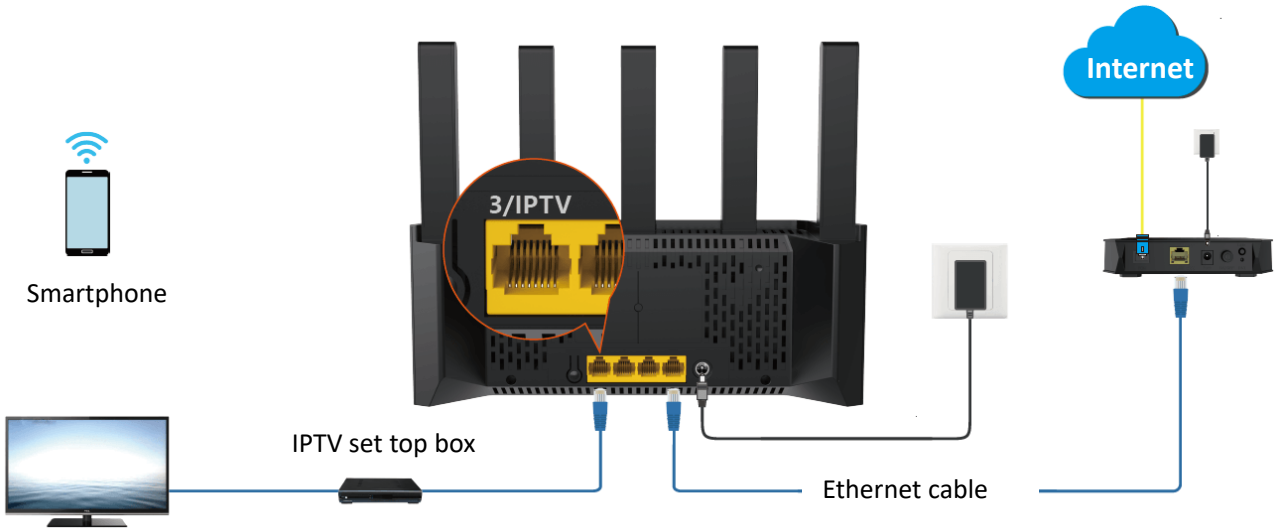
- **Multicast**: If you want to watch multicast videos from the WAN side of the router on your computer, you can enable the multicast function of the router.
- **STB** (set-top box): If the IPTV service is included in your broadband service, you can enjoy both internet access through the router and rich IPTV contents with a set-top box when it is enabled.

12.8.1 Watch IPTV Programs through the Router

Scenario: The IPTV service is included in your broadband service. You have obtained the IPTV account and password from your ISP, and VLAN ID is 10.

Goal: Watch IPTV programs through the router.

Solution: You can configure the IPTV function to reach the goal.



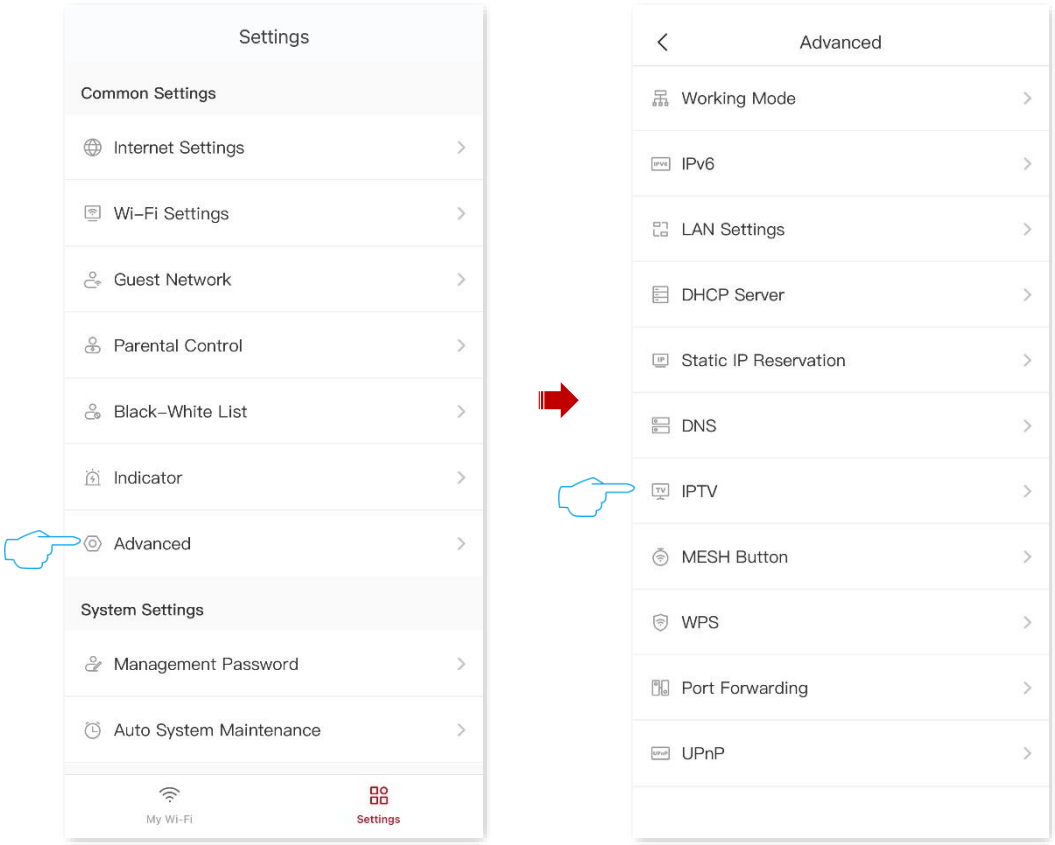
Example: X2LR Pro

Configuration procedure:

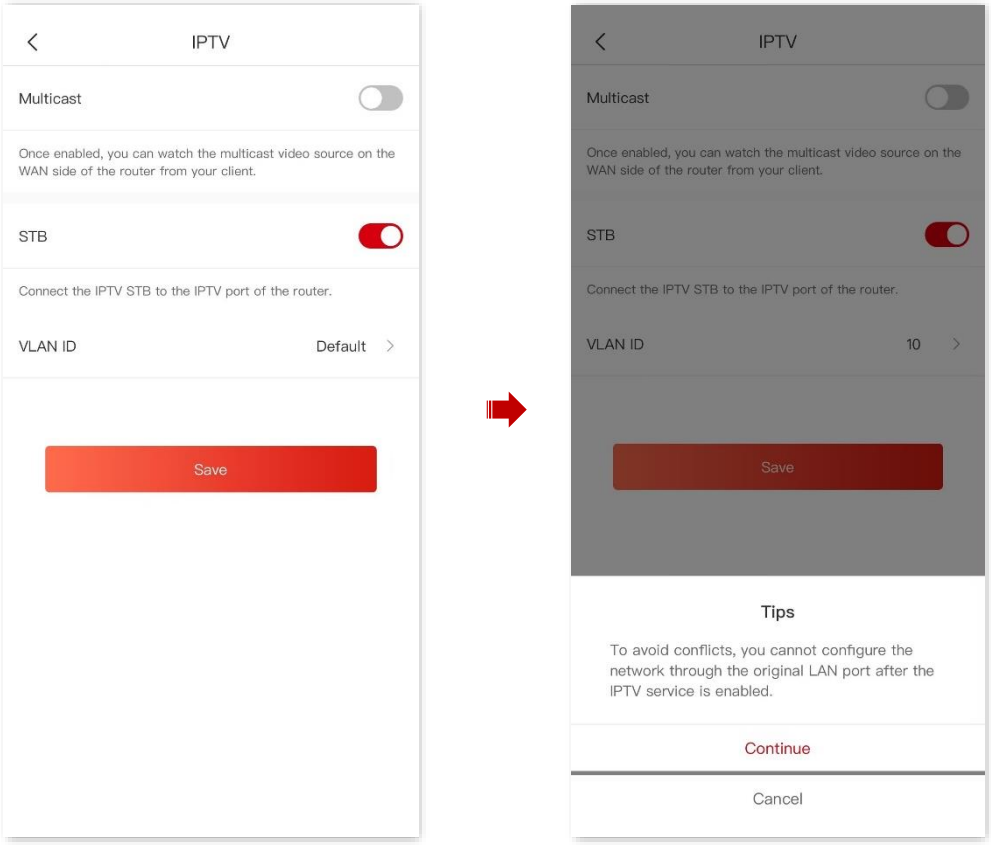
1. Set your router.

   1) Enter the configuration page of the router.

   2) Navigate to **Settings** > **Advanced** > **IPTV**.



3) Enable the **STB** function, set **VLAN ID** to **10**, and tap **Save**. Confirm the prompt message, and tap **Continue**.



2. Configure the set-top box.

Use the IPTV user name and password provided by your ISP to dial up on the set-top box.

---End

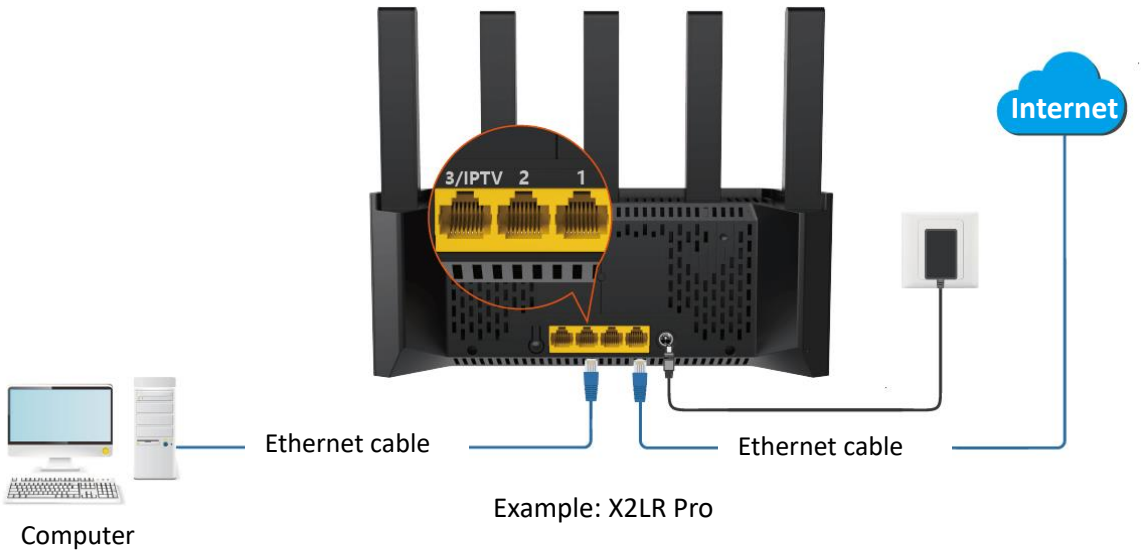
After the settings are completed, you can watch IPTV programs on your TV.

12.8.2 Watch Multicast Videos through the Router

Scenario: You have the address of multicast videos.

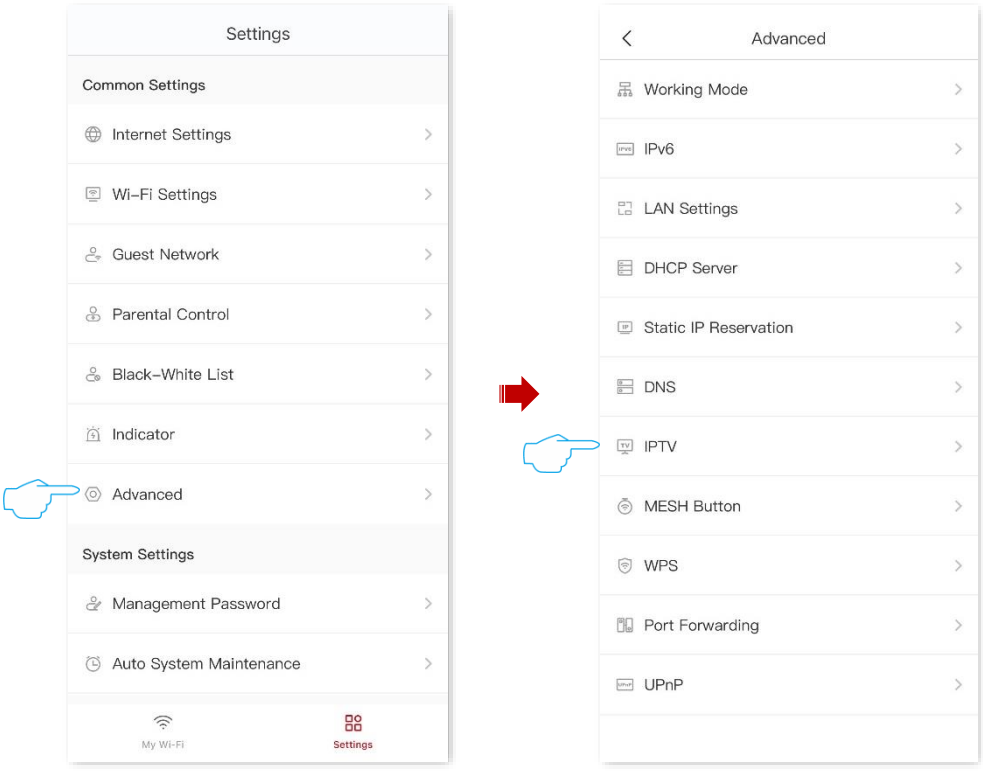
Goal: You can watch multicast videos.

Solution: You can configure the multicast function to reach the goal.

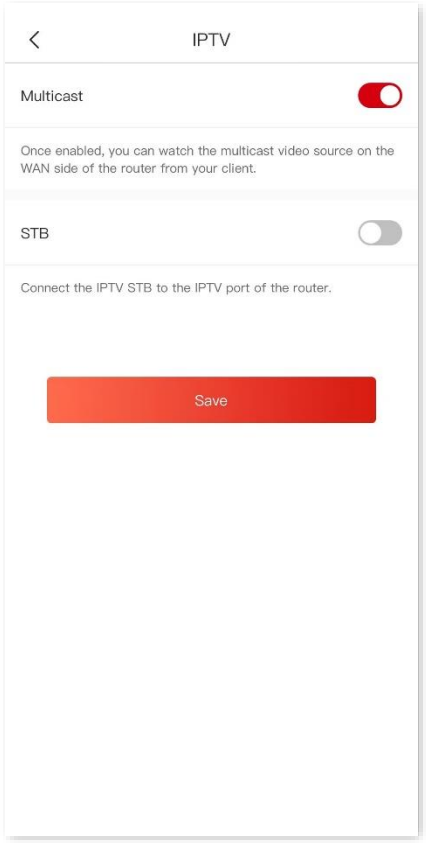


Configuration procedure:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Advanced** > **IPTV**.



3. Enable the **Multicast**, and tap **Save**.



---End

After the settings are completed, you can watch multicast videos on your terminal devices.

12.9 WPS

The WPS function enables Wi-Fi-enabled devices, such as smartphones, to connect to Wi-Fi networks of the router without entering the password.

Tip

After configuration, ensure that the Wi-Fi-enabled devices such as smartphone supports WPS function.

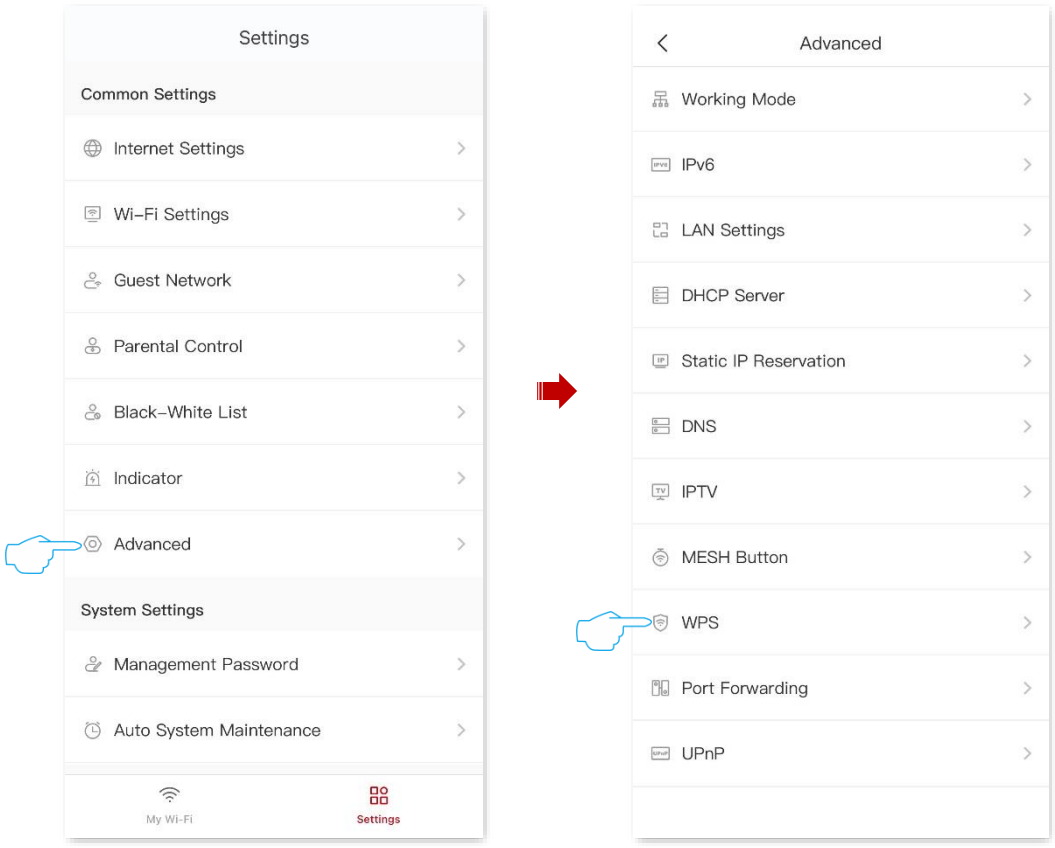
Assume that you have successfully set up your network using your router, and now you want your phone to connect to Wi-Fi without having to enter a Wi-Fi password.

Configuration procedure:

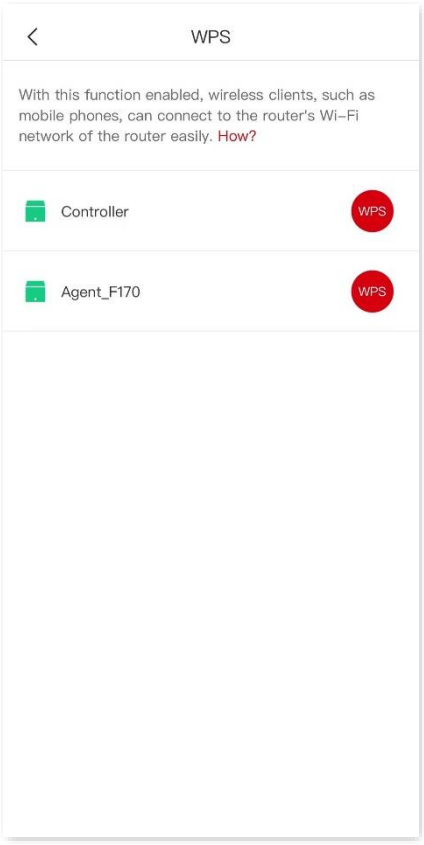
1. Enable the WPS function on the router.

   1) Enter the configuration page of the router.

   2) Navigate to **Settings** > **Advanced** > **WPS**.

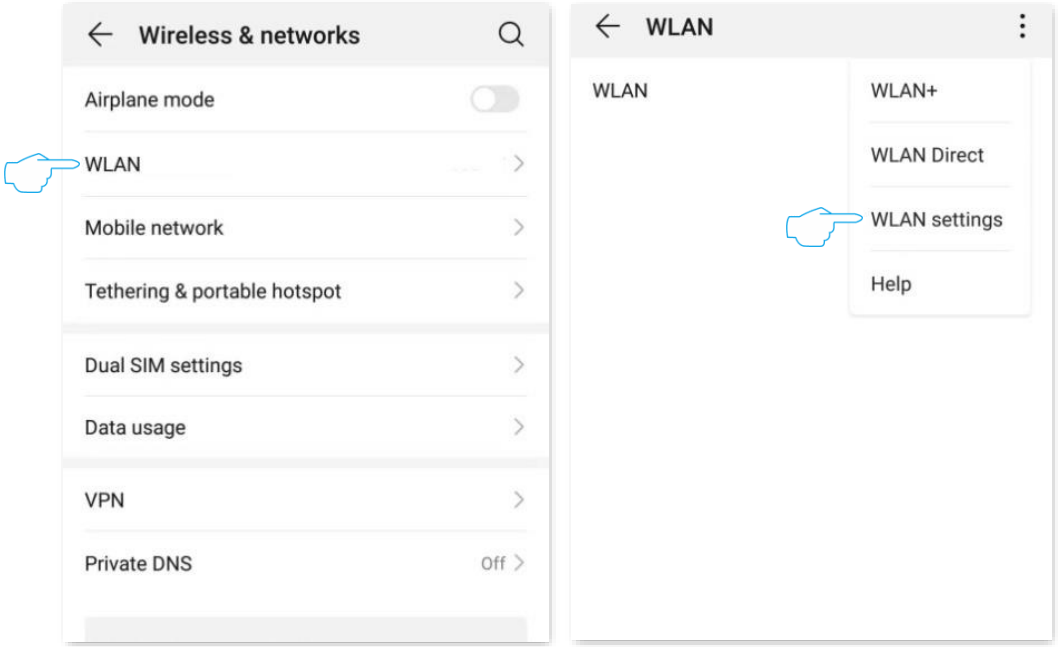


3. Locate the device you want to connect to Wi-Fi and tap WPS. The following figure is for reference only.

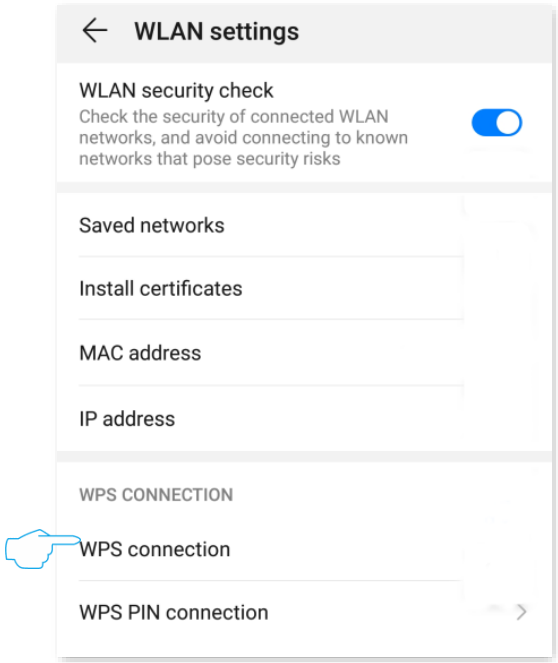


4. Configure the WPS function on your Wi-Fi-enabled devices within 2 minutes. Configuration on various devices may differ (Example: HUAWEI P10).

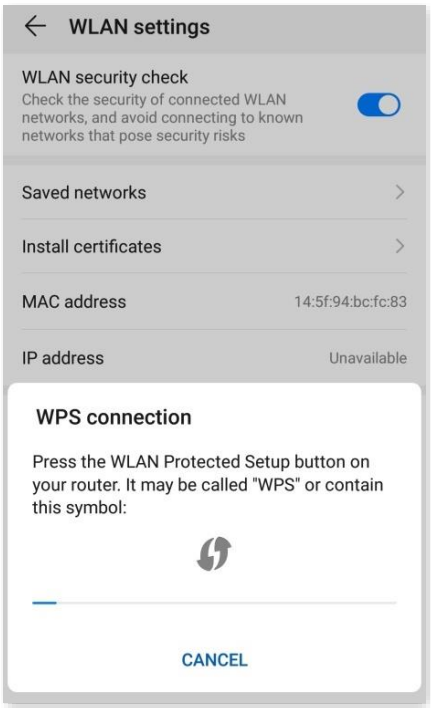
   1) Find **WLAN settings** on your phone.
   2) Tap ⋮, and choose **WLAN settings**.



5. Choose **WPS connection**.



Wait until the WPS negotiation completes. Now the phone is connected to the Wi-Fi network.



---End

12.10 Port Mapping

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

Port mapping opens a service port and specifies its LAN server with an IP address and an intranet port. The router directs internet requests for this service port to the LAN server, so that internet users can access the LAN server, and the LAN is protected from attack.

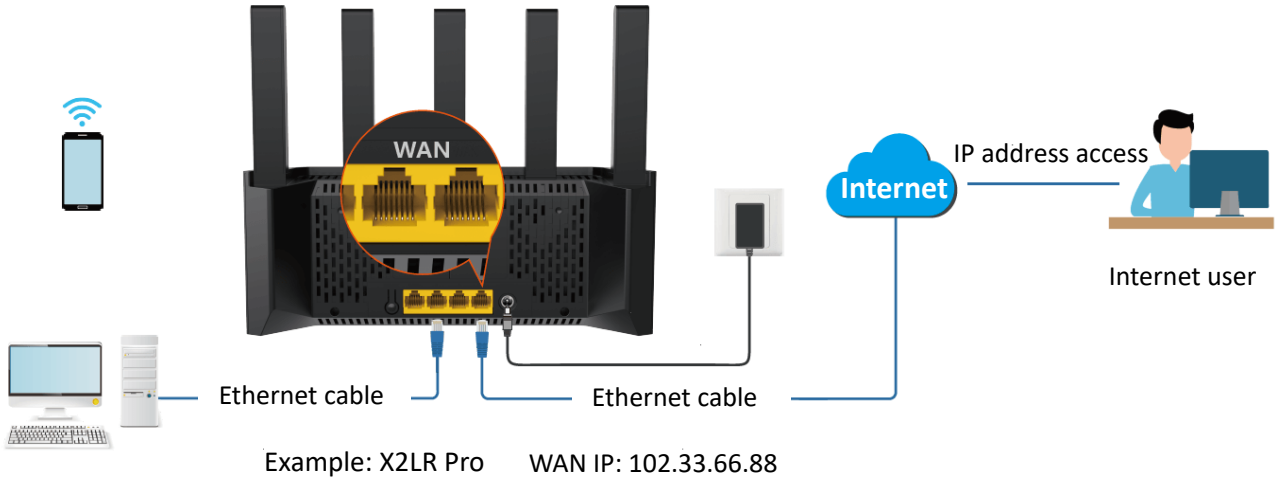
Scenario: You have set up an FTP server within your LAN.

Goal: Set up your own PC as an FTP server and let your family members who are not at home can share resources on the server.

Solution: You can configure the port mapping function to reach the goal.

Tip

- Ensure that the router's WAN port is connected to the internet and an IP address from the public network is obtained. This function may not work on a host with an IP address of a private network or an intranet IP address assigned by ISPs that start with 100. Common IPv4 addresses are classified into class A, class B and class C. Private IP addresses of class A range from 10.0.0.0 to 10.255.255.255. Private IP addresses of class B range from 172.16.0.0-172.31.255.255. Private IP addresses of class C range from 192.168.0.0-192.168.255.255.
- The ISP may not support unreported web services accessed using the default port 80. Therefore, when setting port mapping, you are recommended to set the external port to an unfamiliar port (1024 to 65535), such as 9999, to ensure normal access.
- The internal port number and external port number can be different.

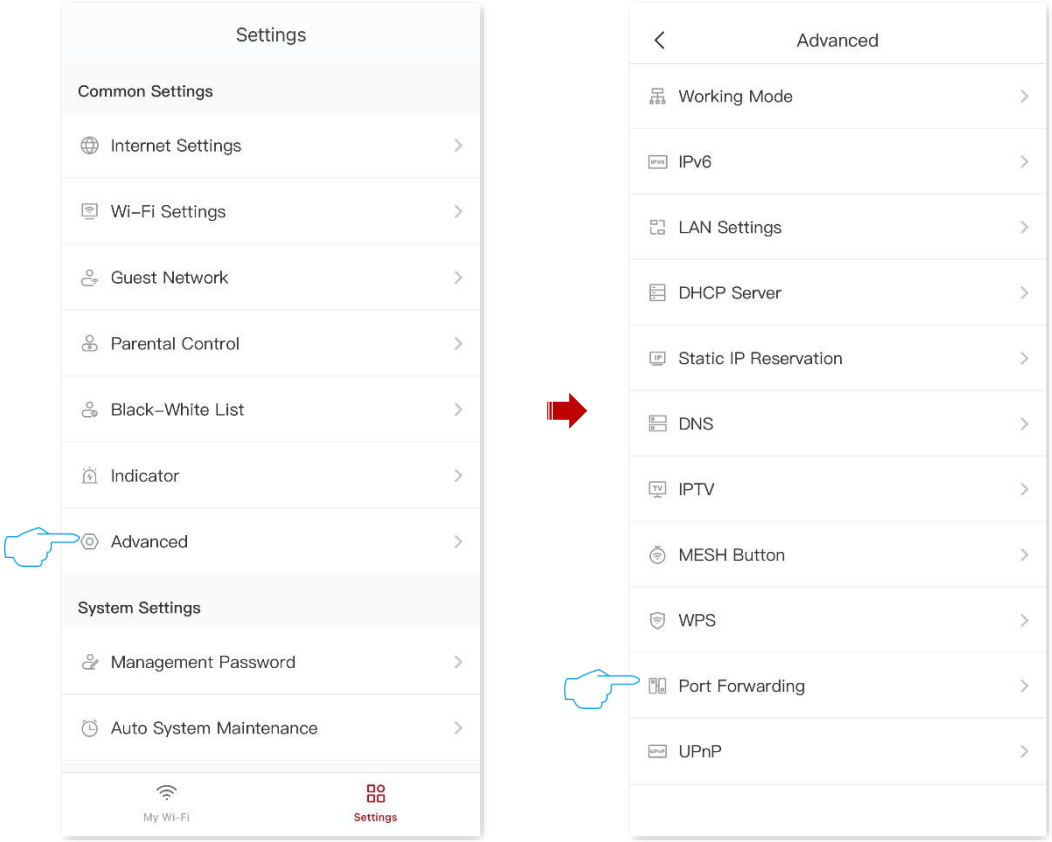


FTP server

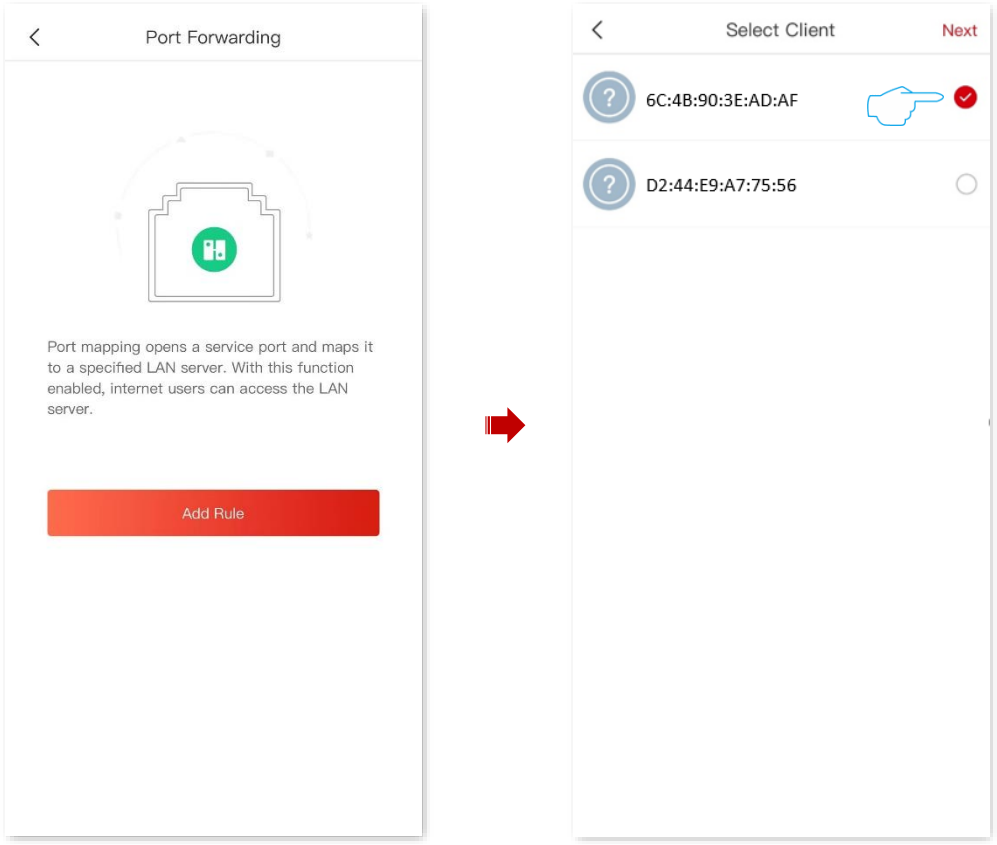
- IP address: 192.168.0.80
- MAC address: 6C:4B:90:3E:AD:AF
- Port: 21

Configuration procedure:

1. Enter the configuration page of the router.
2. Configure the port mapping function.
   1) Navigate to **Settings** > **Advanced** > **Port Mapping**.



   2) Tap **Add Rule** or ＋ in the upper-right corner.
   3) Select the LAN device for port mapping and tap **Next**. The following figure is for reference only.



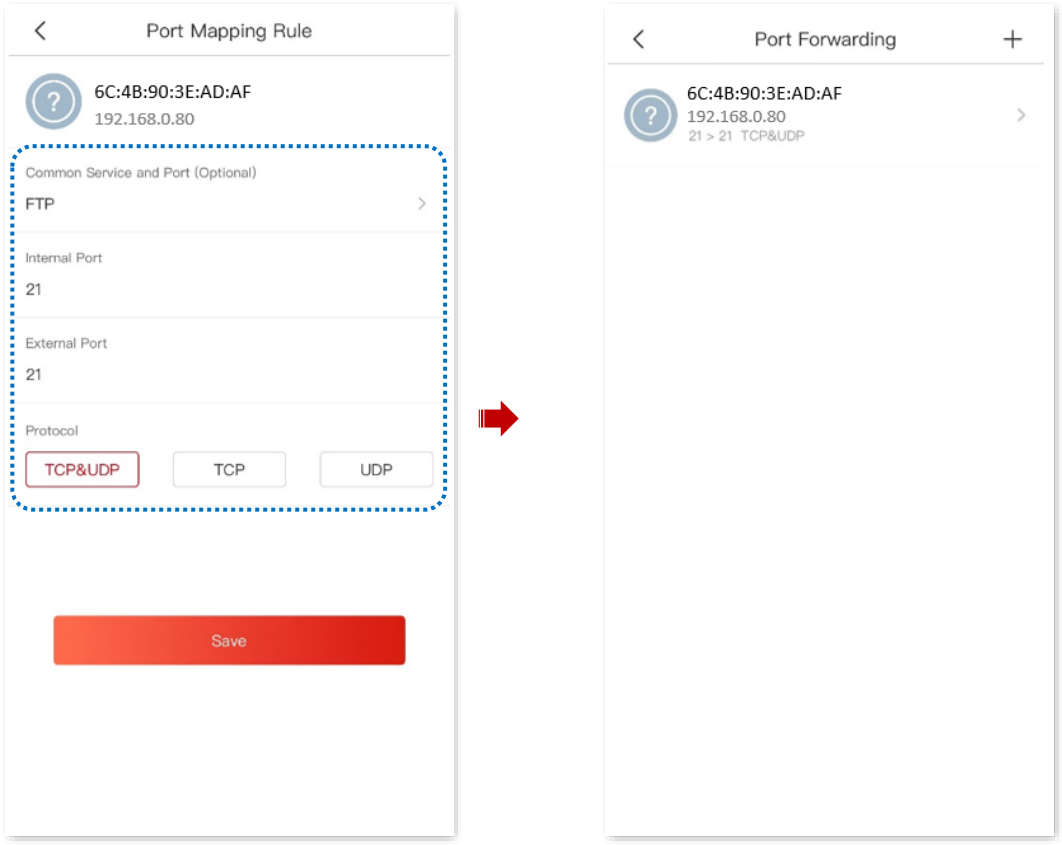
4) In the Common Service and Port drop-down menu, select the service port number of the internal server, which is **21(FTP)** in this example.

Tip

After selecting **Common Service and Port**, the internal and external ports will be filled automatically. You can also customize them.

5) Select the protocol used by the intranet service, it is recommended to select **TCP&UDP**.

6) Tap **Save**.



3. Assign a fixed IP address to the host where the Intranet server resides.

---End

Internet users can successfully access the intranet server by using the “Intranet service application layer protocol name://WAN port IP address”. If the intranet service port is not the default port number, the access address is “Intranet service application layer protocol name://WAN port IP address:External port”.

In this example, the address is **ftp://102.33.66.88**. You can find the current IP address of the router's WAN port on the Internet connection page.

Note

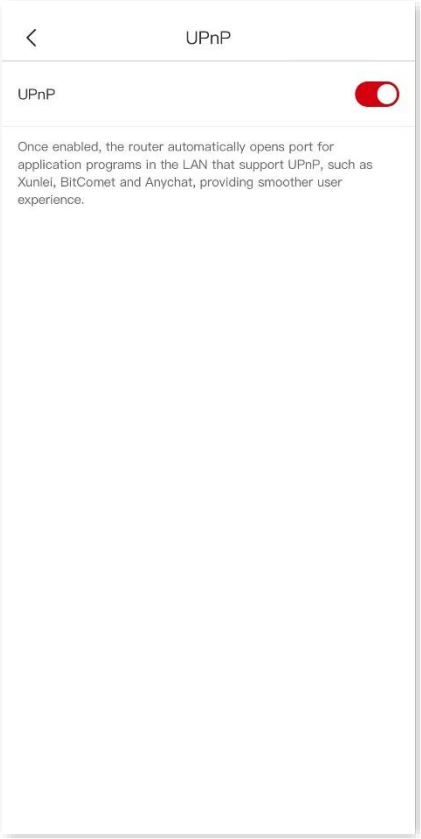
After the configuration, if internet users still cannot access the FTP server, try the following methods:

- Ensure that the internal port you fill in is the correct service port.
- Ensure that the LAN port number configured in the port mapping function is the same as the service port number set on the server.
- Close the firewall, antivirus software and security guards on the host of the FTP server and try again.

12.11 UPnP

After entering the configuration page of the router, and navigate to **Settings** > **Advanced** > **UPnP.**

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



13 System Maintenance

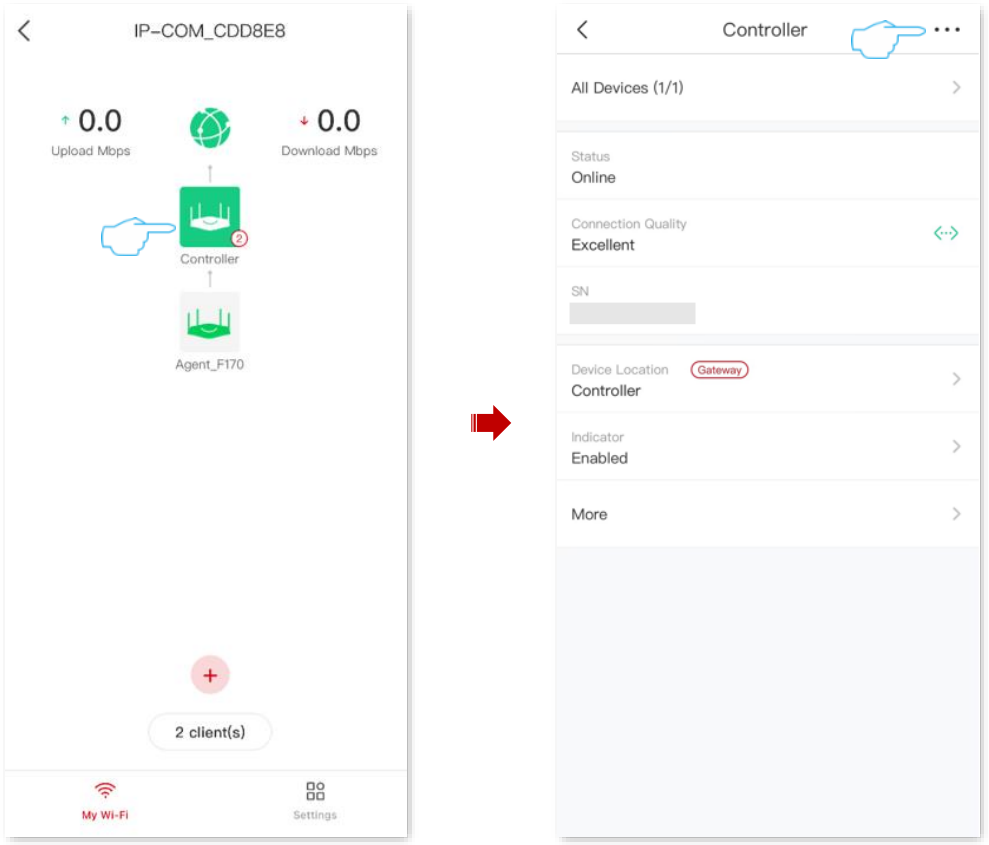
Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

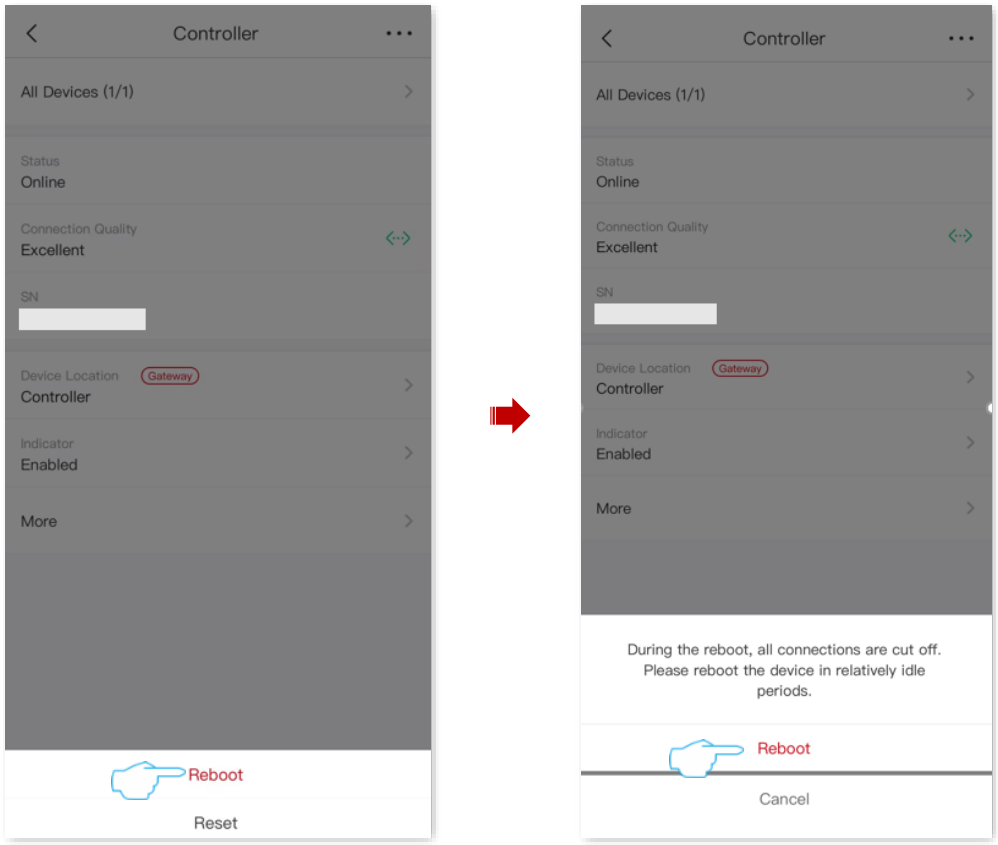
13.1 Reboot Device

If a parameter you set does not take effect or a node cannot be used, you can manually reboot the node to resolve the problem. The reboot will disconnect all connections. Perform this operation when the network is relatively idle.

1. Enter the configuration page of the router.
2. Tap the node device icon that you want to reboot, and then tap • • • in the upper-right corner. The following figure is for reference only.



3. Tap **Reboot**, confirm the prompt message, and tap **Reboot**.



---End

Wait until the ongoing process finishes.

13.2 Reset

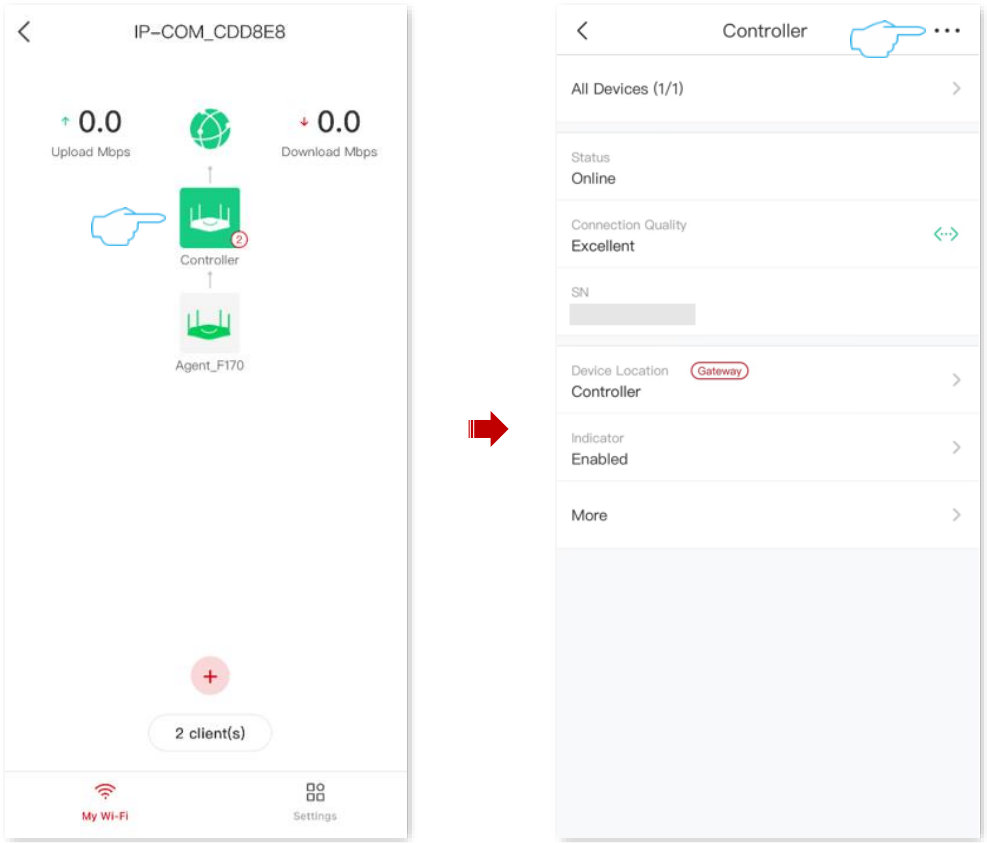
When the network cannot locate the problem or you want to log in to the web UI of the router but forgot the login password, you can restore the router to factory settings and reconfigure.

Note

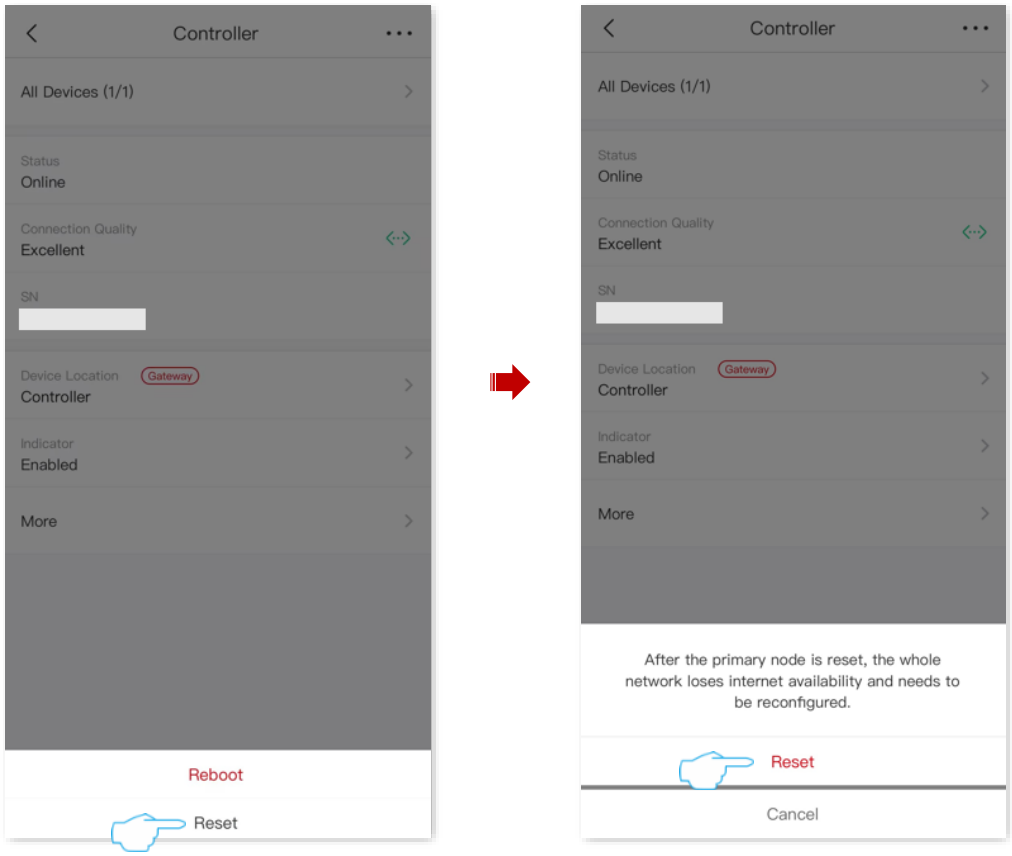
- Resetting clears all configurations and restores the router to factory settings. You need to reconfigure the router. You are recommended to back up the configuration before restoring the factory settings.
- During the process of restoring factory settings, ensure that the router is powered properly to avoid damage to the router.
- After the router is restored to factory settings, the default login IP address of the router is 192.168.0.1.

13.2.1 Method 1

1. Enter the configuration page of the router.
2. Tap the node device icon that you want to reboot, and then tap ••• in the upper-right corner. The following figure is for reference only.



3. Tap **Reset**, confirm the prompt message, and tap **Reset**.



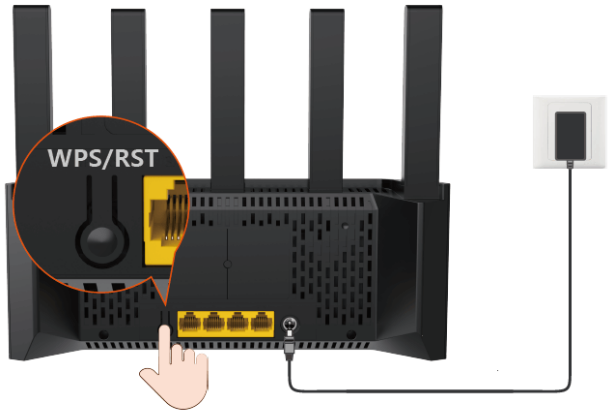
---End

Wait until the ongoing process finishes.

13.2.2 Method 2

Use the reset button (such as RESET, RST) on the device body to restore the router to factory settings.

Method: Hold the button down with a needle-like object for about 8 seconds, and then release it when the indicator blinks red fast. The device is reset.



Example: X2LR Pro

13.2.3 Method 3 (Only for Secondary Nodes)

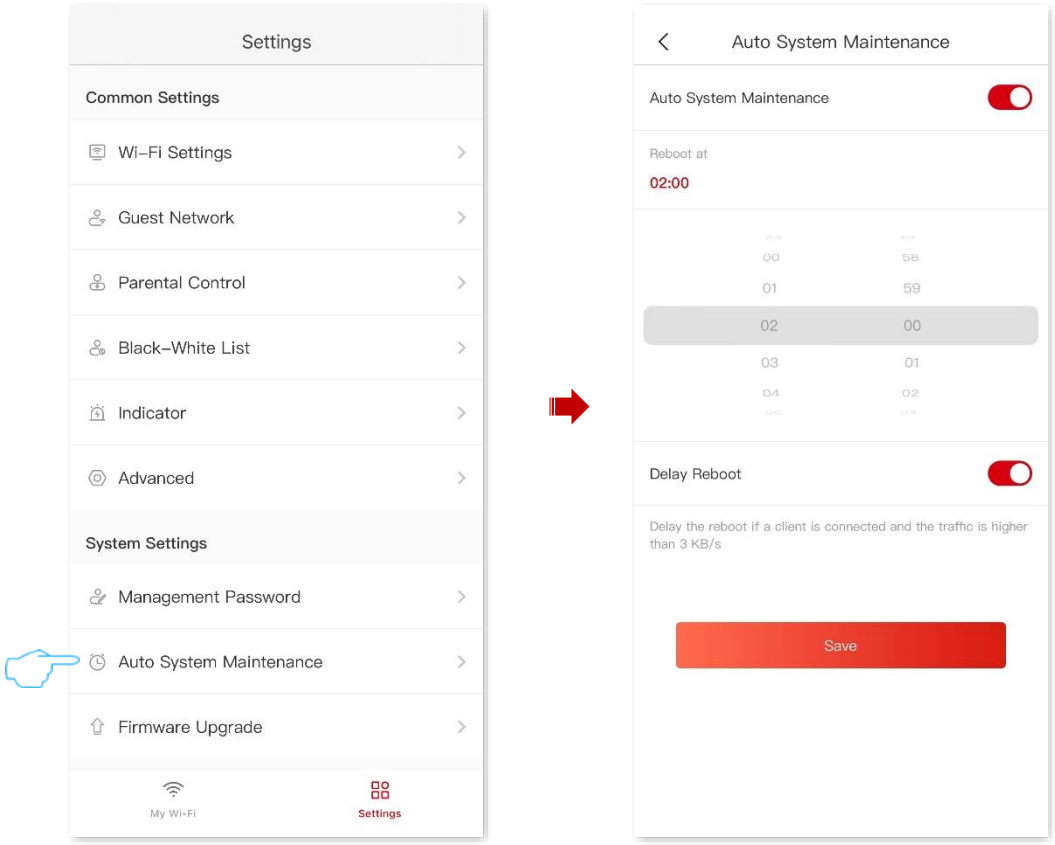
Remove the secondary node to restore the device to factory settings. Refer to Remove the secondary nodes from the network for details.

13.3 Auto System Maintenance

Auto system maintenance enables you to reboot the router regularly. It helps improve the stability and service life of the router. This function is enabled by default.

Set system schedule maintenance:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Auto System Maintenance**.
3. Ensure that the **Auto System Maintenance** function is enabled, and select **Reboot at**. It is recommended to select a time when the network is relatively idle.
4. Set the **Delay Reboot** as required, and tap **Save**.



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The following table describes the parameters displayed on this page.

Parameter description

Parameter	Description
Auto System Maintenance	Used to enable or disable the auto system maintenance function.
Reboot at	Specifies the time when the router reboots automatically every day.
Delay Reboot	Used to enable or disable the reboot delay function. – Enable: 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. – Disable: The function is disabled. The router reboots immediately when the specified time for rebooting approaches.  After **Delay Reboo**t function is enabled, the router continuously detects traffic within 2 hours after reboot time, and reboots once the conditions are met.
Auto System Maintenance	Used to enable or disable the auto system maintenance function.

13.4 Firmware Upgrade

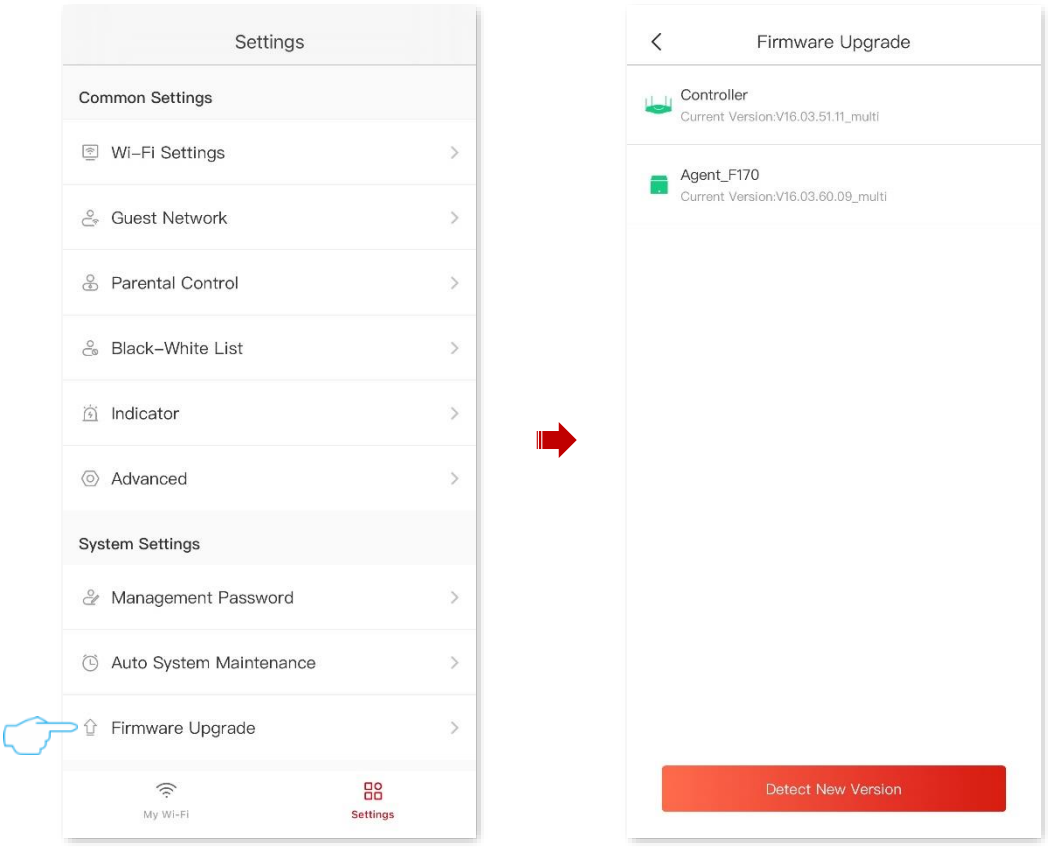
With this function, you can upgrade the firmware of the router to obtain the latest functions and more stable performance.

Note

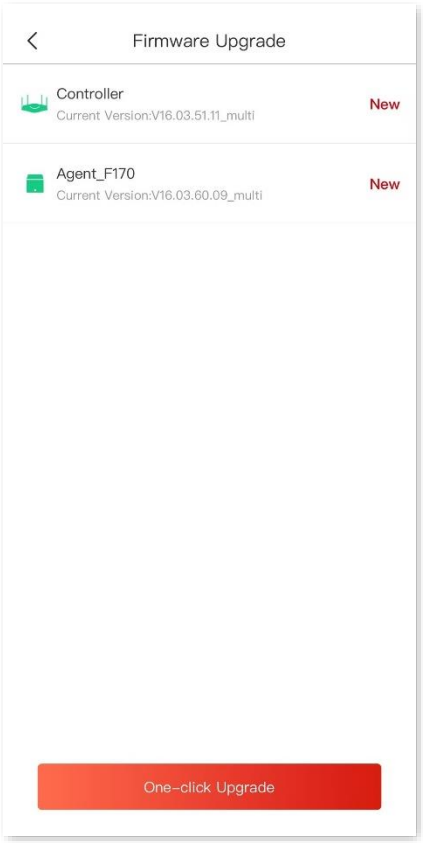
Do not disconnect the device from power or internet during this process. Otherwise, the upgrade may fail or the router may be damaged.

Upgrade router's firmware:

1. Enter the configuration page of the router.
2. Navigate to **Settings** > **Firmware Upgrade**.
3. Tap **Detect New Version**.



4. After detecting the new firmware version, the router will display a New tab. Tap **One-click Upgrade**, the system will download the upgrade firmware from the cloud and upgrade automatically. Please wait with patience.



---End

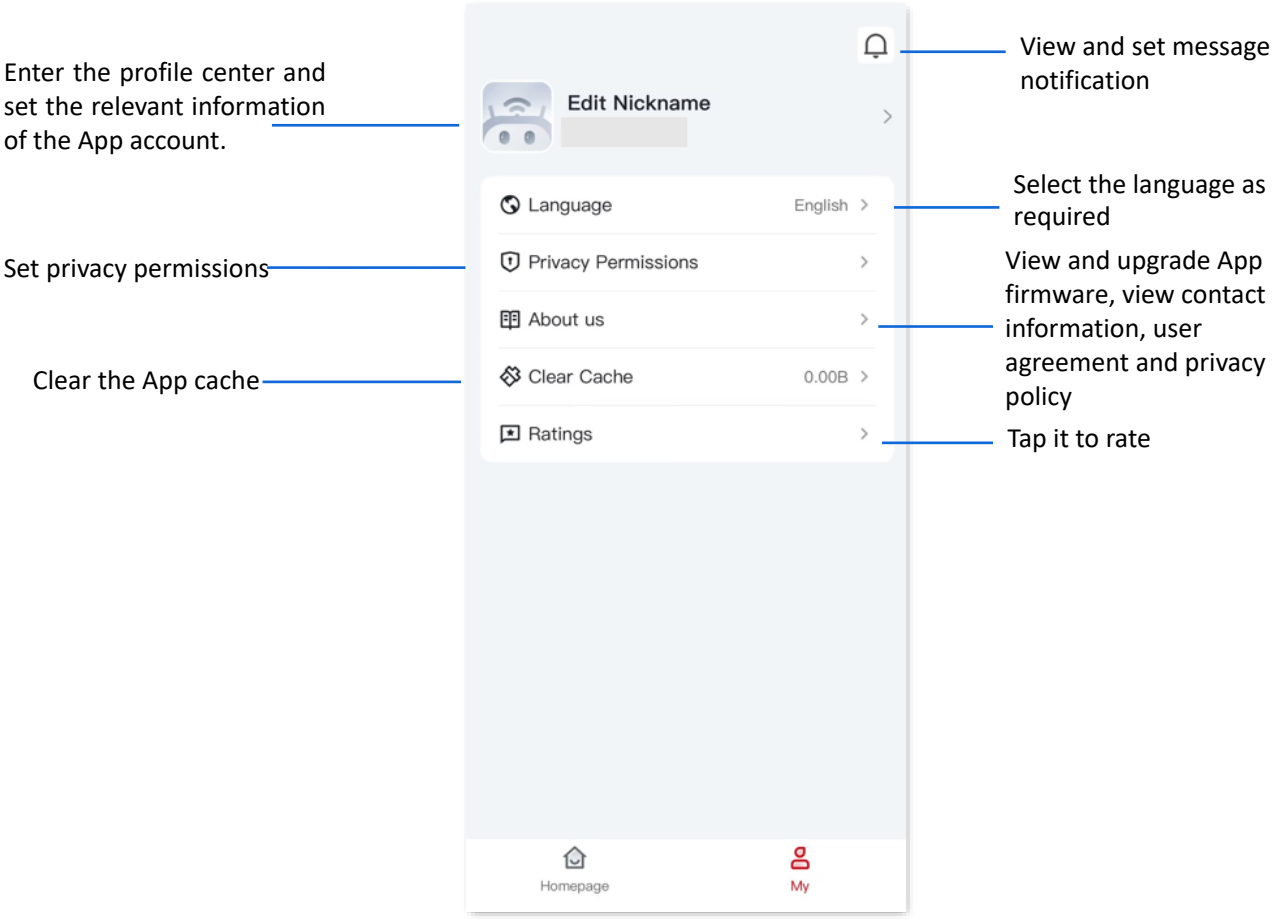
14 My

Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

This chapter includes the following sections:

14.1 Overview

Run the **IPCOM Home** app to enter **My** page. The following figure is for reference only.



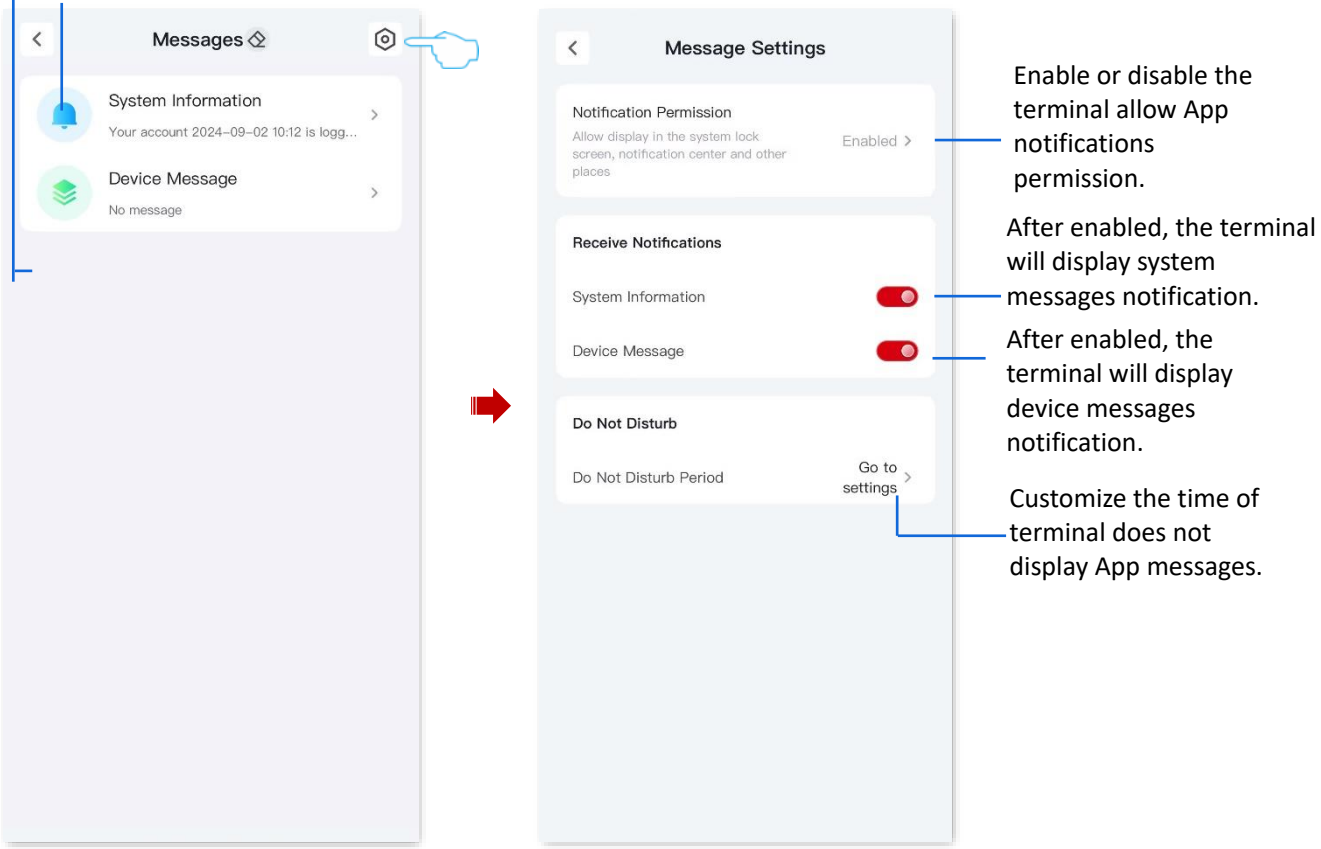
14.2 Message Center

On the My page, tap the message icon to enter the message center configuration page.

Here you can view or delete relevant messages. Tap the settings icon to configure the message.

View or delete messages of clients online or offline. (Only available for some models. Refer to the actual product)

View or delete system messages.



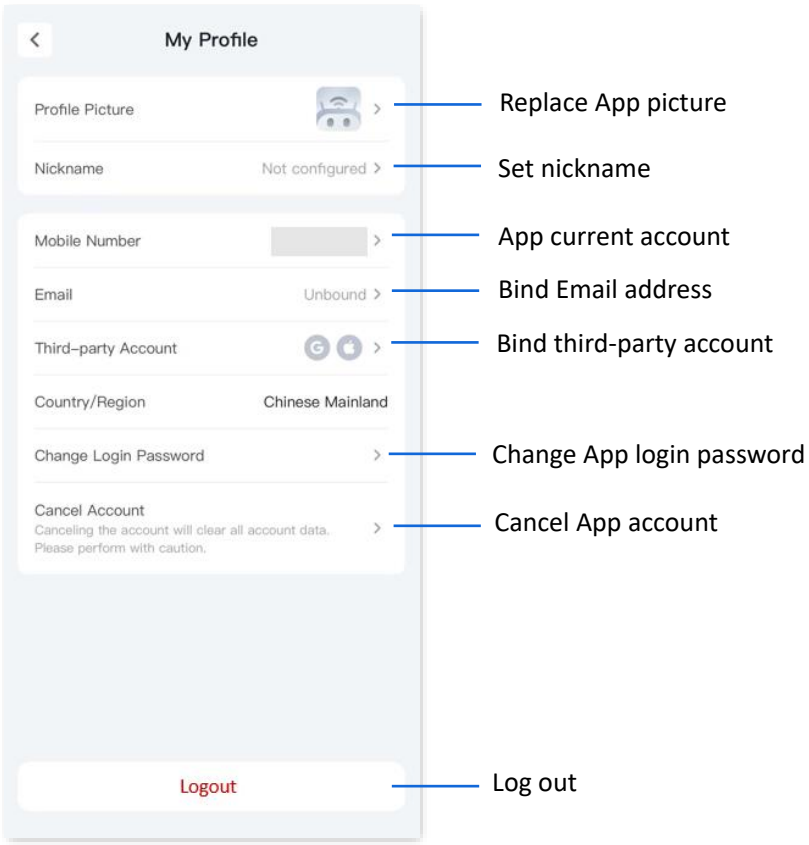
Tip

The priority of message **Do Not Disturb** is higher than the priority of **Notification**. For example, if the **Notification** of the corresponding message is enabled during the effective time of **Do Not Disturb**, the effect of **Do Not Disturb** shall prevail.

14.3 My Profile

Tap the account at the top of the My page to enter my profile configuration page.

Here, you can change the App picture, set a nickname, change the App login password, cancel the account, log out and so on. The following figure takes the mobile number login as an example.



Appendixes

A.1 Connect to a hidden Wi-Fi network

When a Wi-Fi network is hidden, you need to enter the Wi-Fi name manually and connect to it.

Assume that the **Unify 2.4 & 5 GHz** function is enabled and the Wi-Fi parameters are:

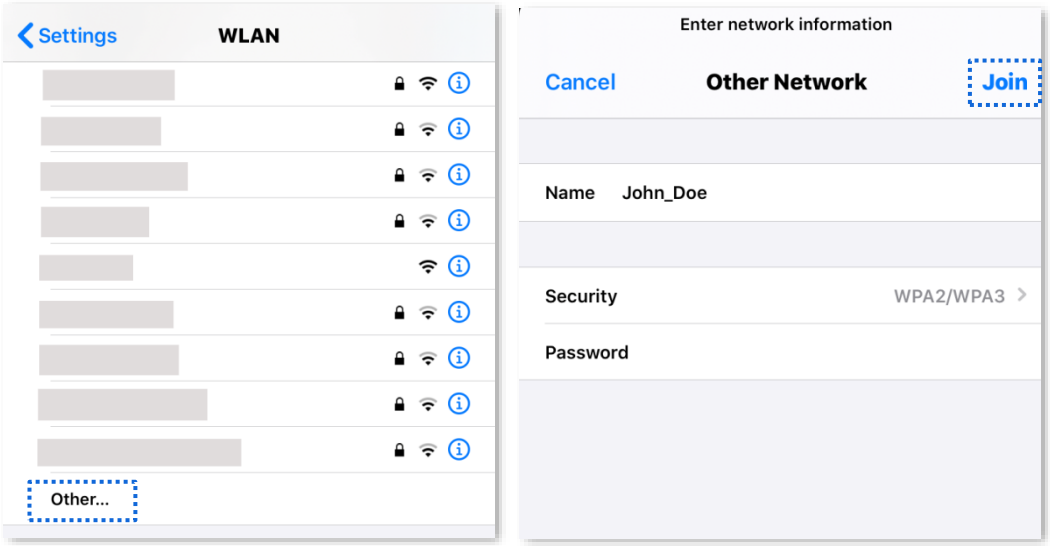
- Wi-Fi name: Jone_Doe
- Encryption type: WPA2/WPA3
- Wi-Fi password: IP-COM+Wireless245

Tip

If you do not remember the wireless parameters of the Wi-Fi network, enter the configuration page of the router and navigate to **Wi-Fi Settings** to find them.

Connect to the Wi-Fi network on your Wi-Fi-enabled device (Example: iPhone):

1. Tap **Settings** on your phone, and find **WLAN**.
2. Enable **WLAN**.
3. Scroll the Wi-Fi list to the bottom, and tap **Other…**.
4. Enter the Wi-Fi name and password, which are **John_Doe** and **IP-COM+Wireless245** in this example.
5. Set **Security** to **WPA2/WPA3** (If WPA2/WPA3 is not available, choose WPA3).
6. Tap **Join.**



---End

When the settings are completed, you can connect to the hidden Wi-Fi network to access the internet.

A.2 FAQ

Q1: I cannot access the internet after the configuration. What should I do?

A1: Try the following solutions:

- Ensure that the WAN port of the router is connected to a modem properly.
- Run the **IPCOM Home** app and navigate to the Internet Settings page. Follow the instructions on the page to solve the problem.
- If the connection type and parameters are correct but the connection still fails, contact your ISP.

If the problem persists, try the following solutions:

- For Wi-Fi-enabled devices:
  - When connecting to Wi-Fi, ensure that you have selected the correct Wi-Fi name and entered the Wi-Fi password correctly (be case sensitive).
  - Run and log in to the **IPCOM Home** app and change your Wi-Fi name and Wi-Fi password. Then try again.
- For wired devices:
  - Ensure that your wired devices are connected to the LAN port (such as 1, 2, 3/IPTV) properly.
  - Ensure that wired devices are set to **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

Q2: The device failed to be detected by the IPCOM Home app upon my first time using the device. What should I do?

A2: Try the following solutions:

- Ensure that your smartphone is connected to the Wi-Fi network of the device.
- Ensure that the cellular network (mobile data) of the client is disabled.
- Ensure that the network permission of the **IPCOM Home** app is enabled, you can tap **Settings** > **IPCOM Home** to enable it.
- If the problem persists, reset the router by referring to Q3 and try again.

Q3: How to restore my device to factory settings?

A3: Hold down the reset button (Marked as RST, RESET) of your device for about 8 seconds, and the router is reset successfully. For more details, see Reset the router to factory settings**.**

Q4: Why cannot I find the Wi-Fi signal of the router?

A4: Connect your computer to LAN port (such as 1, 2 or IPTV/3) of the router, and enter the configuration page of the router. Navigate to Wi-Fi Settings and ensure that:

- The wireless function is enabled.

- The Hide function is not ticked.
- Your Wi-Fi name does not contain any Chinese characters.

Q5: I cannot find the 5 GHz Wi-Fi network of the router on My Wi-Fi-enabled device. What should I do?

A5: Try the following solutions:

- Only devices supporting 5 GHz network can find and connect to the 5 GHz Wi-Fi network.
- Check whether you have enabled **Unify 2.4 & 5 GHz** on the **Wi-Fi Settings** page. If it is enabled, disable it and try again. After it is enabled, the 5 GHz Wi-Fi name is the same as the 2.4 GHz Wi-Fi name.
- If the **Unify 2.4 & 5 GHz** function is disabled on the router but the smartphone can search for another 5 GHz Wi-Fi network, reset the router by referring to Q3 and try again.

Q6: The router's Wi-Fi signal is poor. What should I do?

A6: Try the following solutions:

- Place the router in a high position with few obstacles.
- Keep your router away from electronics with strong interference, such as microwave ovens, induction cookers, and refrigerators.
- Keep your router away from metal barriers, such as weak current boxes, and metal frames.

Q7: If the network speed is slow after I connect my device to the router. What should I do?

A7: Try the following solutions:

- For Wi-Fi-enabled devices, such as a smartphone:
  - Try to get close to your router to test the network speed when the wireless signal strength is full. If the network speed is fast when the signal is strong, it indicates that the signal coverage is weak, resulting in a slow network speed, and the wireless network can be extended by adding new secondary nodes or wireless adapters.
- For wired device, such as a computer:
  - Ensure that the Ethernet cable is connected properly.
  - Ensure that the Network speed control are not configured on the router. If yes, delete related configurations and check whether the network speed is restored.

- Loading too many applications in the background will lead to insufficient computer system resources. Please load software properly or delete unnecessary programs and files to free up resources to improve network speed.

Q8: If the device is disconnected from the router. What should I do?

A8: Try the following solutions:

- If the Wi-Fi-enabled device goes offline, the wired device can access the internet normally:
  - Refer to Q6 to place the router in an appropriate position.
  - Check whether the wireless adapter driver of the Wi-Fi-enabled device is faulty. Replace the wireless adapter driver with another device or update the wireless adapter driver.
  - If the problem persists, reset the router by referring to Q3 and try again.
- If the wired device goes offline, the Wi-Fi-enabled device can access the internet normally:
  - If the Ethernet cable between the computer and the router is too long or poor quality, it will cause the cable drop. Please replace the short Ethernet cable.
  - Try to replace the LAN port (such as 1, 2, or 3/IPTV) connection or use another computer connection.
- If both wired and Wi-Fi-enabled devices go offline:
  - Log in to the web UI of the router and ensure that the router is properly connected to the internet. If not, refer to Router disconnected from the internet to solve.
  - Refer to Q6 to place the router in an appropriate position.
  - Ensure that the WAN port is connected properly, and replace a short Ethernet cable to connect to the WAN port.
  - When not connected to the router, directly connect the Ethernet cable to the computer to check whether the internet is disconnected. If the internet is disconnected from the internet, contact your ISP for help.

  If the problem persists, reset the router by referring to Q3 and try again.

Q9: The networking fails. What should I do?

A9: Try the following solutions:

- Ensure that the new router is reset. If not, restore the router to factory settings first.
- Ensure that the existing router (primary node) is connected to the internet, and then refer to MESH networking and try again.

Q10: I want to unbind the router. What should I do?

A10: Run and log in to the **IPCOM Home** app, locate the router you want to unbind in the **Homepage**, tap  in the upper-right corner of the router, and tap **Unbind**.

A.3 Acronyms and Abbreviations

Acronym or Abbreviation	Full Spelling
AES	Advanced Encryption Standard
AP	Access point
DDNS	Dynamic Domain Name System
DHCP	Dynamic Host Configuration Protocol
DHCPv6	Dynamic Host Configuration Protocol for IPv6
DMZ	Demilitarized zone
DNS	Domain Name System
FTP	File Transfer Protocol
ICMP	Internet Control Message Protocol
IP	Internet Protocol
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

Acronym or Abbreviation	Full Spelling
LED	Light-emitting diode
MAC	Medium access control
MPPE	Microsoft Point-to-Point Encryption
MTU	Maximum Transmission Unit
PMF	Protected Management Frames
PPPoE	Point-to-Point Protocol over Ethernet
PPTP	Point to Point Tunneling Protocol
RA	Router Advertisement
SN	Serial Number
SSID	Service Set Identifier
STB	Set-top box
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
UI	User interface
UPnP	Universal Plug and Play
URL	Uniform Resource Locator
USB	Universal Serial Bus

Acronym or Abbreviation	Full Spelling
VLAN	Virtual local area network
VPN	Virtual private network
WAN	Wide area network
WLAN	Wireless local area network
WPA	Wi-Fi Protected Access
WPA-PSK	WPA Pre-shared Key
WPA3-SAE	WPA3-Simultaneous Authentication of Equals
WPS	Wi-Fi Protected Setup