User Guide

AC1300 Home Wi-Fi System
HC220-G1

1910020852 REV1.0.0

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About This Guide

This guide is a complement to Quick Installation Guide. The Quick Installation Guide provides instructions for quick internet setup, while this guide contains details of each function and demonstrates how to configure them.

When using this guide, please note that features of your device may vary slightly depending on the model and software version you have, and on your location, language, and internet service provider. All screenshots, images, parameters and descriptions documented in this guide are used for demonstration only.

Conventions

In this guide the following conventions are used:

Convention	Description
Underlined	Underlined words or phrases are hyperlinks. You can click to redirect to a website or a specific section.
Teal	Contents to be emphasized and texts on the web page are in teal, including the menus, items, buttons and so on.
>	The menu structures to show the path to load the corresponding page. For example, Settings > Wireless > Wireless Settings means the Wireless Settings page is under the Wireless menu that is located in the Settings tab.
Note:	Ignoring this type of note might result in a malfunction or damage to the device.
Tips:	Indicates important information that helps you make better use of your device.
Symbols on the web page	• click to edit the corresponding entry. • click to delete the corresponding entry. • click to enable or disable the corresponding entry. • click to view more information about items on the page.

More Info

The latest software, management app and utility are available from the Download Center at www.tp-link.com/support.

The Quick Installation Guide can be found where you find this guide or inside the package of the product.

Specifications can be found on the product page at http://www.tp-link.com.

A Technical Support Forum is provided for you to discuss our products at http://forum.tp-link.com.

Our Technical Support contact information can be found at the Contact Technical Support page at www.tp-link.com/support.

Chapter 1

Get to Know Your Devices

This chapter introduces what your devices can do and shows its appearance.

It contains the following sections:

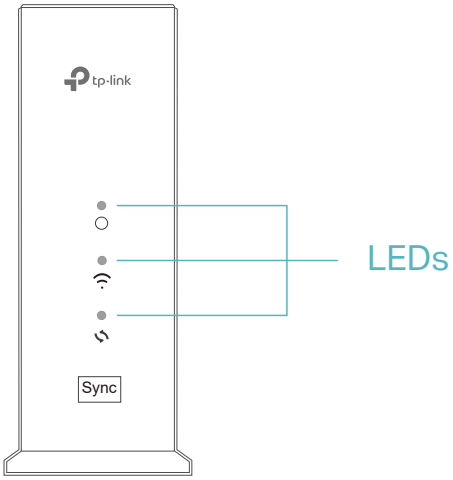
- Product Overview
- Appearance

1. 1. Product Overview

TP-Link home Wi-Fi system use multiple devices to provide a seamless, intelligent and easy-to-configure mesh network that covers the entire home. The system consists of three routers, one works as the Controller and the other two work as Satellite. The Controller connects to the modem or gateway, the Satellites extend the wireless coverage of your network.

1. 2. Appearance

1. 2. 1. LEDs



You can check the device's working status by following the LED Explanation table.

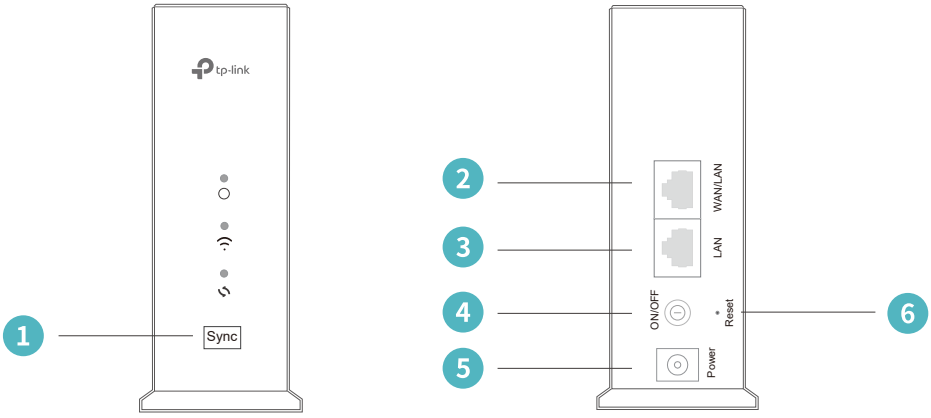
LED Explanation

Name	Status	Indication
○ (System Status)	Flashing Green	The device is updating the firmware.
	Solid Green	The device is ready and the internet is available.
	Flashing	The device is ready but the internet is unavailable.
	Off	Power is off.

LED Explanation

Name	Status	Indication
(Wireless)	Flashing Green	The wireless function is enabled, and the device is in the factory default state.
	Solid Green	The wireless connection between Controller and Satellite is successful, and the signal is strong.
	Solid Orange	The wireless connection between Controller and Satellite is successful, but the signal is weak.
	Solid Red	Wireless connection between Controller and Satellite failed.
	Off	The wireless function is disabled.
(Sync/WPS)	Flashing Green	A Satellite is trying to connect to the Controller via WPS. This process may take up to 2 minutes.
	Solid Green	A Satellite is trying to connect to the Controller via synchronization. This process may take up to 2 minutes. After successful connection, the LED will turn off. If the synchronization fails, the LED will flash for about 10 seconds and then turn off.
	Off	No WPS/Sync in process or WPS/Sync process has completed.

1. 2. 2. Buttons and Ports



Item	Description
1 Sync Button	For pairing the Controller and the Satellite and starting WPS process. Press the button for 1 second to start a WPS process, press for 5 seconds to start a synchronization process.
2 WAN/LAN Port	Combined with WAN/LAN interface capabilities, which can be used to connect the device to the Internet or Ethernet network devices.
3 LAN Port	For connecting the your PC or other Ethernet network devices.
4 ON/OFF Button	The switch for the power. Press it to power on or off the device. ON OFF
5 Power Port	For connecting the device to a power socket via the provided power adapter.
6 Rest Button	Press and hold down for a few seconds to reset the device into factory default settings.

Chapter 2

Connect the Hardware

This chapter contains the following sections:

- Position the Devices
- Connect Your Controller

2. 1. Position the Devices

- The device should not be located in a place where it will be exposed to moisture or excessive heat.
- Place the device in a location where it can be connected to multiple devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way so they do not create a tripping hazard.
- The device can be placed on a shelf or desktop.
- Keep the device away from strong devices with strong electromagnetic interference, such as Bluetooth devices, cordless phones and microwaves.

2. 2. Connect Your Controller

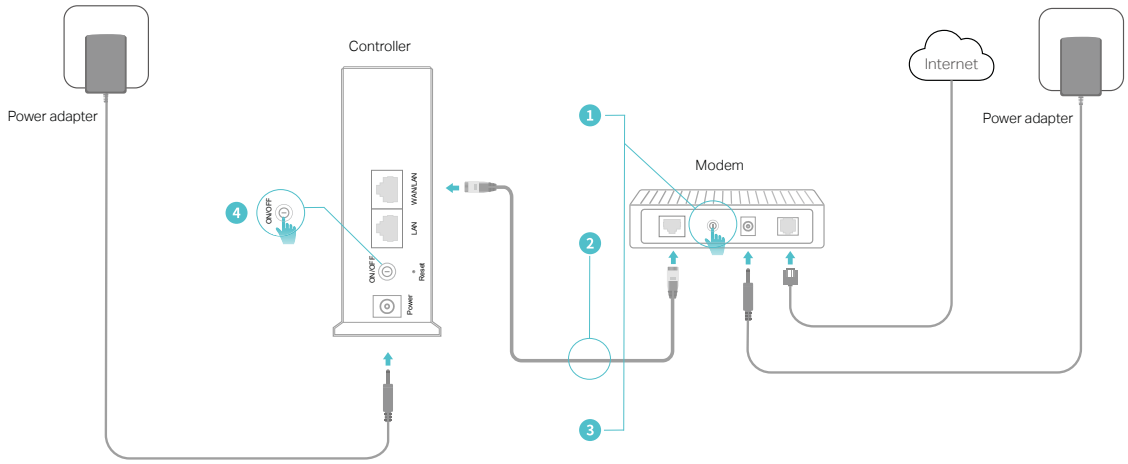
You can set any one of the HC220-G1 routers as the Controller and the remaining two as Satellites.

The Controller provides two working modes: Router Mode and AP Mode. You can choose the mode to better suit your network needs and follow the guide to complete the configuration.

2. 2. 1. Wireless Router Mode

1. Follow the steps below to connect your Controller.

If your internet connection is through an Ethernet cable directly from the wall instead of through a DSL/Cable/Satellite modem, directly connect the Ethernet cable to the Controller's WAN/LAN port, then follow step 4 and 5 to complete the hardware connection.



1) Turn off the modem, and remove the backup battery if it has one.

2) Connect the modem to the Controller's WAN/LAN port with an Ethernet cable.

3) Turn on the modem, and then wait about 2 minutes for it to restart.

4) Turn on the Controller.

5) Verify the System Status LED is solid orange and the Wireless LED is flashing green.

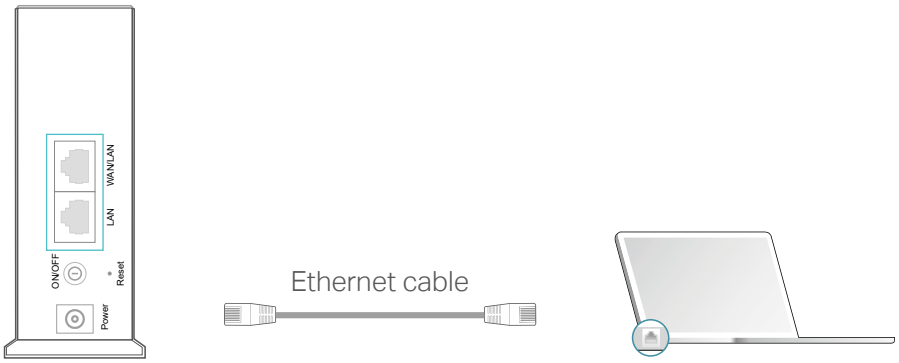
System Status LED is orange.

Wireless LED is flashing green.

2. Connect your computer to the Controller.

- **Method 1: Wired**

Turn off the Wi-Fi on your computer and connect the computer to the LAN port of the Controller using an Ethernet cable.

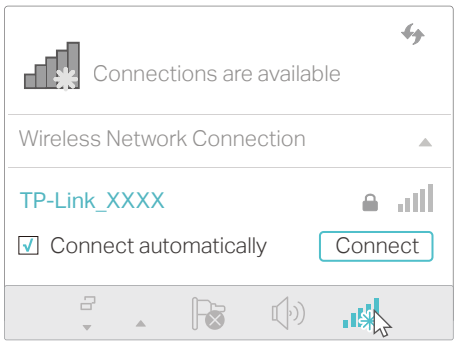


- **Method 2: Wireless**

1) Find the SSID (Network Name) and Wireless Password printed on the label at the bottom of the Controller.

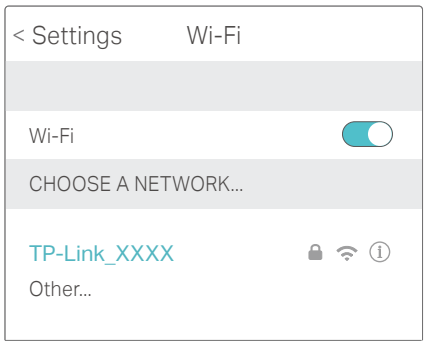
2) Click the network icon of your computer or go to Wi-Fi Settings of your smart device, and then select the SSID to join the network.

Computer



OR

Smart Device



- **Method 3: Use the Sync button**

Wireless devices that support WPS, including Android phones, tablets, most USB network cards, can be connected to your Controller by this method.

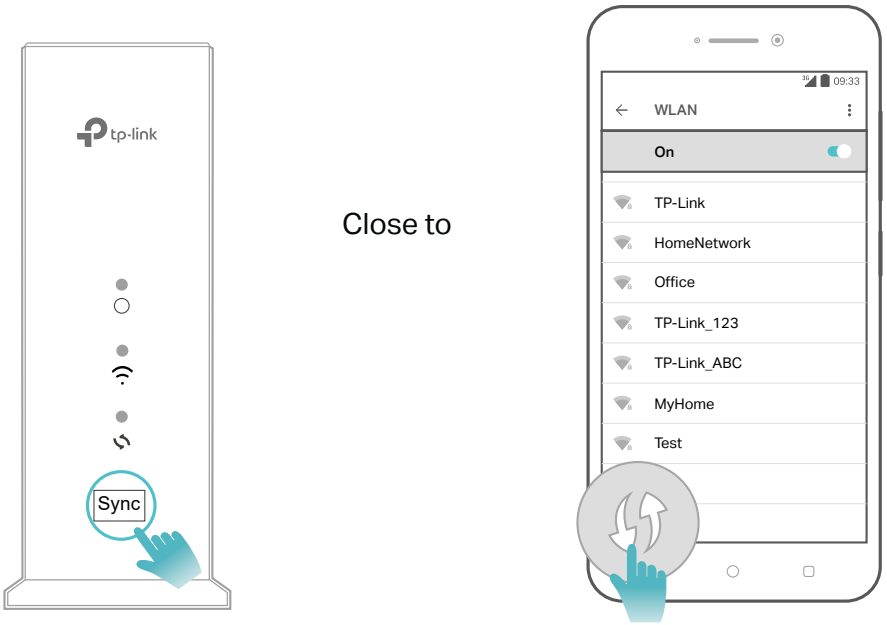
Note:

- WPS is not supported by iOS devices.
- The WPS function cannot be configured if the wireless function of the Controller is disabled. Also, the WPS function will be disabled if your wireless encryption is WEP. Please make sure the wireless function is enabled and is configured with the appropriate encryption before configuring the WPS.

1) Tap the WPS icon on the device's screen. Here we take an Android phone as an example.

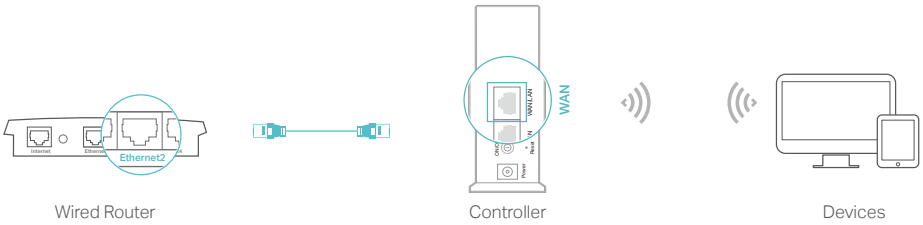
2) Immediately press the Sync button on your Controller.

3) The System Status LED flash for about two minutes during the WPS process.



2. 2. 2. Access Point Mode

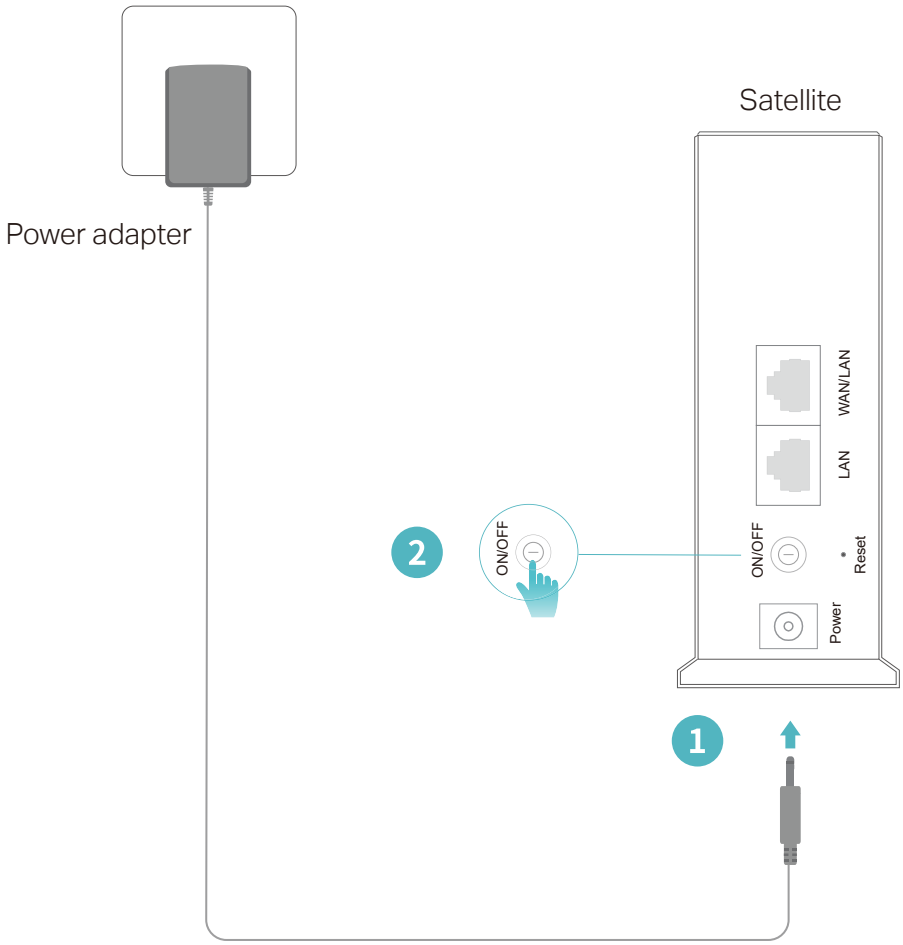
In the access point mode, your Controller and Satellites extend the wireless coverage of your network.



1. Connect the power adapter to the Controller.

2. Connect the Controller to your wired host router's Ethernet port via an Ethernet cable as shown above.
3. Connect a computer to the Controller via an Ethernet cable or wirelessly by using the SSID (network name) and password printed on the label at the bottom of the Controller.

2. 3. Connect Your Satellites



1. Connect your satellites to the power sources with the provided power adapter.
2. Press the power ON/OFF button to turn on the satellite.
3. Verify that the System Status LED is solid orange and the Wireless LED is flashing green.

System Status LED is orange.

Wireless LED is flashing green.

Chapter 3

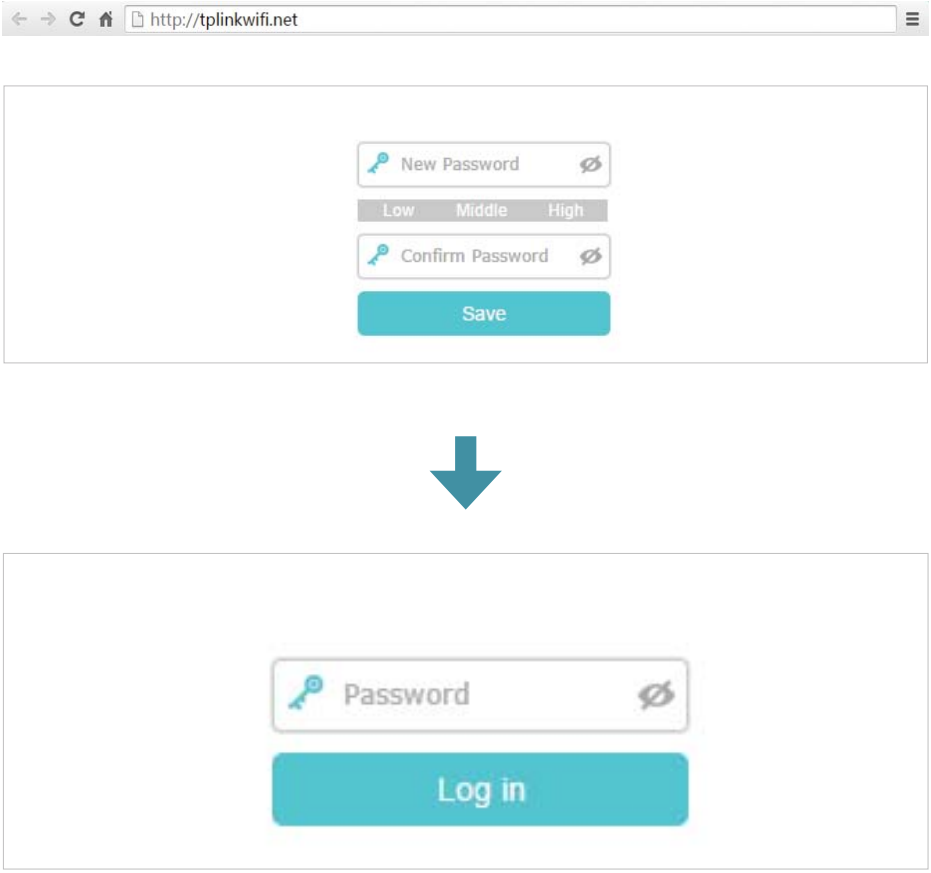
Log In to Your Controller

This chapter introduces how to log in to the web management page of the Controller.

With the web management page, it is easy to configure and manage your Controller. The web management page can be used on any Windows, Macintosh or UNIX OS with a Web browser, such as Microsoft the Internet Explorer, Mozilla Firefox or Apple Safari.

Follow the steps below to log in to your Controller.

1. Set up the TCP/IP Protocol in Obtain an IP address automatically mode on your computer.
2. Launch Enter http://tplinkwifi.net in the address bar of a web browser and create a login password for secure management and click Save. Enter the password again on the login window and click Log in to log in to your Controller.



Note:

1. If the dialog boxes shown in the images above do not appear, it suggests that your IE Web-browser has been set to a proxy. You can go to Tools > Internet Options > Connections > LAN Settings, and clear the Using Proxy checkbox, and click OK.
2. If the login window does not appear, please refer to the FAQ section.

Chapter 4

Set Up Internet Connection

This chapter introduces how to connect your Controller to the internet. The Controller is equipped with a web-based Quick Setup wizard. It has necessary ISP information built in, automates many of the steps and verifies that those steps have been successfully completed. Furthermore, you can also set up an IPv6 connection if your ISP provides IPv6 service.

It contains the following sections:

- Use Quick Setup Wizard
- Set Up an IPv6 Internet Connection

4. 1. Use Quick Setup Wizard

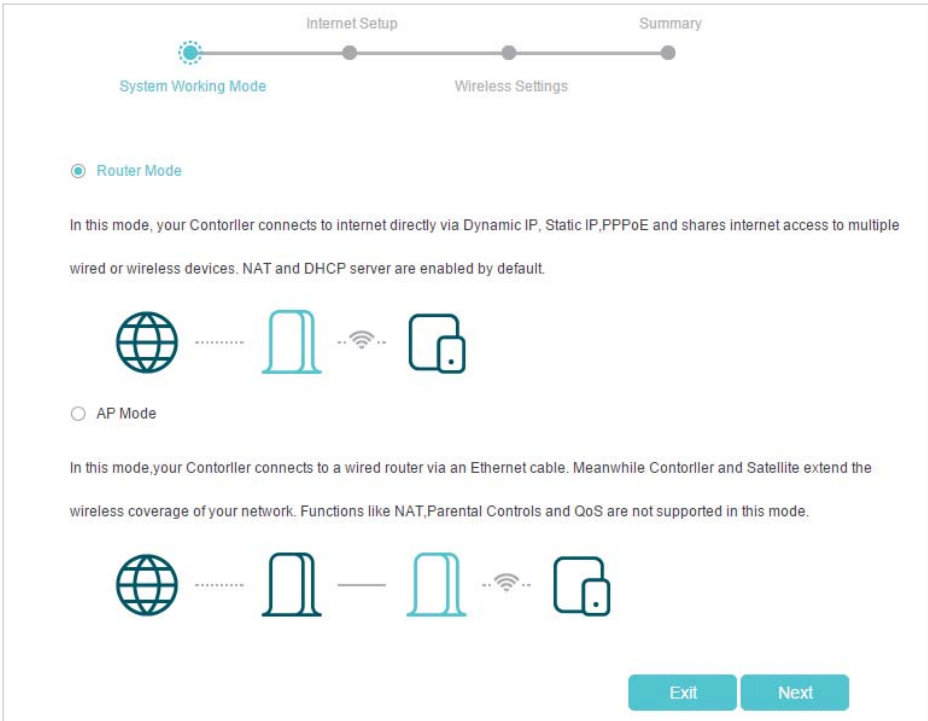
The Quick Setup wizard will guide you to set up your Controller.

Your Controller provide two working modes, Router Mode and AP Mode. You will be asked to choose a working mode at the first login.

4. 1. 1. Set Your Controller Working in Router Mode

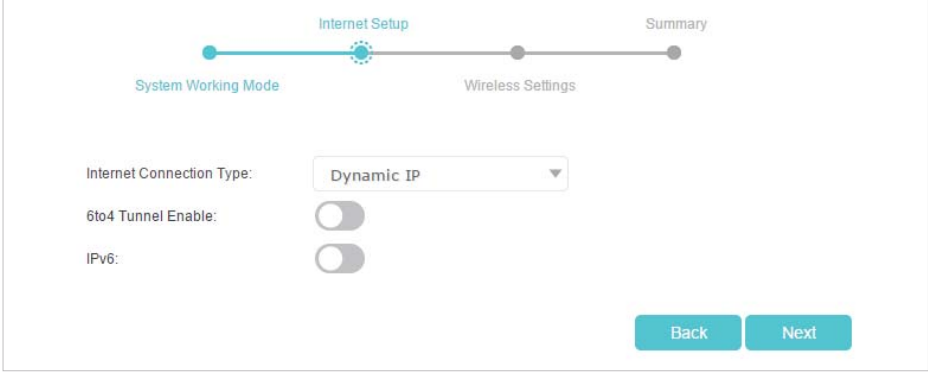
Follow the steps below to set up your Controller.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Click Quick Setup on the top of the page and start the configuration by choosing Router Mode and click Next.



Note: If you want to change the operation mode after the Quick Setup is completed, you can go to Settings > Operation Mode. The Controller will reboot when you change the operation mode.

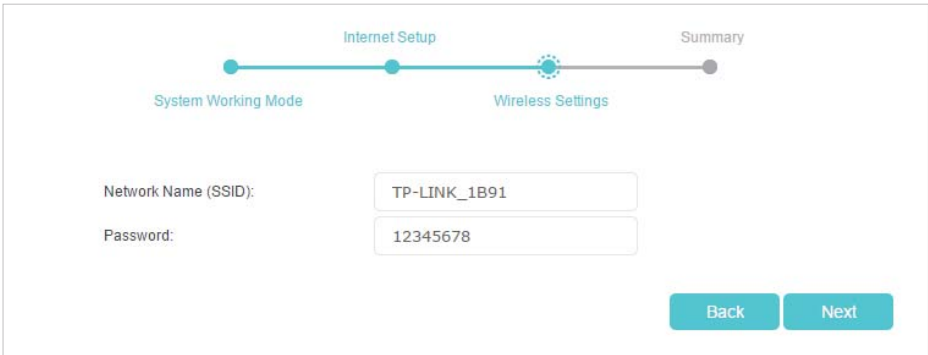
3. Configure the basic internet connection, you can follow the instructions below to continue the configuration, and then click Next.



- Internet Connection Type: Select your internet connection type and enter the corresponding information (if required) provided by your ISP.

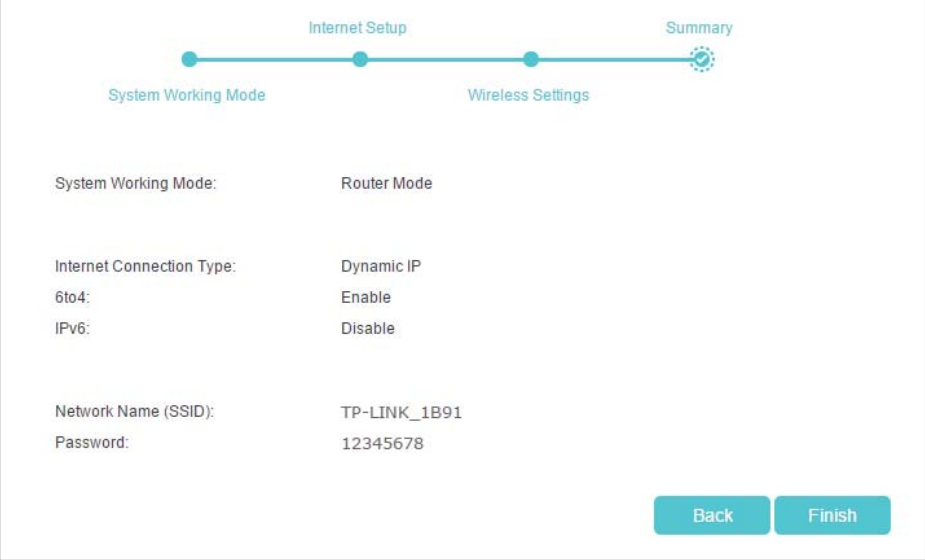
  Three connection types are supported: Dynamic IP, PPPoE and Static IP.
- 6to4 Tunnel Enable: Enable or disable the 6to4 tunnel function.
- IPv6: Enable IPv6 internet connection and set up the basic configuration, or disable the IPv6 connection. Refer to Set Up an IPv6 Internet Connection for advanced setup.

4. Customize your wireless network name (SSID) and the password. You can keep the default settings or change them to a new one, both fields are case-sensitive, and then click Next to get a brief summary of your internet setup.



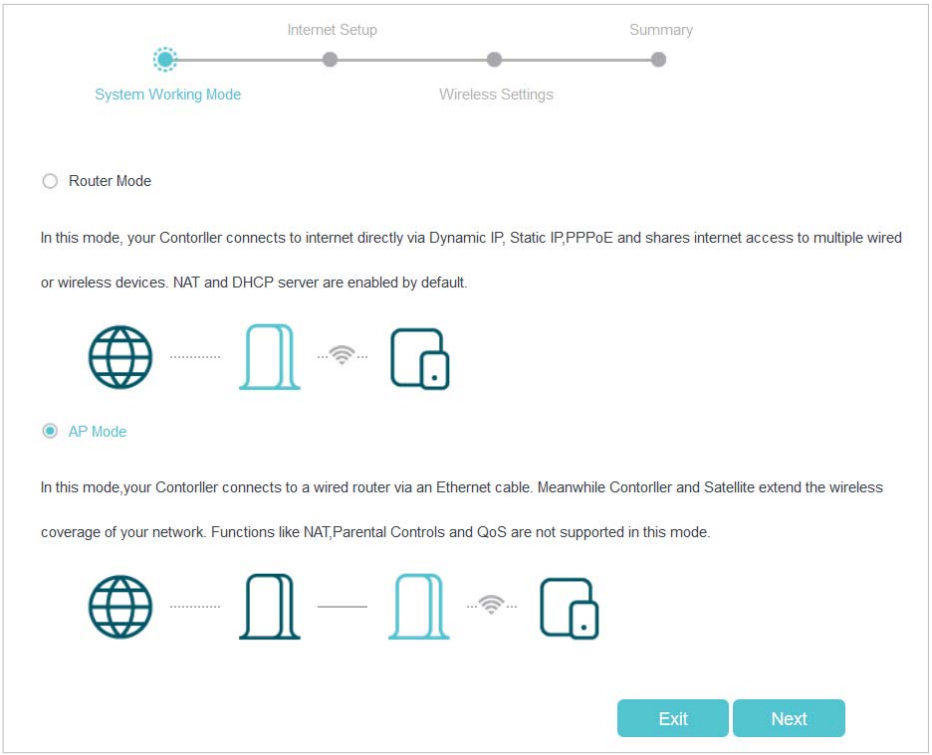
Note: If you have changed the preset wireless network name (SSID) and wireless password during the Quick Setup process, all your wireless devices must use the new SSID and password to connect to the your network.

5. Click Finish to complete the Quick Setup process. You can refer to Test the Network Connectivity to test your Internet connection



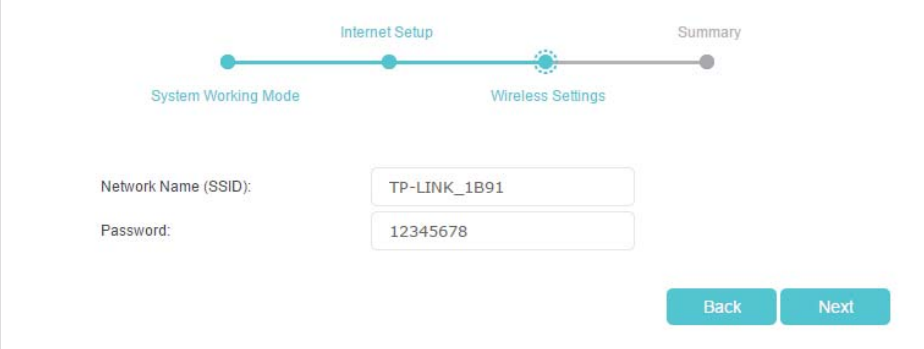
4. 1. 2. Set Your Controller Working in AP Mode

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Click Quick Setup on the top of the page and start the configuration by choosing AP Mode and click Next.



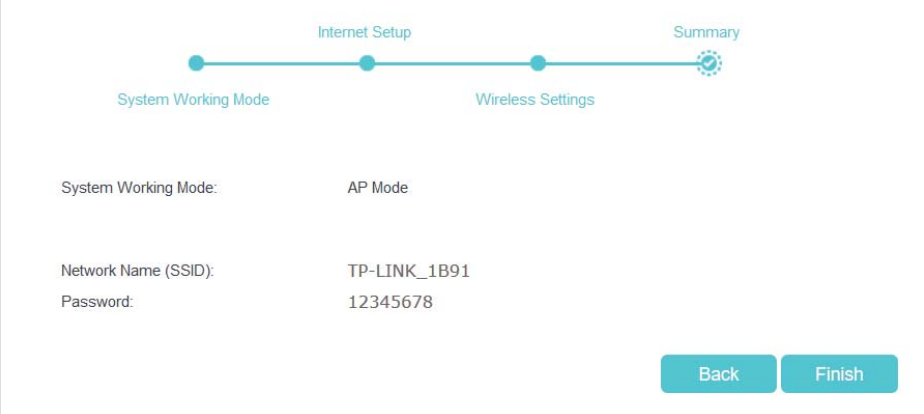
Note: If you want to change the operation mode after the Quick Setup is completed, you can go to Settings > Operation Mode. The Controller will reboot when you change the operation mode.

3. Customize your wireless network name(SSID) and the password. You can keep the default settings or change it to a new one, both fields are case-sensitive, and then click Next to have a brief summary of your internet setup.



Note: If you have changed the preset wireless network name (SSID) and wireless password during the Quick Setup process, all your wireless devices must use the new SSID and password to connect to your network.

4. Click Finish to complete the Quick Setup process. You can refer to Test the Network Connectivity to test your Internet connection



Tips:

- In AP mode, functions like NAT,Parental Controls and QoS are not supported.

4. 2. Set Up an IPv6 Internet Connection

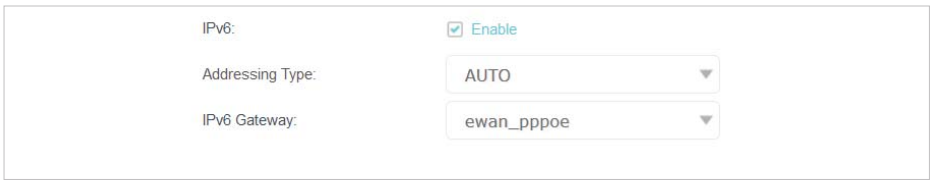
If your ISP provides IPv6 connection and some detailed IPv6 parameters, you can manually set up an IPv6 connection.

If your ISP provides an IPv4-only connection or IPv6 tunnel service, you can run the Quick Setup to enable 6to4 Tunnel for permitting IPv6 connection.

Follow the steps below to set up an IPv6 connection:

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > Internet.

3. Select your WAN Interface Name (Status should be Connected) and click the (Edit) icon.
4. Scroll down the page to enable IPv6, and configure the IPv6 parameters.



- Addressing Type: Consult your ISP for the addressing type (HCPv6 or SLAAC). SLAAC is the most commonly used addressing type.
- IPv6 Gateway: Keep the default setting.

Note: If your ISP has provided the IPv6 address, click Advanced to reveal more settings. Check to use IPv6 specified by ISP and enter the parameters provided by your ISP.

5. Click Save to make the settings effective. Now IPv6 service is available for your network.

Note:
If you still can't access IPv6 resources, it may means that no 6to4 public server was found in your network. You can contact your ISP to sign up for IPv6 connection service.

Chapter 5

Add Satellites to Your Network

This chapter describes how you can add the satellites to your network and extend the wireless coverage.

This chapter contains the following sections:

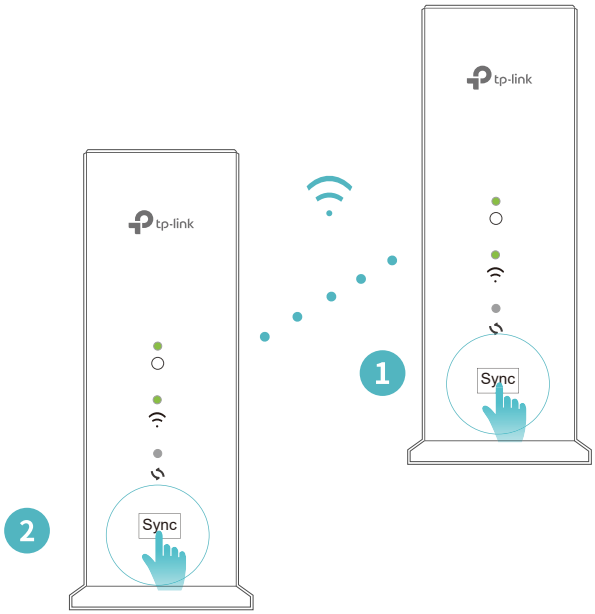
- Sync Your Satellites
- Place Your Satellites

5. 1. Sync Your Satellites

The Wi-Fi System includes three routers, one works as the Controller and the others work as the Satellites. The Sync process is triggered by the Sync button, and the Satellites will automatically copy the settings of your Controller after successful sync.

Follow the steps below to sync the Satellites:

1. Place the Satellite close to the Controller.
2. Power on the Satellites and wait about two minutes for it to get ready.
- System Status LED is green.
- Wireless LED is flashing green.
3. Press and hold the Sync button on the Controller for about 5 seconds until its Sync LED turns solid green and within one minute, press and hold the Sync button on the Satellite for about 5 seconds until its Sync LED turns solid Green.



The Sync LEDs of the Controller and the Satellite flash green and turn off about two minutes later. The Wireless LEDs of the Controller and the Satellite should be solid green after successful synchronization.

4. Repeat step 1-3 to sync another Satellite.

Tips:

1. You can check the sync status on the web management page by visiting http://tplinkwifi.net, going to Settings > Network Map and clicking the HC220-G1 icon.

2. For more information on the management of your Satellites, please refer to Manage Your Satellites.

5. 2. Place Your Satellites

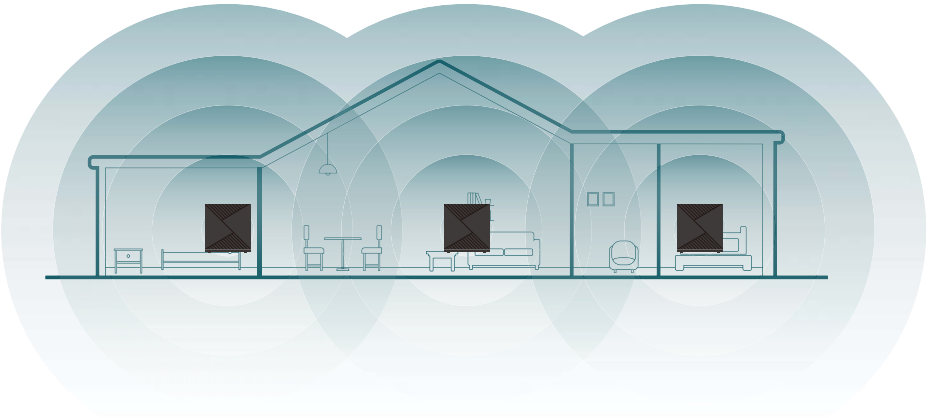
After the Sync processes are complete, you may need to move your Satellites to appropriate places to extend the wireless signal coverage. The exact locations depend on the architectural style and layout of your house, please note that the Wi-Fi signal of one Satellite at least must be within the range of your Controller's Wi-Fi signal in order to sync with the Controller.

You can use the Satellites' wireless LEDs to help you to determine where to place them.

Examples of Typical Placement

- For multi-story house

- For ranch-style house



- For apartment

Tips:

- After the placement, if the Wireless status LED of Satellite is orange or red, please move it closer to the Controller, you can check the connection status and wireless signal status on the web management page by visiting http://tplinkwifi.net, going to Settings > Network Map and clicking the HC220-G1 icon.

Chapter 6

Network Security

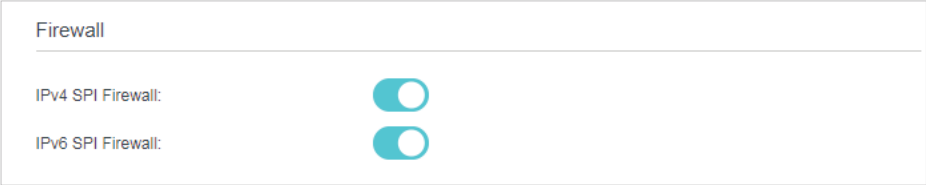
This chapter guides you on how to protect your home network from unauthorized users by implementing network security functions. You can block or allow specific client devices to access your wireless network using MAC Filtering, or using Access Control for wired and wireless networks, or you can prevent ARP spoofing and ARP attacks by using IP & MAC Binding.

- Firewall & DoS Protection
- Service Filtering
- Access Control
- IP & MAC Binding

6. 1. Firewall & DoS Protection

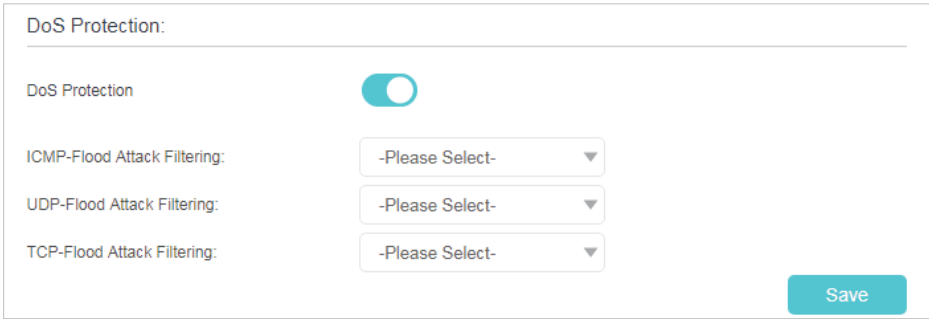
The SPI (Stateful Packet Inspection) Firewall and DoS (Denial of Service) Protection protect the router from cyber attacks.

The SPI Firewall can prevent cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default, and it is recommended to keep the default settings.



DoS Protection can protect your home network against DoS attacks from flooding your network with server requests. Follow the steps below to configure DoS Protection.

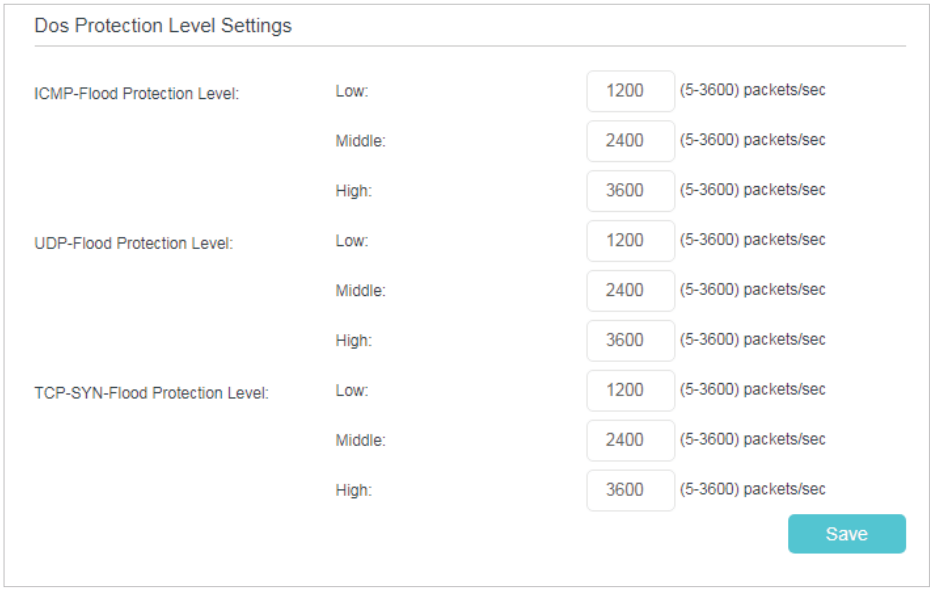
1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Security > Firewall & DoS Protection.



3. Enable DoS Protection.
4. Set the pretection level (Low, Middle or High) for ICMP-Flood Attack Filtering, UDP-Flood Attack Filtering and TCP-Flood Attack Filtering.
   - ICMP-Flood Attack Filtering - Enable to prevent the ICMP (Internet Control Message Protocol) flood attack.
   - UDP-Flood Attack Filtering - Enable to prevent the UDP (User Datagram Protocol) flood attack.
   - TCP-Flood Attack Filtering - Enable to prevent the TCP (Transmission Control Protocol) flood attack.
5. Click Save to make the settings effective.

Tips:

1. The level of protection is based on the number of traffic packets. You can specify the level under DoS Protection Level Settings.



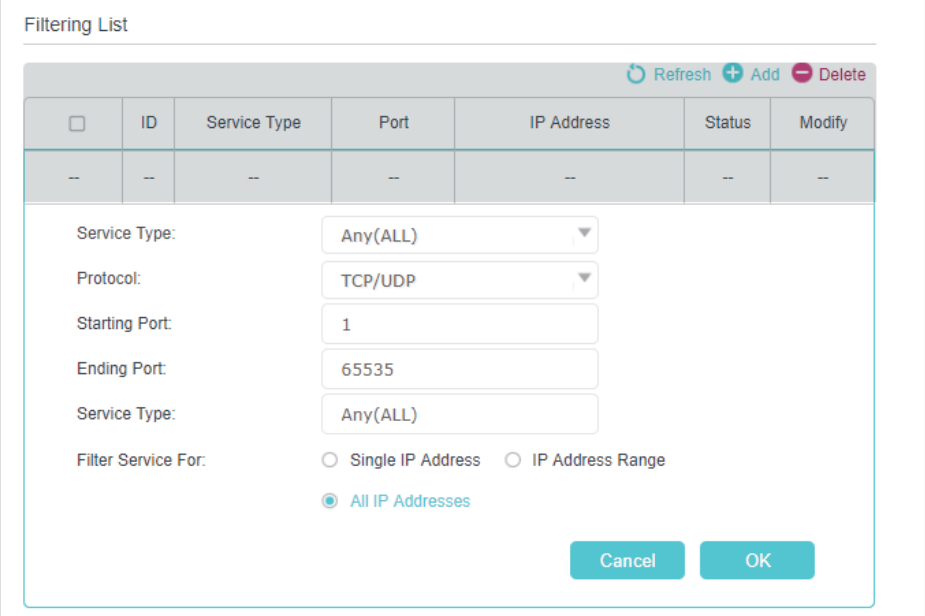
2. The protection will be triggered immediately when the number of packets exceeds the preset threshold value, and the vicious host will be displayed in the Blocked DoS Host List.

6. 2. Service Filtering

With Service Filtering, you can prevent certain users from accessing the specified service, and even block internet access completely.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Security > Service Filtering.
3. Enable Service Filtering.

4. Click Add.



5. Select a Service Type from the drop-down list and the following four boxes will be automatically filled in. Select Custom when your desired service type is not listed, and enter the information manually.
6. Specify the IP address(es) that this filtering rule will apply to.
7. Click OK to make the settings effective.

Note: If you want to disable a entry, click the icon.

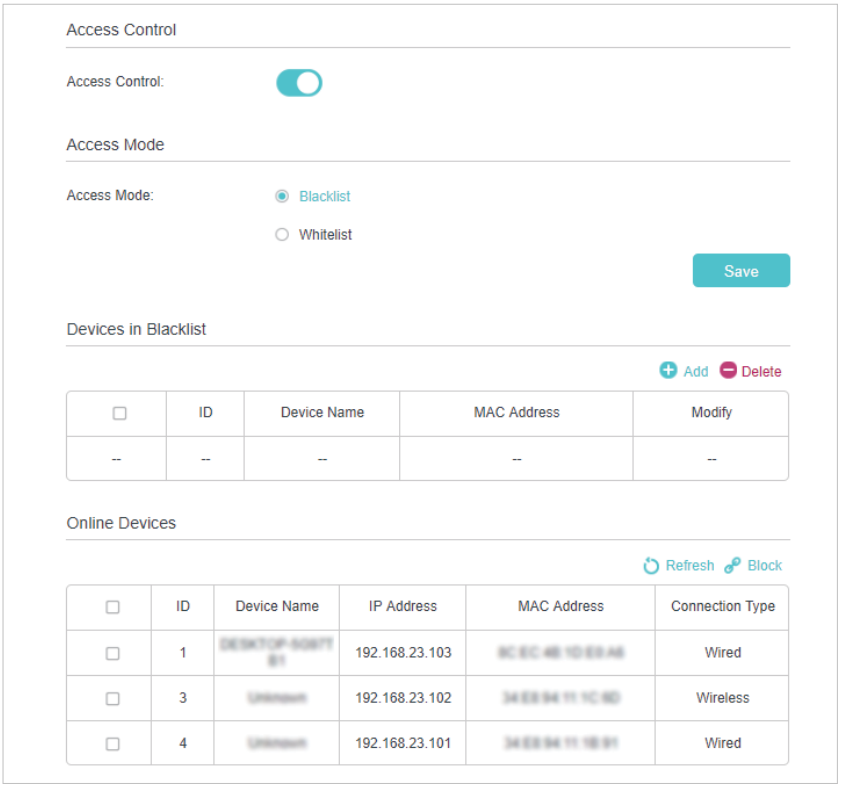
6. 3. Access Control

Access Control is used to block or allow specific client devices to access your network (via wired or wireless) based on a list of blocked devices (Blacklist) or a list of allowed devices (Whitelist).

I want to: Block or allow specific client devices to access my network (via wired or wireless).

How can I do that?

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Security > Access Control and enable Access Control.



3. Select the access mode to either block (recommended) or allow the device(s) in the list.

To block specific device(s)

1) Select Blacklist and click Save.

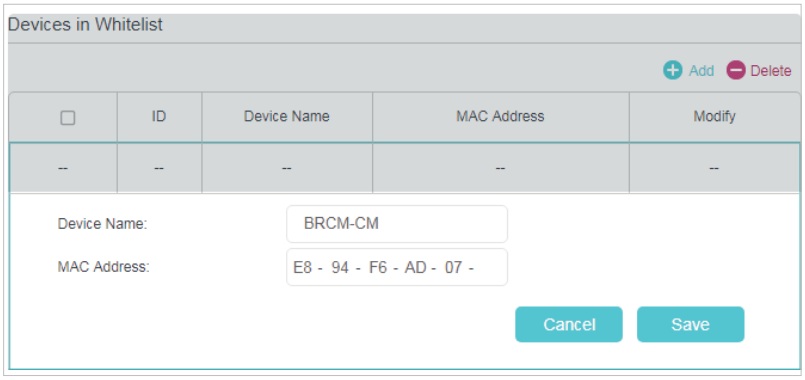
2) Select the device(s) to be blocked in the Online Devices table (or click the Add under the Devices in Blacklist and enter the Device Name and MAC Address manually).

3) Click Block above the Online Devices table. The selected devices will be added to Devices in Blacklist automatically.

To allow specific device(s)

1) Select Whitelist and click Save.

2) Click Add.



3) Enter the Device Name and MAC Address. (You can copy and paste the information from Online Devices table if the device is connected to your network.)

4) Click Save.

Done!

Now you can block or allow specific client devices to access your network (via wired or wireless) using the Blacklist or Whitelist.

6. 4. IP & MAC Binding

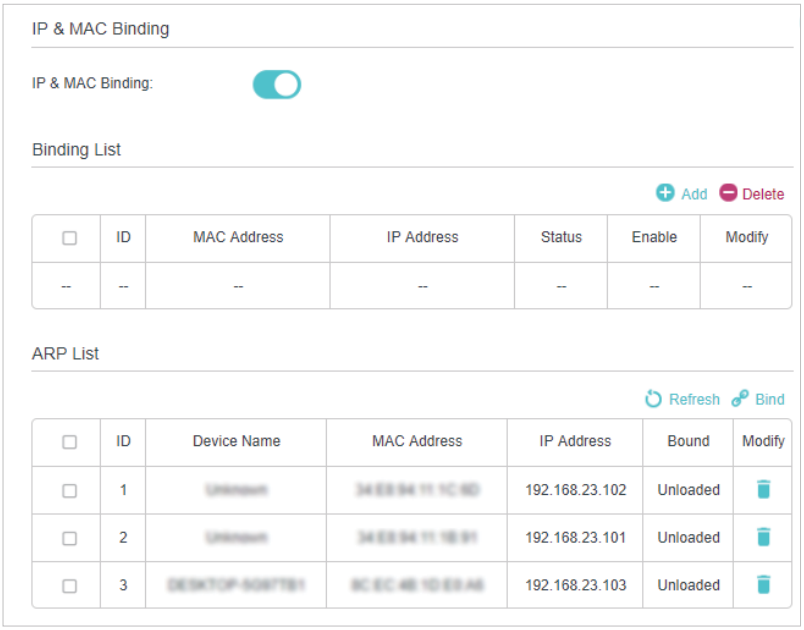
IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind a network device's IP address to its MAC address. This will prevent ARP spoofing and other ARP attacks by denying network access to a device with a matching IP address in the Binding list, but an unrecognized MAC address.

I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Security > IP & MAC Binding and enable IP & MAC Binding.



3. Bind your device(s) according to your needs.

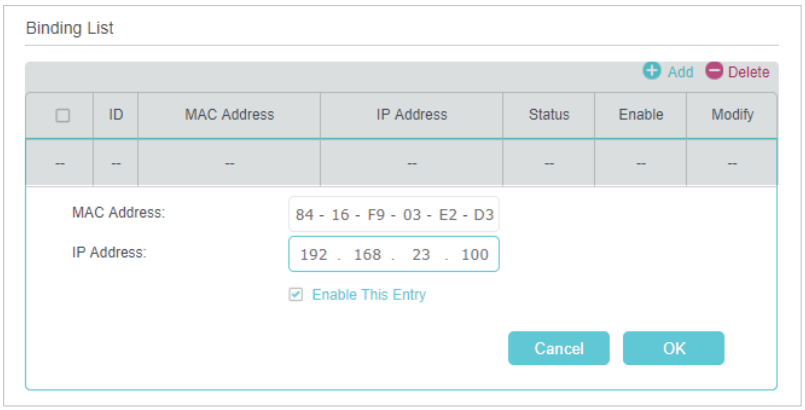
To bind the connected device(s)

1) Select the device(s) to be bound in the ARP List.

2) Click Bind to add to the Binding List.

To bind the unconnected device

1) Click Add.



2) Enter the MAC address and IP address that you want to bind.

3) Select the Enable This Entry check box to enable the entry and click Save.

Done!

Enjoy the internet without worrying about ARP spoofing and ARP attacks.

Chapter 7

NAT Forwarding

Router's NAT (Network Address Translation) feature makes the devices in the LAN use the same public IP address to communicate in the internet, which protects the local network by hiding IP addresses of the devices. However, it also brings about the problem that external host cannot initiatively communicate with the specified device in the local network.

The router can use a forwarding feature to remove the isolation of NAT and allow external internet hosts to initiatively communicate with the devices in the local network, thus enabling some special features.

TP-Link router includes four forwarding rules. If two or more rules are set, the priority of implementation from high to low is Virtual Servers, Port Triggering, UPNP and DMZ.

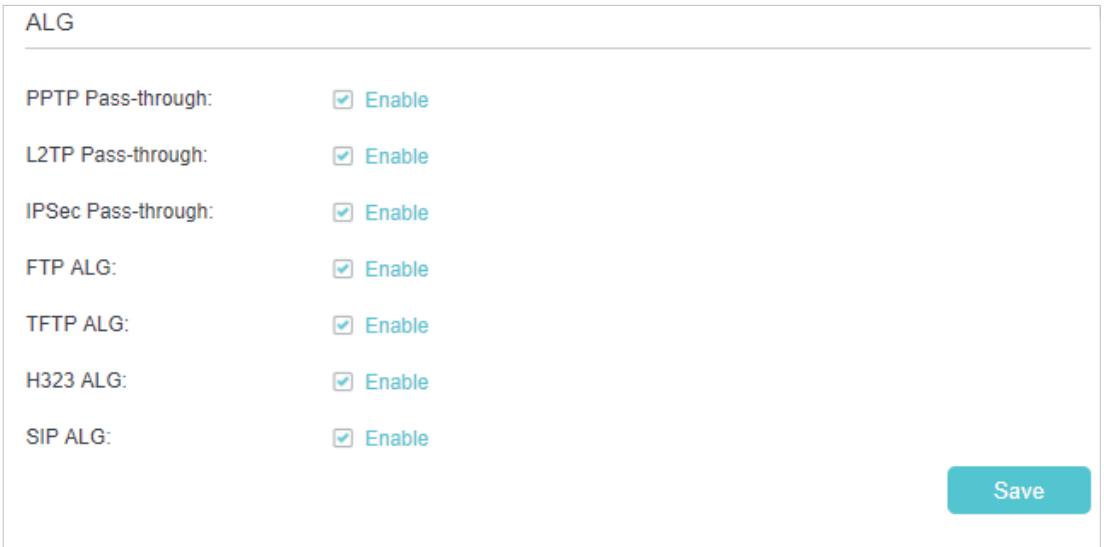
This chapter contains the following sections:

- Translate Address and Port by ALG
- Share Local Resources over the Internet by Virtual Server
- Open Ports Dynamically by Port Triggering
- Make Applications Free from Port Restriction by DMZ

7. 1. Translate Address and Port by ALG

ALG (Application Layer Gateway) allows customized NAT (Network Address Translation) traversal filters to be plugged into the gateway to support address and port translation for certain application layer "control/data" protocols: FTP, TFTP etc. Enabling ALG is recommended.

Visit http://tplinkwifi.net, and log in with the password you set for the Controller. Go to Advanced > NAT Forwarding > ALG.



- PPTP Pass-through: If enabled, it allows Point-to-Point sessions to be tunneled through an IP network and passed through the router.
- L2TP Pass-through: If enabled, it allows Layer 2 Point-to-Point sessions to be tunneled through an IP network and passed through the router.
- IPSec Pass-through: If enabled, it allows IPSec (Internet Protocol Security) to be tunneled through an IP network and passed through the router. IPSec uses cryptographic security services to ensure private and secure communications over IP networks.
- FTP ALG: If enabled, it allows FTP (File Transfer Protocol) clients and servers to transfer data via NAT.
- TFTP ALG: If enabled, it allows TFTP (Trivial File Transfer Protocol) clients and servers to transfer data via NAT.
- H323 ALG: If enabled, it allows Microsoft NetMeeting clients to communicate via NAT.
- SIP ALG: If enabled, it allows clients communicate with SIP (Session Initiation Protocol) servers via NAT.

7. 2. Share Local Resources over the Internet by Virtual Server

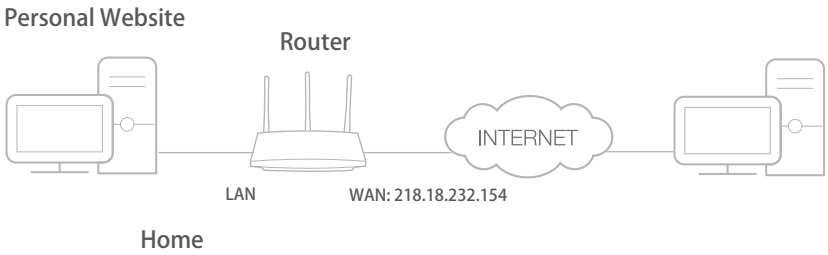
When you build up a server in the local network and want to share it on the internet, Virtual Server can realize the service and provide it to the internet users. At the same time virtual server can keep the local network safe as other services are still invisible from the internet.

Virtual server can be used for setting up public services in your local network, such as HTTP, FTP, DNS, POP3/SMTP and Telnet. Different service uses different service port. Port 80 is used in HTTP service, port 21 in FTP service, port 25 in SMTP service and port 110 in POP3 service. Please verify the service port number before configuration.

I want to:

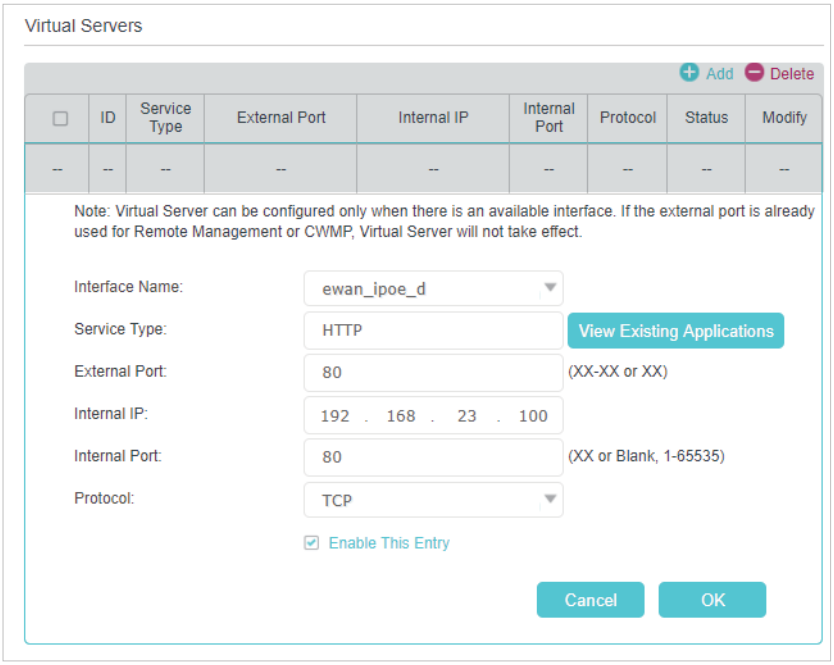
Share my personal website I've built in a local network with my friends through the internet.

For example, the personal website has been built on my home PC (192.168.23.100). I hope that my friends can visit my website. The PC is connected to the router with the WAN IP address 218.18.232.154.



How can I do that?

1. Assign a static IP address to your PC, for example 192.168.23.100.
2. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
3. Go to Settings > NAT Forwarding > Virtual Servers, click Add.



4. Click View Existing Applications, and choose HTTP. The external port, internal port and protocol will be automatically filled in. Enter the PC's IP address 192.168.23.100 in the Internal IP field.

5. Click Save to save the settings.

Tips:

1. It is recommended to keep the default settings of Internal Port and Protocol if you are not clear about which port and protocol to use.
2. If the service you want to use is not in the Service Type, you can enter the corresponding parameters manually. You should verify the port number that the service needs.
3. You can add multiple virtual server rules if you want to provide several services from a router. Please note that the External Port cannot be overlapped.

Done!

Internet users can enter http://WAN IP (in this example: http://218.18.232.154) to visit your personal website.

Tips:

1. For a WAN IP that is assigned dynamically by ISP, it is recommended to apply and register a domain name for the WAN by DDNS, go to Set Up a Dynamic DNS Service Account for more information. Then you can use http://domain name to visit the website.
2. If you have changed the default External Port, you should use http://WAN IP: External Port or http://domain name: External Port to visit the website.

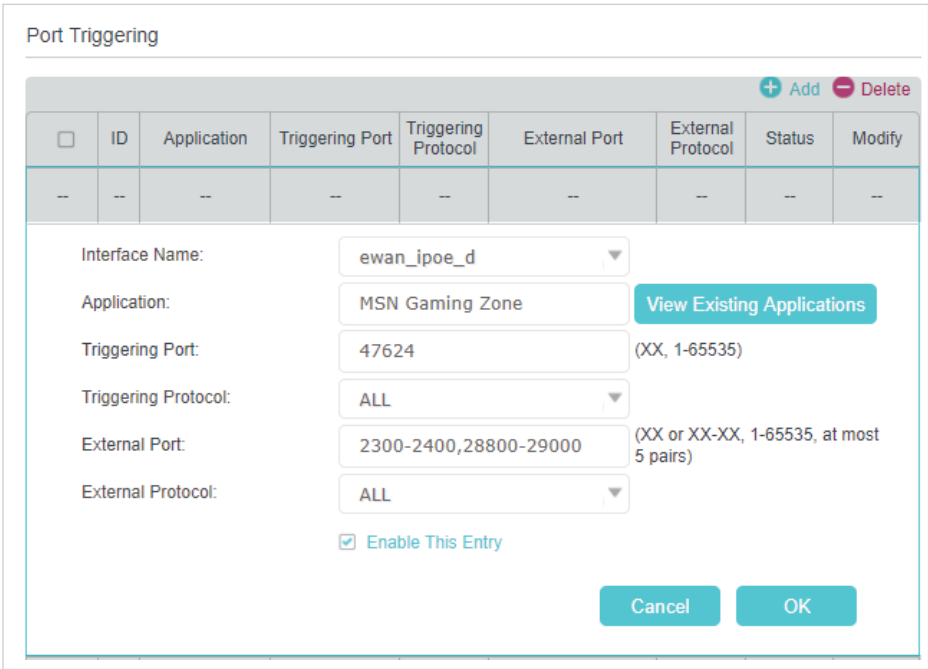
7. 3. Open Ports Dynamically by Port Triggering

Port triggering can specify a triggering port and its corresponding external ports. When a host in the local network initiates a connection to the triggering port, all the external ports will be opened for subsequent connections. The router can record the IP

address of the host. When the data from the internet returns to the external ports, the router can forward them to the corresponding host. Port triggering is mainly applied to online games, VoIPs and video players. Common applications include MSN Gaming Zone, Dialpad, Quick Time 4 players, and so on.

Follow the steps below to configure the port triggering rules:

1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
2. Go to Settings > NAT Forwarding > Port Triggering and click Add.



3. Click View Existing Applications, and select the desired application. The triggering port and protocol, the external port and protocol will be automatically filled in. Here we take MSN Gaming Zone as an example.
4. Click Save to save the settings.

Tips:

1. You can add multiple port triggering rules according to your network needs.
2. If the application you need is not listed in the existing applications list, you can enter the parameters manually. You should verify the external ports the application uses first and enter them into External Port field according to the format suggested.

7. 4. Make Applications Free from Port Restriction by DMZ

When a PC is set to be a DMZ (Demilitarized Zone) host in the local network, it is totally exposed to the internet, which can realize the unlimited bidirectional communication between internal hosts and external hosts. The DMZ host becomes a virtual server with all ports opened. When you are not clear about which ports to open in some special applications, like IP camera and database software, you can set the PC to be a DMZ host.

Note:

DMZ is most applicable when you don't know which ports to open. When it is enabled, the DMZ host is totally exposed to the internet, which may bring some potential safety hazards. If DMZ is not in use, please disable it in time.

I want to:

Make the home PC join the internet online game without port restriction.

For example, due to some port restriction, when playing the online games, you can log in normally but cannot join a team with other players. To solve this problem, set your PC as a DMZ with all ports opened.

How can I do that?

1. Assign a static IP address to your PC, for example 192.168.23.100.
2. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
3. Go to Settings > NAT Forwarding > DMZ and select the Enable checkbox to enable DMZ.

4. Enter the IP address 192.168.23.100 in the DMZ Host IP Address filed.
5. Click Save to save the settings.

Done!

The configuration is completed. You've set your PC to a DMZ host and now you can join a team to game with other players.

Chapter 8

Customize Your Network

This chapter introduces how to view or change the settings of your network using the web management page.

It contains the following sections:

- Check Network Map and Manage Your Satellites
- Set Up Parental Controls
- Specify Wireless Settings
- Change LAN Settings
- Configure IPv6 LAN Settings
- Set Up a Dynamic DNS Service Account

8. 1. Check Network Map and Manage Your Satellites

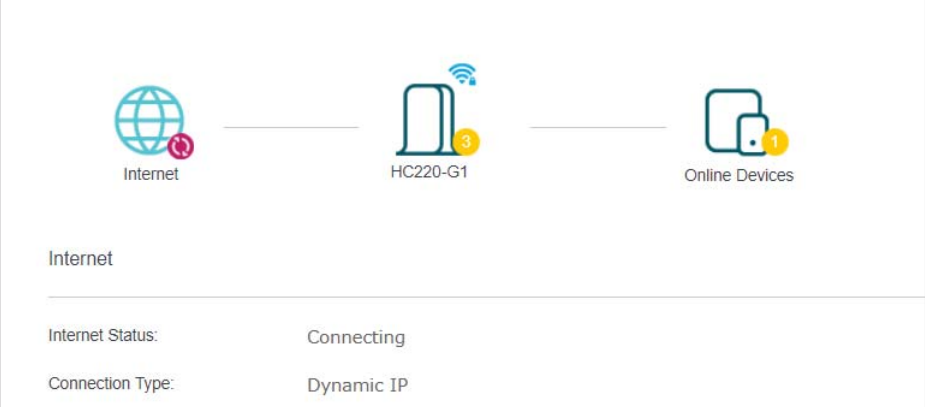
With the network map, you can check whether you have successfully set up your internet connection, manage your Satellites and view the information of connected devices.

8. 1. 1. Check Internet Status

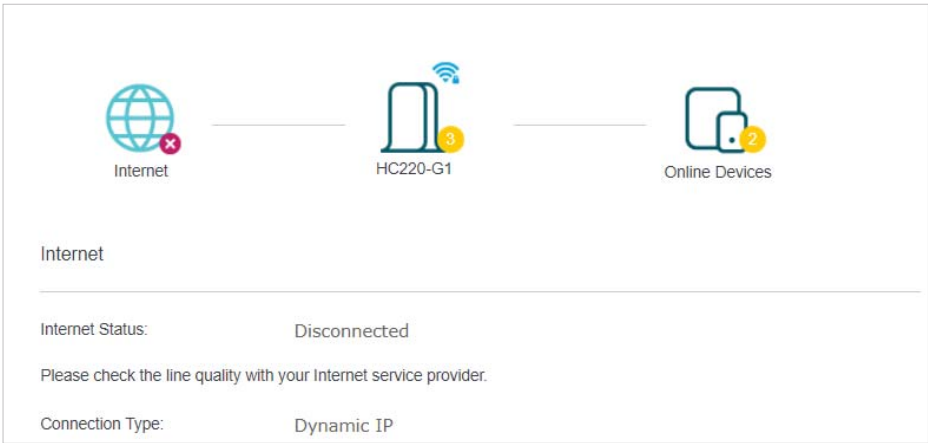
1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Netwrok Map.

- Your Controller is connected to the internet.

- Your Controller is trying to connect to the internet, please wait a few seconds for the connection is complete.



- Your Controller has failed to connect to the internet. Please make sure internet connection type is set correctly, If the problem persists, please refer to FAQ.

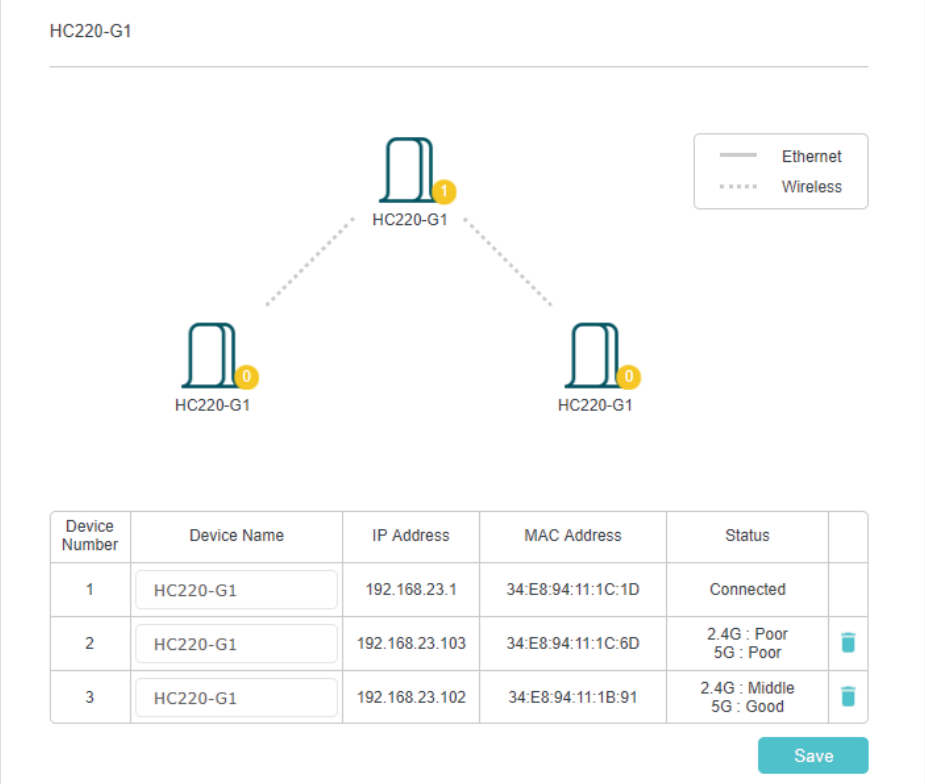


8. 1. 2. Manage Your Satellites

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Netwrok Map and click the HC220-G1 icon.

   You can view the connection status between your Controller and Satellites and the specific information, including device name (editable), assigned IP address, MAC address and status.

   In the device table, the first row shows the information of Controller and the status of Controller shows the Internet connection status. The other rows show the information of Satellites, the status of Satellite shows the connection status between Controller and Satellite.



➢ **To change the name of the Controller or the Satellites.**

1) Locate the Device Name column and enter the new name(s).

2) Click Save to make the settings effective.

For example, you can change the device names according to their location.

➢ **To remove a Satellite from your Wi-Fi System**

1) Click the Delete icon in the row of the Satellite you want to remove

2) Click Yes in the confirmation message box.

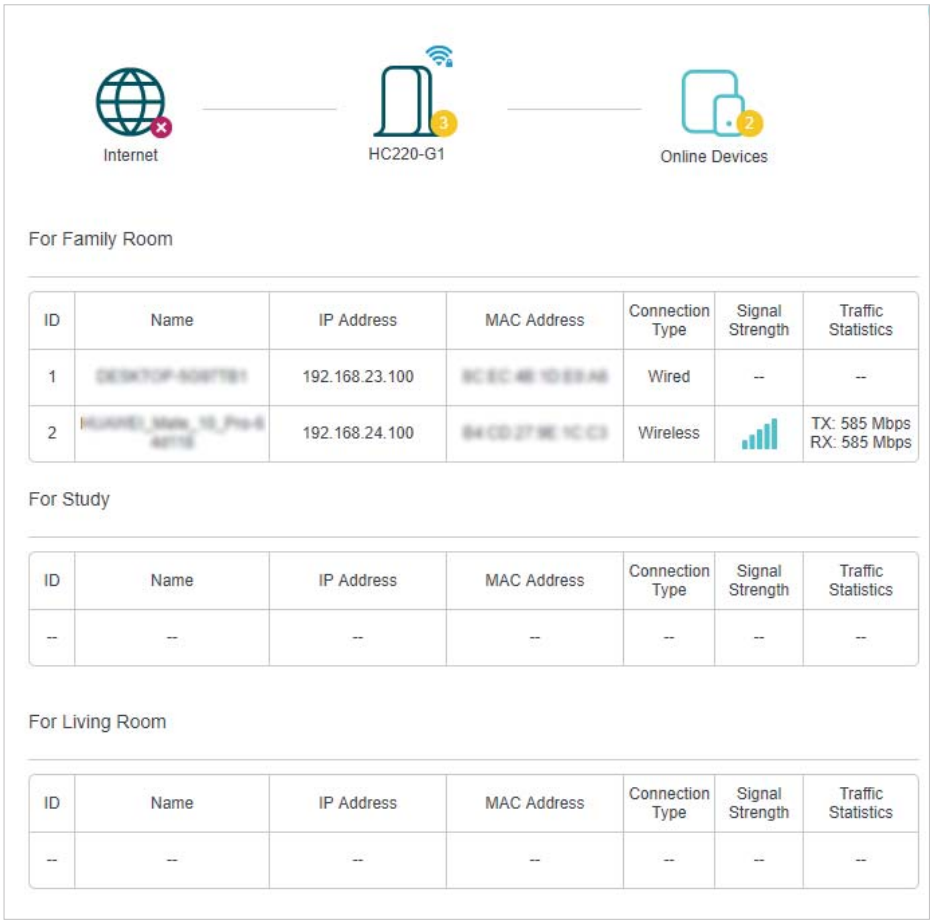
3) Reset the removed Satellite to its factory default settings in preparation for your intended use.

Tips: If you want to add the removed Satellite back to the Wi-Fi system, refer to Add Satellites to Your Network.

8. 1. 3. View Online Devices Information

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Network Map and click the Online Devices icon.

   You can the detailed information of all clients connected to the Controller and the Satellites, including the device name, the connection types as well as the traffic statistics.



8. 2. Set Up Parental Controls

Parental controls allows you to block inappropriate, explicit and malicious websites, and control access to specified websites at specified time.

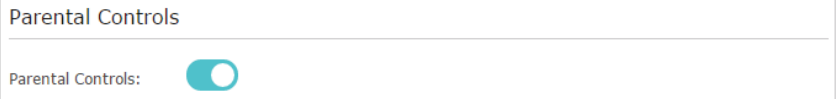
I want to:

Control what types of websites my children or other home network users can visit and the time of day they are allowed to access the internet.

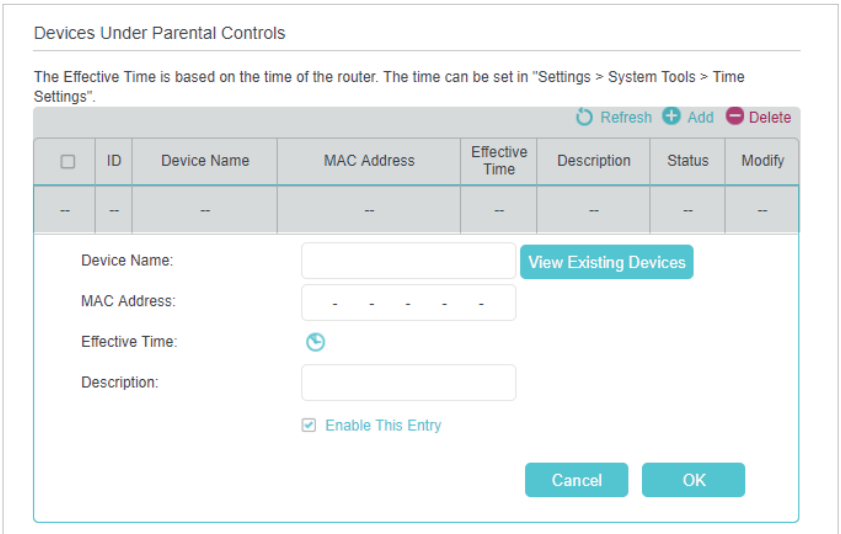
For example, I want to allow my children's devices (e.g. a computer or a tablet) to access only www.tp-link.com and Wikipedia.org from 18:00 (6 PM) to 22:00 (10 PM) on the weekdays and not other time.

How can I do that?

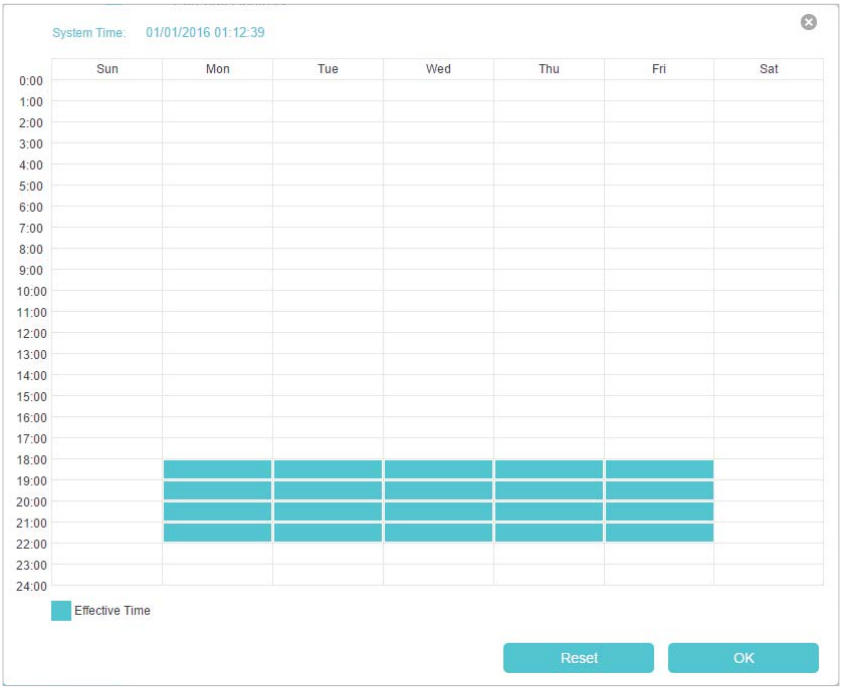
1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > Parental Controls and enable Parental Controls.



3. Click Add, and then click View Existing Devices and select the connected devices. Or, input the Device Name and MAC Address manually.

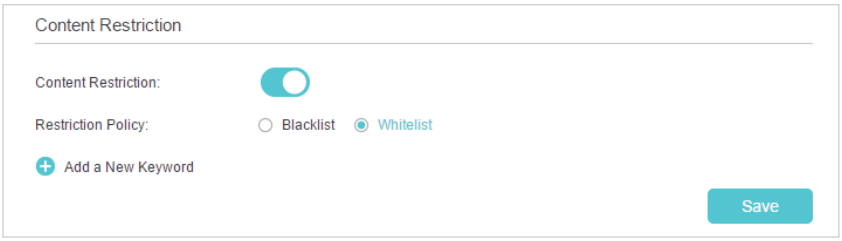


4. Click the icon to set the Effective Time. Drag the cursor over the appropriate cell(s) and click OK.



5. Enter a Description for the entry, select the Enable This Entry checkbox, and then click OK.

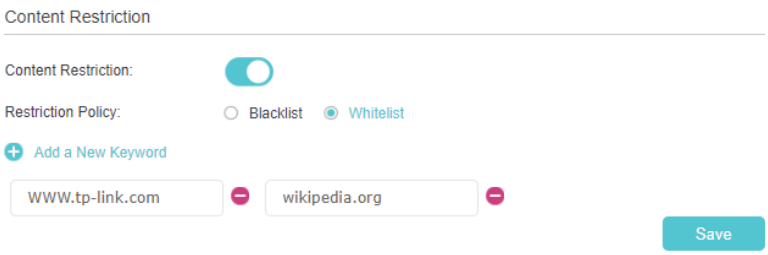
6. Enable Content Restriction, and select Whitelist as the restriction policy.



Tips:

- With Blacklist selected, the controlled devices cannot access any websites containing the specified keywords during the Internet Access Time period.
- With Whitelist selected, the controlled devices can only access websites containing the specified keywords during the Internet Access Time period.

7. Click Add a New Keyword and enter "www.tp-link.com" and "Wikipedia.org" as the keywords and click Save.



8. You can add up to 32 keywords for either Blacklist or Whitelist. Below are some sample entries for your reference.
   - For Whitelist: Enter a web address (e.g. wikipedia.org) to allow access only to its related websites. If you wish to block all Internet browsing access, do not add any keyword to the Whitelist.
   - For Blacklist: Specify a web address (e.g. wikipedia.org), a web address keyword (e.g. wikipedia) or a domain suffix (eg. .edu or .org) to block access only to the websites containing that keyword or suffix.

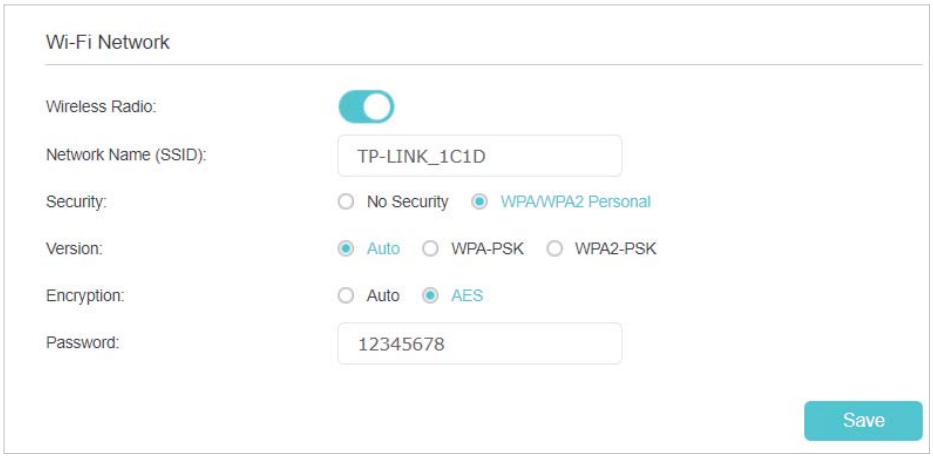
Done! Now you can control your children's internet access as needed.

8. 3. Specify Wireless Settings

8. 3. 1. Change Wireless Settings

The Controller's Wi-Fi network name (SSID) and password, and security option are preset in the factory. The preset SSID and password can be found on the product label. You can customize the wireless settings according to your needs.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Wireless > Wi-Fi Network.



➢ **To enable or disable the wireless function:**

Turn on the Wireless Radio to enable the wireless network. If you don't want to use the wireless function, just turn off this option. And then click Save to make the settings effective.

➢ **To change the wireless network name (SSID) and wireless password:**

Enter a new SSID (32 characters at most) and password and click Save. The SSID and password are case-sensitive.

Note:

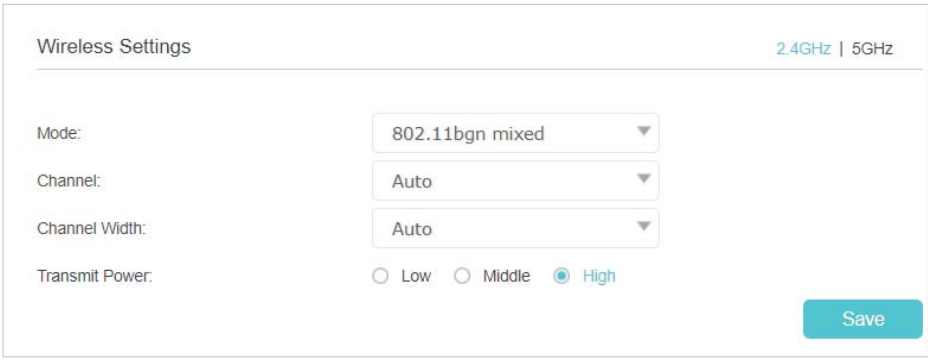
If you use a wireless device to change the wireless settings, you will be disconnected after the new settings are effective. Please write down the new SSID and password for future reference.

➢ **To change the security option:**

1. Go to Settings > Wireless > Wi-Fi Network.
2. Select a security option and security version and encryption type. WPA/WPA2 Personal is recommended, WPA2 uses the newest standard and the security level is the highest. We recommend you don't change the default settings unless necessary.

➢ **To change the mode or channel:**

1. Go to Settings > Wireless > Wireless Settings.
2. Select the wireless network 2.4GHz or 5GHz.
3. Select mode and channel and the related options.



Mode: Select the desired transmission mode.

- 802.11n only: Select only if all of your wireless clients are 802.11n devices.
- 802.11g/n mixed: Select if you are using both 802.11g and 802.11n wireless clients.
- 802.11b/g/n mixed: Select if you are using a mix of 802.11b, 11g, and 11n wireless clients.

Note: When 802.11n only mode is selected, only 802.11n wireless stations can connect to the Controller. It is strongly recommended that you select 802.11b/g/n mixed, and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the Controller.

- 802.11ac only (5GHz): Select if all of your wireless clients are 802.11ac devices
- 802.11ac/n mixed (5GHz): Select if you are using both 802.11ac and 802.11n wireless clients.
- 802.11a/n/ac mixed (5GHz): Select if you are using a mix of 802.11a, 802.11n and 802.11ac wireless clients. It is strongly recommended that you select 11a/n/ac mixed.

Channel: Select the channel you want to use from the drop-down list. This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

Channel Width: Select the channel width from the drop-down list. The default setting is Auto, which can adjust the channel width for your clients automatically.

Transmit Power: Select Low, Middle, or High to specify the data transmit power. The default and recommended setting is High.

8. 3. 2. Use WPS for Wireless Connection

You can use WPS (Wi-Fi Protected Setup) to add a new wireless device to your existing network quickly and easily.

Method 1: Use the WPS button

Use this method if your client device has a WPS button.

1. Press the Sync button of the Controller.
2. Press the WPS button of the client device directly.
3. The Sync LED flashes for about 2 minutes during the WPS process.
4. When the Sync LED is on, the client device has successfully connected to the Controller or the .

Method 2: Use the WPS button on the web management page

Use this method if your client device has a WPS button.

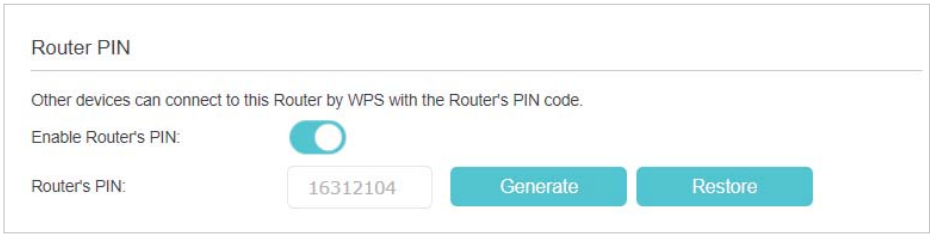
1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Wireless > WPS.

3. Click Push Button.
4. Press the WPS button of the client device directly.
5. The Sync LED of the Controller flashes for about 2 minutes during the WPS process.
6. When the Sync LED is on, the client device has successfully connected to the router.

Method 3: Enter the router's PIN on your client device

Use this method if your client device asks for the router's PIN.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Wireless > WPS.



3. Take a note of the current Router's PIN. You can also click the Generate button to get a new PIN.
4. Enter the PIN on the client device. (The default PIN is also printed on the label of the Controller.)
5. The Sync LED flashes for about 2 minutes during the WPS process.
6. When the Sync LED is on, the client device has successfully connected to the router.

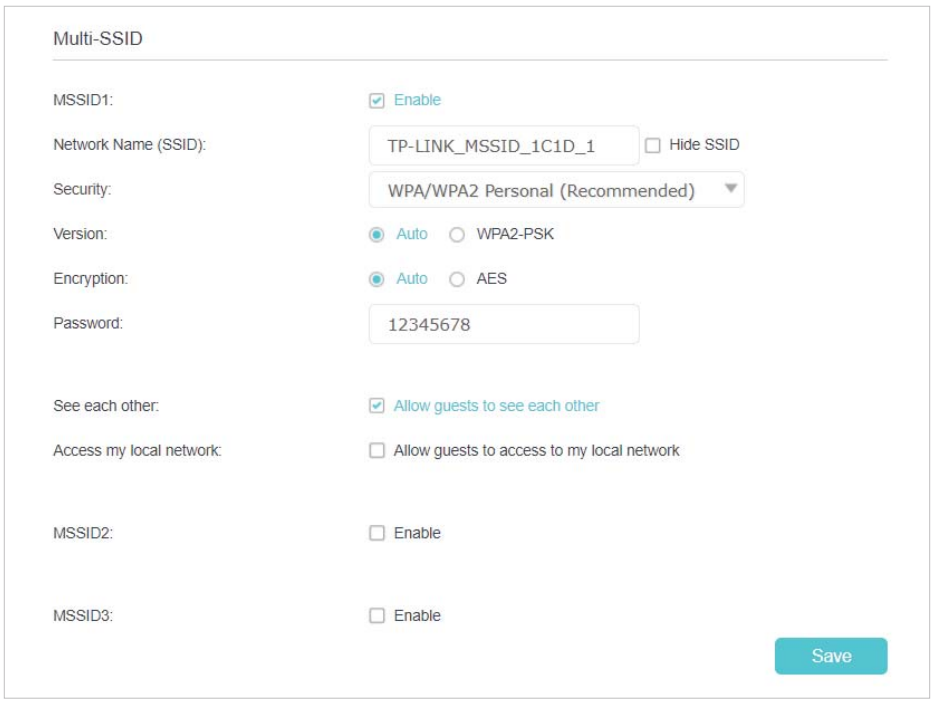
Note:

1. The WPS LED on the router will light on for five minutes if the device has been successfully added to the network.
2. The WPS function cannot be configured if the wireless function of the router is disabled. Please make sure the wireless function is enabled before configuring WPS.

8. 3. 3. Use Multiple SSIDs

Your Controller supports additional up to three wireless networks for client access. You can specify the settings according to your situation.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Wireless > Multi-SSID.
3. Select the SSID (1,2 or 3) Enable check box.



4. Set the SSID and password, select the security options and other options. If you do not want your Controller and Satellites to broadcast the SSID, select the Hide SSID checkbox.
5. Repeat Step 4 to set other two wireless networks if needed, and click Save to make the settings effective.

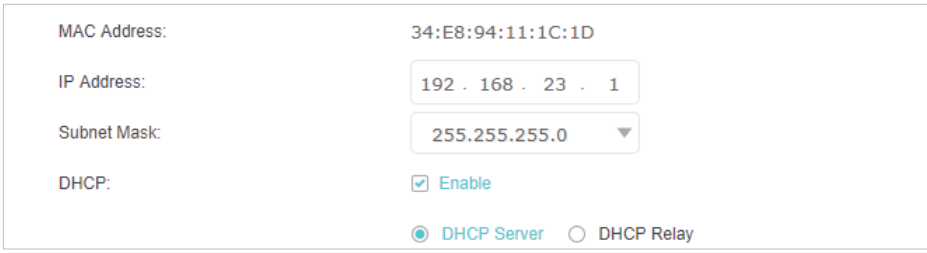
8. 4. Change LAN Settings

8. 4. 1. Change the LAN IP Address

The Controller is preset with a default LAN IP 192.168.23.1, which you can use to log in to its web management page, and three guest LAN IP. The LAN IP address together with the Subnet Mask also defines the subnet that the connected devices are on. If the IP address conflicts with another device in your local network or your network requires a specific IP subnet, you can change it.

Follow the steps below to change your IP address.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > DHCP Server
3. Select IPv4 and click the edit icon in the Modify column.



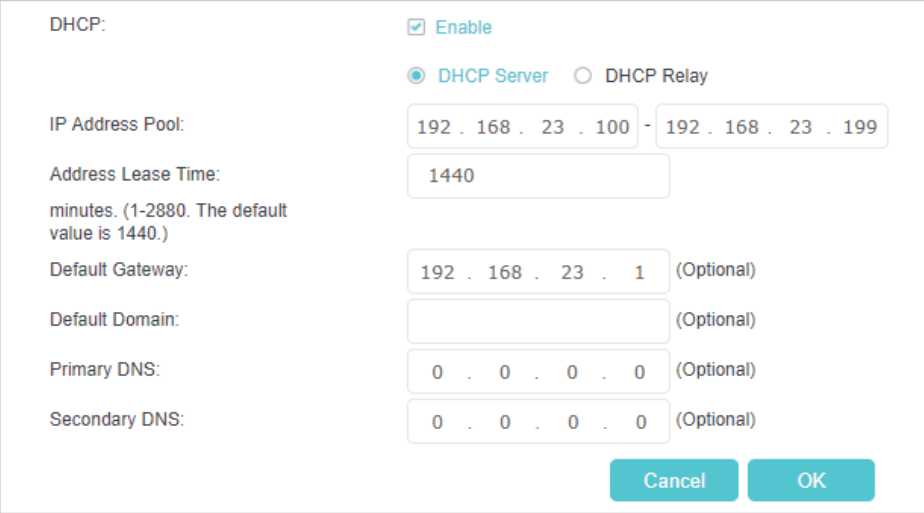
4. Enter a new IP Address appropriate to your needs.
5. Select the Subnet Mask from the drop-down list. The subnet mask together with the IP address identifies the local IP subnet.
6. Keep the rest settings as default.
7. Click OK to make the settings effective.

8. 4. 2. Use the Router as a DHCP Server

You can configure your Controller to act as a DHCP server to assign IP addresses to its clients. To use the DHCP server function of the Controller, you must configure all computers on the LAN to obtain an IP Address automatically.

Follow the steps below to configure DHCP server.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > DHCP Server.
3. Select IPv4 and click the edit icon in the Modify column.



4. Enable DHCP function and select DHCP Server.
5. Specify the IP Address Pool, the start address and end address must be on the same subnet with LAN IP. The router will assign addresses within this specified range to its clients. It is from 192.168.23.100 to 192.168.23.199 by default.

6. Enter a value for the Address Lease Time. The Address Lease Time is the amount of time in which a DHCP client can lease its current dynamic IP address assigned by the Controller. After the dynamic IP address expires, the user will be automatically assigned a new dynamic IP address. The default is 1440 minutes.
7. Keep the rest settings as default and click Save.

Note:

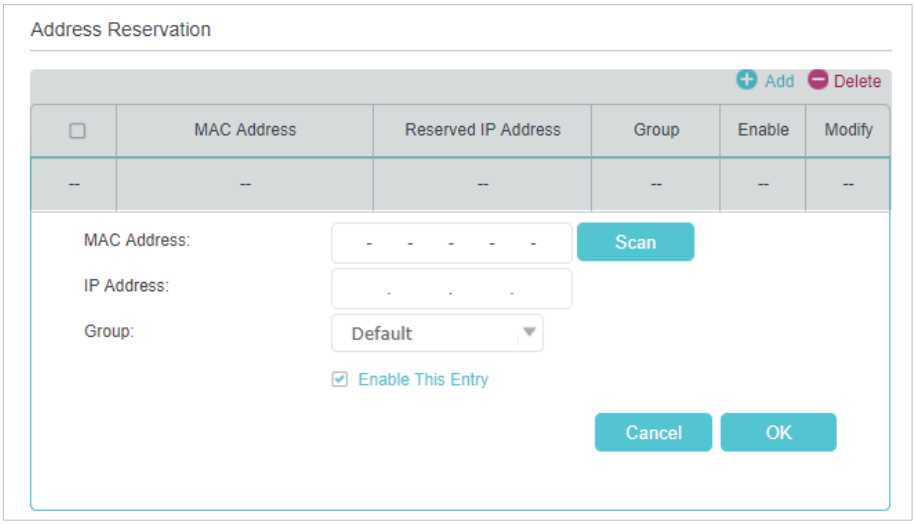
1. The Controller can be configured to work as a DHCP Relay. A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the device's interfaces can be configured as a DHCP relay. If it is enabled, the DHCP requests from local PCs will be forwarded to the DHCP server that runs on WAN side.
2. You can also appoint IP addresses within a specified range to devices of the same type by using Condition Pool feature. For example, you can assign IP addresses within the range (192.168.23.50 to192.168.23.80) to Camera devices, thus facilitating the network management. Enable DHCP feature and configure the parameters according to your situation on the Settings > Advanced Settings > DHCP Server page.

8. 4. 3. Reserve LAN IP Addresses

You can view and add a reserved address for a client. When you specify an IP address for a device on the LAN, that device will always receive the same IP address each time when it accesses the DHCP server. If there are some devices in the LAN that require permanent IP addresses, please configure Address Reservation on the Controller.

Follow the steps below to reserve an IP address for your devices.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > DHCP Server and select IPv4.
3. Scroll down to locate the Address Reservation table and click Add to add an address reservation entry for your device.



4. Enter the MAC Address of the device for which you want to reserve IP address.

5. Specify the IP address which will be reserved by the Controller.
6. Select the Enable This Entry checkbox and click OK to make the settings effective.

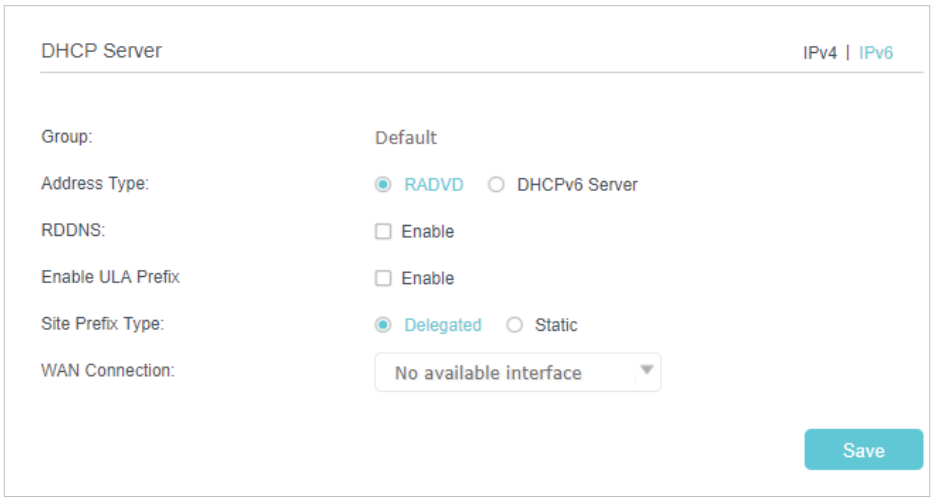
8. 5. Configure IPv6 LAN Settings

Based on the IPv6 protocol, the Controller provides two ways to assign IPv6 LAN addresses:

- Configure the RADVD (Router Advertisement Daemon) address type
- Configure the DHCPv6 Server address type

8. 5. 1. Configure the RADVD Address Type

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > DHCP Server.
3. Select IPv6 to configure IPv6 LAN parameters.



4) Select the RADVD address type to make the router assign IPv6 address prefixes to hosts.

Note:
Do not select the Enable RDNSS and Enable ULA Prefix check boxes unless required by your ISP. Otherwise you may not be able to access the IPv6 network. For more information about RDNSS and ULA Prefix, contact our technical support.

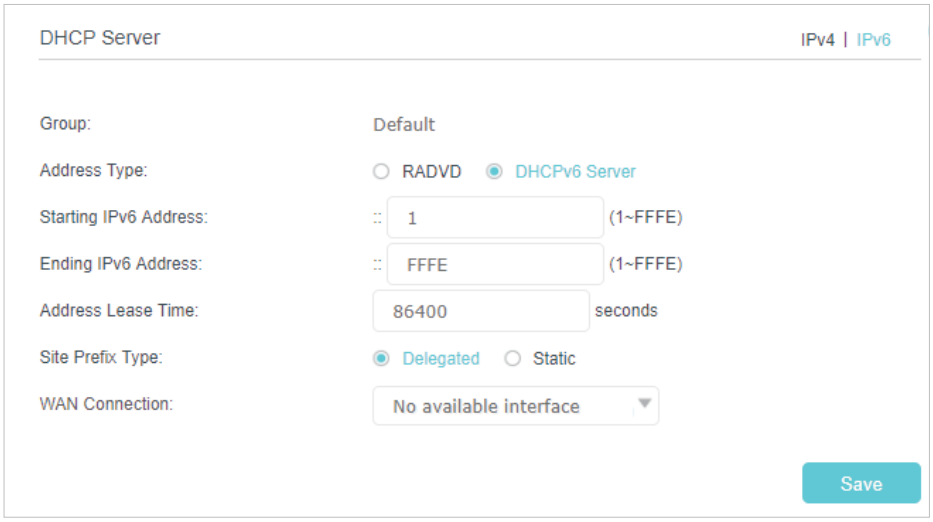
5) Keep Site Prefix Type as the default value Delegated. If your ISP has provided a specific IPv6 site prefix, select Static and enter the prefix.

6) Keep WAN Connection as default.

4. Click Save to make the settings effective.

8. 5. 2. Configure the DHCPv6 Server Address Type

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > DHCP Server.
3. Select IPv6 to configure IPv6 LAN parameters.



1) Select the DHCPv6 Server address type to make the Controller assign IPv6 addresses to hosts.

2) Specify the Start/End IPv6 Address for the IPv6 suffixes. The Controller will generate IPv6 addresses within the specified range.

3) Keep Address Lease Time as default.

4) Keep Site Prefix Type as the default value Delegated. If your ISP has provided a specific IPv6 site prefix, select Static and enter the prefix.

5) Keep WAN Connection as the default setting.

4. Click Save to make the settings effective.

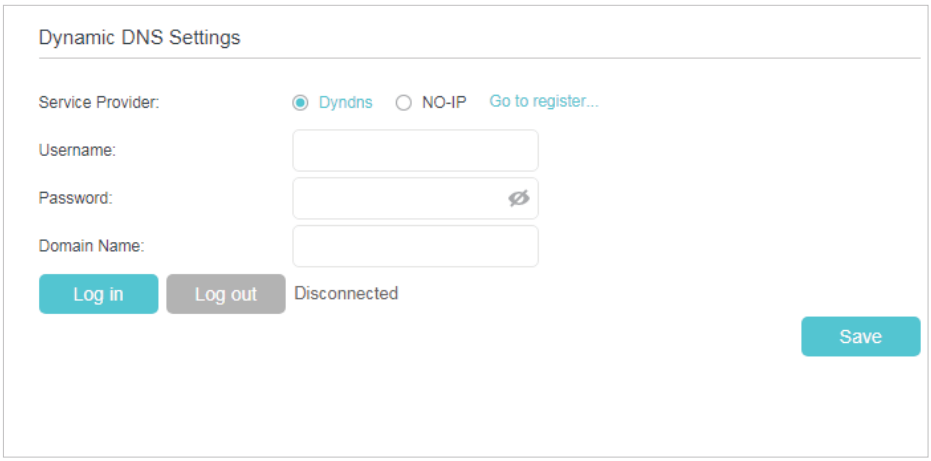
8. 6. Set Up a Dynamic DNS Service Account

Most ISPs (Internet service providers) assign a dynamic IP address to the router and you can use this IP address to access your router remotely. However, the IP address can change any time and you don't know when it changes. In this case, you might need the DDNS (Dynamic Domain Name Server) feature on the router to allow you and your friends to access your router and local servers (FTP, HTTP, etc.) using domain name, in no need of checking and remembering the IP address.

Note: DDNS does not work if the ISP assigns a private WAN IP address (such as 192.168.1.x) to the router.

To set up DDNS, please follow the instructions below:

1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
2. Go to Settings > Advanced Settings > Dynamic DNS.
3. Select the Service Provider (Dyndns or NO-IP).
4. Log in with your DDNS account, select a service provider and click Go to register ... Enter the username, password and domain name of the account (such as lisa.ddns.net).



5. Click Log in and Save.

Tips: If you want to use a new DDNS account, please log out first, and then log in with the new account.

Chapter 9

Manage Your Controller

This chapter introduces how to change the system settings and administrate your home network.

This chapter contains the following sections:

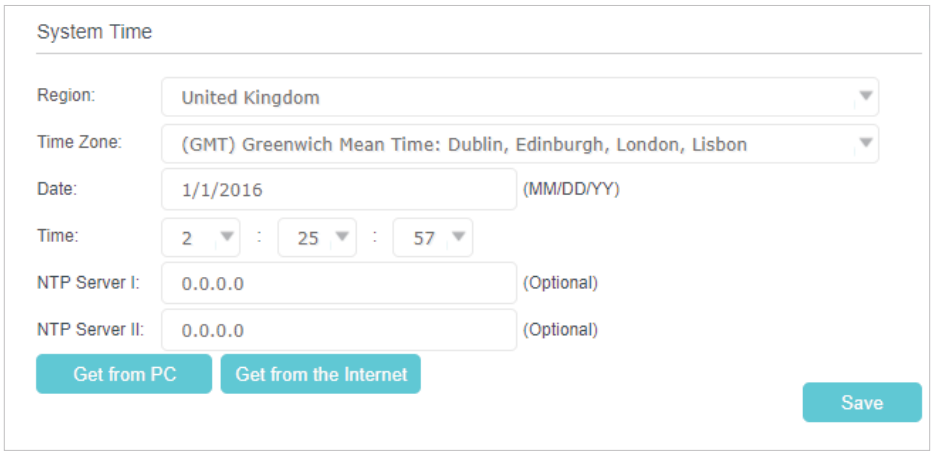
- Set System Time
- Test the Network Connectivity
- Update the Firmware
- Back up and Restore Configuration Settings
- Change the Login Password
- Local Management
- Remote Management
- System Log
- CWMP Settings
- Monitor the Internet Traffic Statistics

9. 1. Set System Time

System time is the time displayed while the router is running. The system time you configure here will be used for other time-based functions like Parental Controls. You can manually set how to get the system time.

Follow the steps below to set your system time.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Time Settings.



3. Configure the system time using the following methods:

   Manually: Select your region, time zone, enter the date and select the local time.

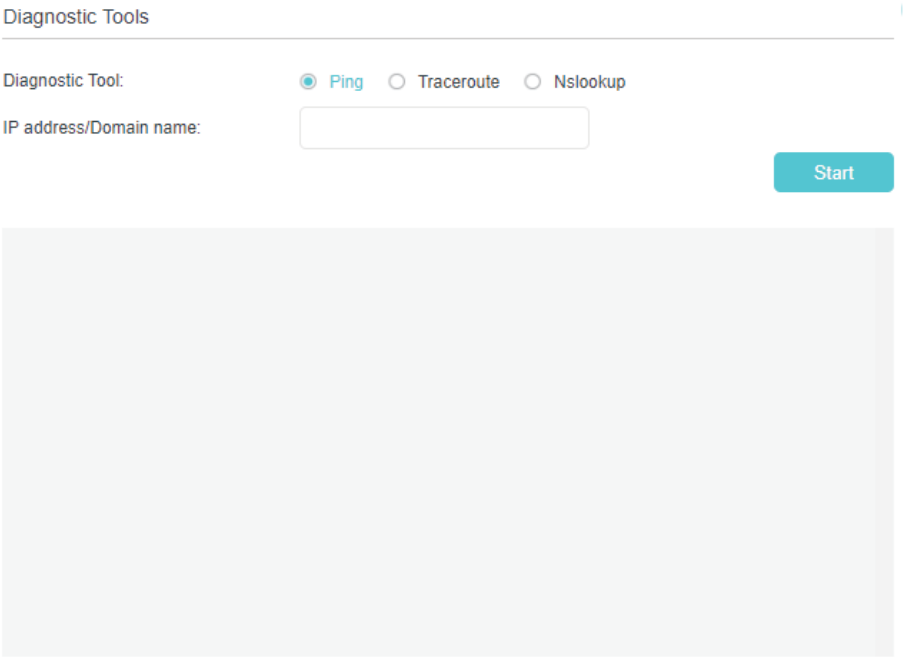
   Get from PC: Click this button if you want to use the current time of your PC.

   Get from the Internet: Click this button if you want to get time from the internet. Make sure your router can access the internet before you select this way to get system time.
4. Click Save.

9. 2. Test the Network Connectivity

Diagnostic tools are used to test the connectivity between the router and the host or other network devices.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Diagnostics.



3. Select Ping, Traceroute or Nslookup as the diagnostic tool to test the connectivity;
   - Ping is used to test the connectivity between the router and the tested host, and measure the round-trip time.
   - Traceroute is used to display the route (path) your router has passed to reach the tested host, and measure transit delays of packets across an Internet Protocol network.
   - Nslookup is used to query the DNS to obtain domain name or IP address mapping or for any other specific DNS record.
4. Enter the IP Address or Domain Name of the host to be tested.
5. Click Start to start the diagnostics and you will find the test results in the gray box.

9. 3. Update the Firmware

TP-Link is dedicated to improving product features, giving you a better network experience.

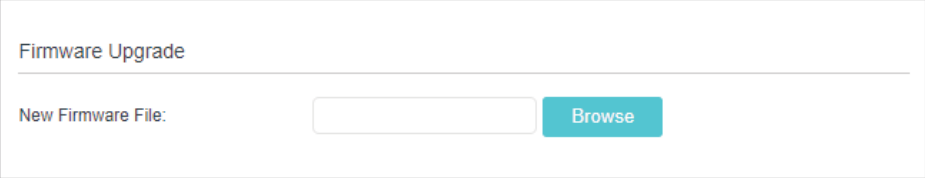
We will inform you through the web management page if there's any update firmware available for your router. The latest firmware can also be downloaded from the Support page of our website www.tp-link.com for free.

Note:

1. Make sure that you have a stable connection between the router and your computer. It is NOT recommended to upgrade the firmware wirelessly.
2. Back up your router configuration before upgrading the firmware.
3. DO NOT turn off the router during the firmware upgrade.

Follow the steps below to update the firmware:

1. Download the latest firmware file for the router from our website www.tp-link.com.
2. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
3. Go to Settings > System Tools > Firmware Upgrade.
4. Focus on the Controller Information section. Make sure the downloaded firmware file matches with the Hardware Version.
5. Locate the Firmware Upgrade section. Click Browse to load the downloaded new firmware file, and click Upgrade.



6. Wait a few minutes for the upgrading and rebooting.

Note: We recommend that your Controller and the Satellites run on the same firmware. You can check the firmware versions of the Satellites in the Satellite Version List table.

Satellite Version List

ID	Device Name	Firmware Version	Hardware Version	Status	Synced
1	For Study	1.0.2 0.9	HC220-G1 v1 00000000	Online	Yes
2	For Living Room	1.0.2 0.9	HC220-G1 v1 00000000	Online	Yes

9. 4. Back up and Restore Configuration Settings

The configuration settings are stored as a configuration file in the router. You can back up the configuration file to your computer for future use and restore the Controller to a previous settings by the backup file when needed. Moreover, you can erase the current settings and reset the router to its default factory settings.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Backup & Restore.

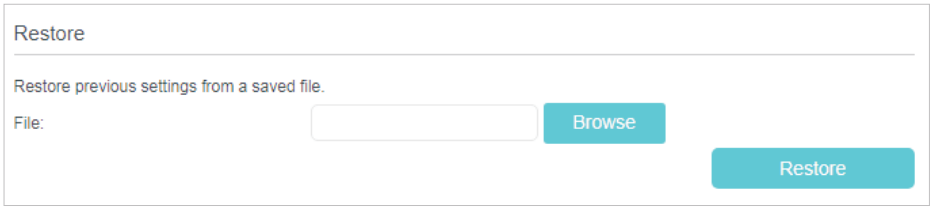
➢ **To back up configuration settings**

Click Backup to save a copy of the current settings to your local computer. A “conf. bin” file will be stored to your computer.

➢ **To restore configuration settings**

1) Click Browse to load the previous backup configuration file, and click Restore.

2) Wait for the restoring and then the router will automatically reboot.



➢ **To reset the router to factory default settings**

1) Click Factory Restore to reset the Controller to its factory default settings.

2) Wait for the reset process to complete, and then the router will automatically reboot.

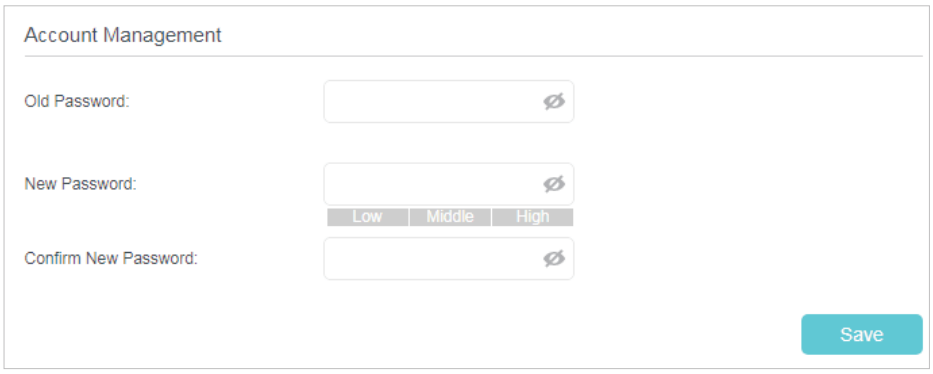
Note:

1. During the resetting process, do not turn off the Controller.
2. We strongly recommend you back up the current configuration settings before resetting.

9. 5. Change the Login Password

A login password is required when you are trying to log in to the Controller's web management page. You will be asked to create a password at the first login. You can change it on the web management page.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Administration and locate the Account Management section.



3. Enter the old password, and enter the new password twice.
4. Click Save to make the settings effective.

9. 6. Local Management

You can control the local devices' authority to manage the Controller via Local Management feature. By default all local connected devices are allowed to manage the

Controller. You can also specify one device to manage the Controller and enable local management over a more secure way, HTTPS.

Follow the steps below to allow only the specific device to manage the Controller via the local management over HTTPS.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Administration and locate the Local Management section.
3. Select the Enable checkbox for Local Management via HTTPS, and keep the Port for HTTP and Port for HTTPS as the default settings. Enter the IP address or MAC address of the local device to manage the Controller.

4. Click Save to make the settings effective.

Now, you can manage the router over both HTTP (http://tplinkwifi.net) and HTTPS (https://tplinkwifi.net).

Note: If you want all local devices can manage the router, just leave the IP/MAC Address field blank.

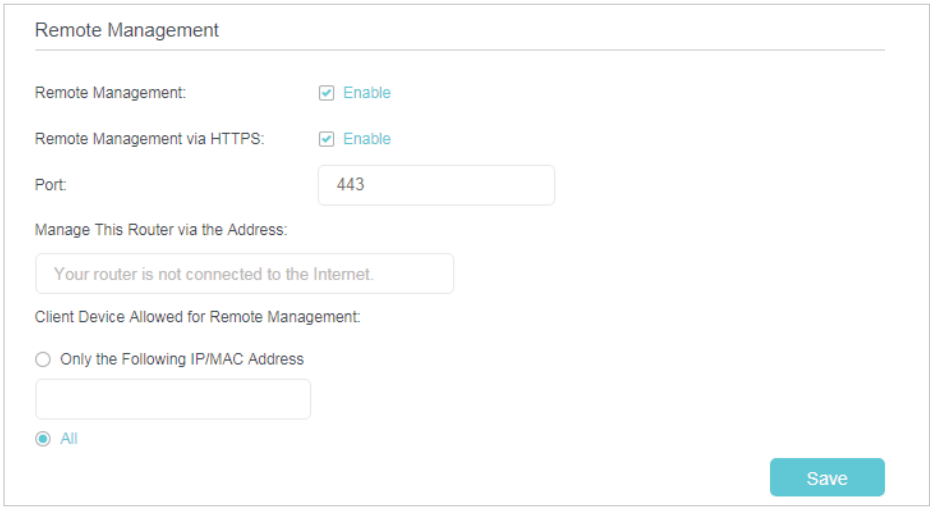
9. 7. Remote Management

By default, the remote devices are not allowed to manage the Controller from the internet. You can enable remote management over HTTP and/or HTTPS if needed. HTTPS is a more secure way to access the Controller.

Note:
If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), you cannot use the remote management feature because private addresses are not routed on the internet.

Follow the steps below to allow remote devices to manage the Controller over HTTPS.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > Administration, and locate the Remote Management section.



3. Enable Remote Management and Remote Management via HTTPS to allow for HTTPS connection. Keep the Port as the default setting.
4. Set the client device allowed for remote management. Select All to allow all remote devices to manage the Controller. If you just want to allow a specific device to manage the Controller, select Only the Following IP/MAC Address and enter the IP/MAC address of the remote device.
5. Click Save.

All devices or the specific device on the internet can log in to your controller using the address displayed on the Manage This Router via the Address field to manage the router.

Tips:

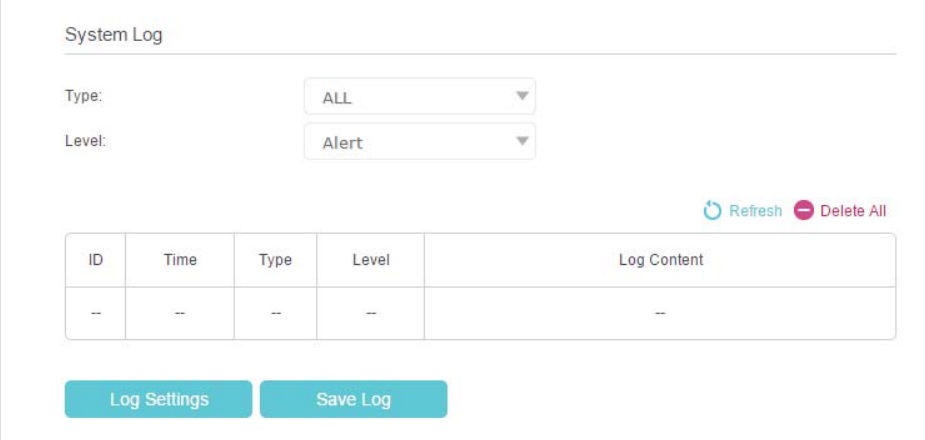
1. If you were warned about the certificate when visiting the web management page remotely, click Trust (or a similar option) to continue. To avoid this warning, you can download and install the certificate on the Controller's web management page at Settings > System Tools > Administration.

2. The router's WAN IP is usually a dynamic IP. Please refer to Set Up a Dynamic DNS Service Account if you want to log in to the router through a domain name.

9. 8. System Log

System log can help you know what happened to your router, facilitating you to locate the malfunctions. For example when your router does not work properly, you may need to save the system log and send it to the technical support for troubleshooting.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Click Advanced > System Tools > System Log page.



➢ **To view the system logs:**

You can view specific system logs by selecting the log type and level.

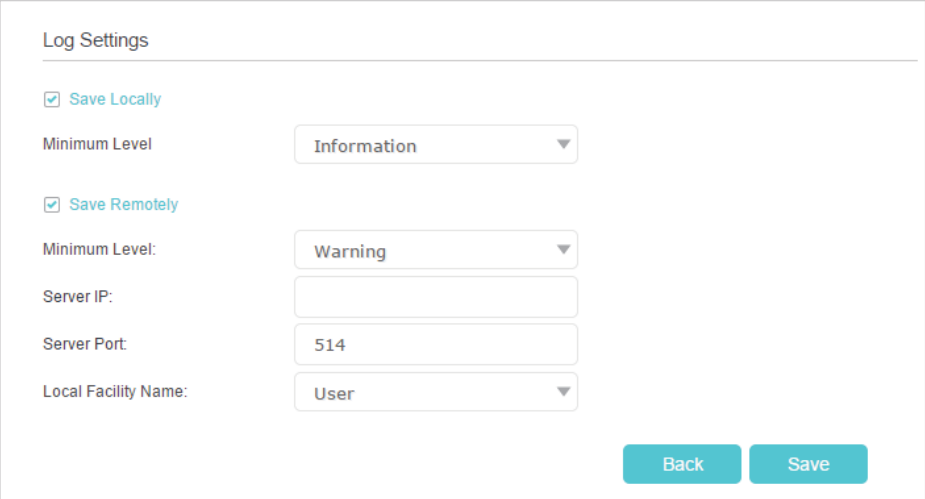
Click Refresh to refresh the log list.

➢ **To save the system logs:**

You can save the system logs to your local computer or a remote server.

Click Save Log to save the logs in a txt file to your computer.

Click Log Settings to set the storage path of logs.

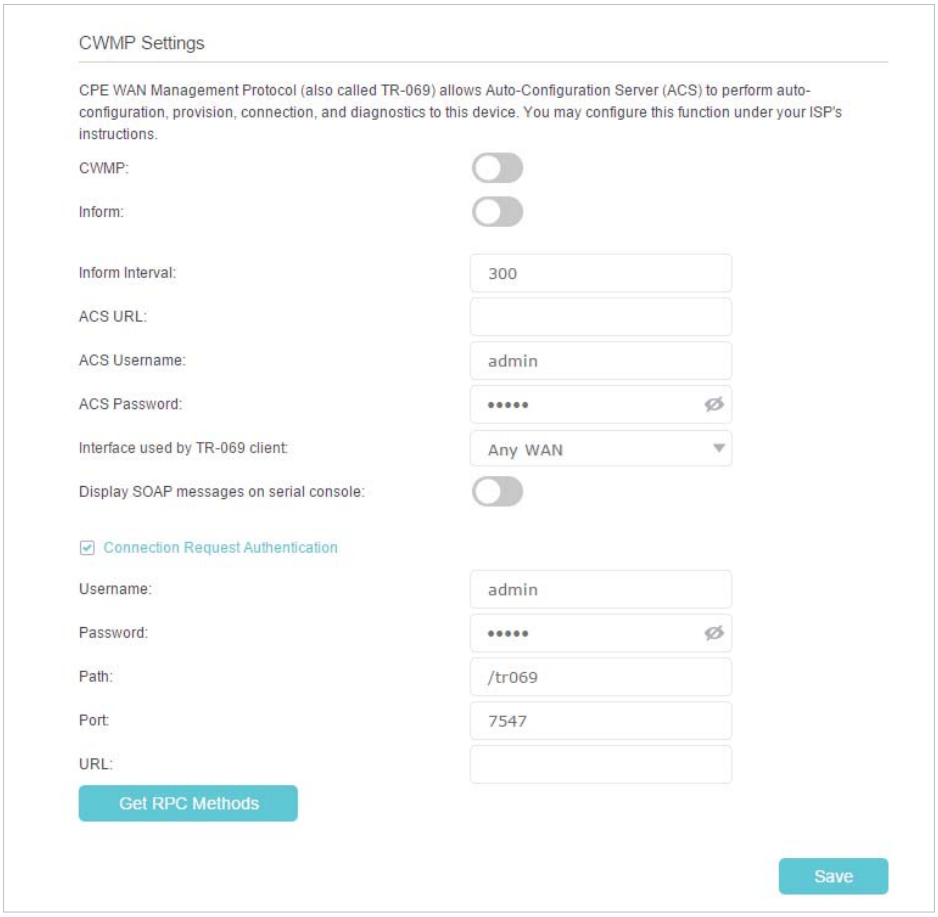


- Save Locally: Select this option to cache the system log to the router's local memory, select the minimum level of system log to be saved from the drop-down list. The logs will be shown in the table in descending order on the System Log page.
- Save Remotely: Select this option to send the system log to a remote server, select the minimum level of system log to be saved from the drop-down list and enter the information of the remote server. If the remote server has a log viewer client or a sniffer tool implemented, you can view and analyze the system log remotely in real-time.

9. 9. CWMP Settings

The Controller supports CWMP (CPE WAN Management Protocol), also called TR-069. This collects information, performs diagnostics and configures the devices automatically via ACS (Auto-Configuration Server).

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Settings > System Tools > CWMP Settings.



- CWMP: Enable or disable the CWMP (CPE WAN Management Protocol) function.
- Inform: Enable or disable the function of sending an inform message to the ACS (Auto Configuration Server) periodically.
- Inform Interval: Set the time interval in seconds when the Inform message will be sent to the ACS.
- ACS URL: Set the web address of the ACS which is provided by your ISP.
- ACS Username/Password: Set the username/password to log in to the ACS server.
- Interface used by TR-069 client: Select which interface to be used by the TR-069 client.
- Display SOAP messages on serial console: Enable or disable this function.

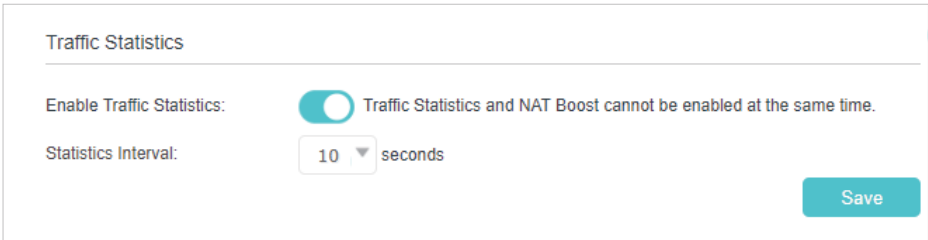
- Connection Request Authentication: Select this checkbox to enable authentication for the connection request.
- Username/Password: Set the username/password for the ACS server to log in to the router.
- Path: Enter the path for the ACS server to log in to the router.
- Port: Enter the port that connects to the ACS server.
- URL: Enter the URL that connects to the ACS server.
- Get RPC Methods: Click this button to get the methods to support CWMP.

Click Save to make the settings effective.

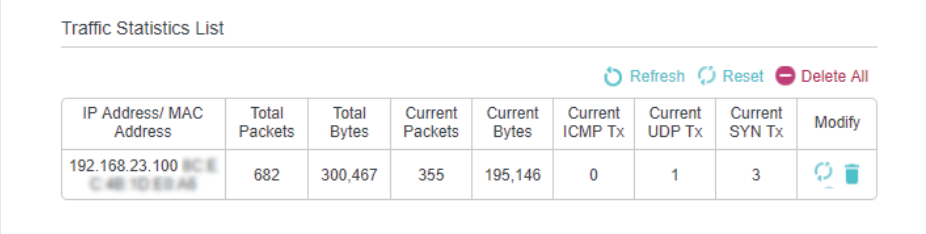
9. 10. Monitor the Internet Traffic Statistics

The Traffic Statistics page displays the traffic usage of all devices in the past 10 minutes/24 hours/7 days.

1. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
2. Go to Advanced > System Tools > Statistics.
3. Turn on Enable Traffic Statistics to enable traffic statistics function, you can view the total number of packets and bytes received and transmitted by the router within the selected Statistics Interval. This function is disabled by default.



4. You can refer to Traffic Statistics List for the detailed information about the traffic usage of all devices.



IP Address/ MAC Address	Total Packets	Total Bytes	Current Packets	Current Bytes	Current ICMP Tx	Current UDP Tx	Current SYN Tx	Modify
192.168.23.100 [illegible]	682	300,467	355	195,146	0	1	3	

FAQ

Q1. What should I do if I forget my wireless password?

The default wireless password is printed on the label of the router.

If the password has been altered:

1. Connect your computer to the Controller using an Ethernet cable.
2. Visit http://tplinkwifi.net, and log in with the password you set for the Controller.
3. Go to Settings > Wireless > Wifi-Network to retrieve or reset your wireless password.

Q2. What should I do if I forget my web management password?

- With the Controller powered on, use a pin or similar subject to press and hold the Reset button for at least 5 seconds to reset it, and then visit http://tplinkwifi.net to create a new login password.

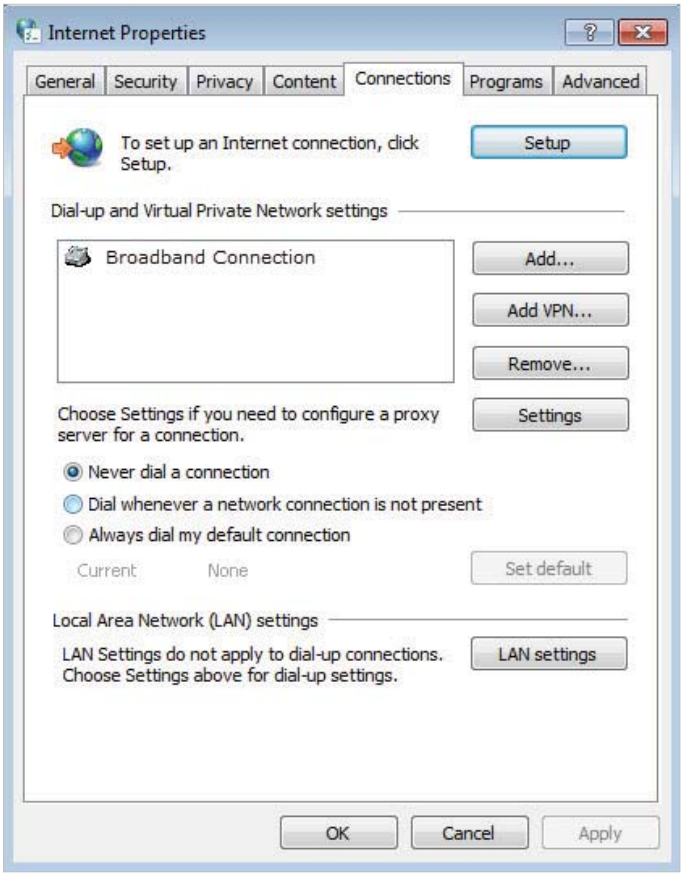
Note:

- You must reconfigure the controller to access the internet once it is reset, please note down your new password for future use.

Q3. What should I do if I cannot log in to the Controller's web management page?

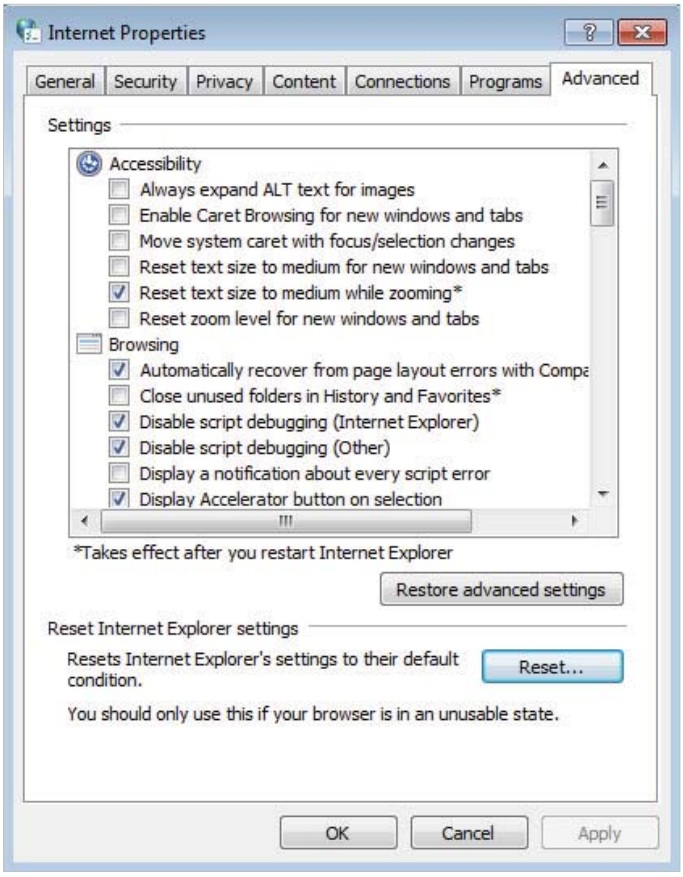
This can happen for a variety of reasons. Please try the methods below to log in again.

- Make sure your computer is connected to the Controller correctly.
- Make sure the IP address of your computer is configured as Obtain an IP address automatically and Obtain DNS server address automatically.
- Make sure http://tplinkwifi.net or http://192.168.23.1 is correctly entered.
- Check your computer's settings:
  1) Go to Start > Control Panel > Network and Internet, and click View network status and tasks.
  2) Click Internet Options on the bottom left.
  3) Click Connections and select Never dial a connection.



4) Click LAN settings and clear the following three options and click OK.

5) Go to Advanced > Restore advanced settings, click OK to save the settings.



- Use another web browser or computer to log in again.
- Reset the router to factory default settings and try again. If login still fails, please contact the technical support.

Note: You must reconfigure the Controller to access the internet once it is reset.

Q4. What should I do if I cannot access the internet?

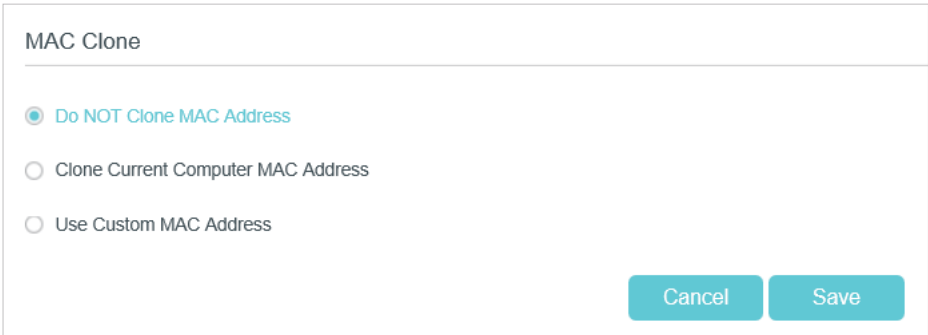
1. Check if the internet is working normally by connecting a computer directly to the modem via an Ethernet cable. If it is not, contact your internet service provider.
2. Check to see if all the connectors are connected well, including the Ethernet cables and power adapter.
3. Check to see if you can log in to the web management page of the Controller. If you cannot, please adjust your computer's settings according to Q3 and then see if you can access the internet. If the problem persists, please go to the next step.
4. Consult your ISP and make sure the connection type, username and password are correct. If there are any mistakes, please run the Quick Setup again to correct the settings.
5. Refer to Q5 to clone the MAC address.

6. If you still cannot access the internet, please restore the Controller to its factory default settings and reconfigure it by following the instructions in Use Quick Setup Wizard.
7. Please contact our Technical Support if the problem persists.

Q5. How to configure MAC address?

You can manually change the MAC address of the Controller. It is helpful when your internet access account provided by your ISP is bound to one specific MAC address, in other words, your ISP just permits only one computer with the authenticated MAC address to access the internet. In this case, you can use MAC Clone to allow more computers to access the internet via the same account.

1. Visit http://tplinkwif.net, and log in with the password you set for the Controller.
2. Go to Settings > Advanced Settings > Internet and click the Add icon, and scroll down to find the MAC Clone section.



- If you are using the computer with the authenticated MAC address to access the modem router, please select Use Current Computer MAC Address.
- If you know the authenticated MAC address, please select Use Custom MAC Address and then enter the address.

3. Click Save to make the settings effective.

Tips:

- Some ISP will register the MAC address of your computer when you access the internet for the first time through their Cable modem, if you add a router into your network to share your internet connection, the ISP will not accept it as the MAC address is changed, so we need to clone your computer's MAC address to the router.
- The MAC addresses of a computer in wired connection and wireless connection are different.

Q6. What should I do if I cannot find my wireless network or I cannot connect the wireless network?

If you fail to find any wireless network, please follow the steps below:

- Make sure the wireless function of your device is enabled if you're using a laptop with built-in wireless adapter. You can refer to the relevant document or contact the laptop manufacturer.

- Make sure the wireless adapter driver is installed successfully and the wireless adapter is enabled.
  - **On Windows 7**

  1) If you see the message No connections are available, it is usually because the wireless function is disabled or blocked somehow.

  2) Click Troubleshoot and windows might be able to fix the problem by itself.

  - **On Windows XP**

  1) If you see the message Windows cannot configure this wireless connection, this is usually because windows configuration utility is disabled or you are running another wireless configuration tool to connect the wireless.

  2) Exit the wireless configuration tool (the TP-Link Utility, for example).

  3) Select and right click on My Computer on desktop, select Manage to open Computer Management window.

  4) Expand Services and Applications > Services, find and locate Wireless Zero Configuration in the Services list on the right side.

  5) Right click Wireless Zero Configuration, and then select Properties.

  6) Change Startup type to Automatic, click on Start button and make sure the Service status is Started. And then click OK.

If you can find other wireless network except your own, please follow the steps below:

- Check the Wireless LED indicator on your Controller or Satellites.
- Make sure your computer/device is still in the range of your Wi-Fi coverage. Move it closer if it is currently too far away.
- Go to Settings > Wireless to check the wireless settings. Double check your wireless network name(s) is not hided.

If you can find your wireless network but failed to connect, please follow the steps below:

- **Authenticating problem/password mismatch:**

  1) Sometimes you will be asked to type in a PIN number when you connect to the wireless network for the first time. This PIN number is different from the Wireless Password/Network Security Key, usually you can only find it on the label of your routers.

2) If you cannot find the PIN or PIN failed, you may choose Connecting using a security key instead, and then type in the Wireless Password/Network Security Key.

3) If it continues to show note of Network Security Key Mismatch, it is suggested to confirm the wireless password of your wireless router.

Note: Wireless Password/Network Security Key is case sensitive.

- **Windows unable to connect to XXXX / Can not join this network / Taking longer than usual to connect to this network:**
  - Check the wireless signal strength of your network. If it is weak (1~3 bars), please move the router closer and try again.
  - Change the wireless Channel of the router to 1, 6 or 11 to reduce interference from other networks.
  - Re-install or update the driver for your wireless adapter of the computer.

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FCC STATEMENT

Product Name: AC1300 Home Wi-Fi System

Model Number: HC220-G1

Component Name	Model
I.T.E POWER SUPPLY	EVSA+24120-2001

Responsible party:

TP-Link USA Corporation, d/b/a TP-Link North America, Inc.

Address: 145 South State College Blvd. Suite 400, Brea, CA 92821

Website: http://www.tp-link.com/us/

Tel: +1 626 333 0234

Fax: +1 909 527 6803

E-mail: sales.usa@tp-link.com

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

"To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

The device is restricted in indoor environment only.

We, **TP-Link USA Corporatio**n, has determined that the equipment shown as above has been shown to comply with the applicable technical standards, FCC part 15. There is no unauthorized change is made in the equipment and the equipment is properly maintained and operated.

Issue Date: 2018.11.05

FCC compliance information statement

Product Name: I.T.E POWER SUPPLY

Model Number: EVSA+24120-2001

Responsible party:

TP-Link USA Corporation, d/b/a TP-Link North America, Inc.

Address: 145 South State College Blvd. Suite 400, Brea, CA 92821

Website: http://www.tp-link.com/us/

Tel: +1 626 333 0234

Fax: +1 909 527 6803

E-mail: sales.usa@tp-link.com

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency

energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

We, **TP-Link USA Corporation**, has determined that the equipment shown as above has been shown to comply with the applicable technical standards, FCC part 15. There is no unauthorized change is made in the equipment and the equipment is properly maintained and operated.

Issue Date: 2018.11.05

CE Mark Warning

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

OPERATING FREQUENCY(the maximum transmitted power)

2400 MHz - 2483.5 MHz (20dBm)

5150 MHz - 5250 MHz (23dBm)

EU declaration of conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/53/EU, 2009/125/EC and 2011/65/EU.

The original EU declaration of conformity may be found at http://www.tp-link.com/en/ce

RF Exposure Information

This device meets the EU requirements (2014/53/EU Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

The device complies with RF specifications when the device used at 20 cm from your body.

Restricted to indoor use.

Canadian Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage;
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement

Caution:

1. The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
2. For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and

The high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

1. Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
2. Le gain maximal d'antenne permis pour les dispositifs avec antenne(s) amovible(s) utilisant la bande 5725-5850 MHz doit se conformer à la limitation P.I.R.E spécifiée pour l'exploitation point à point et non point à point, selon le cas.

En outre, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Industry Canada Statement

CAN ICES-3 (B)/NMB-3(B)

Korea Warning Statements:

당해 무선설비는 운용중 전파혼신 가능성이 있음.

NCC Notice:

注意！

依據 低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性或功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通行；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機需忍受合法通信或工業、科學以及醫療用電波輻射性電機設備之干擾。

BSMI Notice

安全諮詢及注意事項

- 請使用原裝電源供應器或只能按照本產品注明的電源類型使用本產品。
- 清潔本產品之前請先拔掉電源線。請勿使用液體、噴霧清潔劑或濕布進行清潔。
- 注意防潮，請勿將水或其他液體潑灑到本產品上。
- 插槽與開口供通風使用，以確保本產品的操作可靠並防止過熱，請勿堵塞或覆蓋開口。
- 請勿將本產品置放於靠近熱源的地方。除非有正常的通風，否則不可放在密閉位置中。
- 請不要私自打開機殼，不要嘗試自行維修本產品，請由授權的專業人士進行此項工作。

限用物質含有情況標示聲明書

產品元件名稱	限用物質及其化學符號					
	鉛 Pb	鎘 Cd	汞 Hg	六價鉻 CrVI	多溴聯苯 PBB	多溴二苯醚 PBDE
PCB	○	○	○	○	○	○
外殼	○	○	○	○	○	○
電源適配器	–	○	○	○	○	○

備考1. 超出0.1 wt %” 及 “超出0.01 wt %” 系指限用物質之百分比含量超出百分比含量基準值。

備考2. “○” 系指該項限用物質之百分比含量未超出百分比含量基準值。

備考3. “ – “ 系指該項限用物質為排除項目。

Продукт сертифіковано згідно с правилами системи УкрСЕПРО на відповідність вимогам нормативних документів та вимогам, що передбачені чинними законодавчими актами України.

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended
- Do not use the device where wireless devices are not allowed.
- Adapter shall be installed near the equipment and shall be easily accessible.
- Use only power supplies which are provided by manufacturer and in the original packing of this product. If you have any questions, please don't hesitate to contact us.

Please read and follow the above safety information when operating the device. We cannot guarantee that no accidents or damage will occur due to improper use of the device. Please use this product with care and operate at your own risk.

For EU/EFTA, this product can be used in the following countries:

AT	BE	BG	CH	CY	CZ	DE	DK
EE	EL	ES	FI	FR	HR	HU	IE
IS	IT	LI	LT	LU	LV	MT	NL
NO	PL	PT	RO	SE	SI	SK	UK

Explanations of the symbols on the product label

Symbol	Explanation
⎓	DC voltage
	Indoor use only
	RECYCLING This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment. User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.