TP-LINK®

Archer C9 User Guide

AC1900 Wireless Dual Band Gigabit Router

Contents

Abo	ut This Guide	1
Chap	pter 1. Get to Know About Your Router	2
1. 1.	Product Overview	3
1. 2.	Main Features	
1. 3.	Panel Layout	
	1. 3. 1.The Front Panel	
	1. 3. 2.The Back Panel	7
	1. 3. 3.The Side Panel	
Chap	pter 2. Connect the Hardware	9
2. 1.	Position Your Router	10
2. 2.	Connect Your Router	10
Chap	pter 3. Log into Your Router	13
Chap	pter 4. Set Up Internet Connection	15
4. 1.	Quick Setup	16
4. 2.	Manually Configure Your Internet Connection Settings	18
4. 4.	Setting Up an IPv6 Internet Connection	23
Chap	pter 5. Guest Network	27
5. 1.	Create Guest Network	28
5. 2.	Customize Guest Network Options	28
Chap	pter 6. USB Application	30
6. 1.	Local Storage Sharing	31
	6. 1. 1.Access the USB disk	31
	6. 1. 2.Customize Your Settings	33
6. 2.	Remote Access via FTP Server	36
	6. 2. 1.Access the USB disk	36
	6. 2. 2.Customize Your Settings	39
6. 3.	Media Sharing	40

	6. 3. 1.Access the USB disk	41
	6. 3. 2.Customize Your Settings	42
6. 4.	Printer Sharing	43
Chap	oter 7. Parental Controls	47
Chap	oter 8. QoS (Quality of Service)	51
8. 1. 8. 2.	Prioritize Internet Traffic with QoS	
Chap	oter 9. Network Security	57
9. 1.	Protect the Network from Cyber Attacks	58
9. 2.	Access Control	
9.3.	IP & MAC Binding	
Chap	oter 10.NAT Forwarding	63
10. 1.	Share Local Resources in the Internet by Virtual Server	64
10. 2.	Open Ports Dynamically by Port Triggering	65
10.3.	Make Applications Free from Port Restriction by DMZ	66
10. 4.	Make Xbox Online Games Run Smoothly by UPnP	67
Chap	oter 11. Customize Your Network Settings	69
11.1.	Change the LAN Settings	70
11. 2.	Configure to Support IPTV Service	70
11.3.	Specify DHCP Server Settings	72
11.4.	Set Up a Dynamic DNS Service Account	73
11.5.	Create Static Routes	74
11.6.	Specify Wireless Settings	77
11. 7.	Use WPS for Wireless Connection	78
	11. 7. 1.Set the Router's PIN	79
	11. 7. 2.Use the WPS Wizard for Wi-Fi Connections	79
Chap	oter 12. Manage the Router	80
12. 1.	Set Up System Time	81
12. 2.	Test the Network Connectivity	82
12.3.	Upgrade the Firmware	84
	12. 3. 1.Online Upgrade	84

	12. 3. 2.Local Upgrade	85
	12. 3. 3.Restore Interrupted Upgrade after Power Failure	85
12.4.	Backup and Restore Configuration Settings	86
12. 5.	Change the Administrator Account	87
12. 6.	Password Recovery	87
12. 7.	Local Management	88
12. 8.	Remote Management	89
12. 9.	System Log	91
12. 10.	Monitor the Internet Traffic Statistics	93
FAQ		95
Speci	fications	107

About This Guide

This guide provides details of each function and shows how to configure the router appropriate to your needs. In addition to this guide, a Quick Installation Guide is also released with each TP-LINK router, you are suggested to configure your router for quick Internet setup by following the published Quick Installation Guide before you get started with a further configuration.

Conventions

In this guide the following conventions are used:

Convention	Description
router	Stands for AC1900 Wireless Dual Band Gigabit Router without any explanation.
parameters	Parameters provided in the screenshots are just references for setting up the device, which may differ from the actual situation. You can set the parameters according to your demand.
screenshots	The demonstrated screenshots may look a little different from the actual web page of your device due to the various firmware versions. Please just configure your product based on the actual web page.
Blue Italic	Hyperlinks are in blue italic. You can click to redirect to a website or a specific section.
Blue	Contents to be emphasized and texts on the web page are in blue, including the menus, items, buttons, etc.
>	The menu structures to show the path to load the corresponding page. For example, Advanced > Wireless > MAC Filtering means the MAC Filtering function page is under the Wireless menu that is located in the Advanced 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. ⑪ Click to delete the corresponding entry. ☑ Click to enable or disable the corresponding entry.

Chapter 1

Get to Know About Your Router

This chapter introduces what the router can do and shows its main features and appearance.

This chapter contains the following sections:

- Product Overview
- Main Features
- Panel Layout

1. 1. Product Overview

What This Product Does

The Archer C9 AC1900 Wireless Dual Band Gigabit Router integrates 4-port Switch, Firewall, NAT-router and Wireless AP. Powered by 3x3 MIMO technology, the AC1900 Wireless Dual Band Gigabit Router delivers exceptional range and speed, which can fully meet the need of Small Office/Home Office (SOHO) networks and the users demanding higher networking performance. Your wireless connections are radio band selectable to avoid interference in your area, and the four built-in Gigabit ports supply high-speed connection to your wired devices.

Incredible Speed

The Archer C9 AC1900 Wireless Dual Band Gigabit Router provides up to 1900Mbps wireless connection with other wireless clients. The incredible speed makes it ideal for handling multiple data streams at the same time, which ensures your network stable and smooth. The performance of this 802.11ac wireless router will give you the unexpected networking experience at speed much faster than 802.11n. It is also compatible with all IEEE 802.11n, IEEE 802.11a, IEEE 802.11b and IEEE 802.11g products.

Multiple Security Protections

With multiple protection measures, including SSID broadcast control and wireless LAN 64/128/152-bit WEP encryption, Wi-Fi Protected Access (WPA2- PSK, WPA- PSK), as well as advanced Firewall protections, the Archer C9 AC1900 Wireless Dual Band Gigabit Router provides complete data privacy.

Flexible Access Control

The Archer C9 AC1900 Wireless Dual Band Gigabit Router provides flexible access control, so that parents or network administrators can establish restricted access policies for children or staff. It also supports Virtual Server and DMZ host for Port Triggering, and then the network administrators can manage and monitor the network in real time with the remote management function.

Guest Network

Guest Network Access provides secure Wi-Fi access for guests sharing your home or office network in a controlled manner without exposing private Wi-Fi access codes or other personal data.

IPv6 Supported

Archer C9 supports IPv6, which is the foundation of the next generation of the Internet and enables a range of new services and improved user experience.

Tether APP

TP-LINK Tether provides the easiest way to access and manage your router with your devices.

Simple Installation

Since the router is compatible with virtually all the major operating systems, it is very easy to manage. Quick Setup Wizard is supported and detailed instructions are provided step by step in this user guide. Before installing the router, please look through this guide to know all the router's functions.

1. 2. Main Features

- Complies with IEEE 802.11ac
- One 10/100/1000M Auto-Negotiation RJ45 Internet port, four 10/100/1000M Auto-Negotiation RJ45 Ethernet ports, supporting Auto MDI/MDIX
- Provides a USB 3.0 port and a USB 2.0 port supporting file sharing and print server
- Provides WPA/WPA2, WPA-PSK/WPA2-PSK authentication, TKIP/AES encryption security
- Shares data and Internet access for users, supporting Dynamic IP/Static IP/PPPoE/ PPTP/ L2TP Internet access
- Supports simultaneous 2.4GHz and 5GHz connections for 1900Mbps of total available bandwidth
- Supports Virtual Server, Special Application and DMZ host
- Supports UPnP, Dynamic DNS, Static Routing
- Provides Automatic-connection and Scheduled Connection on certain time to the Internet
- Built-in NAT and DHCP server supporting static IP address distributing
- Supports Parental Control and Access Control
- Connects Internet on demand and disconnects from the Internet when idle for PPPoE
- Provides WEP encryption security and wireless LAN ACL (Access Control List)
- Supports Flow Statistics
- Supports IPv6
- Supports firmware upgrade (Online and Local) and Web management

1.3. Panel Layout

1.3.1. The Front Panel



The router's LEDs (view from left to right) are located on the front. You can check the router's working status by following the LED Explanation table.

LED Explanation

Name	Status	Indication
	On	System initialization completes.
ပ် (Power)	Flashing	System initialization or firmware upgrade is in process. Do not disconnect or power off the router.
	Off	Power is off.
	On	The 2.4GHz wireless band is working properly.
ລີ (2.4GHz Wireless)	Off	The 2.4GHz wireless band is disabled.

LED Explanation

Name	Status	Indication
	On	The 5GHz wireless band is working properly.
ன் (5GHz Wireless)	Off	The 5GHz wireless band is disabled.
	On	At least one Ethernet port is connected.
(Ethernet)	Off	No Ethernet port is connected.
	Blue On	Internet is available.
⊘ (Internet)	Orange On	The router's Internet port is connected, but the Internet is not available.
	Off	The router's Internet port is not connected.
(A	On/Off	Turns On when a WPS synchronization is established and automatically turns Off about 5 minutes later.
₩ (WPS)	Flashing	A wireless device is trying to connect to the network via WPS. This process may take up to 2 minutes.
	On	The USB device is identified and ready to use.
Ψ _(USB)	Flashing	The USB device is being identified.
1 (036)	Off	No USB device is plugged into the USB port or the USB device is not identified or USB device has been safely ejected.

1.3.2. The Back Panel



The following parts (view from left to right) are located on the rear panel.

Item	Description
USB 2.0 Port	For connecting to a 2.0 USB storage device or a 2.0 USB printer.
Reset/WPS Button	Press this button for less than 5 seconds to enable the WPS function. Press this button for more than 5 seconds to reset the router to its factory default settings.
Internet Port	For connecting to the DSL/Cable modem, or Ethernet.
Ethernet Ports (1/2/3/4)	For connecting the router to your PC or other Ethernet network devices.
Power On/Off Button	Press this button to power on or off the router.
Power Port	For connecting the router to power socket via the provided power adapter.
Antennas	Used for wireless operation and data transmit. Upright them for the best Wi-Fi performance.

1.3.3. The Side Panel



The following parts (View from top to bottom) are located on the side panel.

ltem	Description
WiFi Button	Press the WiFi button for about 2 seconds to turn on or off the wireless function of your router.
USB 3.0 Port	For connecting to a 3.0 USB storage device or a 3.0 USB printer. It is also compatible with USB 2.0 devices.

Chapter 2

Connect the Hardware

This chapter contains the following sections:

- Position Your Router
- Connect Your Router

Chapter 2 Connect the Hardware

2. 1. Position Your Router

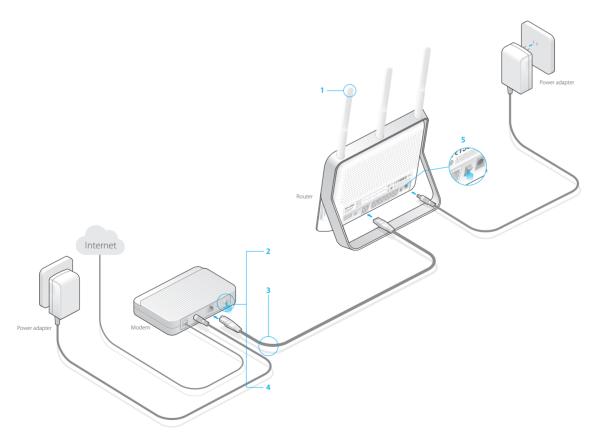
• The Product should not be located where it will be exposed to moisture or excessive heat.

- Place the router in a location where it can be connected to the various 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 router can be placed on a shelf or desktop.
- Keep away from the strong electromagnetic radiation and the device of electromagnetic sensitive.

2. 2. Connect Your Router

Follow the steps below to connect your router.

If your Internet connection is through an Ethernet cable from the wall instead of through a DSL / Cable / Satellite modem, connect the Ethernet cable directly to the router's Internet port, then follow steps 5 and 6 to complete the hardware connection.



1. Install the antennas.

Chapter 2 Connect the Hardware

- 2. Turn off the modem, and remove the backup battery if it has one.
- 3. Connect the modem to the Internet port on your router with an Ethernet cable.
- 4. Turn on the modem, and then wait about 2 minutes for it to restart.
- 5. Turn on the router.
- 6. Verify that the following LEDs are on and solid before continuing with the configuration.

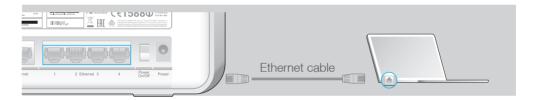


Note:

If the 2.4G LED and 5G LED are off, please press the WiFi button on the side panel for 2 seconds and check the LEDs again a few seconds later.

- 7. Connect your computer to the router.
- Method 1: Wired

Turn off the Wi-Fi on your computer and connect the devices as shown below.



Method 2: Wirelessly

Use the default wireless network name (SSID) and password printed on the product label on the rear panel of the router to connect wirelessly.

Method 3: Use the WPS button

Wireless devices that support WPS, including Android phones, tablets, most USB network cards, can be connected to your router through this method. (WPS is not supported by iOS devices.)

Note:

The WPS function cannot be configured if the wireless function of the router 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) Tab the WPS icon on the device's screen.
- 2) Immediately press the WPS button on your router.

Chapter 2 Connect the Hardware



close to



Chapter 3

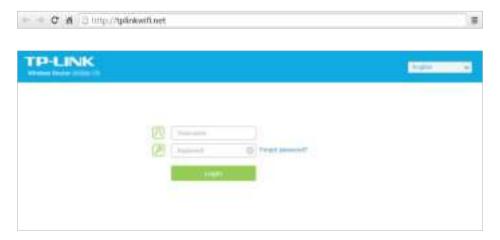
Log into Your Router

Chapter 3 Log into Your Router

With a Web-based utility, it is easy to configure and manage the rouer. The Web-based utility can be used on any Windows, Macintosh or UNIX OS with a Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari.

Follow the steps below to log into your router.

- 1. Set up the TCP/IP Protocol in Obtain an IP address automatically mode on your computer.
- 2. Visit http://tplinkwifi.net, and log in with the username and password you set for the router. The default one is admin for both username and password.



Note:

If the login window does not appear, please refer to FAQ.

Chapter 4

Set Up Internet Connection

This chapter introduces how to connect your router to the Internet. The router is equipped with a web-based Quick Setup wizard. It has many 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 provided IPv6 service.

This chapter contains the following sections:

- Quick Setup
- Manually Configure Your Internet Connection Settings
- Setting Up an IPv6 Internet Connection

4. 1. Quick Setup

The Quick Setup Wizard will guide you through the process to set up your router to access the Internet.

∅ Tips:

If you need the IPv6 Internet connection, please refer to the section of Setting Up an IPv6 Internet Connection.

Follow the steps below to set up your router to access the Internet.

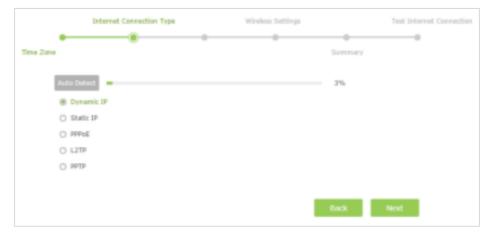
- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Quick Setup on the top of the page.
- 3. Select your Time Zone from the drop-down list and click Next.



4. Click Auto Detect and the router will detect your connection type automatically.

Note:

You can also choose the connection type manually. If you use DSL line and you are only provided an account name and a password by your ISP, choose PPPoE. If you use cable TV or fiber cable, choose Dynamic IP. If you are provided more information such as IP address, Subnet Mask and Default Gateway, choose Static IP. Contact your ISP if you are not sure about the Internet connection information.



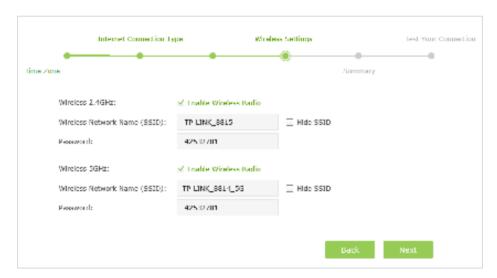
5. In this case, the router automatically detects Dynamic IP as the connection type. Click Next.



6. Follow the instructions on the page to decide whether to clone MAC Address. Click Next.



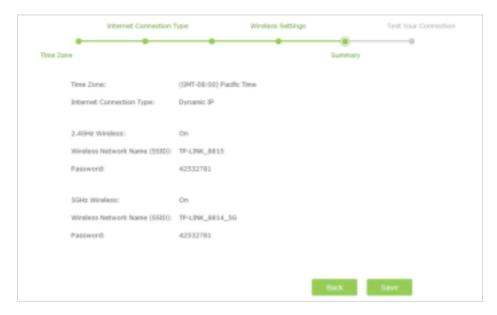
7. Configure your wireless settings and click Next.



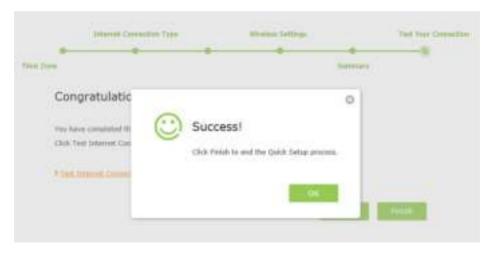
Note:

- 1. You may customize your 2.4GHz/5GHz SSID and password. Once done, the wireless connection will disconnect automatically, and you must then use the new SSID/password to regain access to the Internet.
- 2. Tick Hide SSID if you want to hide this wireless network name.

8. Confirm the information and click Save.



9. Click Test Internet Connection. If you successfully connect to the Internet, the screen will display as follows.



10. Now your computer and WiFi device can connect to the Internet! © Tips:

You can also find and select the wireless network name on your WiFi device to join the WiFi network.

4. 2. Manually Configure Your Internet Connection Settings

In this part, you can check your current Internet connection settings. You can also modify the settings according to the service information provided by your ISP.

Follow the steps below to check or modify your Internet connection settings.

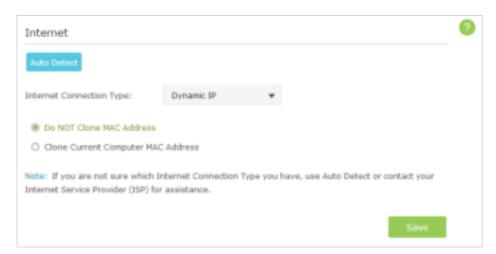
- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Basic > Internet on the left to enter the setting page.
- 3. Select your Internet connection type from the drop-down list.



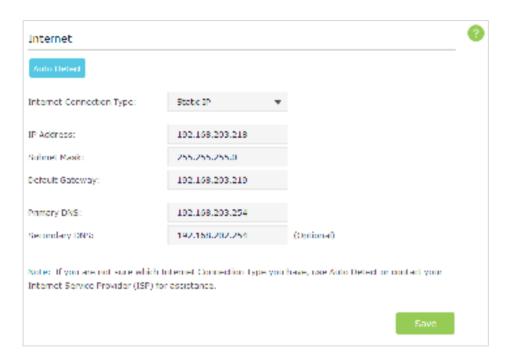
Note:

If you are unsure what your connection type is, click Auto Detect. Since different connection types need different cables and connection information, you can also refer to the demonstrations in Step 4 to judge your connection type.

- 4. Follow the instructions on the page to continue the configuration. Parameters on the figures are just used for demonstration.
 - 1) If you choose Dynamic IP, you need to select whether to clone the MAC address. Dynamic IP users are usually equipped with cable TV or fiber cable.



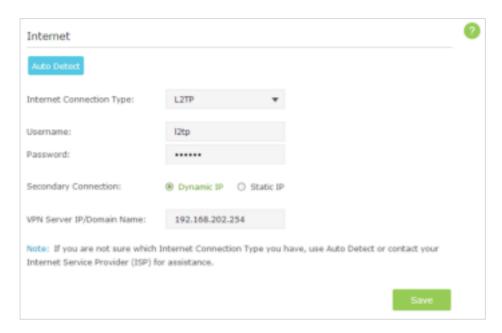
2) If you choose Static IP, enter the information provided by your ISP in the corresponding fields.



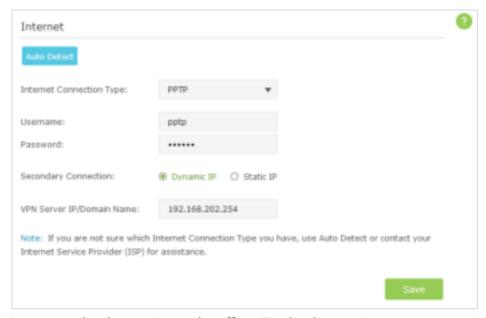
3) If you choose PPPoE, enter the username and password provided by your ISP. PPPoE users usually have DSL cable.



4) If you choose L2TP, enter the username and password and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection.



5) If you choose PPTP, enter the username, password and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection.



5. Click Save to make the settings take effect. To check your Internet connection, click Network Map on the left of the page.

Note:

It may take 1-2 minutes to make the settings valid.

6. After the connection succeed, the screen will display as follows. Here we take PPPoE as an example.



Tips:

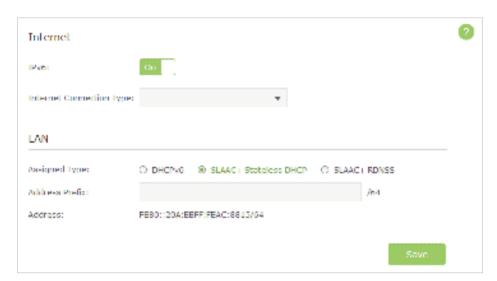
- 1. If your Internet connection type is BigPond Cable, please go to Advanced > Network > Internet.
- 2. If you use Dynamic IP and PPPoE and you are provided any other parameters that are not required on the page, please go to Advanced > Network > Internet to complete the configuration.
- 3. If you still cannot connect to the Internet, refer to FAQ for further instructions.

4.3.

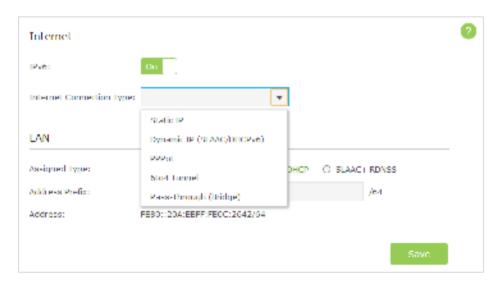
4. 4. Setting Up an IPv6 Internet Connection

Your ISP provides information about one of the following Internet connection types: PPPoE, Dynamic IP(SLAAC/DHCPv6), Static IP, 6to4 tunnel, Pass-Through (Bridge).

- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Advanced > IPv6 to enter the configuration page.



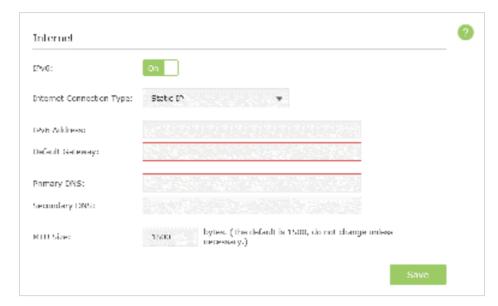
3. Select the Internet connection type provided by ISP.



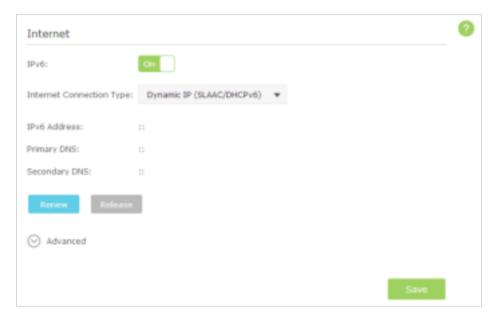
∅ Tips:

If you do not know what your Internet connection type is, contact your ISP or judge according to already known information provided by your ISP.

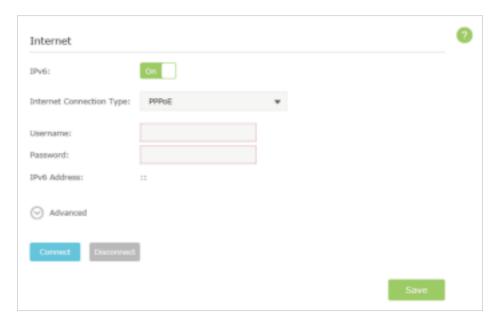
- 4. Fill in information as required by different connection type. (Red blanks must be filled.)
 - 1) Static IP: Fill in blanks and click Save.



2) Dynamic IP(SLAAC/DHCPv6): Click Advanced to have more configuration if ISP requires. Click Save to save the settings and then click Renew to finish the configuration.



3) PPPoE: Fill in the Username and Password. Click Advanced to have more configuration if ISP requires. Click Save to save the settings and then click Connect to finish the configuration.



4) 6to4 Tunnel: An IPv4 Internet connection type is a prerequisite for this connection type. (4. 2) Click Advanced to have more configuration if ISP requires. Click Save to save the settings and then click Connect to finish the configuration.



5) Pass-Through (Bridge): Click Save and skip to step 6.



5. Configure LAN ports. Windows users are recommended to choose from the first two types. Fill in Address Prefix provided by ISP, and click Save to save the settings.

@Tips:

Find Help on the management interface to know more about items.



6. Click Status to check whether you succeed or not. The following figure is an example of a successful PPPoE configuration.



∅ Tips:

Visit FAQ if there is no Internet connection.

Chapter 5

Guest Network

This function allows you to provide Wi-Fi access for guests without disclosing your main network. When you have guests in your house, apartment, or workplace, you can create a guest network for them. In addition, you can limit the network authorities for guests to ensure network security and privacy.

This chapter contains the following sections:

- Create Guest Network
- Customize Guest Network Options

Chapter 5 Guest Network

5. 1. Create Guest Network

1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.

- 2. Go to Advanced > Guest Network.
- 3. Create a 2.4GHz or 5GHz guest network according to your needs.
 - 1) Select Enable Guest Network 2.4GHz or 5GHz.
 - 2) Set an easy-to-identify SSID. Don't select Hide SSID unless you want your guests and other people to manually input this SSID for Wi-Fi access.
 - 3) Set Security to WPA/WPA2 Personal, keep the default Version and Encryption values, and set an easy-to-remember Password.



4. Click Save. Now your guests can access your guest network using the SSID and password you set!

∅ Tips:

To view guest network information, go to Advanced > Status and find the Guest Network section.

5. 2. Customize Guest Network Options

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Guest Network.
- 3. Customize guest network options according to your needs.

Chapter 5 Guest Network



• Allow guests to see each other

Select this checkbox to allow the clients in your guest network to access each other.

Allow guests to access my local network

Select this checkbox to allow the clients in your guest network to access your local network, not just Internet access.

4. Click Save. Now users in your guest network can enjoy only the network authorities you assigned!

Ø Tips:

To view guest network information, go to Advanced > Status and find the Guest Network section.

Chapter 6

USB Application

This chapter describes how to share and access USB devices connected to the router among different clients.

The router only supports USB external flash drives, hard drives and USB printers, and does not support USB 3G/4G modems.

This chapter contains the following sections:

- Local Storage Sharing
- Remote Access via FTP Server
- Media Sharing
- Printer Sharing

Chapter 6 USB Application

6. 1. Local Storage Sharing

Share your USB storage devices with different users on the network.

6. 1. 1. Access the USB disk

1. Connect Your USB Disk

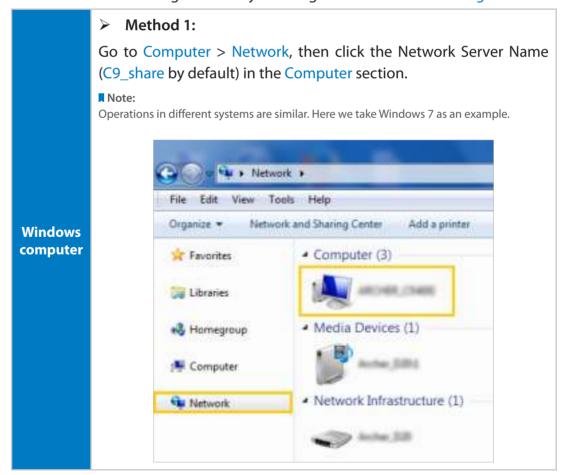
Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

∅ Tips:

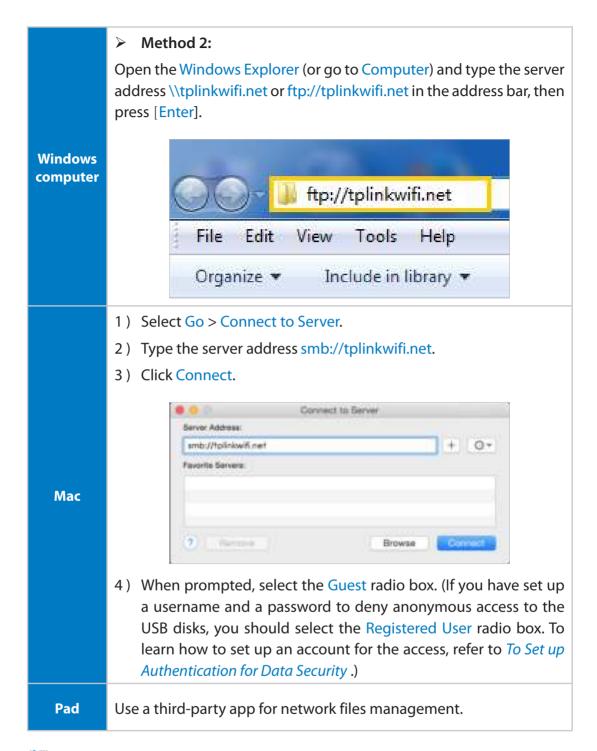
- If you use USB hub, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32, NTFS, exFAT or HFS.
- Before you physically disconnect a USB device from the router, safely remove it to avoid data damage: Go to Advanced > USB Settings > Device Settings and click which is to avoid data damage.

2. Access Your USB Disk

By default, all the network clients can access all folders on your USB disk. Refer to the following table for access instructions. You can also customize your sharing content and set a sharing account by referring to *Customize Your Settings*.



Chapter 6 USB Application



∅ Tips:

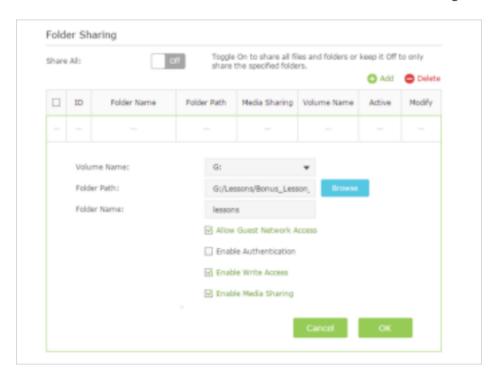
You can also access all folders by using your Network/Media Server Name. Refer to *To Customize the Address of the USB Disk* to learn more.

6. 1. 2. Customize Your Settings

> To Only Share Specific Content

By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

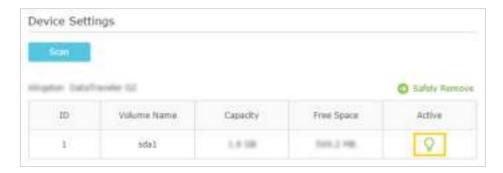
- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Basic > USB Settings > Sharing Access. Focus on the Folder Sharing section.
- 3. Click the button to disable Share All, then click Add to add a new sharing folder.



- 4. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
- 5. Decide the way you share the folder:
 - Allow Guest Network Access: If you select this check box, guest network can access to the this folder.
 - Enable Authentication: Select to enable authentication for this folder sharing, and you will be required to use a username and password to access the USB disk. Refer to To Set up Authentication for Data Security to learn more.
 - Enable Write Access: If you select this check box, network clients can modify this folder.
 - Enable Media Sharing: Select to enable media sharing for this folder, and you can view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices. Click Media Sharing to learn more.

O Tips:

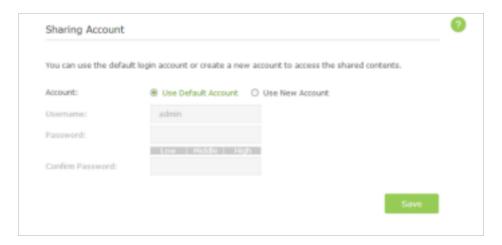
The router can share 32 volumes at most. You can click \bigcirc on the page to detach the corresponding volume you do not need to share.



> To Set up Authentication for Data Security

If you enable Authentication, network clients will be required to enter the username and password you set when accessing the USB disk.

- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Advanced > USB Settings > Sharing Access. Focus on the Sharing Account section.

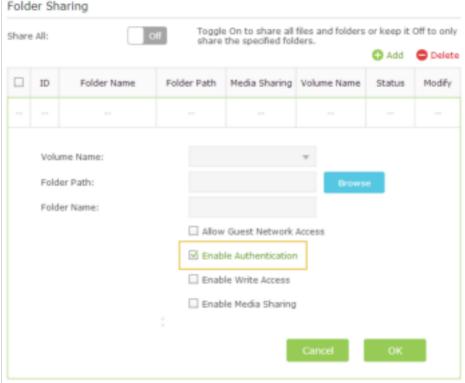


- 3. Choose Use Default Account (admin) or Use New Account and click Save.
- 4. Enable Authentication to apply the account you just set.
 - If you leave Share All enabled, click the button to enable Authentication for all folders.



If Share All is disabled, enable Authentication for specific folders.

Folder Sharing



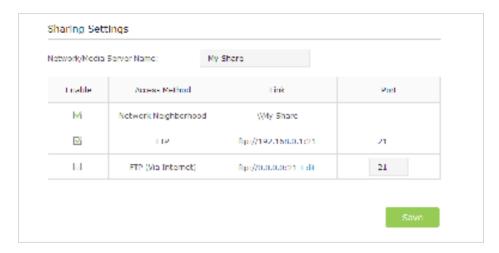
Note:

Due to Windows credential mechanism, you might be unable to access the USB disk after changing Authentication settings. Please log out from Windows and try to access again. For more details, please refer to FAQ.

To Customize the Address of the USB Disk

You can customize the server name and use the name to access your USB disk.

- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Advanced > USB Settings > Sharing Access. Focus on the Sharing Settings section
- 3. Make sure Network Neighborhood is ticked, and enter a Network/Media Server Name as you like, such as My-Share, then click Save.



3. Now you can access the USB disk by visiting \\My-Share (for Windows) or smb:// My-Share (for Mac).

6. 2. Remote Access via FTP Server

You can access your USB disk outside the local area network.

For example:

- Share photos and other large files with your friends without logging in to (and paying for) a photo-sharing site or email system.
- Get a safe backup for the materials for a presentation.
- Remove the files on your camera's memory card from time to time during the journey.
 Note:

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

6. 2. 1. Access the USB disk

1. Connect Your USB Disk

Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

∅ Tips:

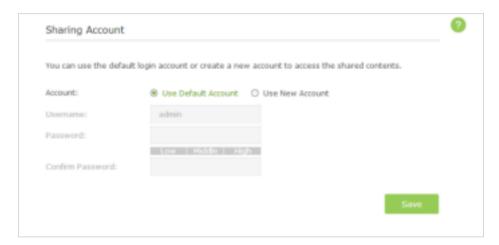
- If you use USB hub, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32, NTFS, exFAT or HFS.
- Before you physically disconnect a USB device from the router, safely remove it to avoid data damage: Select Advanced > USB Settings > Device Settings and click from the router, safely remove it to avoid data damage:

2. Enable Authentication for Data Security

It is strongly recommended that you set and apply a sharing account for data security.

1) Visit http://tplinkwifi.net, then log in with the username and password you set for the router.

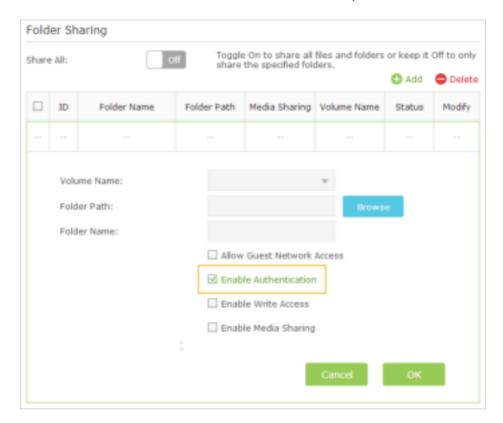
- 2) Go to Advanced > USB Settings > Sharing Access.
- 3) Choose to Use default Account (admin) or Use New Account and click Save.



- 4) Enable Authentication to apply the sharing account.
- If you leave Share All enabled, click the button to enable Authentication for all folders.



• If Share All is disabled, enable Authentication for specific folders.



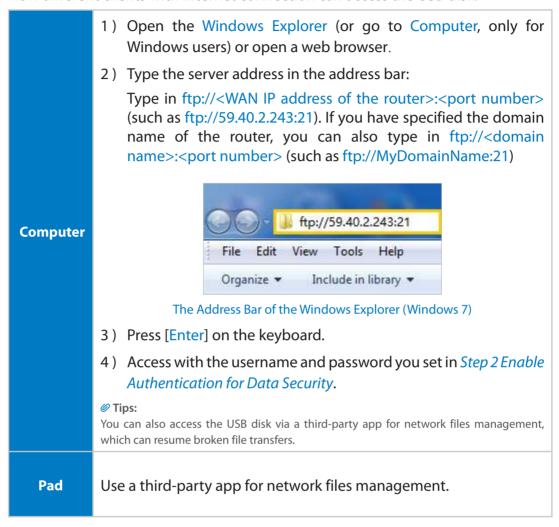
3. Enable the FTP (via Internet)

Select the check box to enable FTP (via Internet), then click Save.



4. Access Your USB Disk via Internet

Now different clients with Internet connection can access the USB disk:



∅ Tips:

Refer to Set Up a Dynamic DNS Service Account to learn how to set up a domain name for you router.

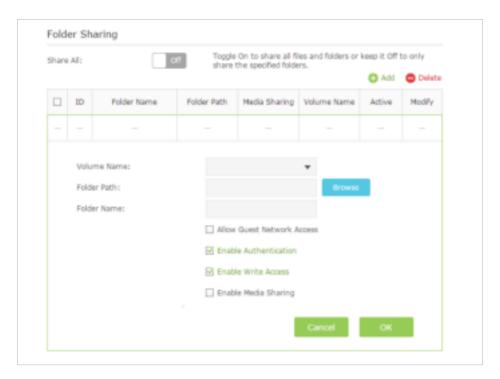
6. 2. 2. Customize Your Settings

> To Only Share Specific Content

By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Basic > USB Settings > Sharing Access. Focus on the section of Folder Sharing. Click the button to disable Share All, then click Add to add a new sharing folder.
- 3. Select the Volume Name and Folder Path, then specify the Folder Name as you like.

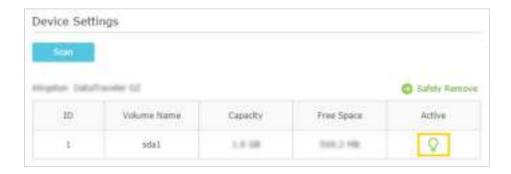
4. Select Enable Authentication. If you allow network clients to modify this folder, select Enable Write Access.



5. Click OK.

O Tips:

The router can share 32 volumes at most. You can click \overline{V} on the page to detach the corresponding volume you do not need to share.



6.3. Media Sharing

The feature of Media Sharing allows you to view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices, such as your computer, pad and PS2/3/4.

6. 3. 1. Access the USB disk

1. Connect Your USB Disk

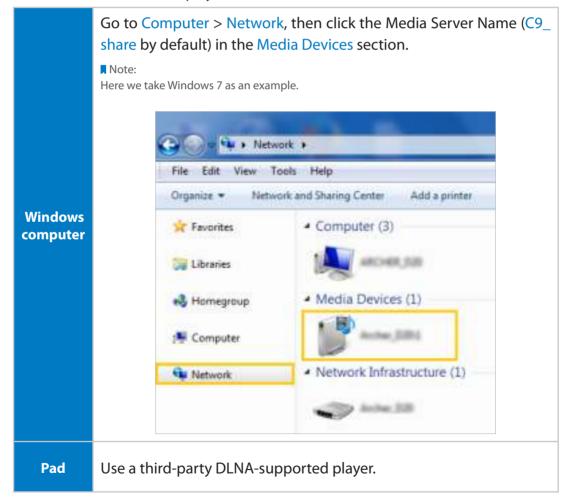
Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

Tips:

- If you use USB hub, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32, NTFS, exFAT or HFS.

2. Play the Media on Your USB Disk

Now the DLNA-supported devices (such as your computer and pad) connected to the router can detect and play the media files on the USB disks.



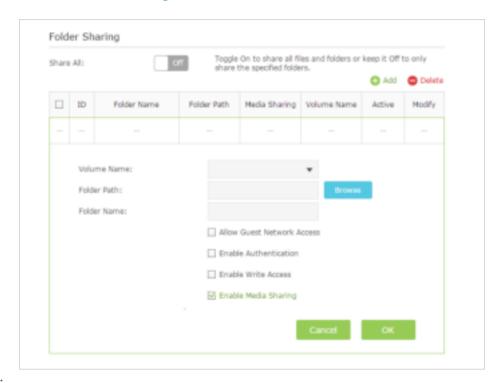
41

6. 3. 2. Customize Your Settings

To Only Share Specific Content

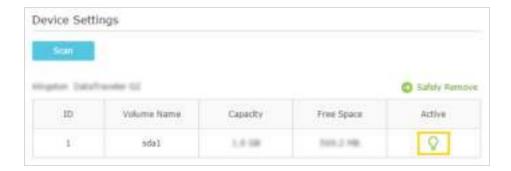
By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

- 1. Visit http://tplinkwifi.net, then log in with the username and password you set for the router.
- 2. Go to Advanced > USB Settings > Sharing Access.
- 3. Focus on the section of Folder Sharing. Click the button to disable Share All, then click Add to add a new sharing folder.
- 4. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
- 5. Select Enable Media Sharing and click OK.



Tips:

The router can share 32 volumes at most. You can click \bigcirc on the page to detach the corresponding volume you do not need to share.



6.4. Printer Sharing

The feature of Printer Sharing helps you share a printer with different computers connected to the router.

Note:

Printers unlisted on this page may be incompatible with the router:

http://www.tp-link.com/common/compatible/print-server/.

1. Install the Driver of the Printer

Make sure you have installed the driver of the printer on each computer that needs printer service.

If you do not have the driver, contact the printer manufacturer.

2. Connect the Printer

Cable a printer to the USB port with the USB cable. Wait several seconds until the USB LED becomes solid on.

3. Install the TP-LINK USB Printer Controller Utility

TP-LINK USB Printer Controller Utility helps you access the shared printer. Download and install the utility on each computer that needs printer service.

- 1) Visit http://www.tp-link.com/app/usb/.
- 2) Click PC Utility (for Windows users) or Mac Utility to download the installation file and uncompress it.



3) Open the uncompressed folder, then click TP-LINK USB Printer Controller Setup (for Windows users) or TP-Link UDS Printer Controller Installer (for Mac users) to install the utility.

4. Access the Printer

You should set the shared printer as Auto-Connect Printer on every computer that needs printer service.

- 1) Double-click the icon on your desktop to launch the USB Printer Controller.
- 2) Highlight the printer you share.

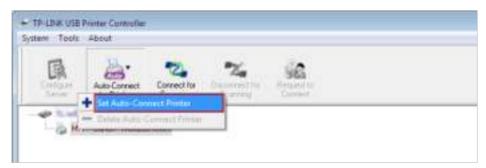


Windows

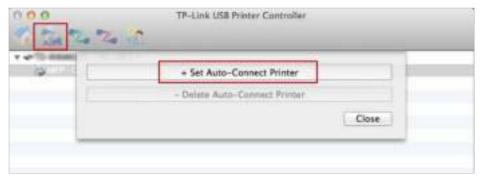


Mac

3) Click the Auto-Connect for printing tab to pull down a list, then select Set Auto-Connect Printer.

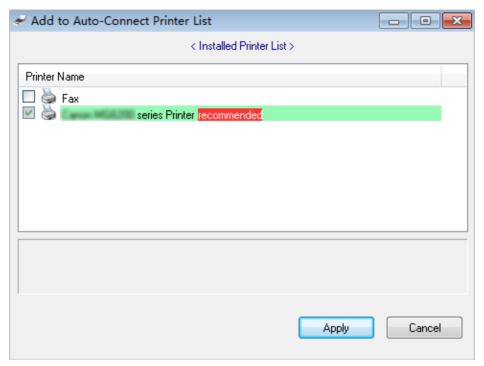


Windows

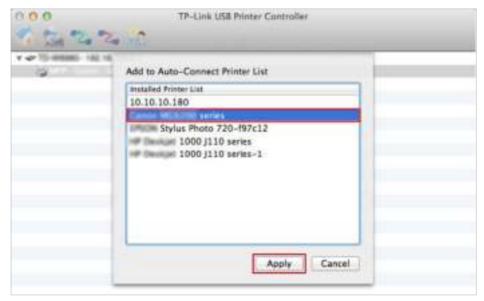


Mac

4) Select the printer you share, then click Apply.

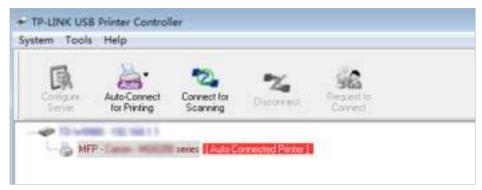


Windows



Mac

5) You will see the printer marked as Auto-Connect Printer. Now you can print with this printer.



Windows



Mac

Ø Tips:

The Print Server also allows different clients to share the scan feature of MFPs (Multi-Function Printers). To scan with TP-LINK USB Printer Controller, right-click the printer and select Network Scanner. Then, a scanning window will pop up. Finish the scanning process by following the on-screen instructions.

Chapter 7

Parental Controls

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

Chapter 7 Parental Controls

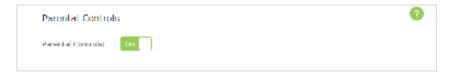
I want to:

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

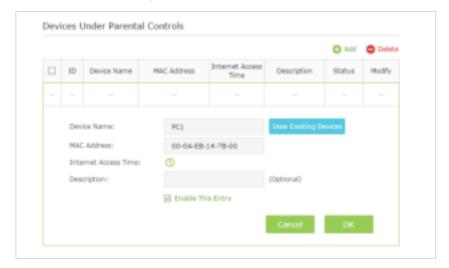
For example, I want to allow my children's devices (e.g. a computer or a tablet) to access only *www.tp-link.com* and *Wikipedia.org* from 18:00 (6PM) to 22:00 (10PM) at the weekend and not other times.

How can I do that?

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

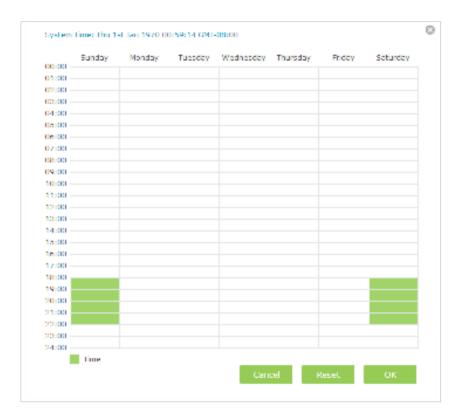


3. Click Add. And then Click View Existing Devices, and select the access device. Or, input the Device Name and MAC Address manually.

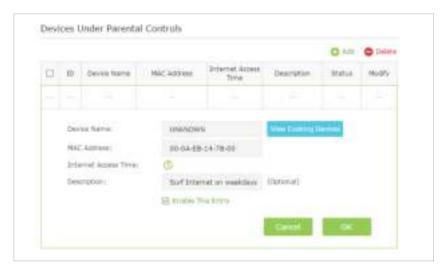


4. Click the sicon to set the Internet Access Time. Drag the cursor over the appropriate cell(s) and click OK.

Chapter 7 Parental Controls



5. Enter a Description for the entry. Keep the Enable This Entry checkbox available. Click OK.



6. Select Whitelist as the restriction policy.



Ø Tips:

- 1. In Blacklist mode, the controlled devices cannot access any websites containing the specified keywords during the Internet Access Time period.
- 2. In Whitelist mode, the controlled devices can only access websites containing the specified keywords during the Internet Access Time period.

Chapter 7 Parental Controls

7. Click Add a New Keyword. Enter a keyword or a website and click Save.



You can add up to 32 keywords for either Blacklist or Whitelist. Below are some sample entries to allow access.

- Enter a web address (e.g. wikipedia.org) or a web address keyword (e.g. wikipedia) to only allow or block access to the websites containing that keyword.
- Specify the domain suffix (eg. .edu or .org) to allow access only to the websites with that suffix.
- If you wish to block all Internet browsing access, do not add any keyword to the Whitelist.

Done!

Now you can control your children's Internet access according to your needs.

Chapter 8

QoS (Quality of Service)

This chapter introduces how to create a QoS rule to specify prioritization of traffic and minimize the impact caused when the connection is under heavy load.

This chapter contains the following sections:

- Prioritize Internet Traffic with Quality of Service
- Update the Database

8. 1. Prioritize Internet Traffic with QoS

QoS (Quality of Service), is designed to ensure the efficient operation of the network when the network overload or congestion.

I want to:

Specify priority levels for some devices or applications.

For example, I have several devices that are connected to my wireless network. I would like to:

- Set my ftp server with faster surfing speed;
- Set my phone an intermediate speed on the Internet;

How can I do that?

- 1. Enable OoS and set bandwidth allocation.
 - 1) Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
 - 2) Go to Advanced > QoS > Settings.
 - 3) Select the Enable QoS checkbox.

 Note: Qos and NAT Boost cannot be enabled at the same time, you need to disable NAT Boost first. Please follow step a and b to disable NAT Boost.
 - a. Click NAT Boost.



b . Deselect Enable NAT Boost and click Save, then click OK on the prompt window.



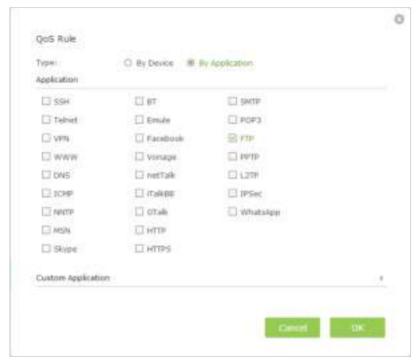
- 4) Input the maximum upload and download bandwidth provided by your service provider. 1Mbps is equal to 1000Kbps.
- 5) Click Advanced and drag the scroll bar to set the bandwidth priority percentage.
 - Note: Add each priority up no more than 100%. High priority is greater than Middle priority, and middle priority is greater than Low priority.
- 6) Click Save.



2. Add QoS Rules.



- 1) Set a high priority rule for the ftp server.
- a. Click Add in the High Priority section.
- b . Select By Application and then select ftp in the list. Click OK.



∅ Tips:

If your application isn't listed on the screen, click Custom Application to add application manually.



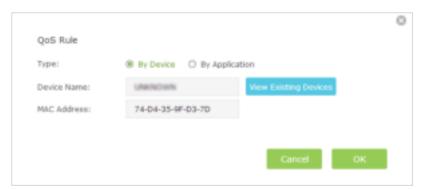
- Name: Enter a name for your application.
- Protocol: Select the protocol for your application, if your are not sure, select ALL.
- Port: Enter the destination port for your application, usually each application has a fixed port, please ensure you enter the correct the port. In this case, the destination port for ftp is 21.
- 2) Set a middle priority rule for the phone.
- a. Click Add in the Middle Priority section.
- b. Select By Device and then click View Existing Devices.



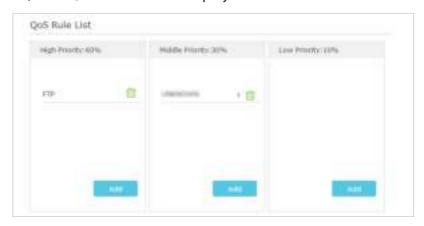
c. Choose the respective device from the list.



d. Click OK.



3) The QoS rules list will display in the table.



Ø Tips: If you want to delete a QoS rule, click
 ☐ to remove the responding rule from the list.

Done!

Now QoS is implemented to Prioritize Internet Traffic.

8. 2. Update the Database

This function can help to add or update the applications of the router support. If the applications you need are not listed in the Application list, you can try to download the new version and upgrade. New database versions are posted at www.tp-link.com and can be downloaded for free.

- 1. Download the latest QoS database from our website www.tp-link.com.
- Go to Advanced > QoS > Database. Click Browse to select the database upgrade file, then click Upgrade. Wait until the upgrade is completed and do not operate during the process.



Chapter 9

Network Security

This chapter guides you on how to protect your home network from cyber attacks and unauthorized users by implementing these three network security functions. You can protect your home network against DoS (Denial of Service) attacks from flooding your network with server requests using DoS Protection, block or allow specific client devices to access your network using Access Control, or you can prevent ARP spoofing and ARP attacks using IP & MAC Binding function.

This chapter contains the following sections:

- Protect the Network from Cyber Attacks
- Access Control
- IP & MAC Binding

9. 1. Protect the Network from Cyber Attacks

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

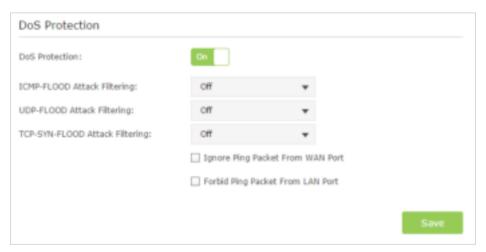
The SPI Firewall can prevent cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default, and it's recommended to keep the default setting.

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 username and password you set for the router.
- 2. Go to Advanced > Security > Settings.

Note

DoS protection and Traffic Statistics must be enabled at the same time, please refer to *Monitor the Internet Traffic Statistics* to enable Traffic Statistics first.



- 3. Enable DoS Protection.
- **4.** Set the level (Off, Low, Middle or High) of protection for ICMP-FLOOD Attack Filtering, UDP-FlOOD Attack Filtering and TCP-SYN-FLOOD Attack Filtering.
 - ICMP-FLOOD Attack Filtering Enable to prevent the Internet Control Message Protocol (ICMP) flood attack.
 - UDP-FIOOD Attack Filtering Enable to prevent the User Datagram Protocol (UDP) flood attack.
 - TCP-SYN-FLOOD Attack Filtering Enable to prevent the Transmission Control Protocol-Synchronize (TCP-SYN) flood attack.

Tips:

The level of protection is based on the traffic packets number. The protection will be triggered immediately when the number of packets exceeds the preset threshold value (the value can be set on Advanced > System

Tools > System Parameters > DoS Protection Level Settings), and the vicious host will be displayed in the Blocked DoS Host List.



- **5.** Select Ignore Ping Packet From WAN Port if you want to ignore the ping packets from WAN port.
- **6.** Select Forbid Ping Packet From LAN Port if you want to forbid the ping packets from LAN port.
- 7. Click Save to make the settings effective.

9. 2. 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 username and password you set for the router.
- 2. Go to Advanced > Security > Access Control.
- 3. Enable Access Control.



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

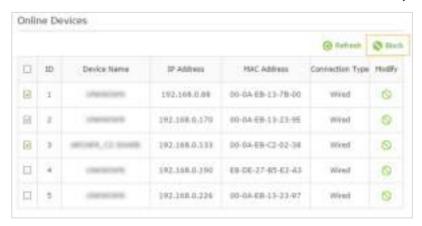
To block specific device(s)

1) Select Blacklist and click Save.



2) Select the device(s) to be blocked in the Devices Online table.

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

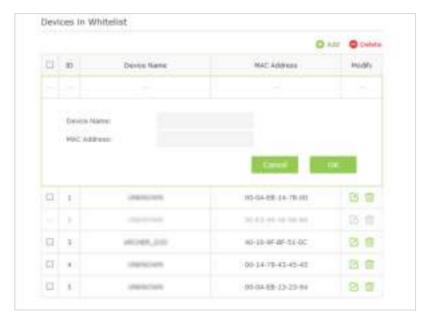


To allow specific device(s)

1) Select Whitelist and click Save.



2) Click Add.in the Devices in Whistelist section. Enter the Device Name and MAC Address (You can copy and paste the information from the following list if the device is connected to your network).



3) Click OK.

Done!

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

9. 3. IP & MAC Binding

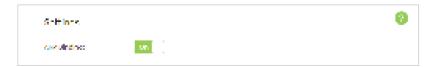
IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind network device's IP address to its MAC address. This will prevent ARP Spoofing and other ARP attacks by denying network access to an device with matching IP address in the Binding list, but unrecognized MAC address.

I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Security > IP & MAC Binding.
- 3. Enable ARP Binding.



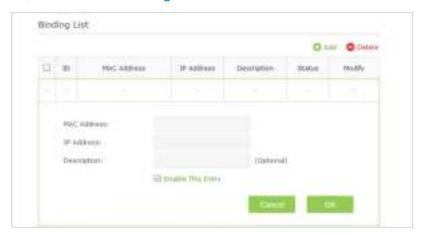
4. Bind your device(s) according to your need.

To bind the connected device(s)

In the ARP List, Click of to add the corresponding device to the Binding List.

To bind the unconnected device

1) Click Add in Binding List section.



- 2) Enter the MAC address and IP address that you want to bind.
- 3) Select the checkbox to enable the entry and click OK.

Done!

Now you don't need to worry about ARP spoofing and ARP attacks.

Chapter 10

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 protect 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.

With forwarding feature the router can penetrate the isolation of NAT and allows the external hosts in the Internet to initiatively communicate with the devices in the local network, thus to realize some special functions.

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:

- Share Local Resources in the Internet by Virtual Server
- Open Ports Dynamically by Port Triggering
- Make Applications Free from Port Restriction by DMZ
- Make Xbox Online Games Run Smoothly by UPnP

10. 1. Share Local Resources in the Internet by Virtual Server

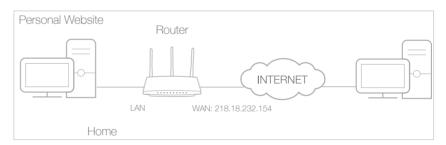
When you build up a server in the local network and want to share it on the Internet, Virtual Server can realize the service and provide it to the Internet users. At the same time virtual server can keep the local network safe as other services are still invisible from the Internet.

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 the configuration.

I want to:

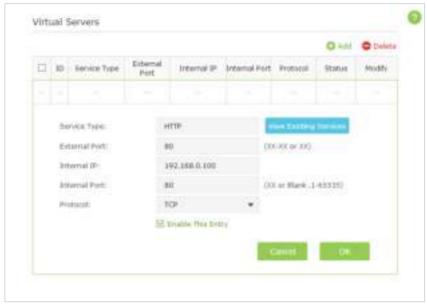
Share my personal website I've built in local network with my friends through the Internet.

For example, the personal website has been built in my home PC (192.168.0.100). I hope that my friends in the Internet can visit my website in some way. 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 192.168.0.100.
- 2. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- **3.** Go to Advanced > NAT Forwarding > Virtual Servers.
- **4.** Click Add. Click View Existing Services, and select HTTP. The external port, internal port and protocol will be automatically filled with contents. Enter the PC's IP address 192.168.0.100 in the Internal IP field.
- **5.** Click OK to save the settings.



Tips:

- 3. 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.
- 4. 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 need.
- 5. You can add multiple virtual server rules if you want to provide several services in a router. Please note that the External Port should not be overlapped.

Done!

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

Note

Your configurations will not take effect if NAT function is disabled. Then you should go to Advanced > System Tools > System Parameters page to enable NAT.

O Tips:

- 1. WAN IP should be a public IP address. For the WAN IP is assigned dynamically by ISP, it is recommended to apply and register a domain name for the WAN refer to Set Up a Dynamic DNS Service Account. 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.

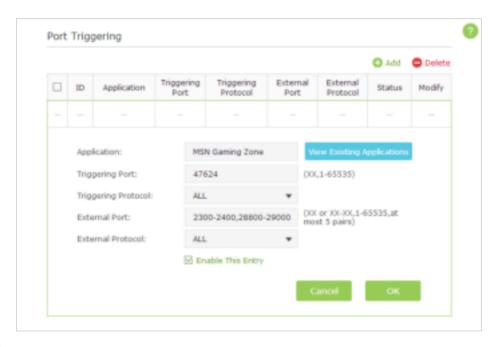
10. 2. Open Ports Dynamically by Port Triggering

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 return 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 and Quick Time 4 players, etc.

Follow the steps below to configure the port triggering rules:

1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.

- 2. Go to Advanced > NAT Forwarding > Port Triggering.
- 3. Click Add. Click View Existing Applications, and select the desired application. The external port, internal port and protocol will be automatically filled with contents. The following picture takes application MSN Gaming Zone as an example.
- 4. Click OK to save the settings.



Note:

Your configurations will not take effect if NAT function is disabled. Then you should go to Advanced > System Tools > System Parameters page to enable NAT.

∅ Tips:

- 1. You can add multiple port triggering rules according to your network need.
- 2. The triggering ports can not be overlapped.
- 3. If the application you need is not listed in the Existing Applications list, please 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 the page displays.

10. 3. 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, such as IP camera and database software, you can set the PC to be a DMZ host.

Note:

DMZ is more applicable in the situation that users are not clear about which ports to open. When it is enabled, the DMZ host is totally exposed to the Internet, which may bring some potential safety hazard. 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 login 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 192.168.0.100.
- **2.** Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
- **3.** Go to Advanced > NAT Forwarding > DMZ and select the checkbox to enable DMZ.



- **4.** Enter the IP address 192.168.0.100 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 make a team to game with other players.

Note:

Your configurations will not take effect if NAT function is disabled. Then you should go to Advanced > System Tools > System Parameters page to enable NAT.

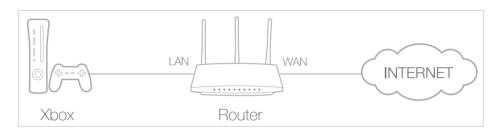
10. 4. Make Xbox Online Games Run Smoothly by UPnP

UPnP (Universal Plug and Play) protocol allows the applications or host devices to automatically find the front-end NAT device and send request to it to open the corresponding ports. With UPnP enabled, the applications or host devices in the both sides of NAT device can freely communicate with each other realizing the

seamless connection of the network. You may need to enable the UPnP if you want to use applications for multiplayer gaming, peer-to-peer connections, real-time communication (such as VoIP or telephone conference) or remote assistance, etc.

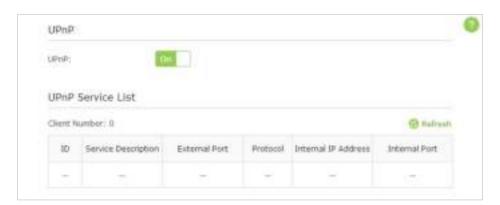
- ∅ Tips:
- 1. UPnP is enabled by default in this router.
- 2. Only the application supporting UPnP protocol can use this feature.
- 3. UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

For example, when you connect your Xbox to the router which has connected to the Internet to play online games, UPnP will send request to the router to open the corresponding ports allowing the following data penetrating the NAT to transmit. Therefore, you can play Xbox online games without a hitch.



If necessary, you can follow the steps to change the status of UPnP.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router;
- Go to Advanced > NAT Forwarding > UPnP and toggle on or off according to your needs.



Note:

Your configurations will not take effect if NAT function is disabled. Then you should go to Advanced > System Tools > System Parameters page to enable NAT.

Chapter 11

Customize Your Network Settings

This chapter guides you on how to configure advanced networking features that are available for this router.

This chapter contains the following sections:

- Change the LAN Settings
- Configure to Support IPTV Service
- Specify DHCP Server Settings
- Set Up a Dynamic DNS Service Account
- Create Static Routes
- Specify Wireless Settings
- Use WPS for Wireless Connection

11. 1. Change the LAN Settings

The router is preset with a default LAN IP 192.168.0.1, which you can use to log in to its web-based management page. 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 on your local network or your network requires a specific IP subnet, you can change it.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Network > LAN page.
- 3. Type in a new IP Address appropriate to your needs. And leave the Subnet Mask as the default settings.



4. Click Save.

Note:

If you have set the Virtual Server, DMZ or DHCP address reservation, and the new LAN IP address is not in the same subnet with the old one, then you should reconfigure them.

11. 2. Configure to Support IPTV Service

I want to:

Configure IPTV setup to enable Internet /IPTV /Phone service provided by my Internet Service Provider (ISP).

How can I do that?

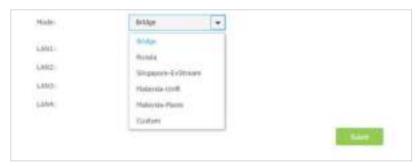
- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Network > IPTV page.
- 3. If your ISP provide the networking service based on IGMP technology, e.g., British Telecom(BT) and Talk Talk in UK:
 - 1) Select the IGMP Proxy checkbox and select the IGMP Version, either V2 or V3, according to information provided by your ISP.



- 2) Click Save.
- 3) After configuring IGMP proxy, IPTV can work behind your router now. You can connect your set-top box to any of the router's Ethernet port.

If IGMP is not the technology your ISP apply to provide IPTV service:

- 1) Select the Enable IPTV check box.
- 2) Select the appropriate Mode according to your ISP. Select Bridge if your ISP is not listed and no other parameters are required, and then skip to Step 4. Select Custom if your ISP is not listed but provides necessary parameters.



- 3) After you have selected a mode, the necessary parameters are predetermined. You can perform other configuration, e.g. enter the IPTV Multicast VLAN ID and select the IPTV Multicast VLAN Priority in Russia mode according to your ISP.
- 4) For Russia, Singapore-ExStream, Malaysia-Unifi and Malaysia-Maxis mode, connect device to the predetermined LAN port. For Bridge and Custom mode, select the LAN type and connect the set-top box to the corresponding port.
- 5) Click Save.

Done!

Your IPTV setup is done now! You may need other configurations on your set-top box before enjoying your TV.

Ø Tips

Oos and IPTV cannot be enabled at the same time.

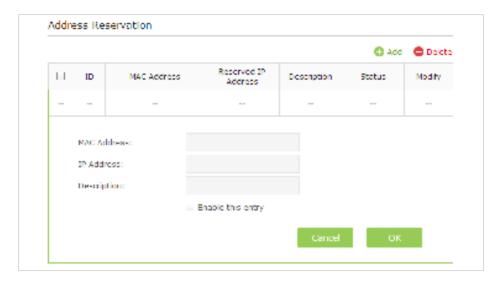
11.3. Specify DHCP Server Settings

By default, the DHCP (Dynamic Host Configuration Protocol) Server is enabled and the router acts as a DHCP server; it dynamically assigns TCP/IP parameters to client devices from the IP Address Pool. You can change the settings of DHCP Server if necessary, and you can reserve LAN IP address for specified client device.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Network > DHCP Server.
- To specify the IP address that the router assigns:



- 1. Make sure that the Enable DHCP Server checkbox is selected.
- 2. Enter the starting and ending IP address in the IP Address Pool.
- 3. Enter other parameters if the ISP offers, the Default Gateway is automatically filled the same as the LAN IP address of the router.
- 4. Click Save to make the settings effective.
- > To reserve an IP address for a specified client device:
- 1. Click the Add button in Address Reservation section.



- 2. Enter the MAC address of the client device.
- 3. Enter the IP address to set to the client device.
- 4. Enter the Description for the rule.
- 5. Select the Enable This Entry checkbox and click OK.

The IP address reservation is configured successfully, and you can see the rule shown as below.



11. 4. Set Up a Dynamic DNS Service Account

Most ISPs (Internet service provieders) 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.

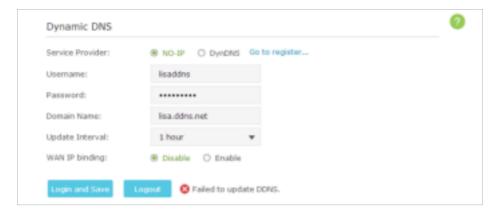
Note:

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 username and password you set for the router.
- 2. Go to Advanced > Network > Dynamic DNS.

3. Select the DDNS Service Provider (NO-IP or Dyndns). If you don't have a DDNS account, select a service provider and click Go to register.



- 4. Enter the username, password and domain name of the account (such as lisadns. ddns.net).
- 5. Click Login and Save.

O Tips:

If you want to use a new DDNS account, please Logout first, then login with the new account.

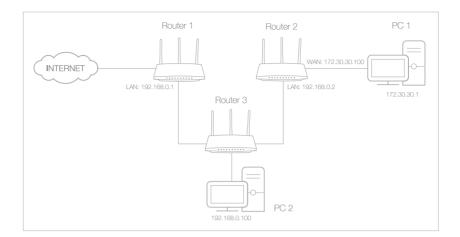
11. 5. Create Static Routes

Static routing is a form of routing that is configured manually by a network administrator or a user by adding entries into a routing table. The manually-configured routing information guides the router in forwarding data packets to the specific destination.

I want to:

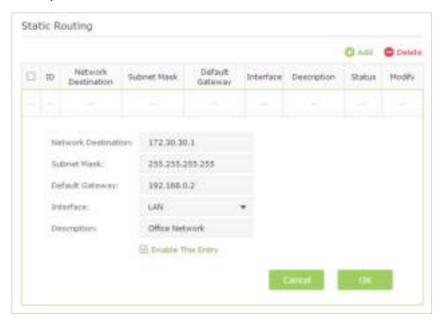
Visit multiple networks and multiple servers at the same time.

For example, in a small office, my PC can surf the Internet, but I also want to visit my company's network. Now I have a switch and another router. I connect the devices as shown in the following figure so that the physical connection between my PC and my company's server is achieved. To surf the Internet and visit my company's network at the same time, I need to configure the static routing.



How can I do that?

- 1. Change the router's LAN IP addresses to two different IP addresses on the same subnet. Disable Router 2's DHCP function.
- **2.** Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
- **3.** Go to Network > Advanced Routing.
- **4.** Click Add and finish the settings according to the following explanations:



Network Destination: The destination IP address that you want to assign to a static route. This IP address cannot be on the same subnet with the WAN IP or LAN IP of the router. In the example, the IP address of the company network is the destination IP address, so here enters 172.30.30.1.

Subnet Mask: Determines the destination network with the destination IP address. If the destination is a single IP address, enter 255.255.255.255; otherwise, enter the subnet mask of the corresponding network IP. In the example, the destination network is a single IP, so here enters 255.255.255.255.

Default Gateway: The IP address of the gateway device to which the data packets will be sent. This IP address must be on the same subnet with the router's IP which sends out the data. In the example, the data packets will be sent to the LAN port of Router 2 and then to the Server, so the default gateway should be 192.168.0.2.

Interface: Determined by the port (WAN/LAN) that sends out the data packets. In the example, the data is sent to the gateway through the LAN port, so LAN should be selected.

Description: Enter a description for this static routing entry.

5. Click OK to save the settings.



6. Check the System Routing Table below. If you can find the entry you set in the System Routing Table, the static routing is set successfully.



Done!

Open a web browser on your PC. Enter the company server's IP address to visit the company network.

11.6. Specify Wireless Settings

The router's wireless 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.

Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.

- > To enable or disable the wireless function of 2.4GHz or 5GHz:
- 1. Go to Basic > Wireless.
- 2. The wireless radio is enabled by default, if you want to disable the wireless function of the router, just clear the Enable Wireless Radio checkbox. In this case, all the wireless settings will be invalid.



- > To change the wireless network name (SSID) and wireless password of 2.4GHz or 5GHz:
- 1. Go to Basic > Wireless.
- 2. Create a new SSID in Wireless Network Name (SSID) and customize the password for the network in Password. The default SSID is TP-LINK_XXXX for 2.4GHz, TP-LINK_XXXX_5G for 5GHz, and the value is case-sensitive.

Note:

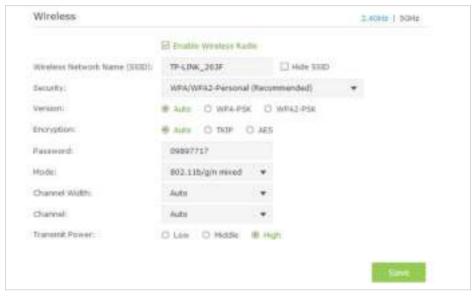
If you use a wireless device to change the wireless settings, you will be disconnected when the settings are effective. Please write down the new SSID and password for future use.

To hide SSID of 2.4GHz or 5GHz:

- 1. Go to Basic > Wireless.
- 2. Select Hide SSID, and your SSID will not broadcast. Your SSID won't display when you scan for local wireless network list on your wireless device and you need to manually join the network.

> To change the security option:

1. Go to Advanced > Wireless > Wireless Settings.



- 2. Select the wireless network 2.4GHz or 5GHz.
- 3. Select an option from the Security drop down list. The router provides four security options, No Security, WPA/WPA2 Personal (Recommended), WPA/WPA2 Enterprise and WEP. We recommend you don't change the default settings unless necessary. If you select other options, configure the related parameters according to the help page.

In addition

- Mode Select a transmission mode according to your wireless client devices.
 802.11b/g/n mixed, 802.11g/n mixed or 802.11n only for 2.4GHz; and 802.11a/n/ac mixed, 802.11n/ac mixed or 802.11ac only for 5GHz. It is recommended to just leave it as default.
- Channel Width Select a channel width (bandwidth) for the wireless network.
- Channel Select an operating channel for the wireless network. It is recommended
 to leave the channel to Auto, if you are not experiencing the intermittent wireless
 connection issue.
- Transmit Power Select either High, Middle or Low to specify the data transmit power. The default and recommended setting is High.

11. 7. Use WPS for Wireless Connection

Wi-Fi Protected Setup(WPS) gives consumers an easier approach to set up a security-protected Wi-Fi connection.

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

11. 7. 1. Set the Router's PIN

Router's PIN is enabled by default to allow wireless devices to connect to the router using the PIN. You can use the default one or generate a new one.



Note:

- 1. If you want to enable/disable the WPS feature, go to System Tools > System Parameters > WPS, select or clear the Enable WPS check box.
- 2. PIN (Personal Identification Number) is an eight-character identification number preset to each router. WPS supported devices can connect to your router with the PIN. The default PIN is labeled on the bottom of the router.

11. 7. 2. Use the WPS Wizard for Wi-Fi Connections

- 1. Select a setup method:
 - Push Button(Recommended): Click the Connect button on the screen. Within two minutes, push the WPS button on the client device.
 - PIN: Enter the client's PIN, and click Connect.



2. Success will appear on the above screen and the WPS LED on the router will keep on for five minutes if the client has been successfully added to the network.

Chapter 12

Manage the Router

This chapter will show you the configuration for managing and maintaining your router. This chapter includes the following sections:

- Set Up System Time
- Test the Network Connectivity
- Upgrade the Firmware
- Backup and Restore Configuration Settings
- Change the Administrator Account
- Password Recovery
- Local Management
- Remote Management
- System Log
- Monitor the Internet Traffic Statistics

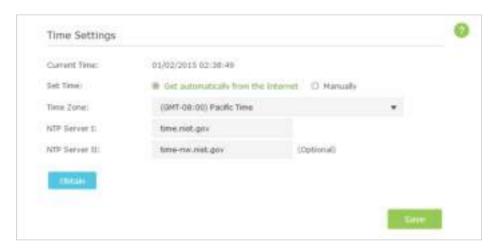
12. 1. Set Up System Time

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.

Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router. Go to Advanced > System Tools > Time Settings.

> To automatically synchronize the time:

1. In the Set Time field, select Get automatically from the Internet.



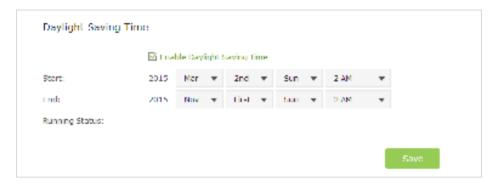
- 2. Select your local Time Zone from the drop-down menu.
- 3. In the NTP Server I fileld, enter the IP address or domain name of your desired NTP Server.
- 4. In the NTP Server II fileld, enter the IP address or domain name of the second NTP Server. (Optional)
- 5. Click Obtion to get the current Interent time.
- 6. Click Save to make the settings effective.

To manually set the date and time:

1. In the Set Time field, select Manually.



- 2. Set the current Date (In MM/DD/YYYY format).
- 3. Set the current Time (In HH/MM/SS format).
- 4. Click Save to make the settings effective.
- > To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving Time.



- 2. Select the correct Start date and time when daylight saving time starts at your local time zone.
- 3. Select the correct End date and time when daylight saving time ends at your local time zone.
- 4. Click Save to make the settings effective.

12. 2. Test the Network Connectivity

Diagnostics is 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 username and password you set for the router.
- 2. Go to Advanced > System Tools > Diagnostics.



- 3. Enter the information with the help of page tips:
 - 1) Choose Ping or Traceroute 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.
 - 2) Enter the IP Address or Domain Name of the tested host.
- 4. Click Start to begin the diagnostics.

Tips

Click Advanced, you can modify the ping count, ping packet size or the Traceroute Max TTL. It's recommended to keep the default value.

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Ping.

```
PDNC www.Yahoo.com (116.214.12.74): 64 data bytes

Reply from 116.214.12.74: bytes=64_ttt=50_seq=1_time=51.640 ms

Reply from 116.214.12.74: bytes=64_ttt=50_seq=2_tme=53.671 ms

Reply from 116.214.12.74: bytes=64_ttt=50_seq=3_tme=56.045 ms

Reply from 116.214.12.74: bytes=64_ttt=50_seq=4_time=57.2877 ms

Ping Statistic "www.Yahoo.com"

Packets: Sent=4, Received=4, Tost=0 (0.00% kes)

Round-trip min/avg/max = $1.640/$4.803/$7.857 ms
```

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Traceroute.

```
Laceroute to www.Yahoo.com (116.214.12.74), 20 hops max, 30 byte packets

1 219.133.12.1 (219.133.12.1) 19.556 ms 22.274 ms 22.024 ms

2 113.106.38.77 (113.106.38.77) 30.115 ms 27.549 ms 20.931 ms

3 1 1 1

4 183.56.05.14 (183.56.05.14) 20.210 ms 29.428 ms 28.272 ms

5 1 202.97.60.25 (202.97.60.25) 29.272 ms 25.461 ms

6 202.97.60.46 (202.97.60.46) 27.335 ms 27.616 ms 28.272 ms

7 202.97.60.149 (202.97.60.149) 22.805 ms 24.024 ms 24.711 ms

8 202.97.60.149 (202.97.60.149) 22.805 ms 24.024 ms 24.711 ms

9 202.97.60.10 (202.97.60.11) 21.171 ms 50.515 ms 56.107 ms

10 220.128.11.190 (220.128.11.190) 60.950 ms 60.200 ms 60.419 ms
```

12. 3. Upgrade the Firmware

TP-LINK is dedicated to improving and richening the product features, giving you a better network experience.

We will inform you throught the web management page if there's any update firmware available for your router. Also, the latest firmware will be released at TP-LINK official website, you can download it 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. Make sure you remove any USB storage device connected to the router before the firmware upgrade to prevent data loss.
- 3. Backup your router configuration before upgrading the firmware.
- 4. Do NOT turn off the router during the firmware upgrade.

12.3.1. Online Upgrade

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. If there's any firmware update available for your router, the update icon will display in the top-right corner of the page. Click the icon to go to the Firmware Upgrade page.

Alternatively, you can go to Advanced > System Tools > Firmware Upgrade, and click Check for upgrade to see if there's any new firmware.



∅ Tips:

If there's any new and important firmware update for your router, you will see the notification (similar as shown below) on your computer as long as a web browser is opened. Click **Upgrade** now, and log into the web management page with the username and password you set for the router. You will see the **Firmware Upgrade** page.



3. Focus on the Online Upgrade section, and click Upgrade.



4. Wait a few moments for the upgrading and rebooting.

12. 3. 2. Local Upgrade

- 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 username and password you set for the router.
- 3. Go to Advanced > System Tools > Firmware Upgrade.
- 4. Focus on the Device Information section. Make sure the downloaded firmware file is matched with the Hardware Version.
- 5. Focus on the Local Upgrade section. Click Browse to locate the downloaded new firmware file, and click Upgrade.



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

12. 3. 3. Restore Interrupted Upgrade after Power Failure

If your router cannot start up after an upgrade interruption due to power failure, do follow the steps below to restore the interrupted upgrade. Otherwise, your router cannot work again.

- 1. Make sure you have the latest firmware file in your computer. If not, try another way to connect your computer to the Internet and download the latest firmware file from www.tp-link.com.
- 2. Connect your computer to the router with an Ethernet cable.
- 3. Visit 192.168.0.1 and you will see the following upgrade page.



- 4. Click Browse and select the downloaded firmware file.
- 5. Click Upgrade and wait for a few minutes until the router completes the upgrade and restarts.

12.4. Backup and Restore Configuration Settings

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

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

> To backup configuration settings:

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



> To restore configuration settings:

1. Click Browse to locate the backup configuration file stored on your computer, and click Restore.



- 2. Wait a few moments for the restoring and rebooting.
- Note: During the restoring process, do not turn off or reset the router.

To reset the router to factory default settings:

1. Click Factory Restore to reset the router.



2. Wait a few moments for the reset and reboot.

Note:

- 1. During the resetting process, do not turn off or reset the router.
- 2. We strongly recommend you backup the current configuration settings before resetting the router.

12. 5. Change the Administrator Account

The account management feature allows you to change your login username and password of the web-based management page.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router before.
- 2. Go to Advanced > System Tools > Administration and complete the settings in Account Management section.



3. Enter the old username and old password. Enter the new username and enter the new password twice (both case-sensitive). Click Save.

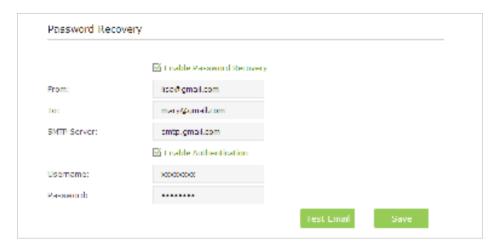
Use the new username and password for the following logins.

12. 6. Password Recovery

This feature allows you to recover your login username and password in case you forget them.

1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.

2. Go to Advanced > System Tools > Administration and complete the settings in Password Recovery section.



- 3. Select the Enable Password Recovery checkbox.
- 4. Specify a mailbox (From) to send the recovery letter and enter its SMTP Server address. Specify a mailbox (To) to receive the recovery letter. If the mailbox (From) to send the recovery letter requires encryption, select Enable Authentication and enter its username and password.

∅ Tips:

- SMTP server is available for users in most webmail systems. For example, the SMTP server address of Gmail is smtp.gmail.com. You can refer to their Help page to learn the SMTP server address.
- Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.
- 5. Click Save to make the settings effective.

You can click Test Mail to test whether the configuration is successful. To recover your login username and password, please refer to FAQ.

12.7. Local Management

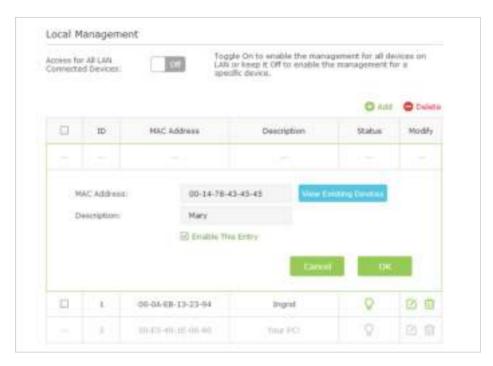
This feature allows you to limit the number of client devices on your LAN from accessing the router using the MAC address-based authentication.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > System Tools > Administration and complete the settings In Local Management section according to your needs.
- Allow all LAN connected devices to manage the router:

Toggle on Access for All LAN Connected Devices.



- Allow specific devices to manage the router:
 - 1) Toggle off Access for All LAN Connected Devices.
 - 2) Click Add.

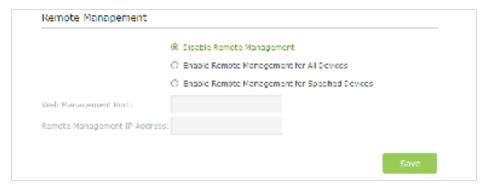


- 3) Click View Existing Devices and select the device to manage the router from the Existing Devices list, or enter the MAC address of the device manually.
- 4) Specify a Description for this entry.
- 5) Select the Enable This Entry checkbox.
- 6) Click OK to make the settings effective.

12.8. Remote Management

This feature allows you to control remote devices' authority to manage the router.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > System Tools > Administration and complete the settings In Remote Management section according to your needs.
- Forbid all devices to manage the router remotely:
 Select Disable Remote Management and click Save.



- Allow all devices to manage the router remotely:
 - 1) Select Enable Remote Management for All Devices.



- 2) Enter Web Management Port (1024-65535 or 80).
- 3) Click Save.

Devices on the Internet can log in to http://113.116.60.229:1024) to manage the router.

© Tips:

- 1. You can find the WAN IP address of the router on Basic > Network Maps > Internet.
- 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.
- Allow specific devices to manage the router remotely:
 - 1) Select Enable Remote Management for Specified Devices.



2) Enter Web Management Port (1024-65535 or 80).

3) In Remote Management IP address, enter the IP address of the remote device to manage the router.

4) Click Save.

Devices using this WAN IP can manage the router by logging in to http://Router's WAN IP:port number (such as http://113.116.60.229:1024).

© Tips:

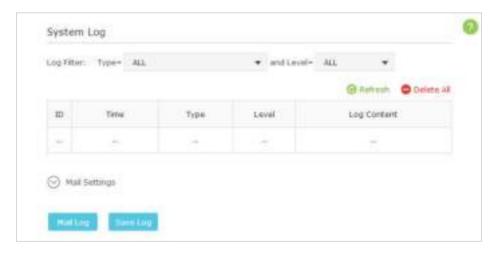
The router's WAN IP is usually a dynamic IP. Please refer to *Set Up a Dynamic DNS Service Account* if you want to log in to the router through a domain name.

12.9. System Log

When the router does not work properly, you can save the system log and send it to the technical support for troubleshooting.

> To Save the System Log in Local:

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > System Tools > System Log.
- 3. Choose the type and level of the system log to your need.
- 4. Click Save Log to save the system log to local.



> To Send the System Log to a Mailbox at a Fixed Time:

For example, I want to check my router's working status at a fixed time every day. However, it's too troublesome to login to the web interface every time I want to go checking. It would be great if the system log could be sent to my mailbox at 8 a.m. every day.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > System Tools > System Log.

3. Click Mail Settings and enter the information with the help of page tips:



- 1) From: Enter the email address used to send the system log.
- 2) To: Enter the recipient's email address, which can be the same to or different from the sender's email address.
- 3) SMTP Server: Enter the SMTP server address.

∅ Tips:

SMTP server is available for users in most webmail systems. For example, the SMTP server address of Hotmail is smtp-mail.outlook.com. You can refer to their Help page to learn the SMTP server address.

4) Select Enable Authentication.

∅ Tips:

Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.

- 5) Username: Enter the email address used to send the system log.
- 6) Password: Enter the password to login the sender's email address.
- 7) Select Enable Auto Mail.

Tips:

The router will send the system log to the designated email address if this option is enabled.

- 8) Set a fixed time. The recipient will receive the system log sent at this time every day.
- 4. Click Save.

12. 10. Monitor the Internet Traffic Statistics

The Traffic Statistics page displays the network traffic of the LAN, WAN and WLAN sent and received packets, allows you to monitor the volume of Internet traffic statistics.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > System Tools > Traffic Statistics.
- 3. Toggle on Traffic Statistics, and then you can monitor the traffic statistics in Traffic Statistics List section.



Click Refresh to update the statistic information on the page.

Click Reset All to reset all statistic values in the list to zero.

Click Delete All to delete all statistic information in the list.

Click to reset the statistic information of the specific device.

Click to delete the specific device item in the list.

Note: Traffic Statistics and NAT Boost cannot be enabled at the same time, you need to disable NAT Boost first. Please follow step a and b to disable NAT Boost.

a. Click NAT Boost.



b. Deselect Enable NAT Boost and click Save, then click OK on the prompt window.



FAQ

Q1. What can I do if I forgot my wireless password?

The default password is labeled at the back of the router. If the password has been altered, please connect the router to the computer using a cable and follow the steps below:

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Wireless > Wireless Settings, locate the password on the loading page, and mark down your new password for future use.

Q2. How to retrieve the username and password of the web management page?

The default username and password of the web management page are admin (in lower case). If the password has been altered, please follow the steps below:

If you have altered the login username and password, and Password Recovery is enabled:

- Note: Ensure the Internet access is available before using this method.
- 1. Visit http://tplinkwifi.net;
- 2. Click Forget password > Send Code, the verification code will be sent to the mailbox you set when enabling Password Recovery;
- 3. Login to your mailbox to copy the verification code;
- 4. Paste the verification code on the window which pops up in Step 2;
- 5. Click Confirm (the login username and password will be reset as admin after the click):
- 6. Enter admin (in lower case) as both username and password to login.
- **Tips:** Please refer to *Password Recovery* to learn how to configure Password Recovery.

If you have altered the username and password but Password Recovery is disabled:

- 1. Reset the router to factory default settings: Press and hold the Reset button for at least 10 seconds and then release;
- 2. Visit http://tplinkwifi.net, enter admin (in lower case) as both username and password to login.
- Note: You'll need to reconfigure the router to surf the Internet once the router is reset, and please mark down your new password for future use.

Q3. I cannot login to the router's web management page, what can I do?

This can happen for a variety of reasons, please try the methods below and try again.

- Make sure the router connects to the computer correctly and the corresponding LED indicator(s) light up.
- Make sure the IP address of your computer is configured as Obtain an IP address automatically and Obtain DNS server address automatically.
- Make sure the http://tplinkwifi.net you input is right.
- 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, select Never dial a connection;



4) Click LAN settings, deselect the following three options and click OK;



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



- Change a web browser or computer and login again.
- Press and hold the Reset button for at least 10 seconds and then release to reset the router. Try to login again. If login still fails, please contact the technical support.
 - Note: You'll need to reconfigure the router to surf the Internet once the router is reset.

Q4. How to use the WDS Bridging function to extend my wireless network?

For example, my house covers a large area. The wireless network coverage of the router I'm using (the root router) is limited. I want to use an extended router to extend the wireless network of the root router.

Note:

- WDS bridging only requires configuration on the extended router;
- WDS bridging function can be enabled either in 2.4GHz frequency or 5GHz frequency for a dual-band router. We use the WDS bridging function in 2.4GHz frequency as an example.
- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Configure the IP address of the router:
 - 1) Go to Advanced > Network > LAN, configure the IP address of the extended router to be in the same subnet with the root router; (For example, the IP address of the root router is 192.168.0.1, the IP address of the extended router can be 192.168.0.2~192.168.0.254. We take 192.168.0.2 as example.)
 - 2) Click Save.
 - Note: Login to the web management page again if the IP address of the router is altered.



- 3. Survey the SSID to be bridged:
 - 1) Go to Advanced > System Tools > System Parameters and load the 2.4GHz Wireless and click Enable WDS Bridging;
 - 2) Click Survey, locate the root router's SSID and click Choose (Here we take TP-LINK_2512 as example);
 - 3) If the root router has wireless password, you should enter the wireless password of the root router;
 - 4) Click Save.



4. Disable DHCP:

- 1) Go to Network > DHCP Server;
- 2) Deselect Enable DHCP Server and click Save.

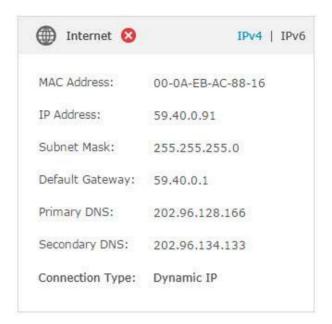


Now you can go to Advanced > Status > Wireless to check the WDS status. When the WDS Status is Run, it means WDS bridging is successfully built.

Q5.1 cannot access the Internet even though the configuration is finished, what can I do?

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Status to check Internet status:

As the follow picture shows, if IP Address is a valid IP address, please try the methods below and try again:



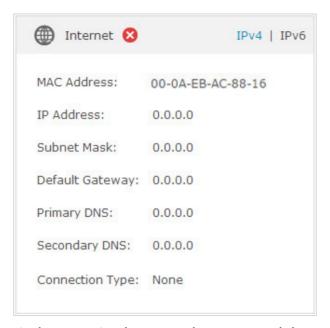
- Your computer might not recognize any DNS server addresses, please manually configure DNS server.
 - 1) Go to Advanced > Network > DHCP Server;
 - 2) Enter 8.8.8.8 as Primary DNS, click Save.
 - Tips: 8.8.8.8 is a safe and public DNS server operated by Google.



- Power cycle the modem and the TP-LINK router.
 - 1) Power off your modem and TP-LINK router, leave them off for 1 minute;
 - 2) Power on your modem first, wait about 2 minutes until it get a solid cable or Internet light;
 - 3) Power back TP-LINK router;
 - 4) Wait another 1 or 2 minutes and check the Internet access.
- Reset the router to factory default settings and reconfigure the router with the help of Quick Setup.

• Please refer to *Upgrade the Firmware* to upgrade the firmware of the router.

As the follow picture shows, if the IP Address is 0.0.0.0, please try the methods below and try again:



- Make sure the physical connection between the router and the modem is proper.
- Clone the MAC address of your computer.
 - 1) Visit http://tplinkwifi.net, and log in with the username and password set for the router;
 - 2) Go to Advanced > Network > Internet and focus on the MAC Clone section
 - 3) Choose an option to your need (Enter the MAC address if Use Custom MAC Address is selected), and click Save.



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.
- Modify the LAN IP address of the router.

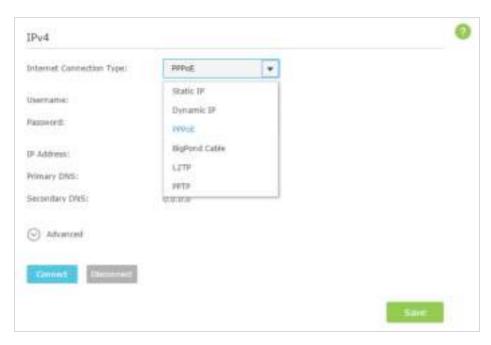
Note:

Most TP-LINK routers use 192.168.0.1/192.168.1.1 as their default LAN IP address, it may be conflicting with the IP range of your existent ADSL modem/router. If so, the router is not able to communicate with your modem and cause you can't access the Internet. To resolve the problem, we need to change the LAN IP address of the router to avoid such conflict, for example, 192.168.2.1.

- 1) Visit http://tplinkwifi.net, and log in with the username and password set for the router;
- 2) Go to Advanced > Network > LAN;
- 3) Modify the LAN IP address as the follow picture shows. Here we take 192.168.2.1 as an example;
- 4) Click Save.



- Power cycle the modem and the TP-LINK router.
 - 1) Power off your modem and TP-LINK router, leave them off for 1 minute;
 - 2) Power on your modem first, wait about 2 minutes until it get a solid cable or Internet light;
 - 3) Power back TP-LINK router;
 - 4) Wait another 1 or 2 minutes and check the Internet access.
- Double check the Internet Connection Type.
 - 1) Confirm your Internet Connection Type, which can be learned from the ISP;
 - 2) Visit http://tplinkwifi.net, and log in with the username and password set for the router:
 - 3) Go to Advanced > Network > Internet;
 - 4) Select your Internet Connection Type and fill in other parameters with the help of page tips;
 - 5) Click Save.



- 6) Power cycle the modem and the TP-LINK router again.
- Please refer to *Upgrade the Firmware* to upgrade the firmware of the router.
- Check the TCP/IP settings on the particular device if all other devices can get Internet from the router.

If tried every method above but cannot access the Internet, please contact the technical support.

Q6. I cannot find my wireless network or I cannot connect the wireless network, what can I do?

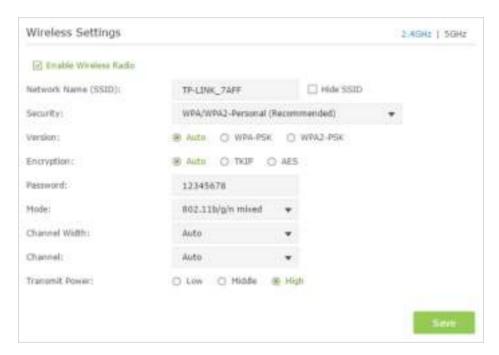
If you fail to find any wireless network, please follow the steps below:

- Make sure the wireless function 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) Clicking on 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 WLAN LED indicator on your wireless router/modem;
- Make sure your computer/device is still in the range of your router/modem, move closer if it is currently too far away;
- Go to Advanced > Wireless > Wireless Settings, and check the wireless router settings, double check your Wireless Network Name, make sure the wireless is not hided;



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

- Authenticating problem, password mismatch:
 - Sometimes it will ask you 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 back of your wireless router;



- 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 on saying 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 was 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;

Q7. What can I do if I cannot access the USB disk after I modify the Authentication settings?

This situation probably happens on your Windows computer due to its special credential mechanism. Once you successfully access the USB disk, the connection will be temporarily recorded and you will be refused to access the USB disk with another account.

You can follow either method below to solve this problem:

- **Method 1**: Log off (sign out) from the Windows to delete the temporary connection record.
- **Method 2**: (Only for Local Storage Sharing) Change the Address of the USB Disk by referring to *To Customize the Address of the USB Disk*.

Q8. What can I do if I am still required to enter the password for USB access even though I have selected Remember my credentials in my

Windows computer?

Because of Windows special credential mechanism, if the USB access username you set is the same as the Windows account name, Windows will be unable to remember the password you set for the USB.

To solve this problem, you can set a different USB access username or make the USB access password the same as your Windows account. After you modify the access account, remember to log off (sigh out) from the Windows.

Q9. Why am I never required to enter the account information for USB access even though I have enabled the Authentication feature?

This situation probably happens on your Windows computer due to its special credential mechanism. If your USB access username and password are both the same as your Windows account, the Windows will automatically use its account information to access the USB disk. Therefore, you will have no need to enter the username and password.

Specifications

	General
Standards	IEEE 802.11ac, IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, IEEE 802.11a, IEEE 802.11e, IEEE 802.11i, IEEE 802.1X, IEEE 802.3X, IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
Protocols	TCP/IP, PPPoE, DHCP, ICMP, NAT, SNTP
	1 10/100/1000M Auto-Negotiation Internet RJ45 port;
Ports	4 10/100/1000M Auto-Negotiation Ethernet RJ45 ports supporting Auto MDI/MDIX;
	2 USB ports supporting storage/FTP/Media/Print Server;
	10BASE-T: UTP category 3, 4, 5 cable (maximum 100m)
	EIA/TIA-568 100 Ω STP (maximum 100m)
Cabling Type	100BASE-TX: UTP category 5, 5e cable (maximum 100m)
cabining type	EIA/TIA-568 100 Ω STP (maximum 100m)
	1000BASE-TX: UTP category 5, 5e cable (maximum 100m)
	EIA/TIA-568 100Ω STP (maximum 100m)
LEDs	U(Power), N (Wireless 2.4G), N (Wireless 5G), P (Ethernet), P (Internet), P (WPS),
LLD3	$\Psi_{(USB\;1),}\;\Psi_{(USB\;2)}$
Safety & Emissions	FCC, CE
	Wireless
Frequency Band*	2.4GHz, 5GHz
	11b: 1/2/5.5/11Mbps
Radio Data Rate	11a/g: 6/9/12/18/24/36/48/54Mbps
naulo Data nate	11n: up to 450Mbps
	11ac: up to 1.3Gbps
Frequency Expansion	DSSS (Direct Sequence Spread Spectrum)
	11ac: 256-QAM for OFDM
Modulation	11n/g/a: QPSK,BPSK,16-QAM, 64-QAM for OFDM
	11b: CCK,DQPSK,DBPSK
Security	WEP, WPA/WPA2, WPA2-PSK/WPA-PSK
	5G: 11a 6Mbps: -92dBm;11a 54Mbps: -74dBm;11ac HT20: -66dBm;11ac HT40:
Sensitivity	-62dBm;11ac HT80: -59dBm;
Sensitivity	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm;
Sensitivity Antenna	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA)
	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA) Three 2.4GHz 2dBi internal antennas
	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA)
Antenna	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA) Three 2.4GHz 2dBi internal antennas Environmental and Physical Operating: 0°C to 40°C (32°F to 104°F)
	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA) Three 2.4GHz 2dBi internal antennas Environmental and Physical
Antenna Temperature	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA) Three 2.4GHz 2dBi internal antennas Environmental and Physical Operating: 0°C to 40°C (32°F to 104°F) Storage: -40°C to 70°C (-40°F to 158°F) Operating: 10% to 90% RH, Non-condensing
Antenna	-62dBm;11ac HT80: -59dBm; 2.4G:11b 1M: -96dBm;11g 54M: -73dBm;11n HT20: -70dBm;11n HT40: -67dBm; Three 5GHz 3dBi detachable antennas (RP-SMA) Three 2.4GHz 2dBi internal antennas Environmental and Physical Operating: 0°C to 40°C (32°F to 104°F) Storage: -40°C to 70°C (-40°F to 158°F)

^{*} Only 2.412GHz \sim 2.462GHz is allowed to be used in USA, which means only channel 1 \sim 11 is available for American users to choose.

COPYRIGHT & TRADEMARKS

Specifications are subject to change without notice. **TP-LINK** is a registered trademark of TP-LINK TECHNOLOGIES CO., LTD. Other brands and product names are trademarks or registered trademarks of their respective holders.

No part of the specifications may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from TP-LINK TECHNOLOGIES CO., LTD. Copyright © 2016 TP-LINK TECHNOLOGIES CO., LTD. All rights reserved.

FCC STATEMENT



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 21 cm from all persons and must not be colocated or operating in conjunction with any other antenna or transmitter."

This device is restricted in indoor environment only.

CE Mark Warning CE 1588 ①

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.

RF Exposure Information

This device meets the EU requirements (1999/519/EC) 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.

National Restrictions

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reason/remark
Belarus	Not implemented	
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund on Svalbard.
Italy	Implemented	The public use is subject to general authorisation by the respective service provider.
		1. SRD with FHSS modulation
	Limited ⁿ implementation	1.1. Maximum 2.5 mW e.i.r.p.
		1.2. Maximum 100 mW e.i.r.p. Permitted for use SRD for outdoor applications without restriction on installation height only for purposes of gathering telemetry information for automated monitoring and resources accounting systems. Permitted to use SRD for other purposes for outdoor applications only when the installation height is not exceeding 10 m above the ground surface.
		1.3.Maximum 100 mW e.i.r.p. Indoor applications.
Russian Federation		2. SRD with DSSS and other than FHSS wideband modulation
		2.1. Maximum mean e.i.r.p. density is 2 mW/MHz. Maximum 100 mW e.i.r.p.
		2.2. Maximum mean e.i.r.p. density is 20 mW/MHz. Maximum 100 mW e.i.r.p. It is permitted to use SRD for outdoor applications only for purposes of gathering telemetry information for automated monitoring and resources accounting systems or security systems.
		2.3. Maximum mean e.i.r.p. density is 10 mW/MHz. Maximum 100 mW e.i.r.p. Indoor applications.
Ukraine	Limited implementation	e.i.r.p. \leq 100 mW with built-in antenna with amplification factor up to 6 dBi.

ATTENTION: Due to EU law, the country settings must be identical to the country where the device is operating (important due to non-harmonised frequencies in the EU).

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.

Cet appareil est conforme aux norms CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

- 1. cet appareil ne doit pas provoquer d'interférences et
- 2. cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

This radio transmitter (IC: 8853A-C9/ Model: Archer C9) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list (Appendix), having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 8853A-C9/ Model: Archer C9) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste (Annexe), et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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 5745-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-topoint operation as appropriate; and

The high-power radars are allocated as primary users (i.e. priority users) of the bands 5745-5850 MHz and that these radars could cause interference and/or damage to LELAN 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 5745-5850 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 5745-5850 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 20cm 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 & BSMI 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。

减少電磁波影響,請妥適使用。

電磁波曝露量MPE 標準值1mW/cm2,送測產品實測值為 (XXX) mW/cm2 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。



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

EHE

Safety Information

- When product has power button, the power button is one of the way to shut off the
 product; when there is no power button, the only way to completely shut off power
 is to disconnect the product or the power adapter from the power source.
- Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.
- Avoid water and wet locations.
- Adapter shall be installed near the equipment and shall be easily accessible.
- The plug considered as disconnect device of adapter.
- 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.

This product can be used in the following countries:

AT	BG	BY	CA	CZ	DE	DK	EE
ES	FI	FR	GB	GR	HU	IE	IT
LT	LV	MT	NL	NO	PL	PT	RO
RU	SE	SG	SK	TR	UA	US	

Explanations of the symbols on the product label

Symbol	Explanation
	DC voltage
<u> </u>	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.

TP-LINK TECHNOLOGIES CO., LTD

DECLARATION OF CONFORMITY

For the following equipment:

Product Description: AC1900 Wireless Dual Band Gigabit Router

Model No.: **Archer C9**Trademark: **TP-LINK**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:

Directives 1999/5/EC, Directives 2004/108/EC, Directives 2006/95/EC, Directives 1999/519/EC,

Directives 2011/65/EU

The above product is in conformity with the following standards or other normative documents

EN 300 328 V1.9.1

EN 301 893 V1.8.1

EN 301 489-1 V1.9.2 & EN 301 489-17 V2.2.1

EN 55022: 2010 + AC:2011

EN 55024: 2010

EN 61000-3-2: 2014

EN 61000-3-3: 2013

EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013

EN 62311: 2008 EN 50385: 2002

The product carries the CE Mark:

C € 1588 ①

Person responsible for making this declaration:

forme

Yang Hongliang
Product Manager of International Business