

9. Find the VPN connection you created, then double-click it.

rgenice + Start this i	enoution Rename this connection =	E • 3
Local Area Conne	ection VPN Connection	
sec.adhather.co.j Intel(1) PRD/308	MT Newson C	

10. Enter the User name and Password you have set for the IPSec VPN server on your mesh device, and click Properties.

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11. Switch to the Security tab, select Layer 2 Tunneling Protocol with IPsec (L2TP/ IPSec) and click Advanced settings.

1994 Connection Properties	H.M
Genual Comuna Security Hadaco	org Dieng
Type of VPM	
Saver 2 Turretting Particulation Part	ei L/IV/Pieri
Data-encoption	Advanced settings
Propert introduction (descention) if and	· indian
Die Dereich Advertungen	Family
Demonstrated particular (FA) Defining a particular Autor Monach (PAP Venice Autor Monach (PAP Venice)) Adventional (and thereb)	escalor Polocy (CHP) (SCHP x2) House topor name and

12. Select Use preshared key for authentication and enter the IPSec Pre-Shared Key you have set for the IPSec VPN server on your mesh device. Then click OK.

Advanced Progenition	
 tes pretarel les fa autorités férciles 	Ar.
C in prints is a finitation 12 perior in here estimate	Collision of the second is on the sec
	Cont

Done! Click Connect to start VPN connection.

• Careed WH	
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in March	new and parametric for the following same in section empirics Cancer Pagewise 1996

15.4. VPN Connections

VPN Connections page displays the clients that are currently connected to the OpenVPN servers, PPTP VPN servers and IPSec VPN hosted on the mesh device.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- 2. Go to Advanced > VPN > VPN connections.

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NAME & COMPANY OF A			
Y MIR CONNECTION			1
	AND COMPLETION		
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Chapter 16

Manage Your Mesh Device

This chapter introduces how to change the system settings and administrate your mesh device's network.

This chapter contains the following sections:

- Set System Time
- <u>Control the LED</u>
- <u>Test Internet Connectivity</u>
- <u>Update the Firmware</u>
- Back Up and Restore Configuration Settings
- Reboot the Mesh Device
- <u>Administration Management</u>
- <u>System Log</u>
- <u>CWMP Settings</u>
- SNMP Settings
- Monitor the Internet Traffic Statistics
- Port Mirror

16.1. Set System Time

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

Follow the steps below to set your system time.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Time Settings page.

Time Zone:	(GMT-08:00) Pacific Time (US & Car	nada); Tijuana	Ŧ
Date:	1/7/2016	(MM/DD/YY)	
Time:	23 V : 59 V : 13 V		
NTP:	C Enable		
NTP Server I:	0.0.0.0	(Optional)	
NTP Server II:	0.0.0.0	(Optional)	

3. Configure the system time using the following methods:

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

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

- 4. Click Save.
- 5. After setting the system time, you can set Daylight Saving Time according to your needs. Enable Daylight Saving Time, and set the start and end time and then click Save to make the settings effective.

		Enable I	Daylight	Savin	g Time							
Start:	2016	Jan	Ŧ	м	Last	Ŧ	W	Tue	Ŧ	т	00:00	Ŧ
End	2016	Oct	Ŧ	м	Last	Ŧ	w	Sun	Ŧ	т	03:00	v

16.2. Control the LED

The LED of the mesh device indicates its activities and status. You can enable the Night Mode feature to specify a time period during which the LED is off.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- 2. Go to Advanced > System > LED Control.
- 3. Enable Night Mode.
- 4. Specify the LED off time, and the LED will be off during this period every day.
- 5. Click SAVE.

		e								
ode Period:	22 🔻	:	0	w t	to	6 7	:	0	w	(HH:MM)
ode Period:	22 🔻	:	0	Ψ.1	to	6 7	:	0	Ŧ	(HH:MM)

16.3. Test Internet Connectivity

Diagnostics function is used to test the connectivity between the mesh device and the host or other network devices.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Diagnostics page.

> To test the internet connection of the mesh device:

Locate the Diagnostic Tools section, and click the Start to test the internet connectivity and you will find the test results in the gray box.

Diagnostic Tools	
Click the Start button to test the Internet connection of the router.	Start

> To run ping and traceroute tools:

1) Locate the Diagnostic Tools section.

Ping & Traceroute & Nslook	oup.			
Choose the test operation:	Ping O Tracer	oute 🔿 Nslookup		
IP address/Domain name:				
 Advanced 				
Interface Name:	Auto	v		
Ping Count:	з		(1-50)	
Ping Packet Size:	32		(4-1472 Bytes)	

- 2) Select Ping or Traceroute or Nslookup as the diagnostic tool to test the connectivity.
- Ping is used to test the connectivity between the mesh device and the tested host, and measure the round-trip time.
- Traceroute is used to display the route (path) your mesh device has passed to reach the tested host, and measure transit delays of packets across an internet Protocol network.
- Nslookup is used to queries the Domain Name System (DNS) to obtain the mapping between a domain name and IP address, or other DNS records.
- 3) Enter the Target IP Address/Domain Name of the tested host. You can change the default test options if necessary.

4) Click Start to begin the diagnostics, and you will find the test results in the gray box.

16.4. Update the Firmware

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

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

Note:

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

> Follow the steps below to upgrade the firmware online:

- 1. Click Check for Upgrades.
- 2. If a new firmware is displayed, click Upgrade and click Yes when prompted, then the mesh device will automatically download the latest firmware file and upgrade.

> Follow the steps below to manually update the firmware:

- 1. Download the latest firmware file for the mesh device from our website <u>www.tp-link.</u> <u>com</u>.
- 2. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 3. Go to Advanced > System Tools > Firmware Upgrade.
- 4. Focus on the Device Information section. Make sure the downloaded firmware file matches with the Hardware Version.

Device Information	
Firmware Version:	
Hardware Version:	

5. Focus on the Local Upgrade section. Click Browse to locate the downloaded new firmware file, and click Upgrade.

-	ID	Device Name	Model Name	MAC Address	Firm	ware Version
2	1	living, room	HX220			

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

16.5. Back Up and Restore Configuration Settings

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

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Backup & Restore.

> To back up configuration settings:

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

Backup			
Save a copy of your current settings.			
	Backup		

> To restore configuration settings:

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

Restore		
Restore previous settings from a sar	ved file.	
File:	Browse	
		Restore

- 2) Wait a few minutes for the restoring and rebooting.
- > To reset the mesh device to factory default settings:

1) Locate the Factory Default Restore section, and click Factory Restore to reset the mesh device.



2) Wait a few minutes for the resetting and rebooting.

Note:

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

16.6. Reboot the Mesh Device

The Reboot feature cleans the cache to enhance the running performance of the mesh device. You can reboot the mesh device manually or set it to reboot regularly.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Reboot Schedule, and you can restart your mesh device.
- > To reboot the mesh device manually:

Click Reboot, and wait a few minutes for the mesh device to rebooting.



- > To schedule the mesh device to reboot at a specific time:
 - 1) Enable Auto Reboot.
 - 2) Specify the Time when the mesh device reboots.

Reboot Schedule	
	oot Schedule, please make sure your router is connected to the internet. Then go to <u>Time Settinos</u> Internet to get the correct network time.
Current Time:	01/08/2016 00:10:57
Reboot Schedule:	Enable
Repeat	Every day 🐨
Reboot Time:	3 * : 0 *
	Save

3) Click Save to make the settings effective.

Some settings of the mesh device may take effect only after rebooting, including:

- · Change the LAN IP Address (system will reboot automatically).
- · Change the Operation Mode (system will reboot automatically).
- Upgrade the firmware of the mesh device (system will reboot automatically).
- Restore the mesh device to its factory defaults (system will reboot automatically).
- Update the configuration with the file (system will reboot automatically).

Note:

The Auto Reboot feature takes effect based on the mesh device's system time. Please make sure you have already set up the time of the mesh device.

16.7. Administration Management

16.7.1. Change the Login Password

A login password is required to log in to the mesh device's web management page. You are asked to set a login password at first login. You can change it with the account management feature.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the Account Management section.

Account Management	
Citcl Processored	Ø
New Password:	Ø Low Midde Hah
Contine New Esseword	Ø

- 3. Enter the old password and a new password twice (both case-sensitive).
- 4. Click Save to make the settings effective.

16.7.2. Local Management

You can control the local devices' authority to manage the mesh device via Local Management feature. By default all local connected devices are allowed to manage the mesh device. You can also specify one device to manage the mesh device and enable local management over a more secure way, HTTPS.

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

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the Local Management section.
- **3.** Enable Local Management over HTTPS and keep the Port for HTTP and Port for HTTPS as the default settings. Enter the IP address or MAC address of the local device to manage the mesh device.

Local Management			
Port for HTTP:	80		
Local Management via HTTPS:	Enable		
Port for HTTPS:	443		
IP/MAC Address:			
			Save

4. Click Save.

Now, you can manage the mesh device over both HTTP (<u>http://tplinkwifi.net</u>) and HTTPS (<u>https://tplinkwifi.net</u>).

Note:

If you want all local devices can manage the mesh device, just leave the IP/MAC Address field blank.

16.7.3. Remote Management

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

Note:

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

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

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the Remote Management section.

Remote Management:	Enable
Port for HTTP:	80
Remote Management via HTTPS:	Enable
Port for HTTPS:	443
Manage This Router via the Address:	
Your router is not connected	to the Internet.
Client Device Allowed for Remote Mar	hagement.
Only the Following IP Addresses	
🚭 Add a new IP	
	/ 32 🔻 🖨
O AI	

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

All devices or the specific device on the internet can log in to your mesh device using the address displayed on the Manage This Mesh Device via the Address field to manage the mesh device.

Ø Tips:

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



2. The mesh device's WAN IP is usually a dynamic IP. Please refer to <u>Configure IPv6 LAN Settings</u> if you want to log in to the mesh device through a domain name.

16.7.4. HTTP Referer Head Check

HTTP referer header check function can protect your networks against CSRF attacks. This function is enabled by default. You can disable this function if needed.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the HTTP Referer Head Check section.
- 3. Clear the Enable check box and click Save if you want to disable this function.



16.7.5. ICMP Ping

ICMP (Internet Control Message Protocol) Ping is used to diagnose the network by sending ICMP echo request packets to the target remote or local host and waiting for an ICMP response.

You can control the mesh device's replies to ICMP Ping requests.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the ICMP Ping section.

ICMP Ping		
ICMP Ping:	🗌 Remote 🕑 Local	
		Save

- **3.** Specify the ICMP Ping reply options.
 - Remote: Select it if you want the computers on a public network to ping the mesh device's WAN IP address.
 - Local: Enabled by default, if enabled, the computers on a private network can ping the mesh device's LAN IP address.
- 4. Click Save to make the settings effective.

16.7.6. Session ID

When Session ID function is enabled, it will be saved into Flash every time the PPP connection is updated. This can prevent some problems of PPPoE/L2TP/PPTP connection being rejected to reconnect to servers when the device is powered off or the network disconnect accidentally.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Administration, and locate the Session ID section.



3. Enable the Update Session ID and Click Save to make the settings effective.

16.8. System Log

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

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > System Log page.

a game	ntog				
lype:			ALL.	*	
39995			Notes	10	
					O fairware 😋 Develo Al
π	Title	Туре	Laivier.		Log Content
3	2016-01-01 0 2:43:34	HTTPD	Notex		Chairing
	og betbigs		Saveing		

> To view the system logs:

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

Click Refresh to refresh the log list.

To save the system logs:

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

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

Click Log Settings to set the storage path of logs.

Log Settings				
🗵 Save Locally				
Minimum Level	Information	Ψ.		
Save Remotely				
Minimum Level	Warning	Ψ.		
Server IF:	192,160,1,100			
Server Port	514			
Local Facility Name:	Haar	-		
			Dack	Save

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

16.9. CWMP Settings

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

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > CWMP Settings page.

CPE WAN Management Protocol (also called	TR.060 allows Jute Configuration Servi	er (ACS) to norform auto-configuratio
provision, connection, and diagnostics to this		
CWMP:		
Inform:		
inform DataModel with TR098:		
Inform Interval:	300	
ACS URL:	https://tauc-cwmp	-server.tpli
ACS Username:	admin	
ACS Password:	•••••	ø
Interface used by TR-069 client:	Any WAN	Ŧ
CPE ID:	IAN MAC	O WAN MAC
CPE ID:	BN CLANMAC	O WAN MAC
	SN O LAN MAC admin	O WAN MAC
Connection Request Authentication		○ WAN MAC
Connection Request Authentication	admin	ø
Connection Request Authentication Usemame: Password:	admin	ø
Connection Request Authentication Usemame: Password:	admin Manual O Randor	ø
Connection Request Authentication Username: Password: Path:	admin Manual O Randor /tr069	ø
Connection Request Authentication Usemame: Password: Path: Port:	admin Manual O Randor /tr069	ø

- CWMP: Enable or disable the CWMP (CPE WAN Management Protocol) function.
- Inform: Enable or disable the function of sending an inform message to the ACS (Auto Configuration Server) periodically.
- Inform Interval: Set the time interval in seconds when the Inform message will be sent to the ACS.
- ACS URL: Enter the web address of the ACS which is provided by your ISP.

- ACS Username/Password: Enter the username/password to log in to the ACS server.
- Interface used by TR-069 client: Select which interface to be used by the TR-069 client.
- Display SOAP messages on serial console: Enable or disable this function.
- Connection Request Authentication: Select this check box to enable authentication for the connection request.
- Username/Password: Enter the username/password for the ACS server to log in to the mesh device.
- Path: Enter the path for the ACS server to log in to the mesh device.
- Port: Enter the port that connects to the ACS server.
- URL: Enter the URL that connects to the ACS server.
- Simple Traversal of UDP over NATs: Select this check box to enable STUN for the connection request and set the STUN maximum and minimum keep alive period, server address and port.

Click Save to make the settings effective.

16. 10. SNMP Settings

SNMP (Simple Network Management Protocol) is widely used in network management for network monitoring. It allows management applications to retrieve status updates and statistics from the SNMP agent within this device. In this way, network administrators can easily search and modify the information on any node on the network. Meanwhile, they can locate faults promptly and implement the fault diagnosis, capacity planning and report generating.

The SNMP Agent is an application running on the mesh device that performs the operational role of receiving and processing SNMP messages, sending responses to the SNMP manager, and sending traps when an event occurs. So a mesh device contains SNMP "agent" software can be monitored and/or controlled by SNMP Manager using SNMP messages.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > SNMP Settings page.

SNMP Settings					
Simple Network Management from the SINMP agent within th		froms to retrieve status opticies and a bricks			
I neble SNM SAgeol					
SNMP Agent for WAN					
Read-only Community	public				
Write Community	private				
System Name	EX510				
System Description	0.4.0 3.0.0 v6060.0 Bulli				
System Location					
System Contect					
hep Manager 11	0.0.0.0				
		Save			

- SNMP Agent/SNMP Agent for WAN: Turn on to enable the built-in SNMP agent that allows the mesh device to operate as the operational role in receiving and processing of SNMP messages, sending responses to the SNMP manager, and triggering SNMP traps when an event occurs.
- Read-only Community: Displays the default public community string that protects the mesh device from unauthorized access.
- Write Community: Displays the default write community string that protects the mesh device from unauthorized changes.
- System Name: Displays the administratively-assigned name for this managed device.
- System Description: Displays the textual description of the managed device. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software.
- System Location: Displays the physical location of this device (for example, the telephone closet, 3rd floor).
- System Contact: Displays the textual identification of the contact person for this managed device, together with information on how to contact this person.
- Trap Manager IP: Displays the IP address of the host to receive the traps.

You are suggested to keep the default settings. Click Save to make the settings effective.

16. 11. Monitor the Internet Traffic Statistics

The traffic statistics function allows you to monitor the volume of internet traffic statistics. You can view the network traffic of the LAN, WAN and WLAN sent and received packets.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Traffic Statistics.
- **3.** Turn on Enable Traffic Statistics to enable traffic statistics function, you can view the total number of packets and bytes received and transmitted by the mesh device within the selected Statistics Interval. This function is disabled by default.

Traffic Statistics		
Enable Traffic Statistics: Traffic Statistics and NAT Boo	est cannot be enabled at the same time.	
Statistics Interval:	10 m seconds	
		Save

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

					O Re	itesh 💭 R	leset All 🗢	Delete Al
IP Address/ MAC Address	Total Packets	Total Bytes	Current Packets	Current Bytes	Current ICMP Tx	Current UDP Tx	Current SYN Tx	Modify
-		_		-	-	_	-	

16. 12. Port Mirror

This feature copies network packets of the WAN port to a specific LAN port for data analysis and network monitoring.

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with the password you set for the mesh device.
- 2. Go to Advanced > System Tools > Port Mirror

Port Mirror			
Lineble	[₹] 1 milite		
Leo Inferiece	LANL		
Imeoul	0	(seconds)	
			Save

- 3. Enable Port Mirroring.
- 4. Select a LAN port to mirror network packets of the WAN port.
- **5.** Set a Timeout duration after which Port Mirroring will disable automatically. If you set Timeout to 0 seconds, Port Mirroring will not disable automatically.
- 6. Save the settings.

FAQ

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

The default wireless password is printed on the label of the mesh device. If the password has been altered:

- 1. Connect your computer to the mesh device using an Ethernet cable.
- 2. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- 3. Go to Wireless to retrieve or reset your wireless password.

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

- If you are using a TP-Link ID to log in, or you have enabled the Password Recovery feature of the mesh device, click Forgot password on the login page and then follow the instructions to reset it.
- Alternatively, press and hold the Reset button of the mesh device until the Power LED blinks to restore factory default settings, and then visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u> to create a new login password.

Note:

• You'll need to reconfigure the mesh device to surf the internet once the mesh device is reset, and please mark down your new password for future use.

Q3. What should I do if I can't log in to the mesh device's web management page?

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

- Make sure your computer is connected to the mesh device 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 <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u> is correctly entered.
- Check your computer's settings:
 - 1) Go to Start > Control Panel > Network and Internet, and click View network status and tasks.
 - 2) Click Internet Options on the bottom left.
 - 3) Click Connections and select Never dial a connection.

nternet Properties	1-8-1
neral Security Privacy Content Connections	Programs Advance
To set up an Internet connection, click Setup.	Setup
Dial-up and Virtual Private Network settings	
8roadband Connection	Add
	Add VPN
	Remove
Choose Settings if you need to configure a proxy server for a connection.	Settings
Never dial a connection	
O Dial sherever a network connection is not prese	nt
Always dal my default connection	
Curnert. Name	secondarit:
.ocal Area Network (LAH) settings	
LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings.	LAN settings

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

Automatic con use of manual					s. To ensure the
Automatica	ally detect s	ettings			
Use autom	atc config.	ration script			
Address					
Proxy server					
				Company of the	CONTRACTOR OF A DESCRIPTION OF A DESCRIP
		r your LAN (tions).	These :	settings	will not apply to
Use a prox	VPN connec	tions).	These s		Advanced
Use a prox dial-up or v	VPN connec	tions).	641 [80	

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

Interne	e Properti	es:				9
General	Security	Phivacy	Content	Connections	Programa	Advanced
Setting	6				n soc att	-
	Enable Move Reset Reset Browsing Auton Cose Disable Usable	s expand caret Br syntem co text size zoom lev atically re unused fr e script di e script di	eret with fit to medium to medium el for new ecover fror elogging (ebugging (new windows ocus/selection of for new windo while zooming? windows and to n page layout e story and Pavo Internet Explor Other)	hanges ws and tabe * bbs wrors with C rites* er)	
	V Deple	y Acceler	nttud rate	it every script and the script of the script	stor.	
*18	es effect o	Nuter Aon	restart Ini	Restore	advanced s	etlings
Rese	ition.	Explorer	's settings	to their default	- NOR	
			0	<)[Q	ancel	Apply

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

Note: You'll need to reconfigure the mesh device to surf the internet once the mesh device is reset.

Q4. What should I do if I can't access the internet even though the configuration is finished?

- 1. Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- 2. Go to Advanced> Network > Status to check internet status:

If IP Address is a valid one, please try the methods below and try again:

- Your computer might not recognize any DNS server addresses. Please manually configure the DNS server.
 - 1) Go to Advanced > Network > LAN Settings > DHCP Server.
 - 2) Enter 8.8.8.8 as Primary DNS, click SAVE.
 - Tips: 8.8.8 is a safe and public DNS server operated by Google.

	DHCP Server () DHCP Relay
IP Address Pool:	192 168 88 2 192 168 88 249
Address Lesse Time	120 minutes (1-700 The detaul value is (1400)
Detentl Celevay	192 . 168 . 88 . 1 (Options)
Default Domain:	(Optional)
Primery DNS	B . B . B . B (Oshnod)
Secondary DNS:	0 0 0 0 (Optional)

- Restart the modem and the mesh device.
 - 1) Power off your modem and mesh device, and leave them off for 1 minute.
 - 2) Power on your modem first, and wait about 2 minutes until it gets a solid cable or Internet light.
 - 3) Power on the mesh device.
 - 4) Wait another 1 or 2 minutes and check the internet access.
- Reset the mesh device to factory default settings and reconfigure the mesh device.
- Upgrade the firmware of the mesh device.
- Check the TCP/IP settings on the particular device if all other devices can get internet from the mesh device.

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

Status	
Internet status menview is mispaged in	the page
internet	
Statum	WAN port is unplugged
Internet Connection Type:	Dynamic IP
IP Address	
Subnet Mask	0,0,0,0
Detaut Gateway	
Primary DNS.	0,0,0,0
Secondary DNS	0.0.0.0

- Make sure the physical connection between the mesh device and the modem is proper.
- Clone the MAC address of your computer.

- 1) Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- Go to Internet or Advanced > Network > Internet and focus on the MAC Clone section.
- 3) Choose an option as needed (enter the MAC address if Use Custom MAC Address is selected), and click SAVE.

MAC Clon	e	
	Router MAC Address.	Use Default MAC Address 🤍
		Line Detault MAC Address
		Clone Current Device MAC
		Use Custom MAC Address

Ø 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 mesh device 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 mesh device.
- The MAC addresses of a computer in wired connection and wireless connection are different.

• Modify the LAN IP address of the mesh device.

Note:

Most TP-Link mesh devices use 192.168.88.1as their default LAN IP address, which may conflict with the IP range of your existing ADSL modem/router. If so, the mesh device is not able to communicate with your modem and you can't access the internet. To resolve this problem, we need to change the LAN IP address of the mesh device to avoid such conflict, for example, 192.168.2.1.

- 1) Visit <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
- 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.

LAN		
View and configure LAN settings.		
MAC Address:	98-DA-C4-B4-01-D8	
IP Address:	192.168.2.1	
Subnet Mask:	255.255.255.0	\sim

• Restart the modem and the mesh device.

- 1) Power off your modem and mesh device, and leave them off for 1 minute.
- 2) Power on your modem first, and wait about 2 minutes until it get a solid cable or Internet light.
- 3) Power on the mesh device.
- 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 <u>http://tplinkwifi.net</u> or <u>http://192.168.88.1</u>, and log in with your TP-Link ID or the password you set for the mesh device.
 - 3) Go to Advanced > Network > Internet.
 - 4) Select your Internet Connection Type and fill in other parameters.
 - 5) Click Save.

Internet		
Set up an internet connection with the s	ervice information provided by your IS	P (internet service provider)
Internet Connection Type:	Dynamic IP ~	
IP Address:	Static IP	
Subnet Mask:	Dynamic IP	
Default Gateway:	PPPoE	
Primary DNS:	L2TP PPTP	
Secondary DNS:	0.0.0.0	
	RENEW	

- 6) Restart the modem and the mesh device again.
- Please upgrade the firmware of the mesh device.

If you've tried every method above but still cannot access the internet, please contact the technical support.

Q5. What should I do if I can't find my wireless network or I cannot connect the wireless network?

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

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

- Make sure the wireless adapter driver is installed successfully and the wireless adapter is enabled.
 - On Windows 7
 - 1) If you see the message No connections are available, it is usually because the wireless function is disabled or blocked somehow.
 - 2) Click Troubleshoot and windows might be able to fix the problem by itself.
 - On Windows XP
 - 1) If you see the message Windows cannot configure this wireless connection, this is usually because windows configuration utility is disabled or you are running another wireless configuration tool to connect the wireless.
 - 2) Exit the wireless configuration tool (the TP-Link Utility, for example).
 - 3) Select and right click on My Computer on desktop, select Manage to open Computer Management window.
 - 4) Expand Services and Applications > Services, find and locate Wireless Zero Configuration in the Services list on the right side.
 - 5) Right click Wireless Zero Configuration, and then select Properties.
 - 6) Change Startup type to Automatic, click on Start button and make sure the Service status is Started. And then click OK.

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

- Check the WLAN LED indicator on your mesh device/modem.
- Make sure your computer/device is still in the range of your mesh device/modem. Move it closer if it is currently too far away.
- Go to Wireless or Advanced > Wireless > Wireless Settings, and check the wireless settings. Double check your wireless Network Name and SSID is not hided.

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

- Authenticating problem/password mismatch:
 - Sometimes you will be asked to type in a PIN number when you connect to the wireless network for the first time. This PIN number is different from the Wireless Password/Network Security Key, usually you can only find it on the label of your mesh device.



- 2) If you cannot find the PIN or PIN failed, you may choose Connecting using a security key instead, and then type in the Wireless Password/Network Security Key.
- 3) If it continues to show note of Network Security Key Mismatch, it is suggested to confirm the wireless password of your mesh device.

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

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

FCC compliance information statement

Product Name: BBA Mesh Model Number: BBA Mesh

Component Name	Model			
I.T.E. Power	T120200-2B1			

Responsible party:

TP-Link USA Corporation Address: 10 Mauchly, Irvine, CA 92618 Website: http://www.tp-link.com/us/ Tel: +1 626 333 0234 Fax: +1 909 527 6804 E-mail: sales.usa@tp-link.com

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

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

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

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

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

FCC RF Radiation Exposure Statement

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

To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 23 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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

Issue Date: 2022.09.06

FCC compliance information statement

Product Name: I.T.E. Power Supply Model Number: T120200-2B1 Responsible party: TP-Link USA Corporation Address: 10 Mauchly, Irvine, CA 92618 Website: http://www.tp-link.com/us/ Tel: +1 626 333 0234 Fax: +1 909 527 6804 E-mail: sales.usa@tp-link.com

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

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

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

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

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

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

Issue Date: 2022.09.06

Canadian Compliance Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

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

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

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

Caution:

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;

DFS (Dynamic Frequency Selection) products that operate in the bands 5250-5350 MHz, 5470-5600MHz, and 5650-5725MHz.

Avertissement:

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;

Les produits utilisant la technique d'atténuation DFS (sélection dynamique des fréquences) sur les bandes 5250-5350 MHz, 5470-5600MHz et 5650-5725MHz.

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)

NCC Notice & BSMI Notice:

注意!

取得審驗證明之低功率射頻器材,非經核准,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及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信;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。

前述合法通信,指依電信管理法規定作業之無線電通信。

低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干 擾。

應避免影響附近雷達系統之操作。

高增益指向性天線只得應用於固定式點對點系統。

安全諮詢及注意事項

- 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。
- 不要私自拆開機殼或自行維修,如產品有故障請與原廠或代理商聯繫。

限用物質含有情況標示聲明書

設備名稱: V Equipment		me Mesh Wi	-Fi AP	型號(型式):HX510/HX220/ Type designation (Type)				
	限用物質及其化學符號 Restricted substances and its chemical symbols							
單元 Unit	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr ⁺⁶)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)		
РСВ	0	0	0	0	0	\bigcirc		
外殼	0	0	0	0	0	\bigcirc		
電源供應器	_	0	0	0	0	\bigcirc		

天線	0	0	0	0	\bigcirc	\bigcirc
備考1. 〝超出	備考1. [*] 超出0.1 wt % 2 [*] 超出0.01 wt % 係指限用物質之百分比含量超出百分比含量基準值					
Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.						
備考2. *〇′係指該項限用物質之百分比含量未超出百分比含量基準值。						
Note 2: "〇" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.						
備考3. 》一《係指該項限用物質為排除項目。						
Note 3: The " $-$ " indicates that the restricted substance corresponds to the exemption.						

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device. If you need service, please contact us.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended
- Do not use the device where wireless devices are not allowed.
- Adapter shall be installed near the equipment and shall be easily accessible.
- Use only power supplies which are provided by manufacturer and in the original packing of this product. If you have any questions, please don't hesitate to contact us.
- This product uses radios and other components that emit electromagnetic fields. Electromagnetic fields and magnets may interfere with pacemakers and other implanted medical devices. Always keep the product and its power adapter more than 15 cm (6 inches) away from any pacemakers or other implanted medical devices. If you suspect your product is interfering with your pacemaker or any other implanted medical device, turn off your product and consult your physician for information specific to your medical device.
- Operating Temperature: 0°C ~40°C

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

Explanations of the symbols on the product label

Symbol	Explanation
	DC voltage
\sim	AC voltage
	Class II equipment

Symbol	Explanation
♦ • €•♦	Polarity of output terminals
(VI)	Energy efficiency Marking
\square	Indoor use only
\wedge	Caution
	Operator's manual
X	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.