User Guide

Festa AX3000 Gigabit VPN Gateway

 REV1.20.0 1910013713

CONTENTS

About This Guide

This User Guide provides information for managing Festa Gigabit VPN Gateway in standalone mode. The Standalone mode for Festa devices only supports some basic troubleshooting. For device management, please use the Festa Cloud-Based Controller.

Intended Readers

This Guide is intended for network managers familiar with IT concepts and network terminologies.

Conventions

When using this guide, notice that features available may vary by model and software version. All images, steps, and descriptions in this guide are only examples and may not reflect your actual experience.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute the warranty of any kind, express or implied. Users must take full responsibility for their application of any products.

In this Guide, the following conventions are used:

- The symbol  stands for Note. Notes contain suggestions or references that helps you make better use of your device.
- **Menu Name > Submenu Name > Tab** page indicates the menu structure. **Network > LAN > LAN** means the Interface Statistics page under the Traffic Statistics menu option that is located under the Status menu.
- **Bold** font indicates a button, toolbar icon, menu or menu item.

More Information

- The latest software and documentations can be found at Download Center at https://www.tp-link.com/support.
- The Installation Guide (IG) can be found where you find this guide or inside the package of the gateway.
- Specifications can be found on the product page at https://www.tp-link.com.
- To ask questions, find answers, and communicate with TP-Link users or engineers, please visit https://community.tp-link.com to join TP-Link Community.
- Our Technical Support contact information can be found at the Contact Technical Support page at https://www.tp-link.com/support.

Part 1

Accessing the Gateway

CHAPTERS

1 Determine the Management Method

Before building your network, choose a proper method to manage your gateway based on your actual network situation. The gateway supports two configuration options: Standalone Mode or Controller Mode.

Firstly, you should configure the gateway in Standalone mode to connect it to the internet, then you can manage it in controller mode via Festa SDN Controller.

- Controller Mode

If you want to configure and manage a large-scale network centrally, which consists of mass devices such as access points, switches, and gateways, Controller Mode is recommended. In Controller Mode, the gateway can be centrally configured and monitored via Festa SDN Controller.

To prepare the gateway for Festa SDN Controller Management, refer to Controller Settings. For detailed instructions about the network topology in such situations and how to use Festa SDN Controller, refer to the User Guide of Festa SDN Controller. The guide can be found on the download center of our official website: https://www.tp-link.com/support/download/.

- Standalone Mode

In Standalone Mode, you can access and manage the gateway using the GUI (Graphical User Interface, also called web interface in this text).

This User Guide introduces how to configure the gateway in Standalone Mode.

Note:

The GUI is inaccessible while the gateway is managed by a controller. To turn the gateway back to Standalone Mode and access its GUI, you can forget the gateway on the controller or reset the gateway.

2 Web Interface Access

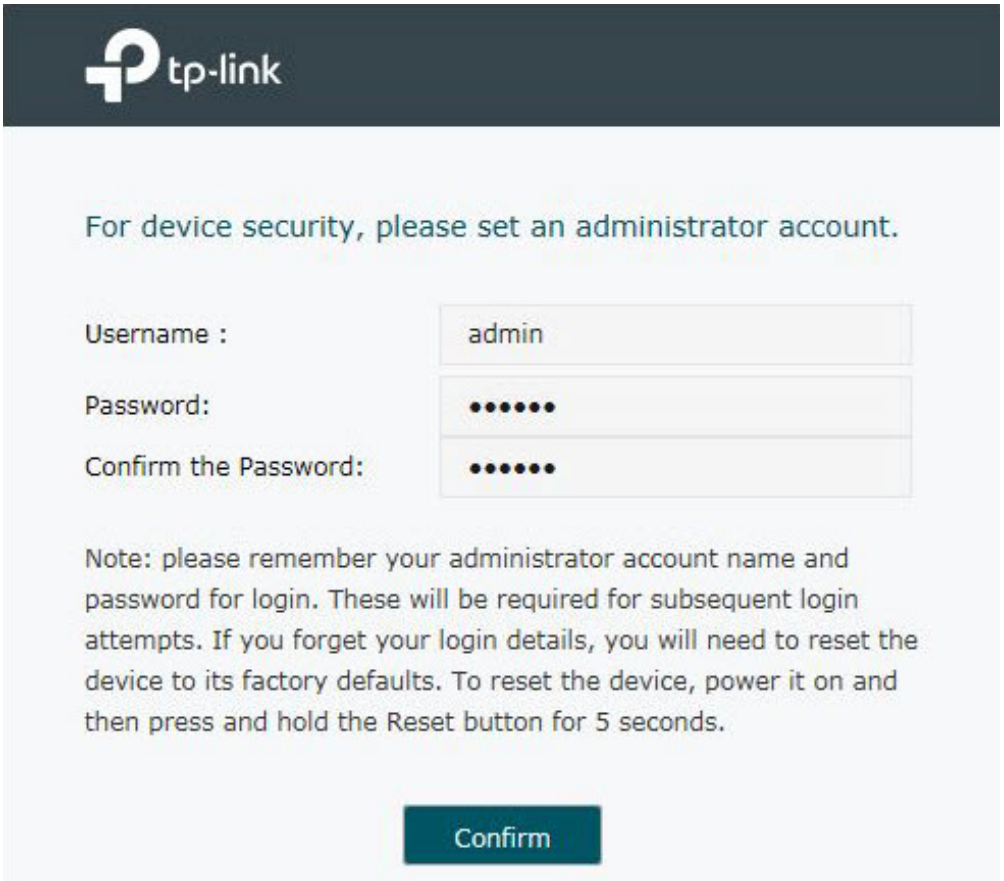
The following example shows how to log in via the web browser.

1) Connect to the gateway using the default SSID printed on the label at the bottom of the gateway or connect a PC to a LAN port of the gateway with an RJ45 port properly. If your computer is configured with a fixed IP address, change it to “Obtain an IP address automatically“.
2) Open a web browser and type the default management address http://tplinker.net or http://192.168.0.1 in the address field of the browser, then press the Enter key.

Figure 2-1 Enter the gateway's IP Address In the Browser

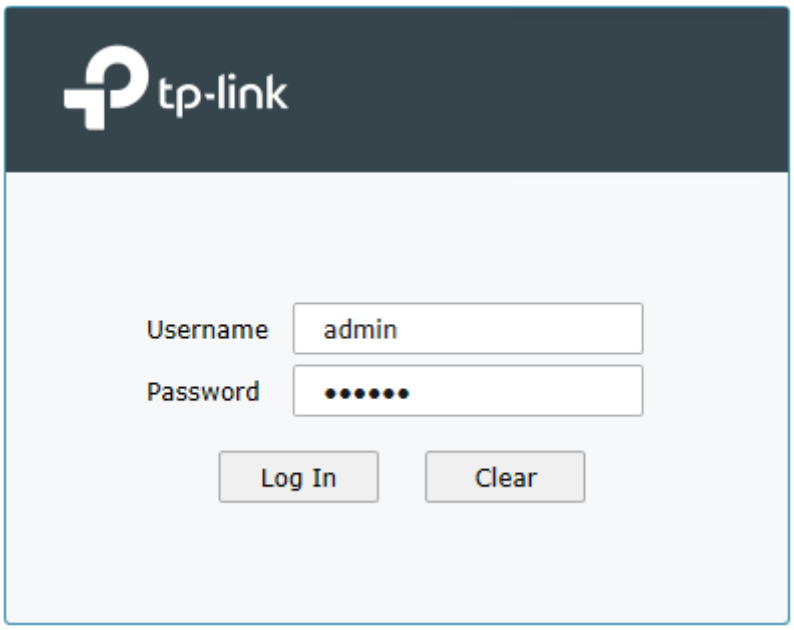
3) Create a username and a password for subsequent login attempts.

Figure 2-2 Create a Username and a Password



4) Use the username and password set above to log in to the webpage.

Figure 2-3 Login Authentication



5) After a successful login, you can configure the function by clicking the setup menu on the left side of the screen.

Part 2

Configuring Network

CHAPTERS

1 Overview

The Network module provides basic gateway functions, including WAN connection and LAN settings.

1.1 Supported Features

WAN

WAN ports connect to the internet. You can configure multiple WAN ports for your network. Each WAN port has its own connection type and parameters, which you should configure according to the requirements of your ISP.

LAN

When the LAN ports of the gateway connect to your local network devices, the gateway functions as the gateway, which allows those devices to connect to the internet.

2 WAN Configuration

You can configure multiple WAN ports for your network. Each WAN port can have its own WAN connection, providing link backup and load balancing.

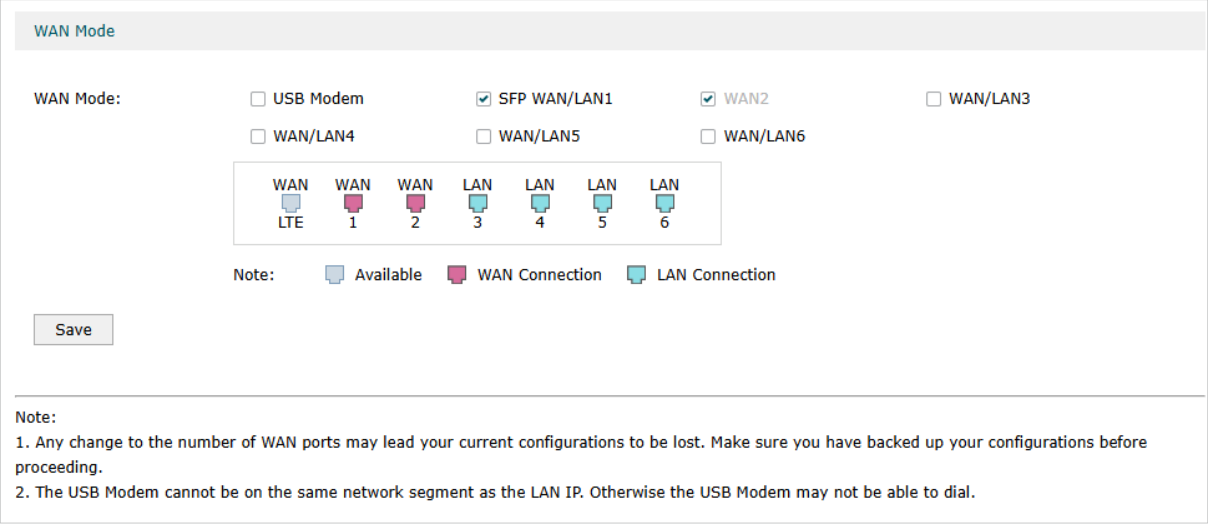
To complete WAN configuration, follow these steps:

1) Configure the number of WAN ports.
2) Configure the WAN connection.

2.1 Configuring the Number of WAN Ports

Choose the menu **Network** > **WAN** > **WAN Mode** to load the following page.

Figure 2-1 Configuring the WAN Mode



WAN Mode	Determine the number of WAN ports according to your needs. To enable a port as WAN port, check the box of the desired port. To configure multiple WAN ports, enable the ports one by one. Only WAN, WAN/LAN, SFP WAN (for certain devices) and USB Modem can function as WAN port.

Note:

Any change to the number of WAN ports may lead your current configurations to be lost. Make sure you have backed up your configurations before proceeding.

2.2 Configuring the WAN Connection

The gateway supports five connection types: **Static IP, Dynamic IP, PPPoE, L2TP, PPTP,** you can choose one according to the service provided by your ISP.

Static IP: If your ISP provides you with a fixed IP address and the corresponding parameters, choose Static IP.

Dynamic IP: If your ISP automatically assigns the IP address and the corresponding parameters, choose Dynamic IP.

PPPoE: If your ISP provides you with a PPPoE account, choose PPPoE.

L2TP: If your ISP provides you with an L2TP account, choose L2TP.

PPTP: If your ISP provides you with a PPTP account, choose PPTP.

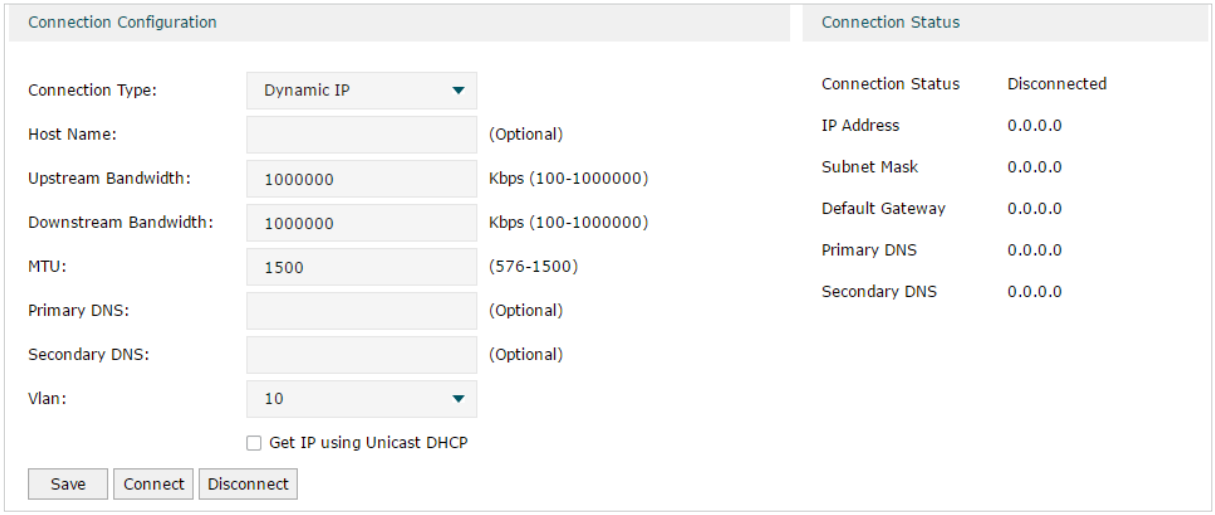
Note:

The number of configurable WAN ports is decided by **WAN Mode**. To configure **Wan Mode**, refer to Configuring the Number of WAN Ports.

Configuring the Dynamic IP

Choose the menu **Network** > **WAN** > **WAN** to load the following page.

Figure 2-2 Configuring the Dynamic IP



In the **Connection Configuration** section, select the connection type as Dynamic IP. Enter the corresponding parameters and click **Save**.

Connection Type	Choose the connection type as Dynamic IP if your ISP automatically assigns the IP address.
Host Name	(Optional) Enter a name for the gateway. It is null by default.
Upstream Bandwidth	Specify the upstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Upstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
Downstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Downstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.

MTU	Specify the MTU (Maximum Transmission Unit) of the WAN port. MTU is the maximum data unit transmitted in the physical network. When Dynamic IP is selected, MTU can be set in the range of 576-1500 bytes. The default value is 1500.
Primary/ Secondary DNS	(Optional) Enter the IP address of the DNS server provided by your ISP.
VLAN	Add the WAN port to a VLAN. Generally, you don't need to manually configure it unless required by your ISP. By default, the WAN port is automatically assigned to a VLAN, and the egress rule of the VLAN is UNTAG, so the packets are transmitted by the WAN port without VLAN tags. If you want the WAN port to transmit packets with VLAN tag, you need to create the corresponding VLAN first and configure its egress rule as TAG, then manually add the WAN port to that VLAN. To create VLANs, go to **Festa Cloud-Based Controller**.
Get IP using Unicast DHCP	The broadcasting requirement may not be supported by a few ISPs. Select this option if you can not get the IP address from your ISP even with a normal network connection. This option is not required generally.
Connect/ Disconnect	Click the button to active/terminate the connection.

Configuring the Static IP

Choose the menu **Network** > **WAN** > **WAN** to load the following page.

Figure 2-3 Configuring the Static IP

In **Connection Configuration** section, select the connection type as Static IP. Enter the corresponding parameters and click **Save**.

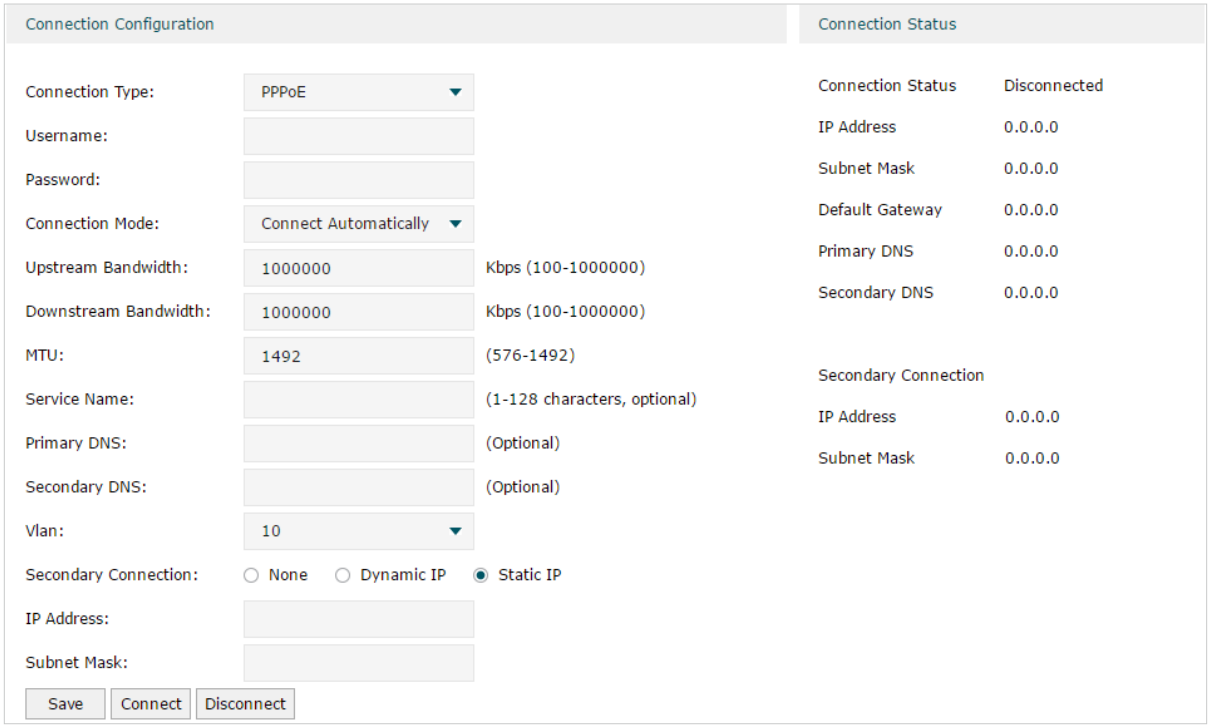
Connection Type	Choose the connection type as Static IP if your ISP has offered you a fixed IP address.

IP Address	Enter the IP address provided by your ISP.
Subnet Mask	Enter the subnet mask provided by your ISP.
Default Gateway	Enter the default gateway provided by your ISP.
Upstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the “Maximum Downstream Bandwidth” in **Bandwidth Control** set on the Festa Cloud-Based Controller,, to make “Bandwidth Control” take effect, please ensure this parameter is set correctly.
Downstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the “Maximum Downstream Bandwidth” in **Bandwidth Control** set on the Festa Cloud-Based Controller,, to make “Bandwidth Control” take effect, please ensure this parameter is set correctly.
MTU	Specify the MTU (Maximum Transmission Unit) of the WAN port. MTU is the maximum data unit transmitted in the physical network. When Static IP is selected, MTU can be set in the range of 576-1500 bytes. The default value is 1500.
Primary/ Secondary DNS	(Optional) Enter the IP address of the DNS server provided by your ISP.
VLAN	Add the WAN port to a VLAN. Generally, you don’t need to manually configure it unless required by your ISP. By default, the WAN port is automatically assigned to a VLAN, and the egress rule of the VLAN is UNTAG, so the packets are transmitted by the WAN port without VLAN tags. If you want the WAN port to transmit packets with VLAN tag, you need to create the corresponding VLAN first and configure its egress rule as TAG, then manually add the WAN port to that VLAN. To create VLANs, go to **Festa Cloud-Based Controller**.

Configuring the PPPoE

Choose the menu **Network** > **WAN** > **WAN** to load the following page.

Figure 2-4 Configuring the PPPoE



In the **Connection Configuration** section, select the connection type as PPPoE. Enter the corresponding parameters and click **Save**.

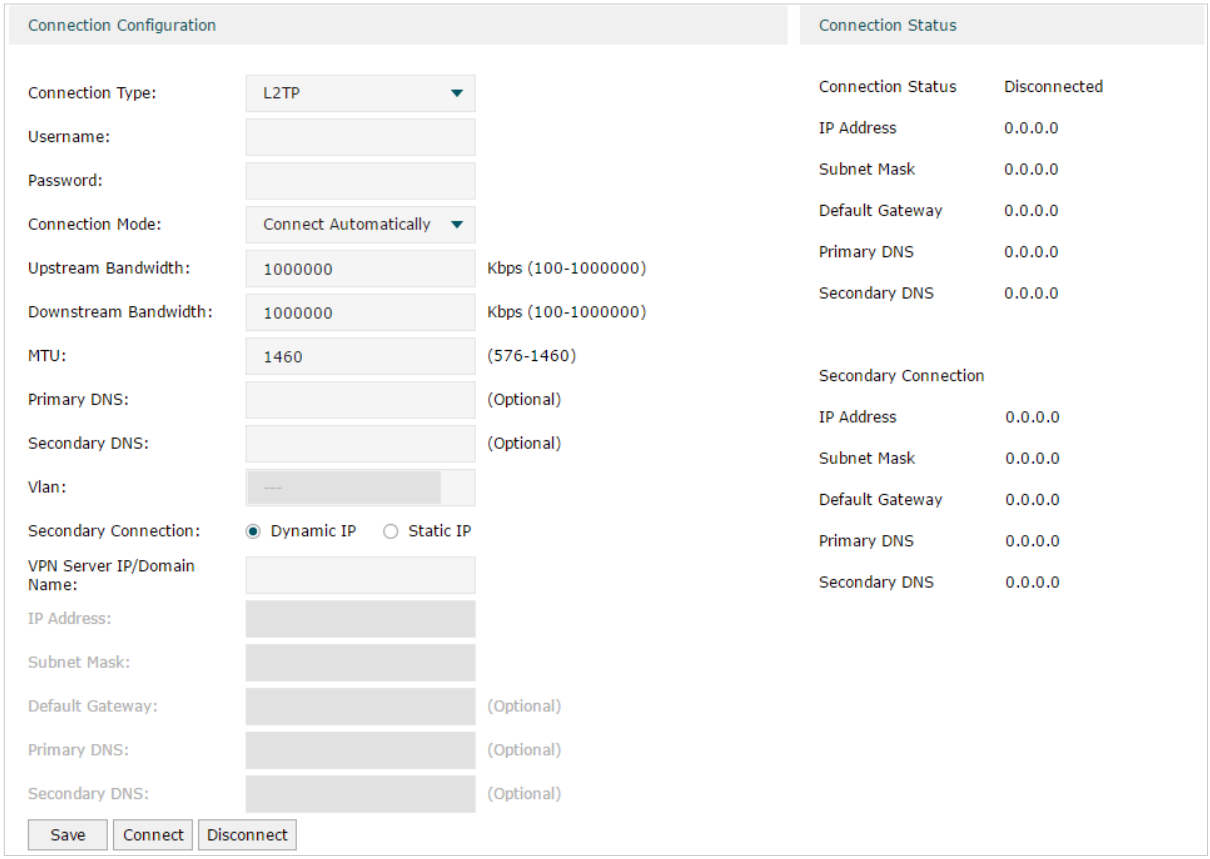
Connection Type	Choose the connection type as PPPoE if your ISP provides you with a PPPoE account.
Username	Enter the PPPoE username provided by your ISP.
Password	Enter the PPPoE password provided by your ISP.
Connection Mode	Choose the connection mode, including **Connect Automatically**, **Connect Manually** and **Time-Based.** **Connect Automatically:** The gateway will activate the connection automatically when the gateway reboots or the connection is down. **Connect Manually:** You can manually activate or terminate the connection. **Time-Based:** During the specified period, the gateway will automatically activate the connection.
Time	Choose the effective time range when the **Connection Mode** is chosen as **Time-Based**. To create the time range, go to **Festa Cloud-Based Controller**.
Upstream Bandwidth	Specify the upstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Upstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.

Downstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Downstream Bandwidth" on **Transmission > Bandwidth Control > Bandwidth Control** page, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
MTU	Specify the MTU (Maximum Transmission Unit) of the WAN port. MTU is the maximum data unit transmitted in the physical network. When PPPoE is selected, MTU can be set in the range of 576-1492 bytes. The default value is 1492.
Service Name	(Optional) Enter the service name. This parameter is not required unless provided by your ISP. It is null by default.
Primary/ Secondary DNS	(Optional) Enter the IP address of the DNS server provided by your ISP.
VLAN	Add the WAN port to a VLAN. Generally, you don't need to manually configure it unless required by your ISP. By default, the WAN port is automatically assigned to a VLAN, and the egress rule of the VLAN is UNTAG, so the packets are transmitted by the WAN port without VLAN tags. If you want the WAN port to transmit packets with VLAN tag, you need to create the corresponding VLAN first and configure its egress rule as TAG, then manually add the WAN port to that VLAN. To create VLANs, go to **Festa Cloud-Based Controller**.
Secondary Connection	Secondary connection is required by some ISPs. Select the connection type required by your ISP. **None:** Select this if the secondary connection is not required by your ISP. **Dynamic IP:** Select this if your ISP automatically assigns the IP address and subnet mask for the secondary connection. **Static IP:** Select this if your ISP provides you with a fixed IP address and subnet mask for the secondary connection.
Connect/ Disconnect	Click the button to active/terminate the connection.

Configuring the L2TP

Choose the menu **Network** > **WAN** > **WAN** to load the following page.

Figure 2-5 Configuring the L2TP



In the **Connection Configuration** section, select the connection type as L2TP. Enter the corresponding parameters and click **Save**.

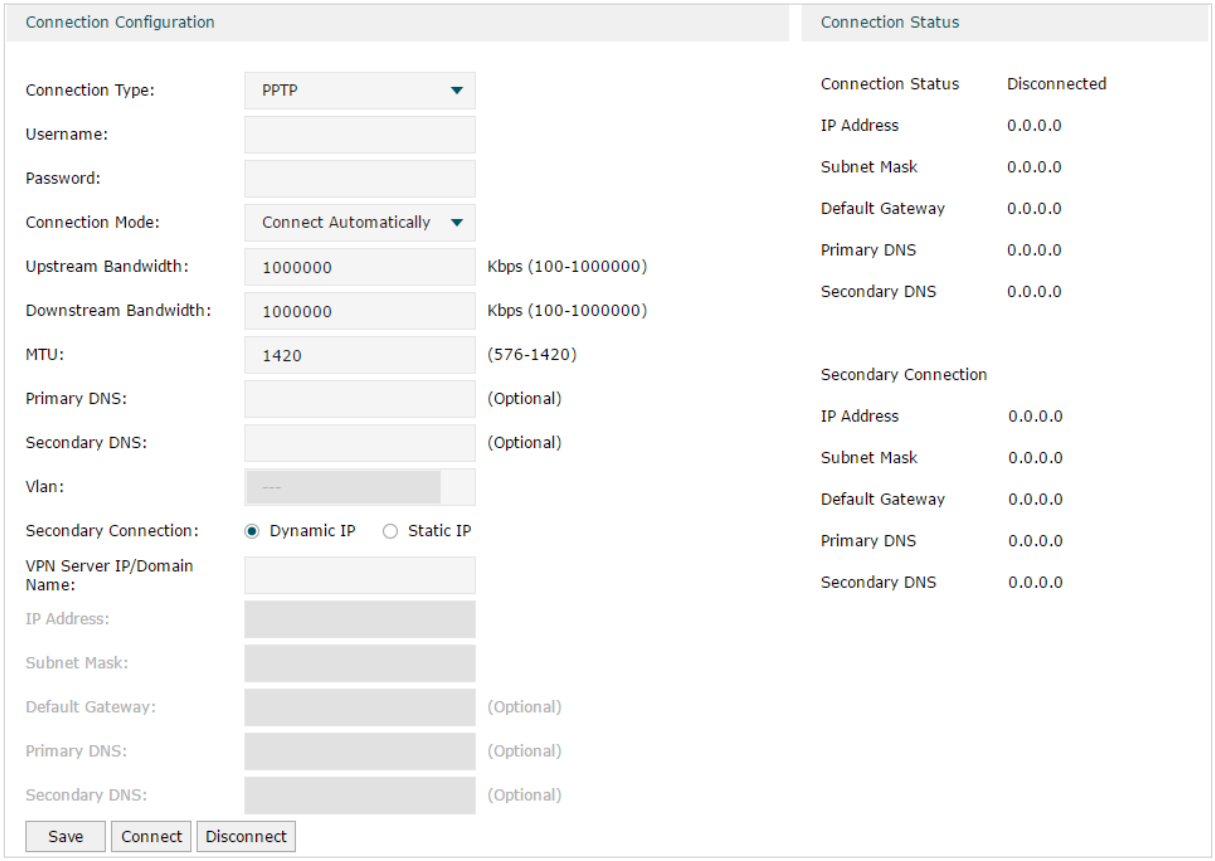
Connection Type	Choose the connection type as L2TP if your ISP provides you with an L2TP account.
Username	Enter the L2TP username provided by your ISP.
Password	Enter the L2TP password provided by your ISP.
Connection Mode	Choose the connection mode, including **Connect Automatically**, **Connect Manually** and **Time-Based.** **Connect Automatically:** The gateway will activate the connection automatically when the gateway reboots or the connection is down. **Connect Manually:** You can manually activate or terminate the connection. **Time-Based:** During the specified period, the gateway will automatically activate the connection.
Time	Choose the effective time range when the **Connection Mode** is chosen as **Time-Based**. To create the time range, go to **Festa Cloud-Based Controller**.

Upstream Bandwidth	Specify the upstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Upstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
Downstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Downstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
MTU	Specify the MTU (Maximum Transmission Unit) of the WAN port. MTU is the maximum data unit transmitted in the physical network. When L2TP is selected, MTU can be set in the range of 576-1460 bytes. The default value is 1460.
Primary/ Secondary DNS	(Optional) Enter the IP address of the DNS server provided by your ISP.
VLAN	Add the WAN port to a VLAN. Generally, you don't need to manually configure it unless required by your ISP. By default, the WAN port is automatically assigned to a VLAN, and the egress rule of the VLAN is UNTAG, so the packets are transmitted by the WAN port without VLAN tags. If you want the WAN port to transmit packets with VLAN tag, you need to create the corresponding VLAN first and configure its egress rule as TAG, then manually add the WAN port to that VLAN. To create VLANs, go to **Festa Cloud-Based Controller**.
Secondary Connection	Select the secondary connection type provided by your ISP. If you select the secondary connection type as Static IP, you need to configure IP Address, Subnet Mask, Default Gateway, Primary/Second DNS. The secondary connection is required for L2TP connection. The gateway will get some necessary information after the secondary connection succeeded. These information will be used in the L2TP connection process.
VPN Server/ Domain Name	Enter the VPN Server/Domain Name provided by your ISP.
IP Address	Enter the IP address provided by your ISP for the secondary connection.
Subnet Mask	Enter the subnet mask provided by your ISP for the secondary connection.
Default Gateway	Enter the default gateway provided by your ISP for the secondary connection.
Primary/ Secondary DNS	Enter the primary/secondary DNS provided by your ISP for the secondary connection.
Connect/ Disconnect	Click the button to active/terminate the connection.

Configuring the PPTP

Choose the menu **Network** > **WAN** > **WAN** to load the following page.

Figure 2-6 Configuring the PPTP



In **Connection Configuration** section, select the connection type as PPTP. Enter the corresponding parameters and click **Save**.

Connection Type	Choose the connection type as PPTP if your ISP provides you with a PPTP account.
Username	Enter the PPTP username provided by your ISP.
Password	Enter the PPTP password provided by your ISP.
Connection Mode	Choose the connection mode, including **Connect Automatically**, **Connect Manually** and **Time-Based.** **Connect Automatically:** The gateway will activate the connection automatically when the gateway reboots or the connection is down. **Connect Manually:** You can manually activate or terminate the connection. **Time-Based:** During the specified period, the gateway will automatically activate the connection.
Time	Choose the effective time range when the **Connection Mode** is chosen as **Time-Based**. To create the time range, go to **Festa Cloud-Based Controller**.

Upstream Bandwidth	Specify the upstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Upstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
Downstream Bandwidth	Specify the downstream bandwidth of the WAN port. The value configured here is the upper limit of the "Maximum Downstream Bandwidth" in **Bandwidth Control** set on the Festa Cloud-Based Controller, to make "Bandwidth Control" take effect, please ensure this parameter is set correctly.
MTU	Specify the MTU (Maximum Transmission Unit) of the WAN port. MTU is the maximum data unit transmitted in the physical network. When PPTP is selected, MTU can be set in the range of 576-1420 bytes. The default value is 1420.
Primary/ Secondary DNS	(Optional) Enter the IP address of the DNS server provided by your ISP.
VLAN	Add the WAN port to a VLAN. Generally, you don't need to manually configure it unless required by your ISP. By default, the WAN port is automatically assigned to a VLAN by default, and the egress rule of the VLAN is UNTAG, so the packets are transmitted by the WAN port without VLAN tags. If you want the WAN port to transmit packets with VLAN tag, you need to create the corresponding VLAN first and configure its egress rule as TAG, then manually add the WAN port to that VLAN. To create VLANs, go to **Festa Cloud-Based Controller**.
Secondary Connection	Select the secondary connection type provided by your ISP. If you select the secondary connection type as Static IP, you need to configure IP Address, Subnet Mask, Default Gateway, Primary/Second DNS. The secondary connection is required for PPTP connection. The gateway will get some necessary information after the secondary connection succeeded. These information will be used in the PPTP connection process.
VPN Server/ Domain Name	Enter the VPN Server/Domain Name provided by your ISP.
IP Address	Enter the IP address provided by your ISP for the secondary connection.
Subnet Mask	Enter the subnet mask provided by your ISP for the secondary connection.
Default Gateway	Enter the default gateway provided by your ISP for the secondary connection.
Primary/ Secondary DNS	Enter the primary/secondary DNS provided by your ISP for the secondary connection.
Connect/ Disconnect	Click the button to active/terminate the connection.

3 LAN Configuration

The LAN port is used to connect to the LAN clients, and works as the default gateway for these clients. You can configure the DHCP server for the LAN clients, and clients will automatically be assigned to IP addresses if the method of obtaining IP addresses is set as "Obtain IP address automatically".

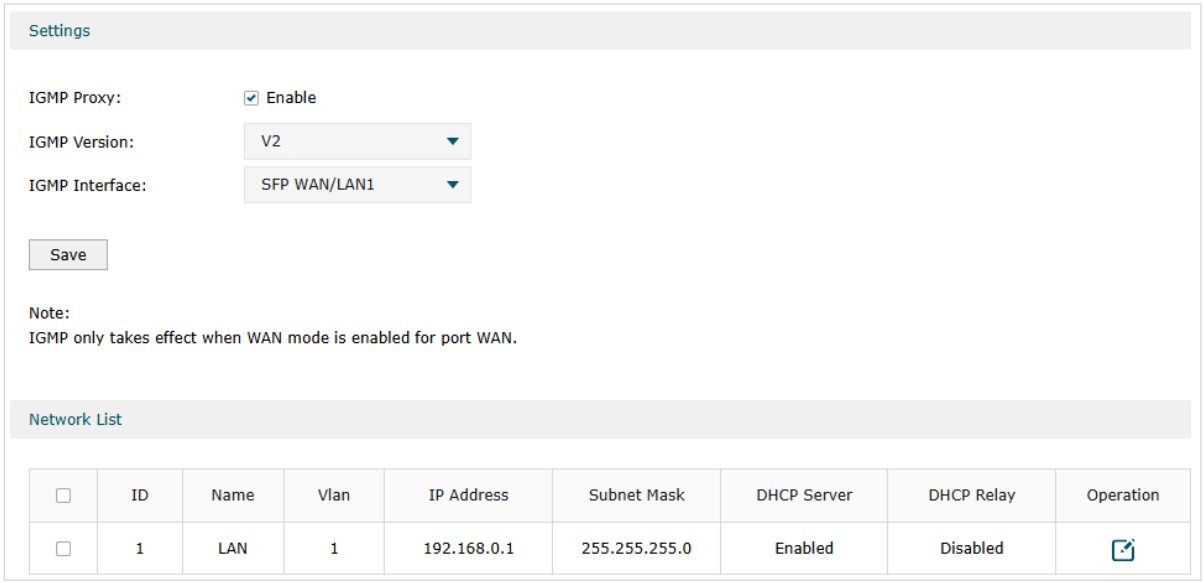
For LAN configuration, you can:

- Configure the IP address of the LAN port.
- Configure the DHCP server.
- Configure the DHCP relay.
- View the DHCP Client List

3.1 Configuring the IP Address of the LAN Port

Choose the menu **Network** > **LAN** > **LAN** to load the following page.

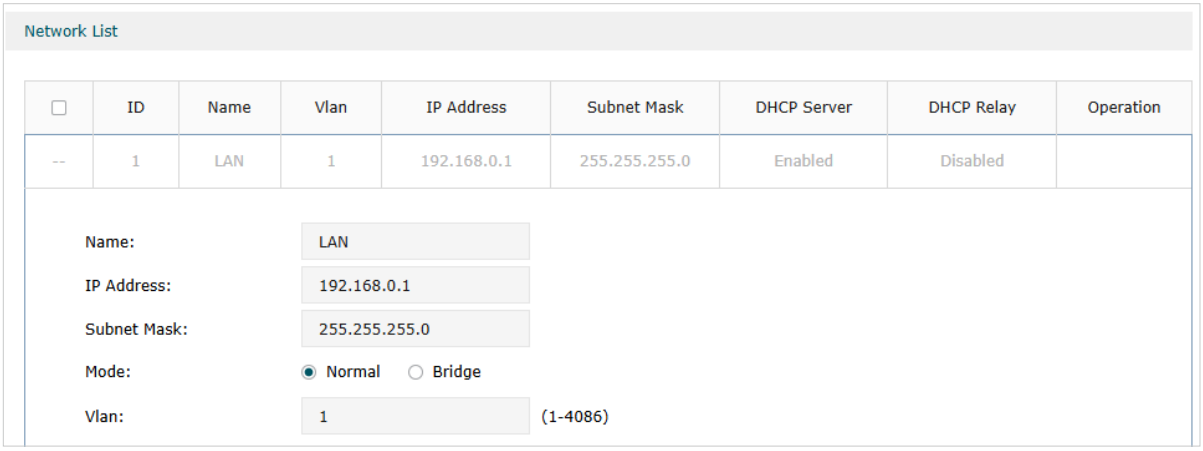
Figure 3-1 Configuring the LAN IP Address



(Optional) With LAN Settings, you can set up IGMP Proxy.

IGMP Proxy	Check the box to enable IGMP Proxy. IGMP Proxy sends IGMP querier packets to the LAN ports to detect if there is any multicast member connected to the LAN ports.
IGMP Version	Choose the IGMP version as V2 or V3. The default is IGMP V2.

Click the Edit button to load the following page. Enter the IP address of the LAN port, and click **OK**.



IP Address	Enter the IP address of the LAN port. This IP address is the default gateway of the LAN clients, and the IP addresses of all the LAN clients should be in the same subnet with this LAN IP address.
Subnet Mask	Enter the subnet mask of the LAN port.
Mode	Specify whether to use a normal VLAN or bridge VLANs. When bridge is selected, you can configure multiple VLANs for devices to access the LAN network.
Vlan	Specify the VLAN of the LAN port, only the clients in the specified VLAN can access and manage the gateway.

Note:

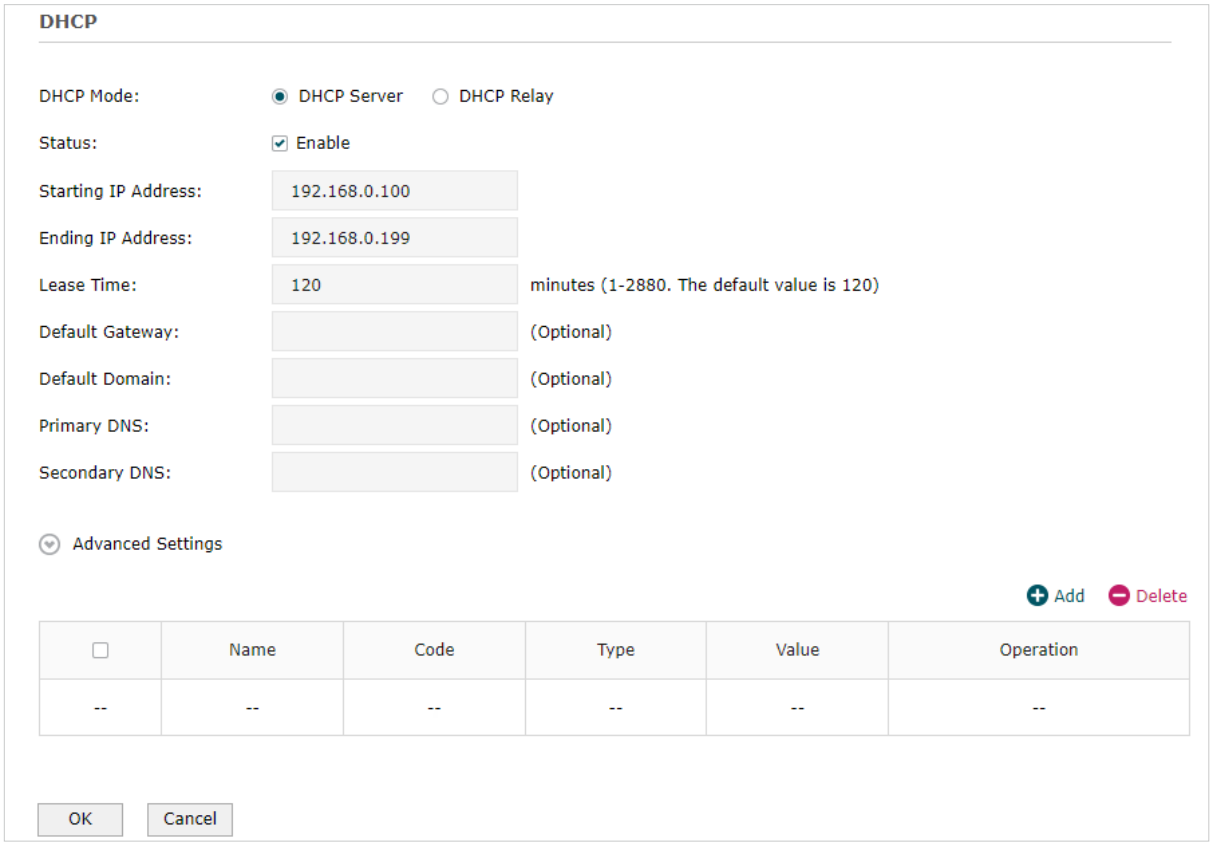
- Changing the IP address of LAN port will automatically redirect the browser to the new management page. If the redirecting failed, please try to reconnect your PC to the gateway to automatically get a new IP address, or configure a proper static IP address manually.
- Changing the IP address of the LAN port may affect some related functions, like the IP pool of the DHCP server.

3.2 Configuring the DHCP Server

You can configure an IP address pool for the DHCP server to assign IP addresses. When clients send requests to the DHCP server, the server will automatically assign IP addresses and the corresponding parameters to the clients.

Choose the menu **Network** > **LAN** > **LAN** to load the following page. Click the **Edit** button in the **Network List** section.

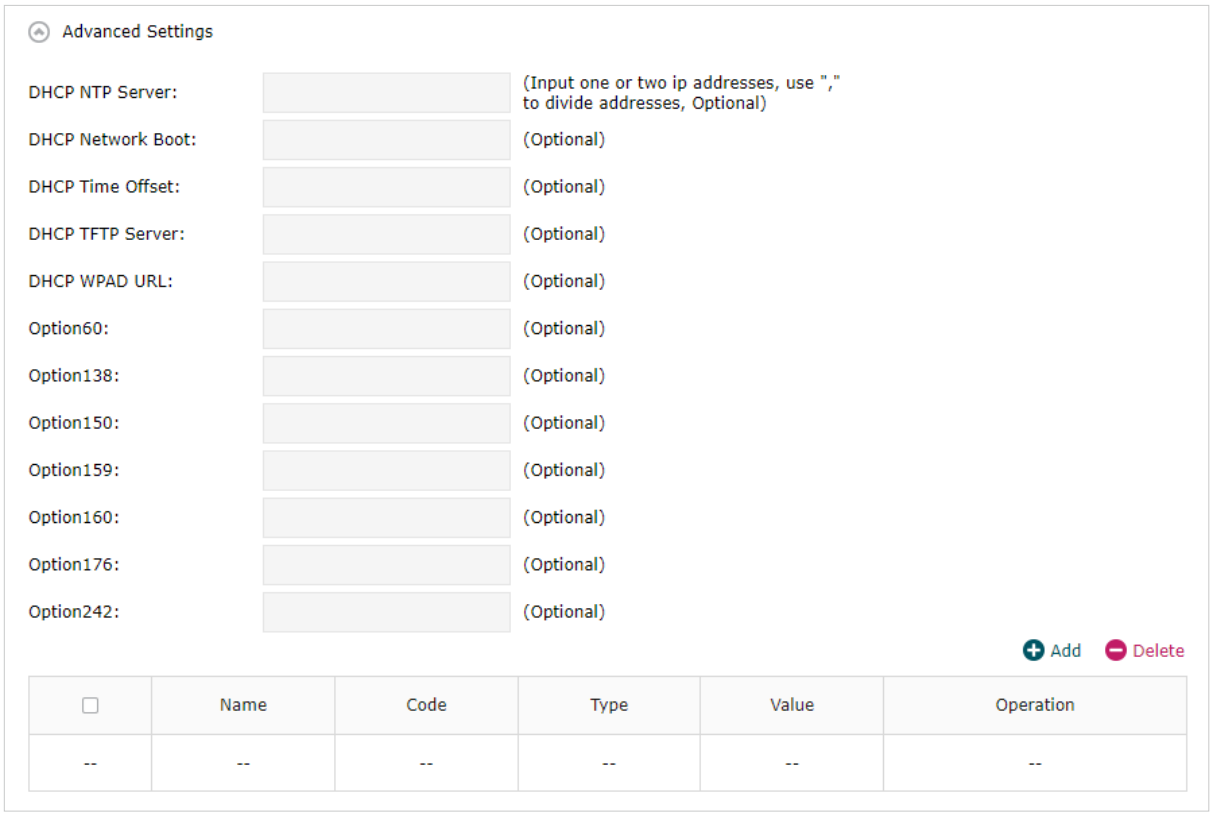
Figure 3-2 Configuring the DHCP Server



Select **DHCP Server**, and configure the parameters of the DHCP server, then click **Save**.

Starting/Ending IP Address	Enter the starting IP address and ending IP address of the DHCP server's IP pool. The IP pool defines the IP range that can be assigned to the clients in the LAN. **Note**: The starting IP address and ending IP address should be in the same subnet with the IP address of the LAN port.
Lease Time	Specify the lease time for DHCP clients. Lease time defines how long the clients can use the IP address assigned by the DHCP server. Generally, the client will automatically request the DHCP server for extending the lease time before the lease expired. If the request failed, the client will have to stop using that IP address when the lease finally expired, and try to get a new IP address from the other DHCP servers.
Default Gateway	(Optional) It is recommended to enter the IP address of the LAN port.
Default Domain	(Optional) Enter the domain name of your network.
Primary/ Secondary DNS	(Optional) Enter the DNS server address provided by your ISP. If you are not clear, please consult your ISP.
Status	Check the box to enable the DHCP server.

Click **Advanced Settings** to configure more settings.



DHCP NTP Server	(Option 42) Enter one or two DHCP NTP Server addresses to get the system time from internet. Use "," to divide addresses.
DHCP Network Boot	(Option 67) Enter the value for DHCP Option 67. It specifies the boot file name.
DHCP Time Offset	(Option 2) Enter the time offset of the DHCP client's subnet in seconds from the UTC time.
DHCP WPAD URL	(Option 252) Enter the DHCP WPAD (Web Proxy Auto-Discovery) URL for the DHCP client to configure its proxy settings.
DHCP TFTP Server	(Option 66) Enter the TFTP server address for file transfer.
Option60	(Optional) Enter the value for DHCP Option 60. DHCP clients use this field to optionally identify the vendor type and configuration of a DHCP client. Mostly, it is used in the scenario where the APs apply for different IP addresses from different servers according to the needs. For detailed information, please consult the vendor. For TP-Link, this entry should be TP-Link.
Option138	(Optional) Enter the value for DHCP Option 138. It is used in discovering the devices by the Omada controller.
Option150	(Optional) Enter the value for DHCP Option 150. It specifies the TFTP server information and supports multiple TFTP server IP addresses.
Option159	(Optional) Enter the value for DHCP Option 159. This option is used to configure a set of ports bound to a shared IPv4 address.

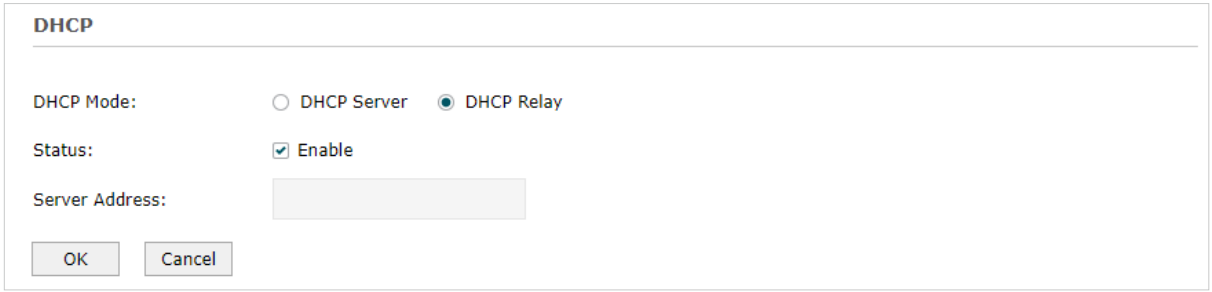
Option160	(Optional) Enter the value for DHCP Option 160. This option is used to configure DHCP captive portal.
Option176	(Optional) Enter the value for DHCP Option 176. This option is used to configure parameters for IP phones.
Option242	(Optional) Enter the value for DHCP Option 242. This option is used to provide the TMS address automatically.
Add	Click to add a DHCP option entry

3.3 Configuring the DHCP Relay

If you select DHCP Relay as DHCP Mode, the gateway will relay DHCP requests from LAN clients to the DHCP server in another network. Then the DHCP server will assign IP addresses to the LAN clients. Configure the following parameters.

Choose the menu **Network** > **LAN** > **LAN** to load the following page. Click the **Edit** button in the **Network List** section.

Figure 3-3 Configuring the DHCP Relay



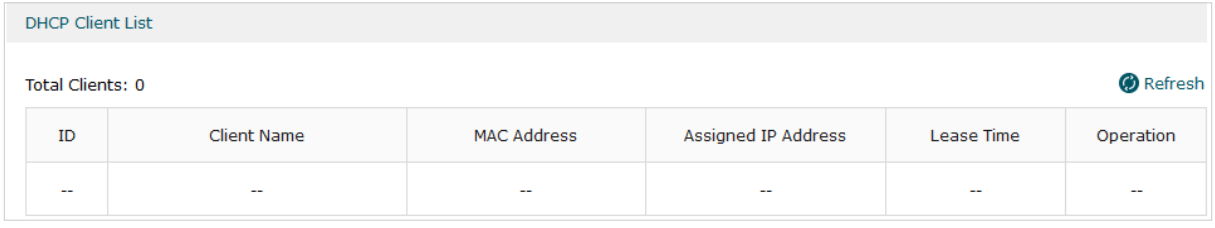
Select **DHCP Relay**, and configure the parameters of the DHCP replay, then click **Save**.

Status	Check the box to enable DHCP Relay.
Server Address	Enter the IP address of the DHCP server.

3.4 Viewing the DHCP Client List

Choose the menu **Network** > **LAN** > **DHCP Client List** to load the following page.

Figure 3-4 Viewing the DHCP Client List



Here you can view the DHCP client list.

Client Name	Displays the name of the client.
MAC Address	Displays the MAC address of the client.
Assigned IP Address	Displays the IP address assigned to the client.
Lease Time	Displays the remaining lease time of the assigned IP address. After the lease expires, the IP address will be re-assigned.

Part 3

Configuring Wireless Settings

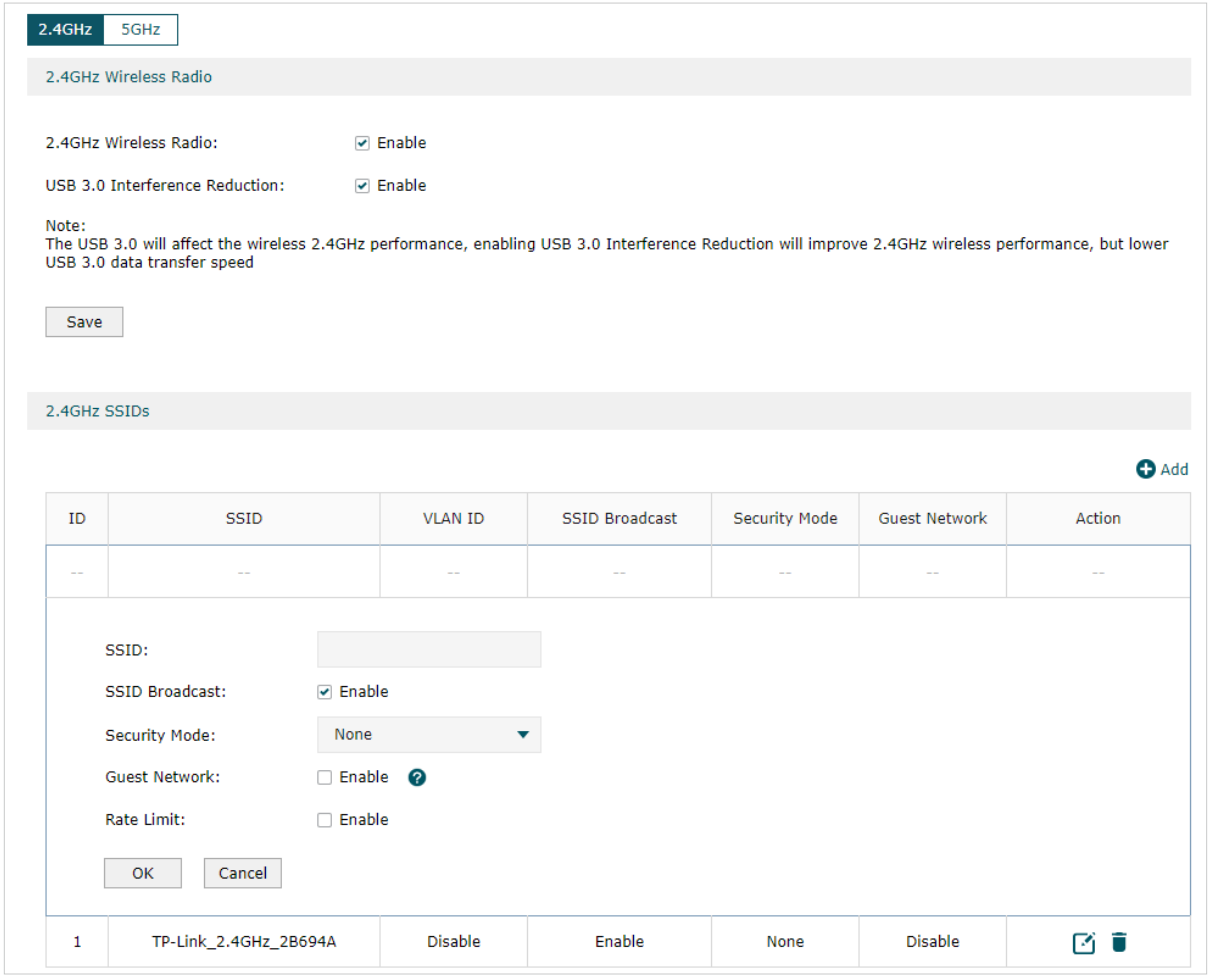
Wireless Settings Access allows you to create wireless networks on the 2.4GHz or 5GHz band, view and edit the information of the wireless networks that have been created.

To complete wireless settings access, follow these steps:

1) Click 2.4GHz | 5GHz to select a frequency band.
2) Configure the information and features of the wireless network.

Choose the menu **Wireless** > **Wireless Settings** > **Wireless Settings Access** to load the following page. Click **2.4GHz | 5GHz** to select a frequency band.

Figure 3-5 Configuring the Wireless Settings Access



2.4GHz/5GHz Wireless Radio	Check the box to enable the wireless radio of the chosen band before configuring the wireless parameters. Only when this option is enabled will the wireless radio on 2.4GHz or 5GHz band works.
USB 3.0 Interference Reduction	The USB 3.0 will affect the wireless 2.4GHz performance, enabling USB 3.0 Interference Reduction will improve 2.4GHz wireless performance, but lower USB 3.0 data transfer speed

Click **Add** to create a new SSID on the chosen band, configure the parameters, and click OK.

SSID	Specify the network name (SSID) to identify the wireless network. The wireless clients choose the SSID on their WLAN settings page to connect to the wireless network.
SSID Broadcast	When enabled, the gateway broadcast the SSID in the air, and the SSID will appear in the list of available wireless networks. When disabled, users must enter the SSID manually to connect to the wireless network.
Security Mode	Select the encryption method for the wireless network based on needs. None - With None selected, the clients can access the wireless network without authentication, which is suitable for scenarios with lower security requirements. WPA-Enterprise - WPA-Enterprise (Wi-Fi Protected Access-Enterprise) is a safer encryption method compared with WPA-Personal and None. But it also costs more to maintain the network, so it is more suitable for business networks. WPA-Personal - WPA-Personal is based on a pre-shared key. It is characterized by high safety and simple settings, so it is mostly used by common households and small businesses.
Guest Network	When enabled, all the clients connecting to the SSID are blocked from reaching any private IP subnet.
Rate Limit	When enabled, you can limit the download and/or upload rate of each client to balance bandwidth usage.

In the **2.4GHz/5GHz Wireless Advanced Settings** section, you can configure the following parameters.

Figure 3-6 2.4GHz/5GHz Wireless Advanced Settings

Wireless Mode	Select the IEEE 802.11 mode the radio uses. For 2.4GHz: 802.11n only - Only 802.11n clients can connect to the gateway. 802.11b/g mixed - Both 802.11b and 802.11g clients can connect to the gateway. 802.11b/g/n mixed - All of 802.11b, 802.11g, and 802.11n clients operating in the 2.4GHz frequency can connect to the gateway. 802.11b/g/n/ax mixed - All of 802.11b, 802.11g, 802.11n, and 802.11ax clients operating in the 2.4GHz frequency can connect to the gateway. Note that 802.11ax is only available for certain devices. For 5GHz: 802.11n/ac mixed - Both 802.11n clients and 802.11ac clients operating in the 5GHz frequency can connect to the gateway. 802.11a/n/ac mixed - All of 802.11a, 802.11n, and 802.11ac clients operating in the 5GHz frequency can connect to the gateway. 802.11a/n/ac/ax mixed - All of 802.11a, 802.11n, 802.11ac, and 802.11ax clients operating in the 5GHz frequency can connect to the gateway. Note that 802.11ax is only available for certain devices.
Channel Width	Select the channel width of the gateway. For the 2.4GHz band, available options include Auto, 20MHz, and 40MHz. For the 5GHz band, available options include Auto, 20MHz, 40MHz, 80MHz, and 160MHz.
Channel	Select the channel used by the gateway. For example, 1/2412MHz means that the channel is 1 and the frequency is 2412MHz. By default, the channel is selected as Auto, and we recommend that you keep the default setting.
Tx Power	Specify the transmit power value. If this value is set to be larger than the maximum transmit power that is allowed by the local regulation, the regulated maximum transmit power will be applied in the actual situation. Note that in most cases, it is unnecessary to use the maximum transmit power. Specifying a larger transmit power than needed may cause interference to the neighborhood. Also, it consumes more power and reduces the longevity of the device.

Part 4

System Tools

CHAPTERS

1 Overview

1.1 Overview

The System Tools module provides several system management tools for users to manage the gateway.

1.2 Supported Features

Management

With this function, you can reset the gateway, reboot the gateway and upgrade the firmware.

Controller Settings

Configure your gateway to be discovered by Festa SDN Controller, then it can be managed centrally via Festa Cloud-Based Controller.

Diagnostics

Enable the Remote Assistance function to get help from the technicians if you fail to solve your network problem.

2 Management

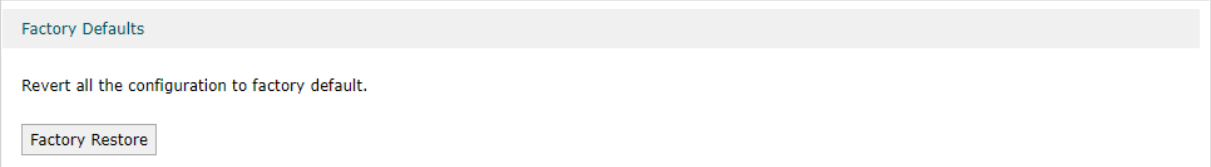
In Management module, you can configure the following features:

- Factory Default Restore
- Reboot
- Firmware Upgrade

2.1 Factory Default Restore

Choose the menu **System Tools** > **Management** > **Factory Default Restore** to load the following page.

Figure 2-1 Reseting the Device

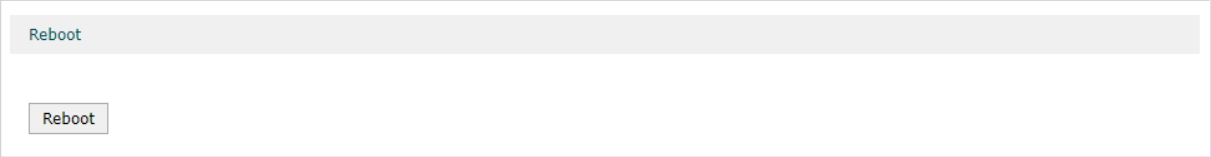


Click **Factory Restore** to reset the device.

2.2 Reboot

Choose the menu **System Tools** > **Management** > **Reboot** to load the following page.

Figure 2-2 Rebooting the Device

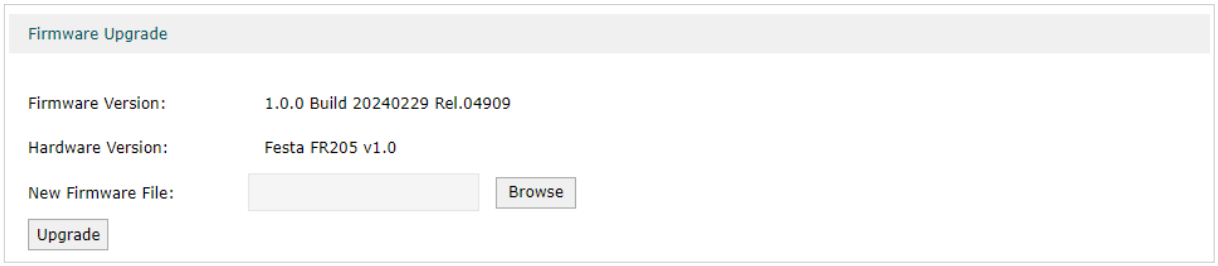


Click **Reboot** to reboot the device.

2.3 Firmware Upgrade

Choose the menu **System Tools** > **Management** > **Firmware Upgrade** to load the following page.

Figure 2-3 Configure System Settings



Select one firmware file and click **Upgrade** to upgrade the firmware of the device.

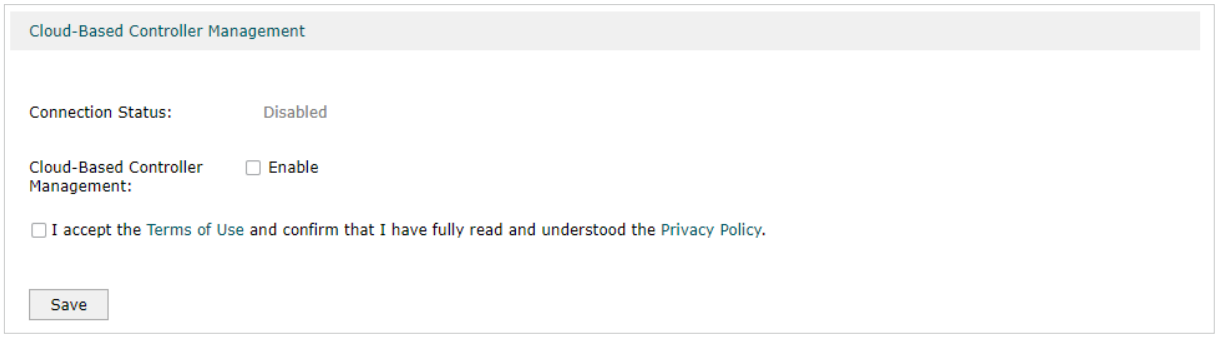
3 Controller Settings

To make your controller adopt your gateway, make sure the gateway is connected to the internet and configure controller Settings enable your gateway to be discovered by the Festa Cloud-Based Controlle.

3.1 Enable Cloud-Based Controller Management

Choose the menu **System Tools** > **Controller Settings** page. In the Cloud-Based Controller Management section, enable Cloud-Based Controller Management and click **Save**. You can check the connection status on this page.

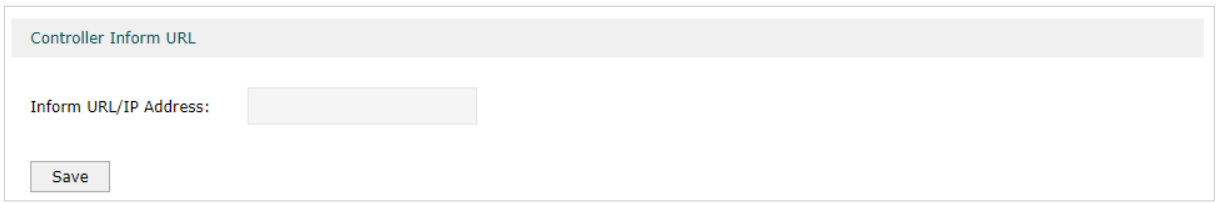
Figure 3-1 Cloud-Based Controller Management



3.2 Configure Controller Inform URL

Choose the menu **System Tools** > **Controller Settings** page. In the Controller Inform URL section, inform the gateway of the controller's URL/IP address, and click **Save**. Then the gateway makes contact with the controller so that the controller can discover the gateway.

Figure 3-2 Cloud-Based Controller Management



4 Diagnostics

In Diagnostics module, you can configure the following features:

- Remote Assistance

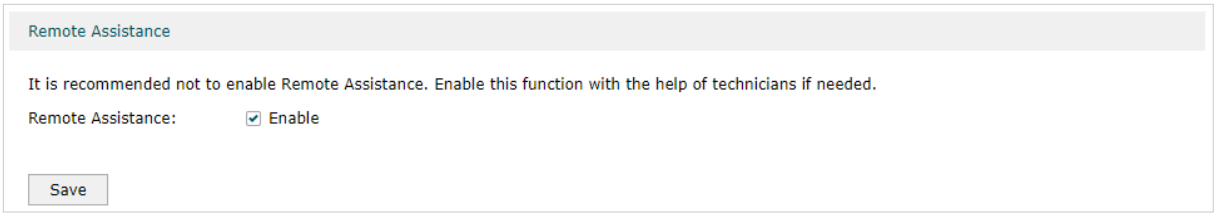
4.1 Remote Assistance

Note:

Please make contact with the technicians before trying to use this function.

Choose the menu **System Tools** > **Diagnostics** > **Remote Assistance** to load the following page.

Figure 4-1 Remote Assistance Page



Check the box and click **Save** to enable the remote assistance function and then the technicians can access your gateway and help to solve the problems by SSH..