Tenda

V1.0

User Guide

www.tendacn.com

Wireless Modem Router

Copyright Statement

Table of Contents

About This Manual

This user manual describes how to install, configure, operate, and troubleshoot the modem router in a simple and easy-to-understand way.

Chapter1 Get to Know Your Wireless Router

This user guide applies to the following four models: D301 and D151. The D301 is used as an example throughout this user guide.

The differences between the two products are listed below:

Model	Wireless Speed	USB Port	RJ45 Ports
D301	300M	1	4
D151	150M	none	4

D301

D151

Note:

The USB-based features of Print Server and Storage Service are unavailable in D151 that is not built with a USB port.

What it does

The Wireless ADSL2+ Modem Router provides you with an easy and secure way to set up a wireless home network with fast access to the Internet over a high-speed digital subscriber line (DSL). Complete with a built-in ADSL modem, it is compatible with all major ADSL Internet service providers. It offers wireless speeds of up to 300 Mbps needed for demanding applications, such as large file transfers, streaming HD video, and multiplayer gaming. The unit comes with a wide range of premium features and applications such as IPv6, TR069, SNMP, Multicast, IP tunnel, ready share USB, IPTV service and parental controls, etc. Plus, with the router, you can access Internet via the ATM interface or Ethernet interface.

Product Features

- **Wireless N** speeds up to 300 Mbps for streaming HD videos and online gaming in addition to basic Internet applications.
- **All-in-one device** combines a Built-in ADSL2+ modem, wired router, wireless router and switch
- **Sharable USB** lets you access and share files on an attached USB hard drive (available only in D301)
- **Sharable Printer** lets you print from your Windows computer to a connected USB printer (available only in D301)
- **Advanced QoS** helps prioritize media streaming and gaming applications for best entertainment experience
- **Parental Control** keeps your kids Internet experience safe using flexible and customizable filter settings
- **One-touch WPS** ensures a quick and secure network connection
- **WEP and WPA/WPA2** are supported for advanced encryptions
- **Compatibility:** Works with all major ADSL Internet service providers (ISPs); Backward compatible with 802.11b/g

WiFi devices

- **Interchangeable LAN/WAN** ports to schedule the Ethernet port to function either as a LAN or a WAN port
- **Interchangeable LAN/IPTV** to schedule the Ethernet port to function either as a LAN or an IPTV port
- **Optional Ethernet and ADSL Uplinks:** Access Internet via ADSL2+ Broadband Internet Service or an interchangeable LAN/WAN RJ-45 port
- **Multiple Internet Connection Types:** Bridging, PPPoE, IPoE, PPPoA, IPoA, dynamic IP and static IP
- **IPTV Service** lets your surf Internet while watching online TV
- **6000V lightning－proof** design fits into lightning-intensive environment
- **Strong driving capability** up to 6.5Km transmission distance
- **High speed ADSL speed** up to 24Mbps downstream 1Mbps upstream
- **Built-in firewall** prevents hacker attacks
- **Channel auto-select** for optimum performance
- **FDM** technology enables telephoning, faxing and surfing activities to proceed simultaneously without mutual interference
- **Other Advanced Features:** IPv6, DDNS, virtual server, DMZ, port triggering, IP filter, MAC filter and UPnP, etc
- **Tenda Setup Wizard** for easy and fast installation and configuration
- **Tenda Green:** Use hardware Power On/Off and software WiFi On/Off buttons to turn on and off power and WiFi to save energy when not in use

Package Contents

Your box should contain the following items:

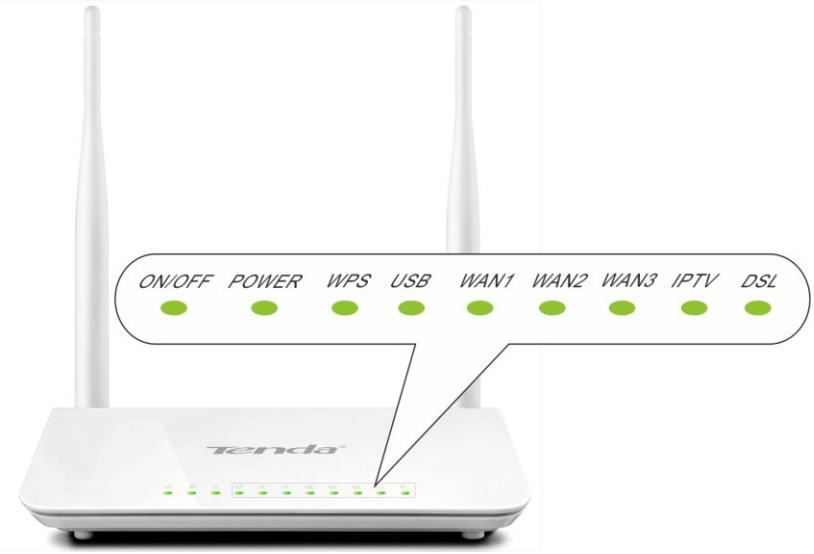
- Wireless Modem Router
- Phone cable
- Ethernet cable
- ADSL2+ filter
- Quick install guide
- Power adapter
- Resource CD

If any of the parts are incorrect, missing, or damaged, keep the carton, including the original packing materials and contact your Tenda dealer for immediate replacement.

Chapter 2 Hardware Install

If you have not already set up your new router using the Quick Install Guide that comes in the box, this chapter walks you through the hardware install. To set up your Internet connection, see **Chapter 2 Quick Internet Setup**.

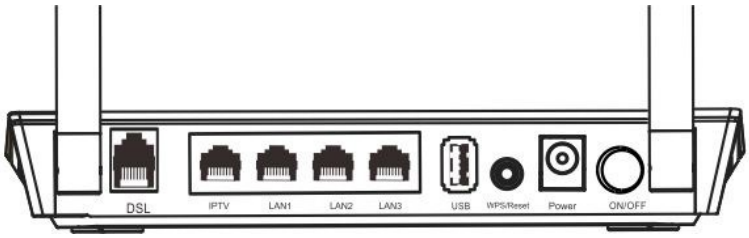
Front Panel



The LEDs on the device are described below:

LED	Status	Description
Power	Solid	Power is supplied to the device.
	Off	Power is not supplied to the device.
SYS	Blinking	System is functioning correctly.
	Solid/Off	System is functioning incorrectly.
WLAN	Blinking	Transferring data
	Off	Wireless is disabled.
	Solid	Wireless is enabled.
ADSL	Slow Blink	Physical connection failure.
	Fast Blink	Synchronizing...
	Solid	ADSL connection is established.
LAN 1/2/3/4	Off	No connection established.
	Blinking	Transferring data
	Solid	Connection is established.
WPS	Solid	Client connected successfully.
	Blinking	The WPS LED starts blinking if you pressed the WPS button on the device or interface.
	Off	If there is no wireless clients connected, the WPS LED turns off after blinking for 2 minutes.
USB （available only in D301）	Solid	Connection is successfully established on the USB port.
	Off	Connection is not established on the USB port.

Back Panel



✧ **ON/OFF:** Power switch to turn the router on or off.

Note:

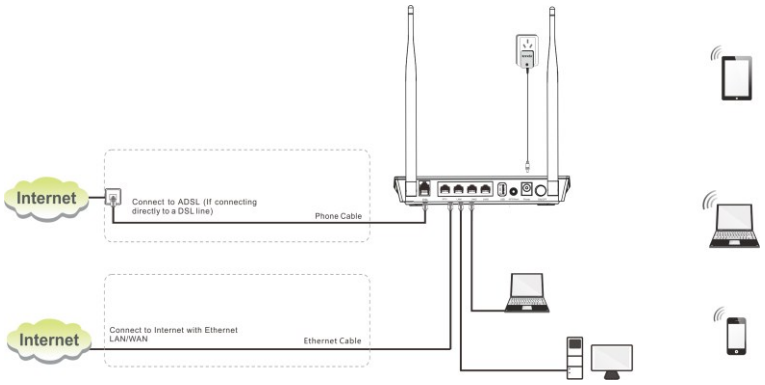
Please use the included power adapter. Use of a power adapter with different voltage rating may damage the device.

✧ **WPS/RESET:** Press it for 1-3 seconds to enable WPS connection or 7 seconds to restore all configurations to factory defaults.

✧ **LAN:** Ethernet RJ-45 LAN ports to cable the device to the local network devices such as computers.**LAN:** Ethernet RJ-45 LAN ports to cable the device to the local network devices such as computers.

✧ **DSL:** RJ-11 Asynchronous DSL (ADSL) port for connecting the device to a DSL line.

Follow the diagram below to install the device.



Chapter 3 Quick Internet Setup

This chapter instructs you to quickly set up your Internet connection.

The Quick Internet Setup applies only to ADSL Uplink mode. If you are not directly connecting to the ADSL line via a phone cable, please click the **Advanced** button on the home page and then select **Advanced Setup -> Layer2 Interface -> ETH Interface**. For more information, see **To set up the ETH interface** and **To setup WAN Service for ETH Interface**.

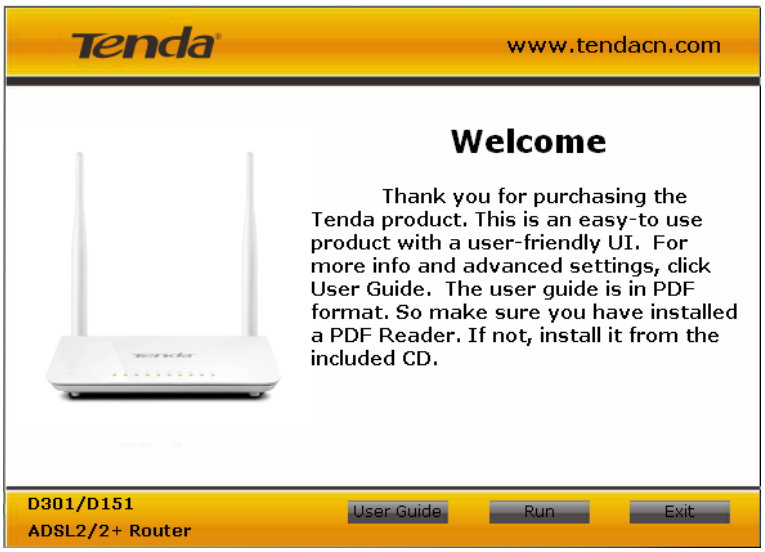
2.1 Log in to Web Manager

You can log in to the modem router's web manager with the Setup Wizard on the included CD automatically or using a web browser manually. The Setup Wizard on the auto-run CD can automatically configure your PC's TCP/IP properties and direct you to the web login window without requiring the IP address.

Using Setup Wizard

1. Insert the included resource CD into your computer's drive and the CD automatically runs. If the CD does not run automatically, double click  . You will see the screen below.

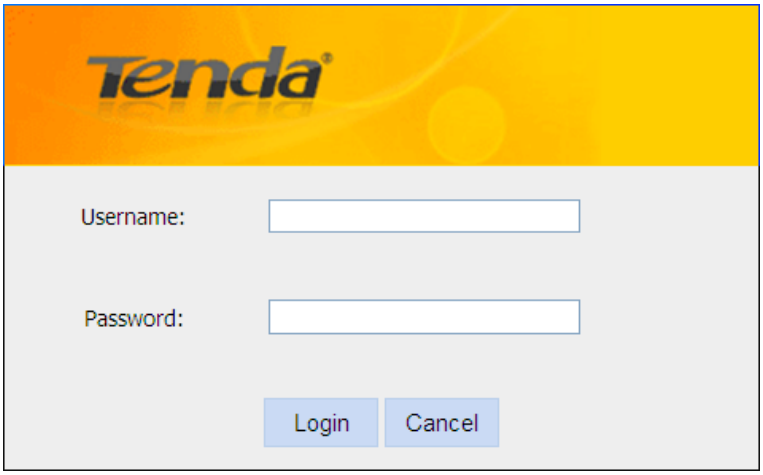
2. Click **Run** and it will automatically configure your PC's TCP/IP properties. If your PC is successfully configured, the login window below will display.



Using Browser

1. Set your PC to **Obtain an IP address automatically**. For more information, see ***Appendix 1 Configure Your PC***.

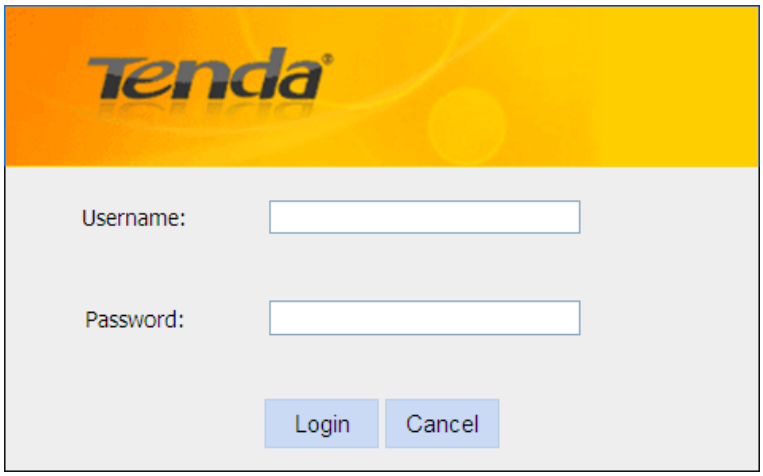
2. Launch a web browser and enter **192.168.1.1** to display the login window.



3. Enter **admin** in both the login User Name and Password boxes if you first time access the router and then click the **Login** button to enter the screen below.

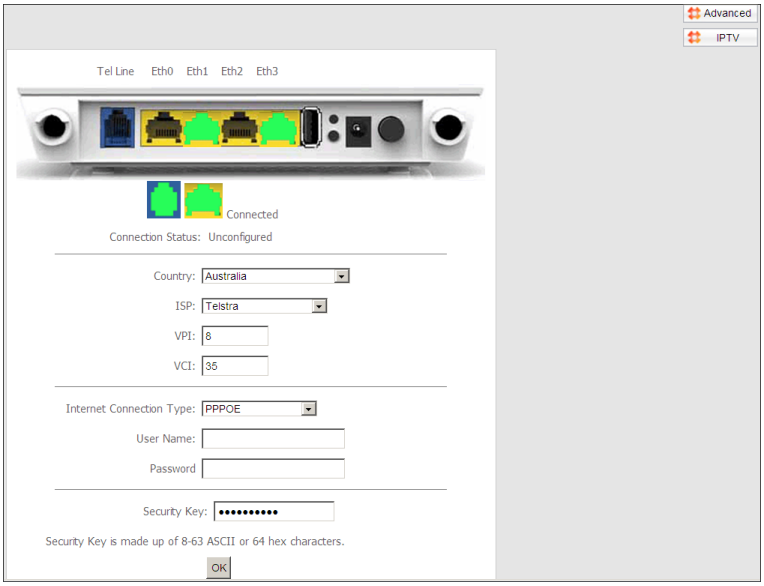
Tip:

If you changed the login user name and password and forget them, press the Reset button on the device and then enter the default settings of admin.



2.2 Internet Setup

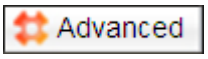
a. Select your country.
b. Select your ISP.
c. VPI and VCI fields will be populated automatically if you select a correct country and ISP.
d. Select your Internet connection type.



Depending on the type of connection, you are prompted to enter your ISP settings, as shown in the following table:

Internet Connection Type		ISP Information
PPPoE PPPoA		Enter the ISP login user name and password. If you cannot locate this information, ask your ISP to provide it.
IPoE	Dynamic IP	No entries are needed.
	Static (Fixed) IP	Enter the assigned IP address, subnet mask, and the IP address of your ISP's primary DNS server. This information should have been provided to you by your ISP. If a secondary DNS server address is available, enter it also.
IPoA	Static (Fixed) IP	Enter the assigned IP address, subnet mask, and the IP address of your ISP's primary DNS server. This information should have been provided to you by your ISP. If a secondary DNS server address is available, enter it also.

Note:

If your country and/or your ISP are not covered on the home page, please click the 

button on the home page and then select ***Advanced Setup -> Layer2 Interface -> ATM Interface*** *and then click* ***Add*** *there to manually configure the VPI and VCI. If you cannot locate this information, refer to* **Appendix 4 VPI/VCI List** *or ask your ISP to provide it. For more information, see* **To set up the ATM interface** *and* **To setup WAN Service for ATM Interface**.

e. After you configure all the above settings, click **OK** to save and apply them.

f. Test Internet Connectivity

Launch a web browser and enter www.tendacn.com. If the webpage is opened, you are connected to Internet.

2.3 Quick Wireless Security Setup

For security purpose, we strongly recommend you to customize a new security key. Simply enter 8-63 ASCII or 64 hex characters.

Tip:

1. If you customize a new security key, write it on a sticky label and attach it to the bottom of the unit. You will need the new security key if you wish to connect to the device wirelessly in the future.

2. To join your secured wireless network, see Appendix 2 Join Your Wireless Network.

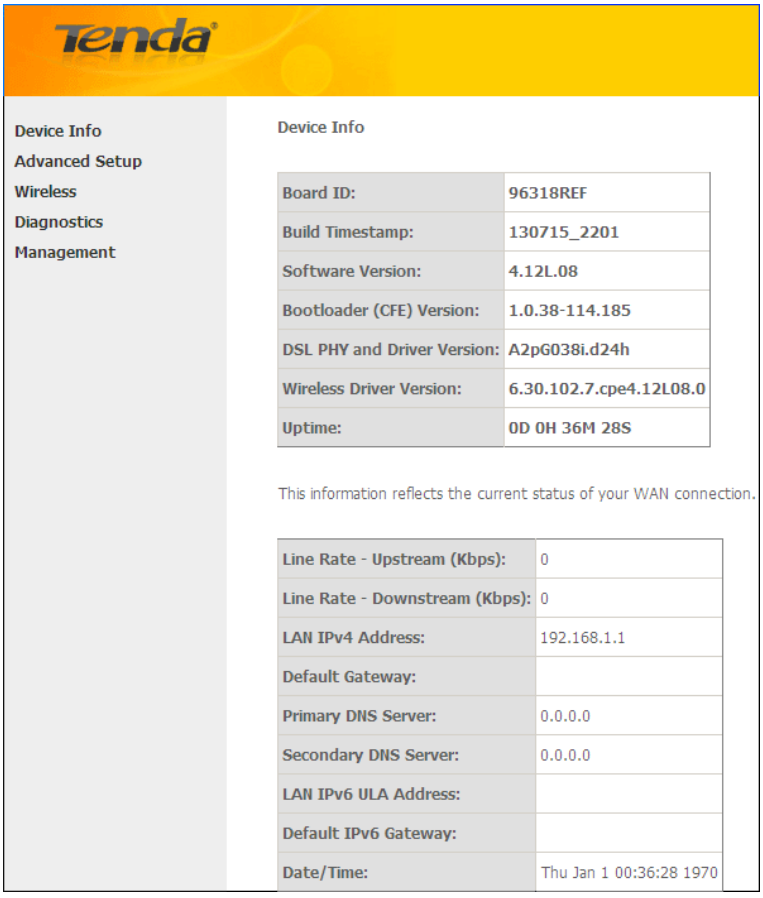
Chapter 4 Advanced Settings

This chapter describes the advanced features of your router.

The information is for users with a solid understanding of networking concepts who want to configure the router for unique situations.

This chapter includes the following sections:

Click **Advanced** on the home page to enter the screen below.

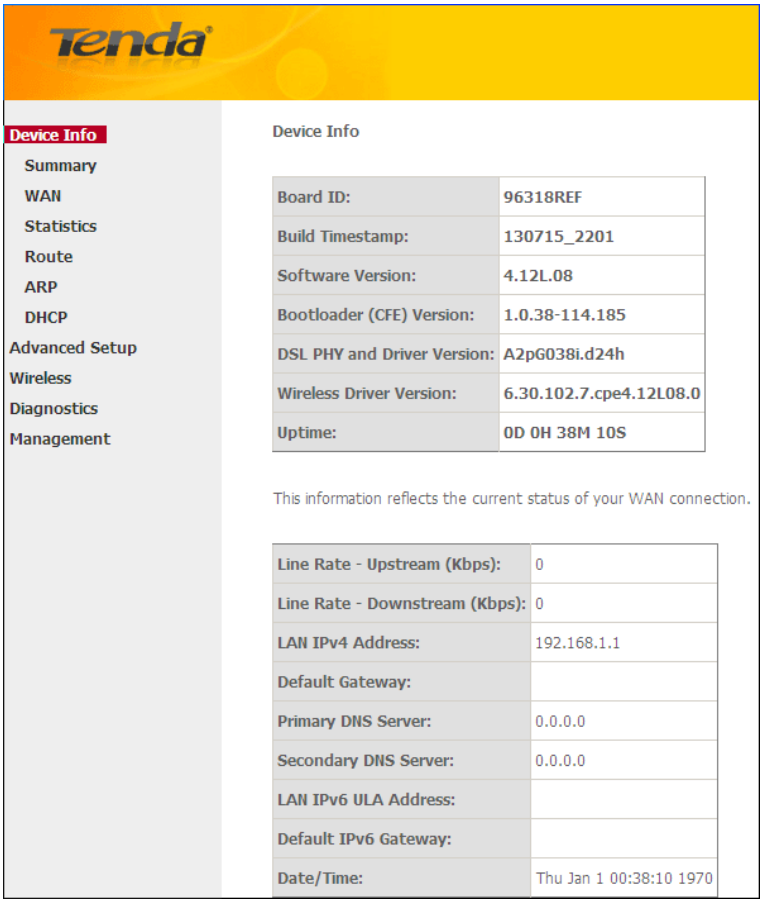


4.1 Device Info

This section includes the following information:

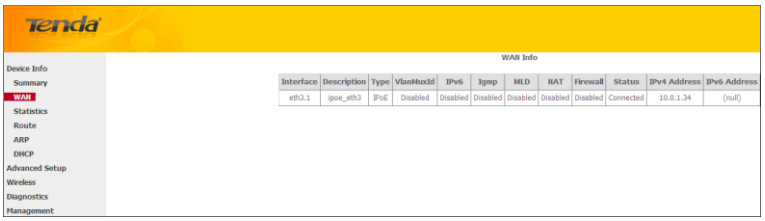
Summary

Here you can view system information and current status of your WAN connection as seen in the screenshot.



WAN

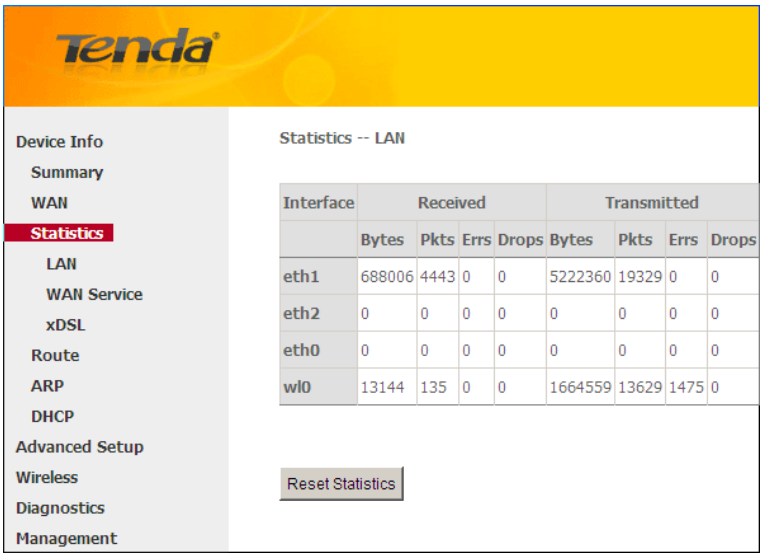
Here you can view the WAN Information including Interface, Description, Type, IGMP, NAT, Firewall, Status, IPv4 Address and VLAN ID as seen in the screenshot.



Statistics

Here you can view the packets received and transmitted on LAN/WAN ports.

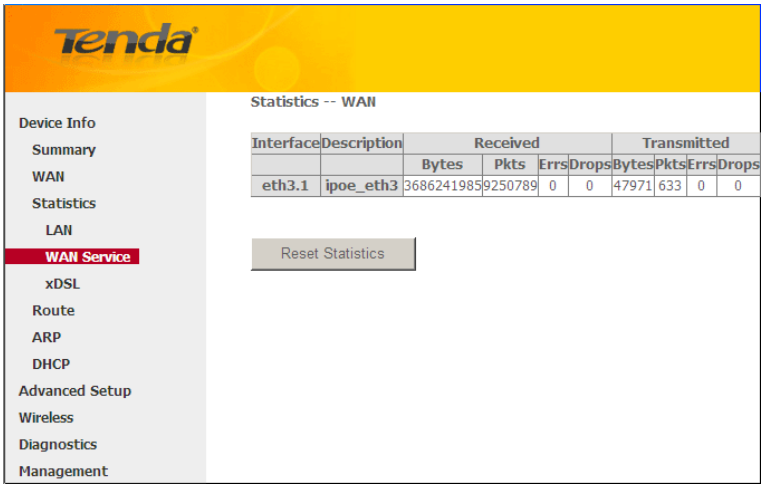
Statistics--LAN: Displays the packets received and transmitted on the LAN ports as seen in the screenshot below.



Tip:

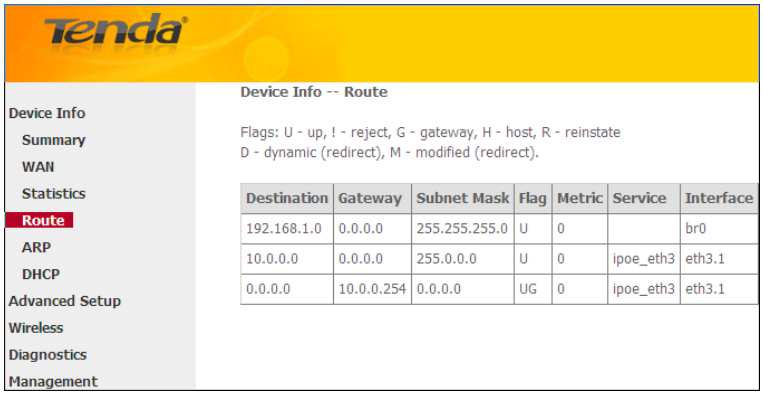
eth0, eth1, eth3 and eth3 respectively represent the LAN port1, LAN port2, LAN port3 and LAN port4 of the device.

Statistics--WAN: Displays the packets received and transmitted on the WAN ports as seen in the screenshot below.



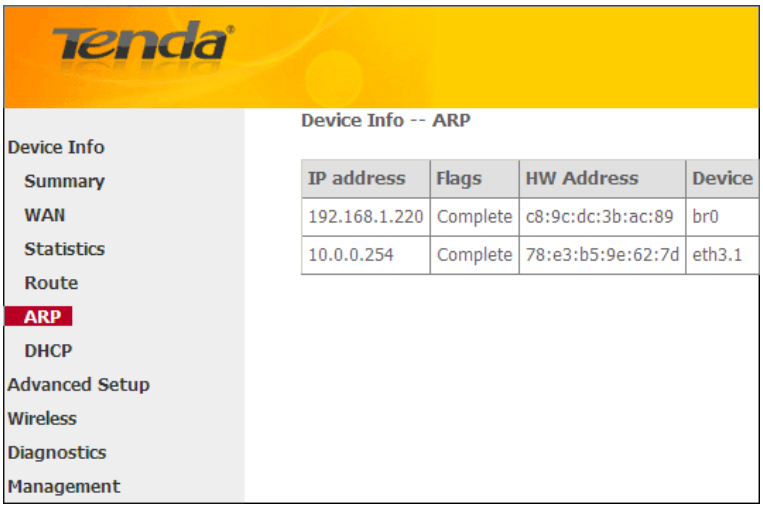
Route

Here you can view the route table as seen in the screenshot:



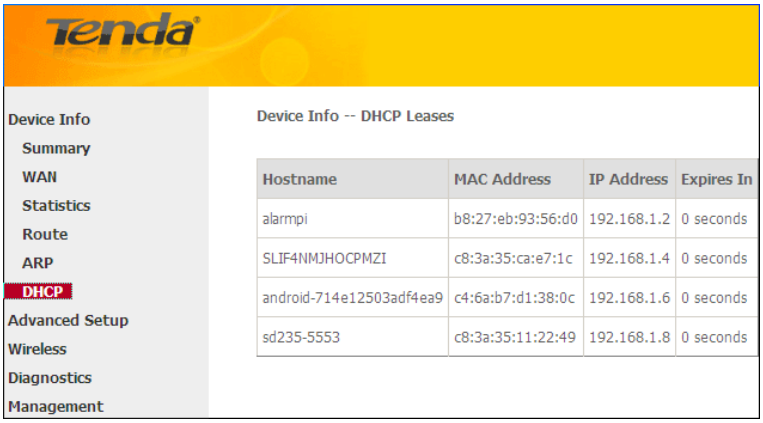
ARP

Here you can view the IP and MAC addresses of the PCs that attach to the device either via a wired or wireless connection as seen in the screenshot:



DHCP

Here you can view the DHCP leases, including IP and MAC addresses of the PCs, hostnames and remaining lease time as seen in the screenshot:



4.2 Advanced Setup

This section explains the following information:

- Layer2 Interface
- WAN Service
- LAN
- NAT
- Security
- Parental Control
- Quality of Service
- Routing
- DNS
- DSL

4.2.1 Layer2 Interface

Click **Advanced Setup -> Layer2 Interface** to enter the Layer2 Interface screen.

This router provides two Layer2 Interfaces:

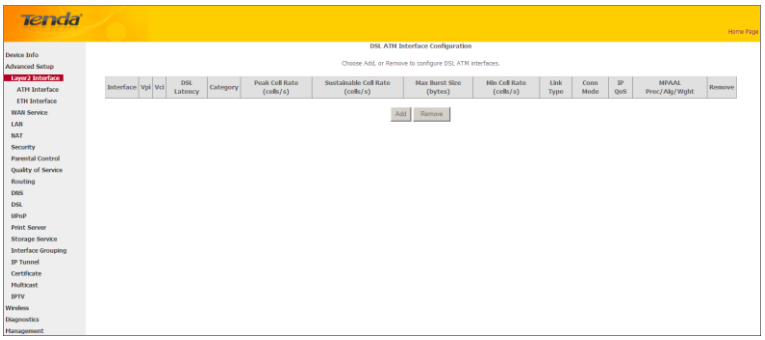
- ATM Interface for ADSL broadband Internet service

- ETH Interface for connecting to Internet via an Ethernet cable.

By default, system applies the ATM Interface (ADSL uplink).

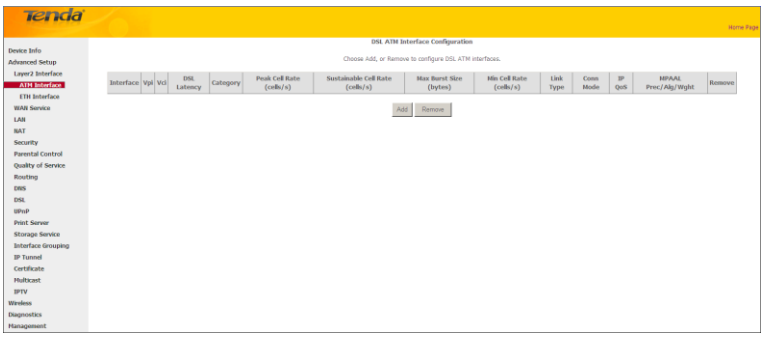
If you directly connect to the ADSL line via a phone cable, first refer to **To set up the ATM interface** and then skip to **To setup WAN Service for ATM Interface**.

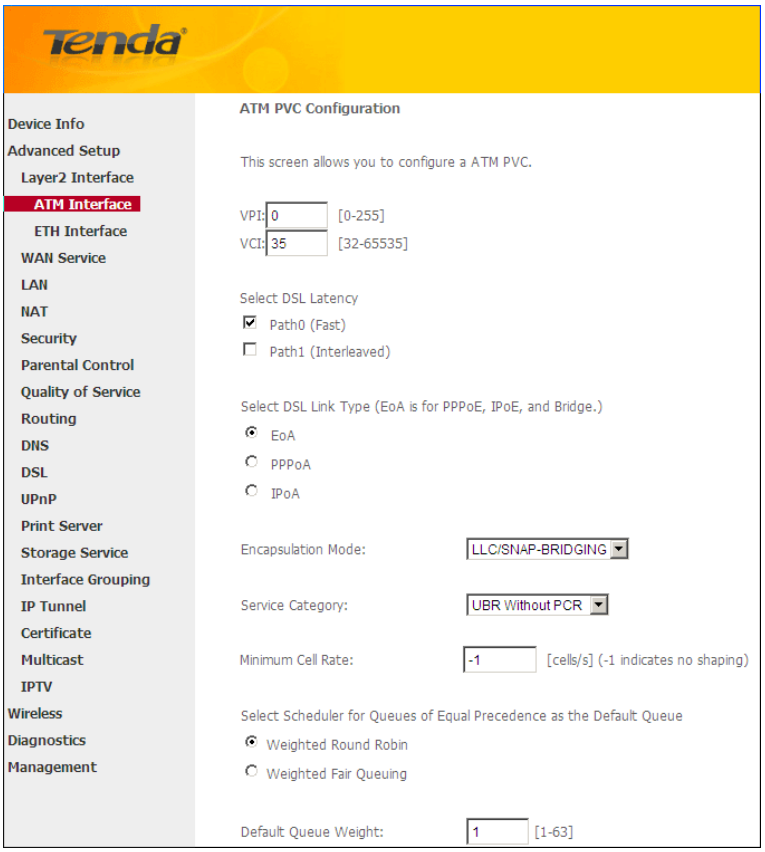
Or if you connect to Internet via a fiber/cable modem using an Ethernet cable, first refer to **To set up the ETH interface** and then skip to **To setup WAN Service for ETH Interface**.



To set up the ATM interface

Select **ATM Interface** and click **Add** to configure it.





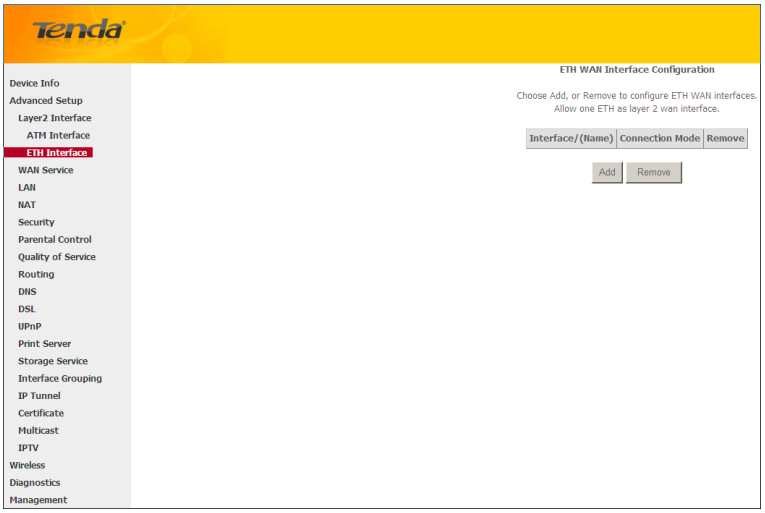
Enter the VPI and VCI values, Select a DSL Link Type (Internet connection type): EoA (EoA is for PPPoE, IPoE, and Bridge.), PPPoA or IPoA, leave other options unchanged from factory defaults and click **Apply/Save** and then refer to **To setup WAN Service for ATM Interface** to configure the WAN service for Internet access.

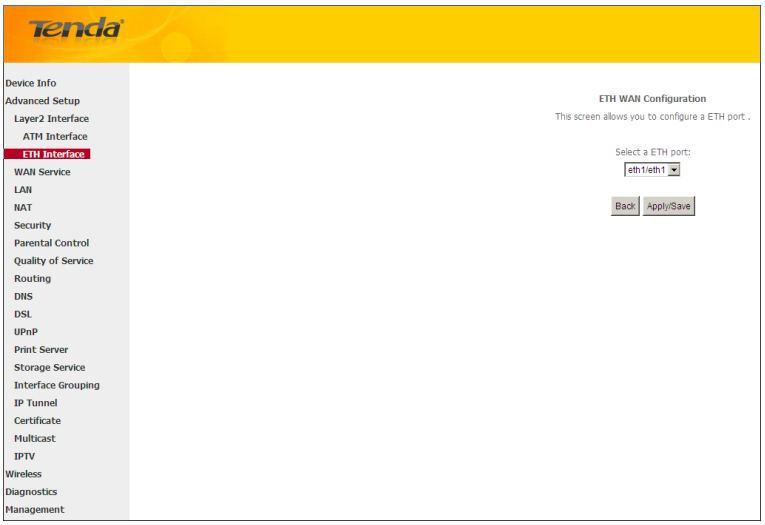
Tip:

*If you are unsure about the VPI/VCI parameters, see **Appendix 4 VPI/VCI List**. Or if your ISP and the VPI/VCI information is not covered there, ask your ISP to provide it.*

To set up the ETH interface

Select **ETH Interface** and click **Add** to configure it.





The Ethernet port configured here is to function as a WAN port. Only one LAN port can be configured as the WAN port at a time. After you finish your settings, click the **Apply/Save** button and then refer to **To setup WAN Service for ETH Interface** to configure the WAN service for Internet access.

Tip:

eth0, eth1, eth3 and eth3 respectively represent the LAN port1, LAN port2, LAN port3 and LAN port4 of the device.

4.2.2 WAN Service

This router provides two WAN services:

- WAN Service for ATM Interface (ADSL uplink)
- WAN Service for ETH Interface (Ethernet uplink)

To setup WAN Service for ATM Interface

If you configured the **ATM Interface** (ADSL uplink), follow steps below to configure the WAN service:
Click **Advanced Setup -> WAN Service** and then click the **Add** button. Select the interface you have configured
Depending on the type of connection, you will come to different screens and be prompted to enter your ISP settings accordingly. Select one connection type from the five Internet connection types as shown in the following table (If you are unsure, consult your ISP.):

Internet Connection Type		ISP Information
PPPoE PPPoA		Enter the ISP login user name and password. If you cannot locate this information, ask your ISP to provide it.
IPoE (If your ISP uses DHCP to assign your IP address or if your ISP	Dynamic IP	No entries are needed.
	Static (Fixed) IP	Enter the assigned IP address, subnet mask, and the IP address of your ISP's primary DNS server. This information should have been provided to you by your ISP. If a secondary DNS server address is

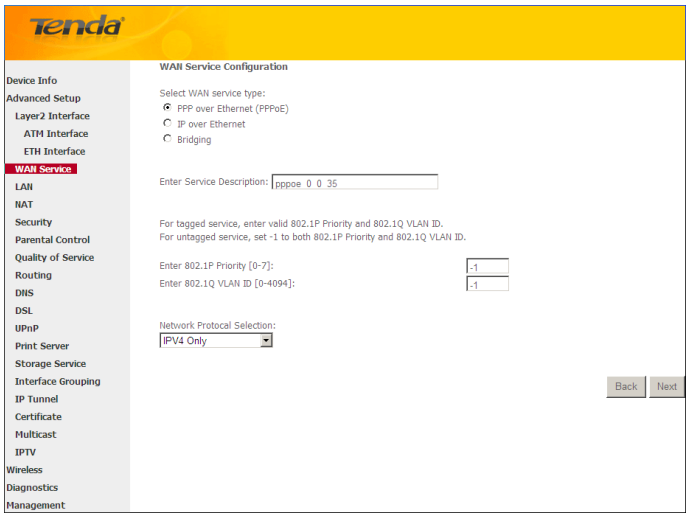
assigns you a static (fixed) IP address, IP subnet mask and the gateway IP address, you need to select the IP over Ethernet (IPoE).		available, enter it also.
IPoA	Static (Fixed) IP	Enter the assigned IP address, subnet mask, and the IP address of your ISP's primary DNS server. This information should have been provided to you by your ISP. If a secondary DNS server address is available, enter it also.
Bridging		If you wish to iniate a dialup directly from your PC for Internet access or enjoy the entire Internet connection (instead of sharing it with others), you can select the **Bridging** and then click **Next**.

Tip:

For PPPoE, IPoE, and Bridging Internet connection types, you must first select EoA on the ATM Interface Screen, for more information, see To set up the ATM interface.

PPP over Ethernet (PPPoE)

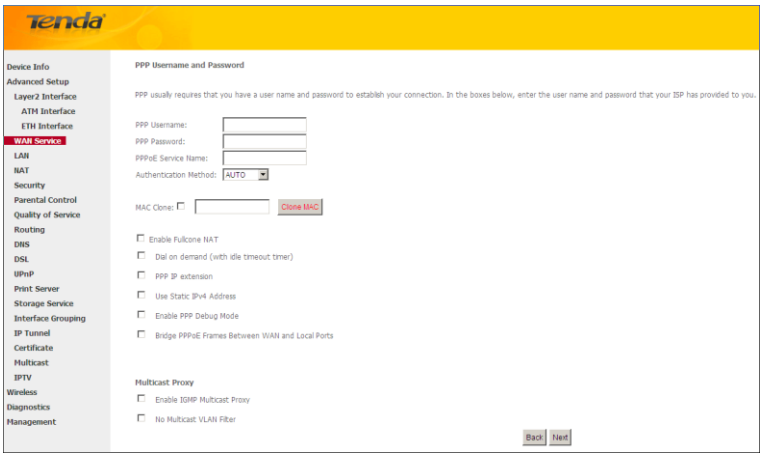
If you have selected the **EoA** from the **ATM Interface** screen in **Layer2 Interface**, you will see the screen below when you click the **WAN Service** tab, select the configured interface and click **Next**.



1. Select PPPoE.
2. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
3. Select a network protocol: IPv4, IPv6 or IPv4 & IPv6 (dual stack).
4. Click **Next.**

Note:

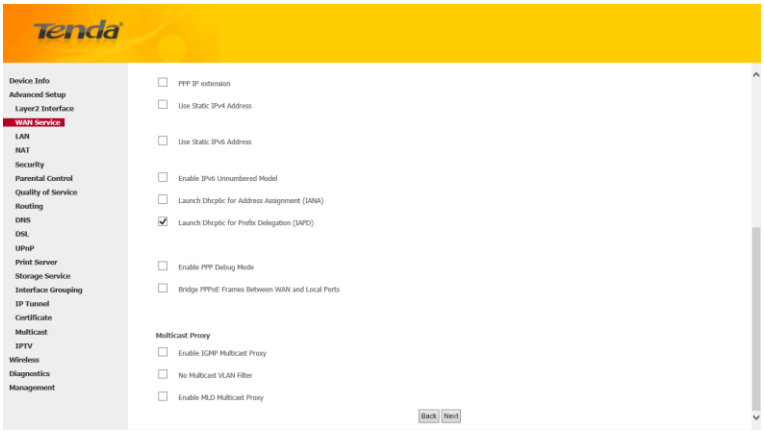
If you select IPv6 or IPv4 & IPv6 (dual stack), skip to IPv6.



- **PPP User Name:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- **PPP Password:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- **PPPoE Service Name:** This information is provided by your ISP. Only enter it if instructed by your ISP.
- **Authentication Method:** This is used by ISP to authenticate the client that attempts to connect. If you are not sure, consult your ISP or select **Auto**.
- **Clone MAC:** Clicking this button copies the MAC address of your PC to the router. Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem, but some ISPs additionally register the MAC address of the network interface card in your computer when your account is first opened. They then accept traffic only from the MAC address of that computer. If so, configure your router to "clone" the MAC address from the authorized computer.
- **Dial on demand:** Connect to ISP only when there is traffic transmission. This saves your broadband Internet service bill.
- **PPP IP extension:** If enabled, all the IP addresses in outgoing packets including management packets on the WAN port will be changed to the device's WAN IP address. Only change the default settings if necessary.
- **Enable PPP Debug Mode:** Only enable this feature if supported by your ISP.
- **Bridge PPPoE Frames Between WAN and Local Ports:** If enabled, PPPoE dialup frame from LAN side will directly egress the WAN port without modification.
- **Multicast Proxy:** If enabled, the router will use multicast proxy.

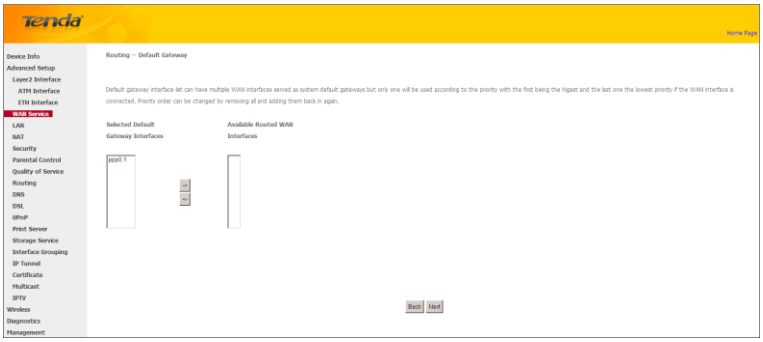
IPv6

If you select IPv4 as the network protocol, skip this section.



1. Check **Launch Dhcp6c for Prefix Delegation (IAPD).**
2. If your ISP is using stateful DHCPv6, check **Launch Dhcp6c for Address Assignment (IANA)** also. Or configure a static IP address.
3. Click **Next -> Next -> Apply/Save.**

WAN Gateway

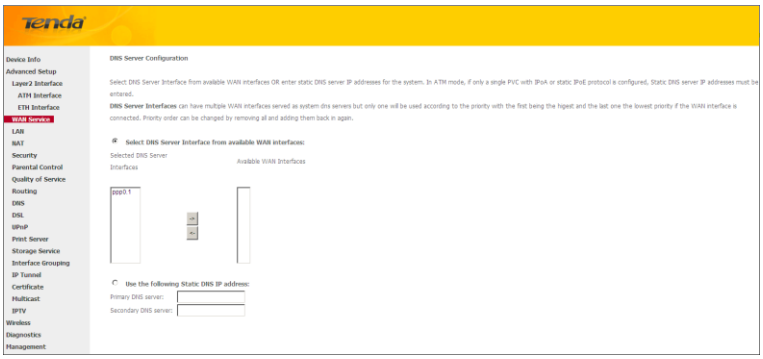


Here you can configure the WAN gateway address. After you configure it click **Next**. The default setting is recommended.

Note:

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

WAN DNS



Here you can configure the WAN DNS address:
-Click the **Select DNS Server Interface from available WAN interfaces** option
-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system
And then click **Next**.

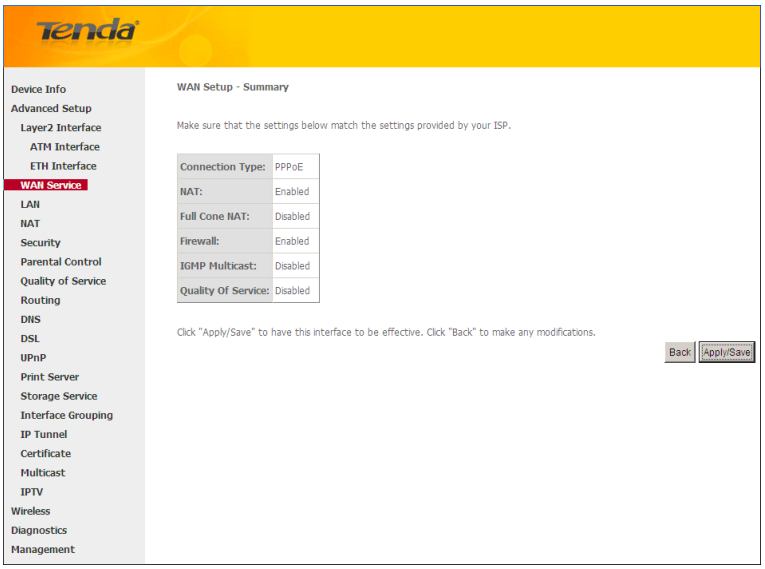
Note:

1.DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

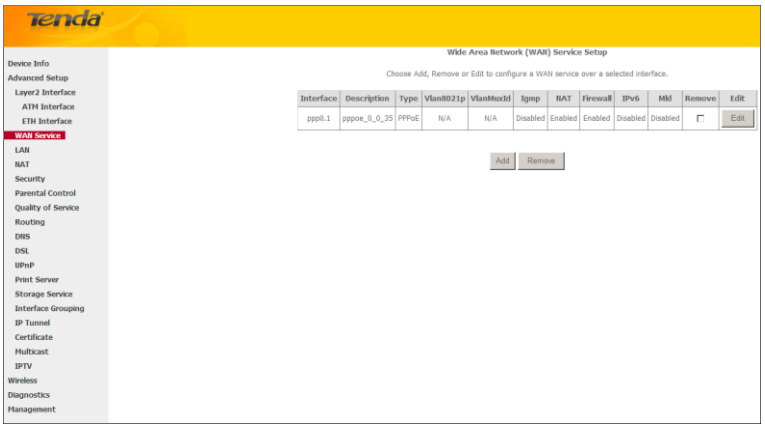
2. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses

must be entered.

3. If you cannot locate the static DNS server IP information, ask your ISP to provide it.



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.

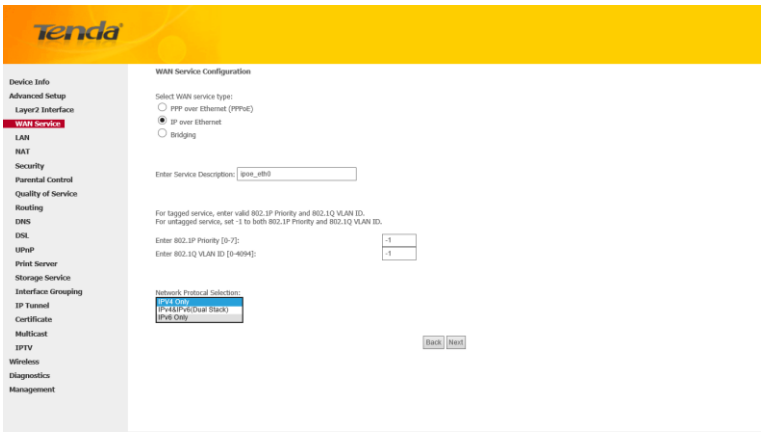


When the PPPoE connection is successful, you can access Internet.

IP over Ethernet (IPoE)

If your ISP uses DHCP to assign your IP address or if your ISP assigns you a static (fixed) IP address, IP subnet mask and the gateway IP address, you need to select the IP over Ethernet (IPoE).

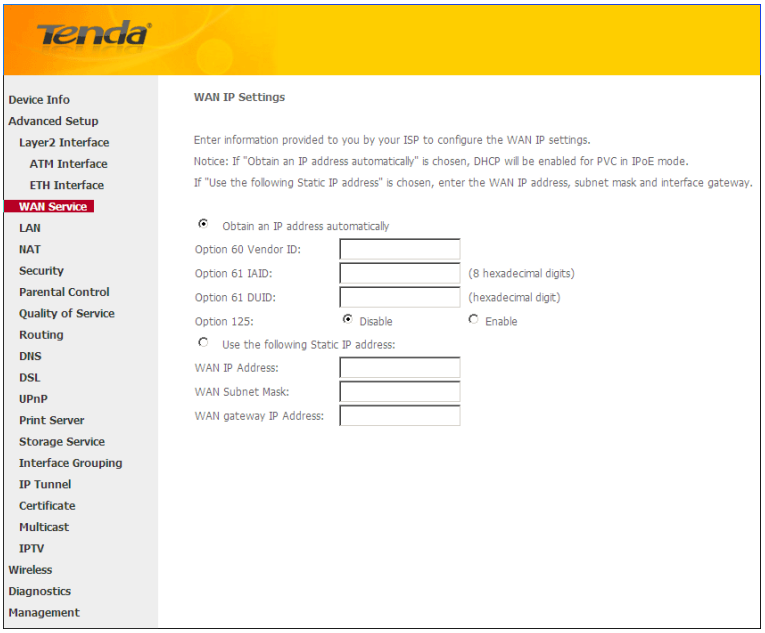
If you have selected the **EoA** from the **ATM Interface** screen in **Layer2 Interface**, you will see the screen below when you click the **WAN Service** tab, select the configured interface and click **Next**.



1. Select IPoE.
2. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
3. Select a network protocol: IPv4, IPv6 or IPv4 & IPv6 (dual stack).
4. Click **Next.**

Note:

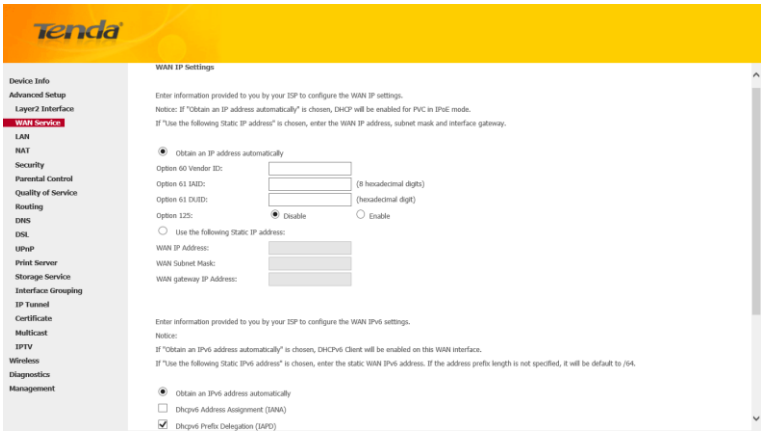
If you select IPv6 or IPv4 & IPv6 (dual stack), skip to IPv6.



- ✧ **Obtain an IP address automatically:** This allows the router to automatically acquire IP information from your ISP or your existing networking equipment.
- ✧ **Use the following Static IP address:** This allows you to specify the Static IP information provided by your ISP or that corresponds with your existing networking equipment.
- ✧ **WAN IP Address:** The Internet IP address provided by your ISP for accessing Internet.
- ✧ **WAN Subnet Mask:** The subnet mask address provided by your ISP for accessing Internet.
- ✧ **WAN gateway IP Address:** The gateway IP address provided by your ISP for accessing Internet.

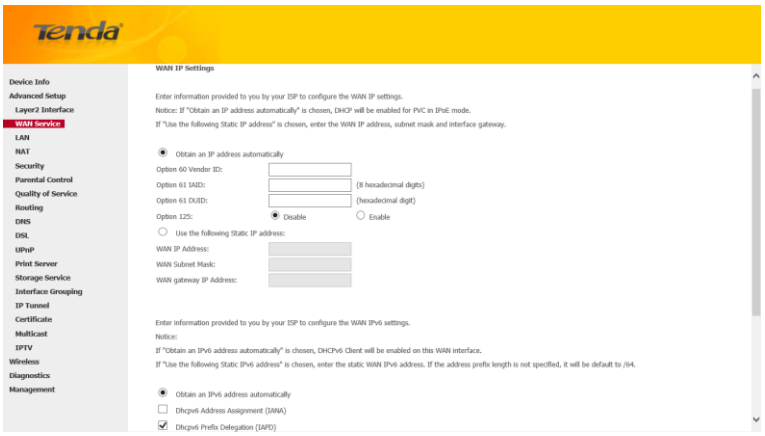
IPv6

If you select IPv4 as the network protocol, skip this section.



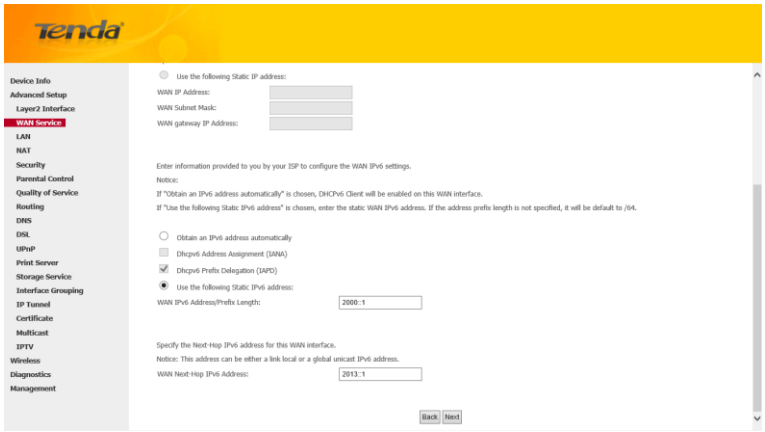
To obtain an IP address automatically:

1. Select **Obtain an IP address automatically.**
2. Check **Launch Dhcp6c for Prefix Delegation (IAPD).**
3. If your ISP is using stateful DHCPv6, check **Launch Dhcp6c for Address Assignment (IANA)** also.
4. Click **Next -> Next -> Apply/Save.**

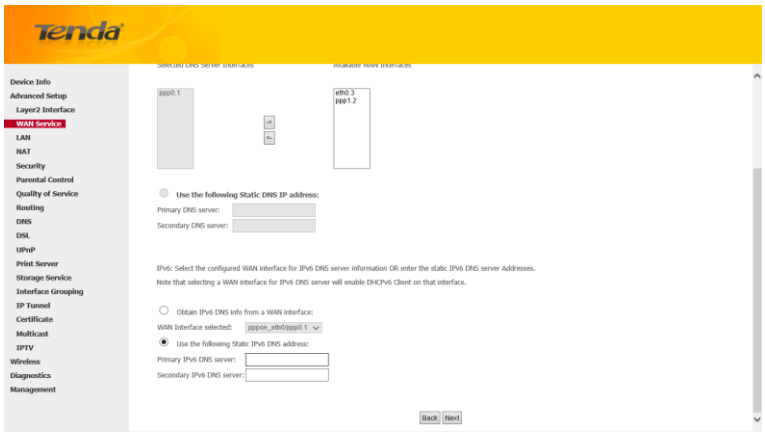


To configure a static IPv6 address

1. Select **Use the following Static IPv6 address.**
2. Configure **WAN IPv6 Address/Prefix Length** and **WAN Next-Hop IPv6 Address.**



3. Click **Next -> Next** to enter the screen below.

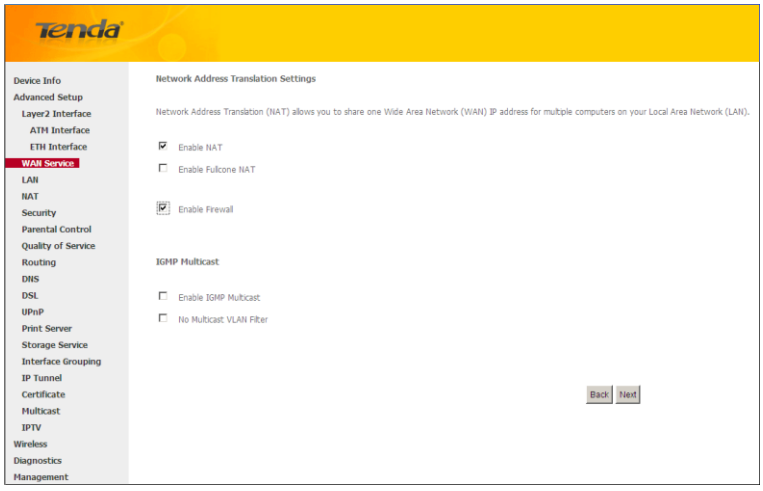


4. Select **Use the following Static IPv6 DNS address** and manually enter the DNS server address. If you have two DNS server addresses, enter the second also.

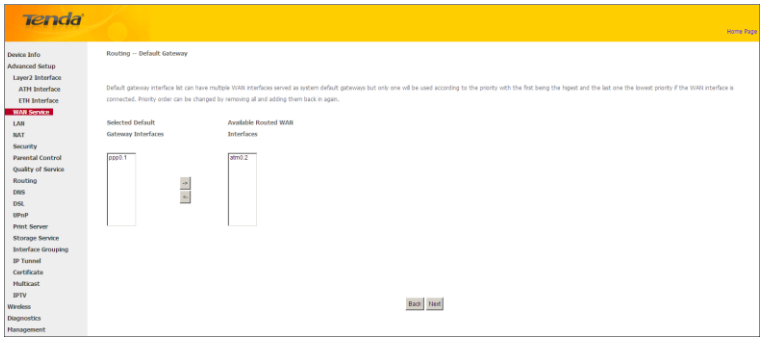
5. Click **Next -> Apply/Save**.

Note:

If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.



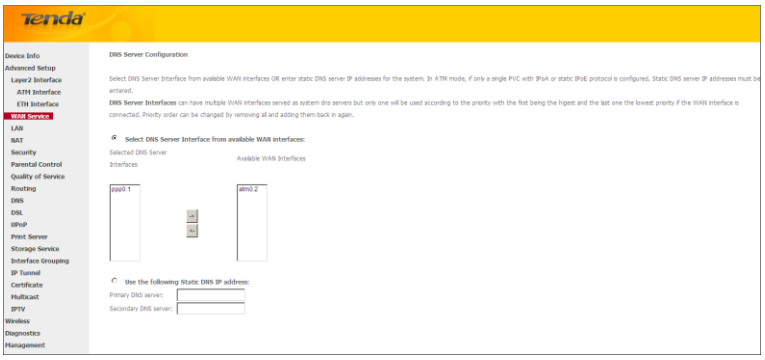
Here you can configure the NAT settings. If you are unsure about the options, please keep the default settings and then click **Next**.



Here you can configure the WAN gateway address. Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and

adding them back in again.

If you are unsure about the options, please keep the default settings and then click **Next**.



Here you can configure the WAN DNS address:

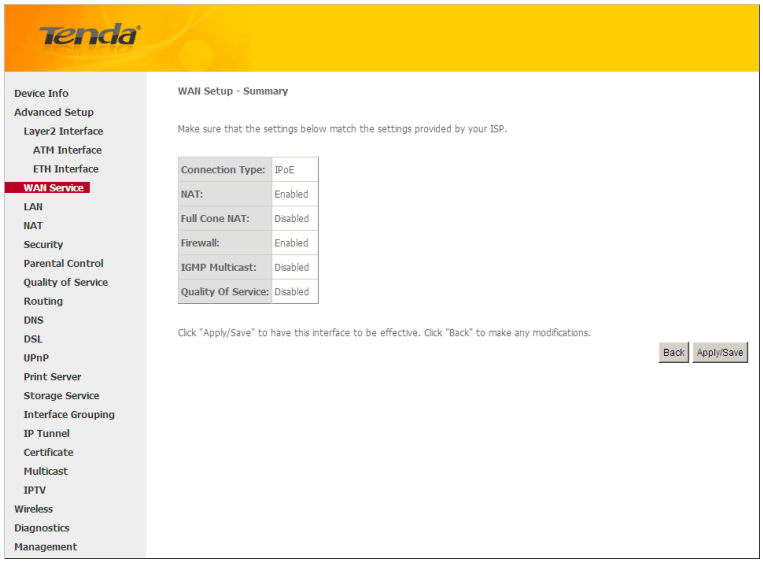
-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

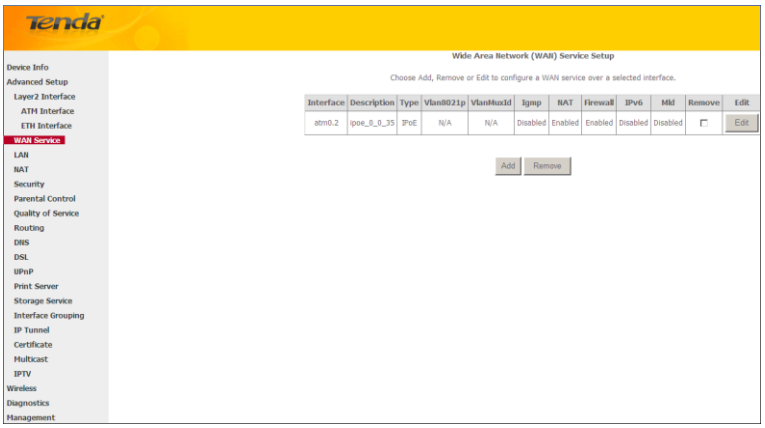
And then click **Next**.

Note:

1. *DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.*
2. *In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.*
3. *If you cannot locate the static DNS server IP information, ask your ISP to provide it.*



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.

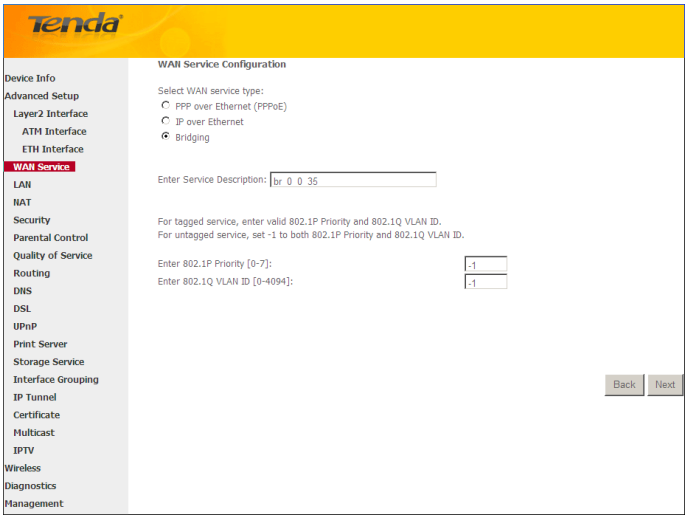


When the IPoE connection is successful, you can access Internet.

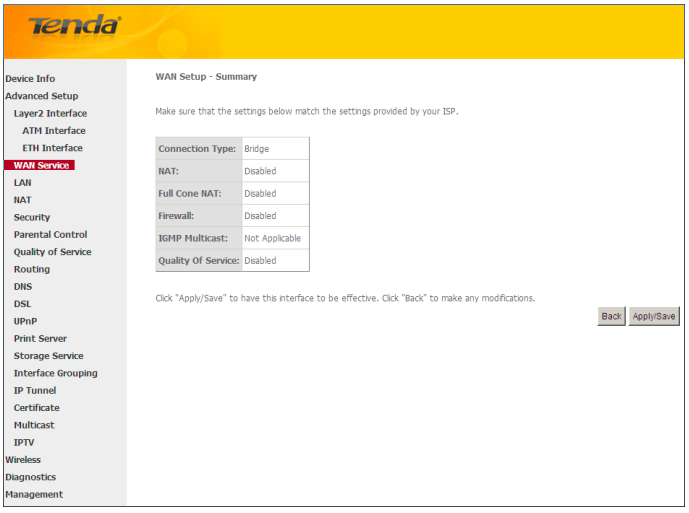
Bridging

If you wish to iniate a dialup directly from your PC for Internet access or enjoy the entire Internet connection (instead of sharing it with others), you can use the Bridging DSL link type and create a dialup program on your PC.

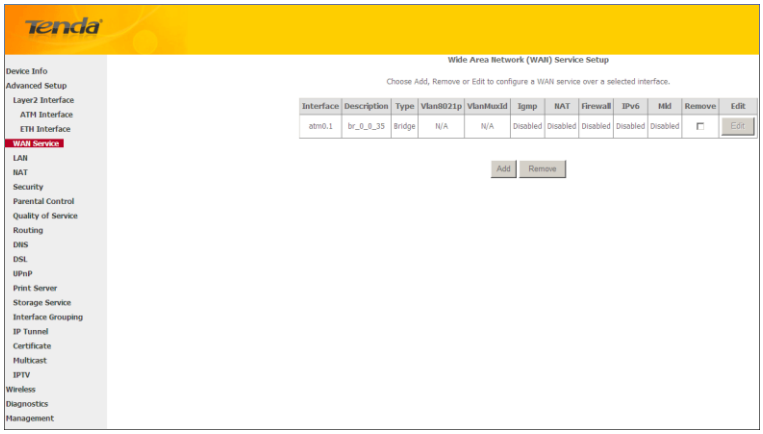
If you have selected the **EoA** from the **ATM Interface** screen in **Layer2 Interface**, you will see the screen below when you click the **WAN Service** tab, select the configured interface and click **Next**.



The **Enter Service Description** field is optional. We recommend that you keep it unchanged from default and click **Next**.



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.



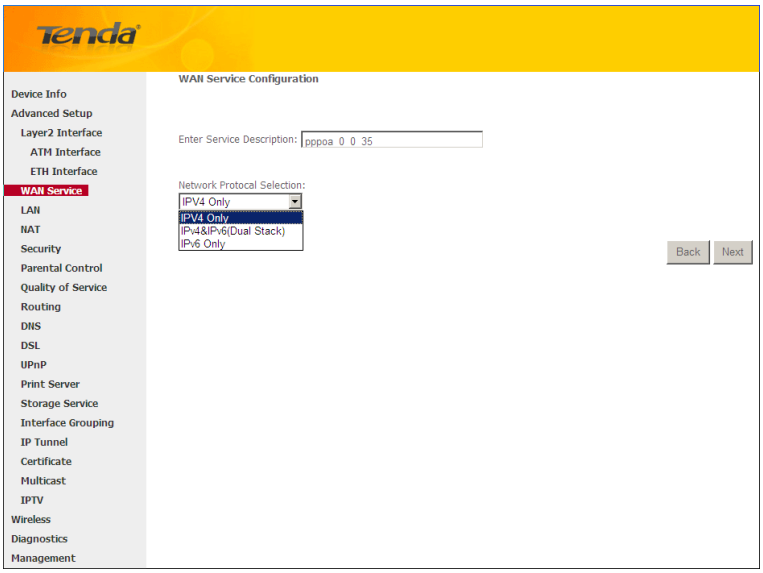
When the bridging connection is successful, you can access Internet.

Note:

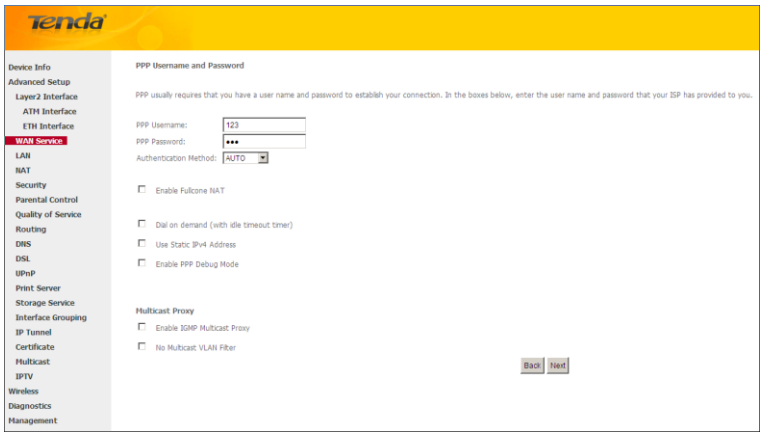
To configure multiple WAN connections, simply configure multiple ATM interfaces and then follow the instructions above.

PPPoA

If you have selected the **PPPoA** from the **ATM Interface** screen in **Layer2 Interface**, you will see the screen below when you click the **WAN Service** tab, select the configured interface and click **Next**.



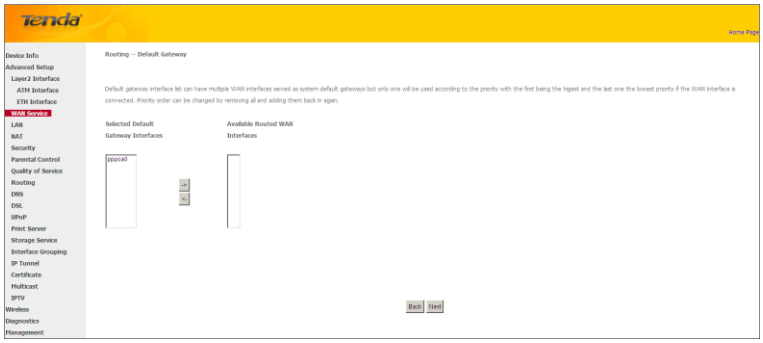
1. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
2. Select a network protocol: IPv4, IPv6 or IPv4 & IPv6 (dual stack).
3. Click **Next.**



- **PPP User Name:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- **PPP Password:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- **Authentication Method:** This is used by ISP to authenticate the client that attempts to connect. If you are not sure, consult your ISP or select **Auto**.
- **Dial on demand:** Connect to ISP only when there is traffic transmission. This saves your broadband Internet service bill.
- **Enable PPP Debug Mode:** Only enable this feature if supported by your ISP.
- **Bridge PPPoE Frames Between WAN and Local Ports:** If enabled, PPPoE dialup frame from LAN side will directly egress the WAN port without modification.
- **Multicast Proxy:** If enabled, the router will use multicast proxy.

If you are not sure about the options on this screen, simply enter your ISP user name and password and leave the other options unchanged from defaults. Click **Next** to enter the following screen.

WAN gateway

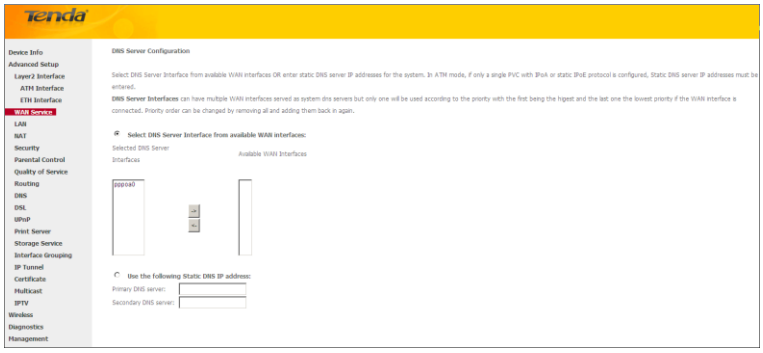


Here you can configure the WAN gateway address. After you configure it click **Next**. The default setting is recommended.

Note:

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

WAN DNS



Here you can configure the WAN DNS address:

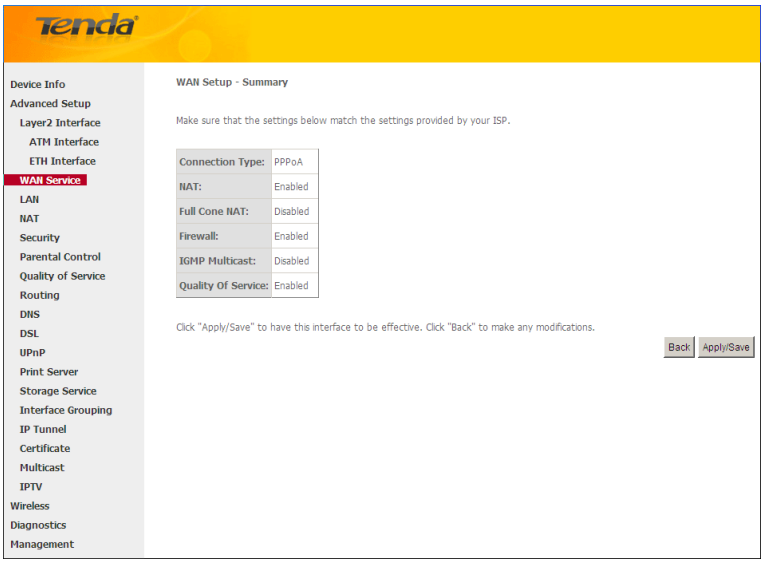
-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

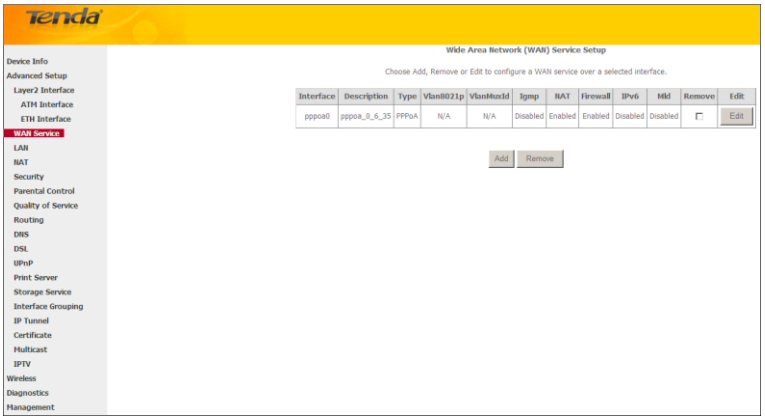
And then click **Next**.

Note:

1. *DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.*
2. *In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.*
3. *If you cannot locate the static DNS server IP information, ask your ISP to provide it.*



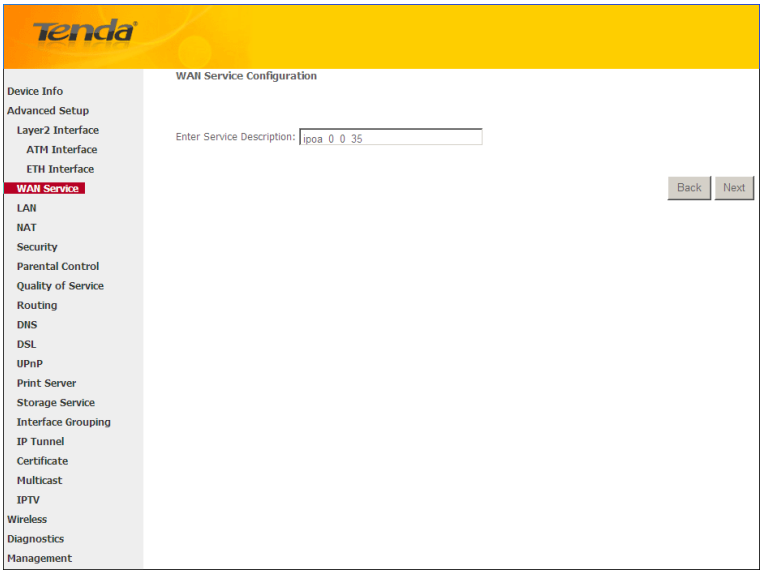
Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.



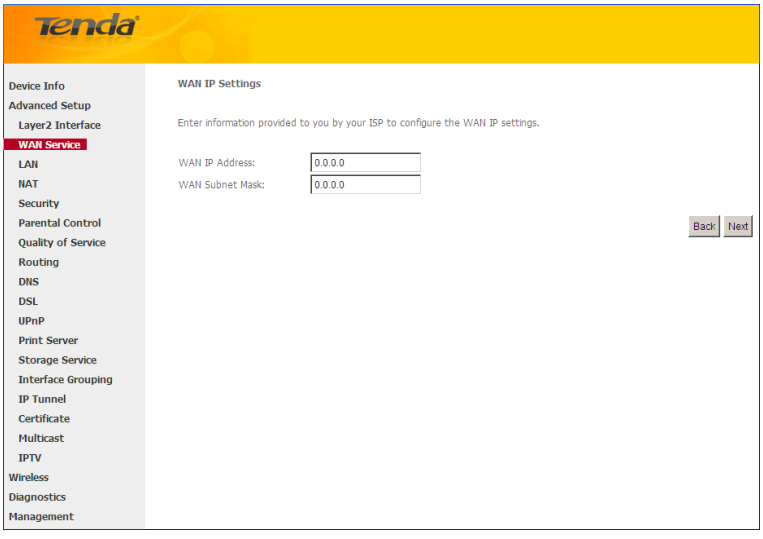
When the PPPoA connection is successful, you can access Internet.

IPoA

If you have selected the **IPoA** from the **ATM Interface** screen in **Layer2 Interface**, you will see the screen above when you click the **WAN Service** tab, select the configured interface and click **Next**.



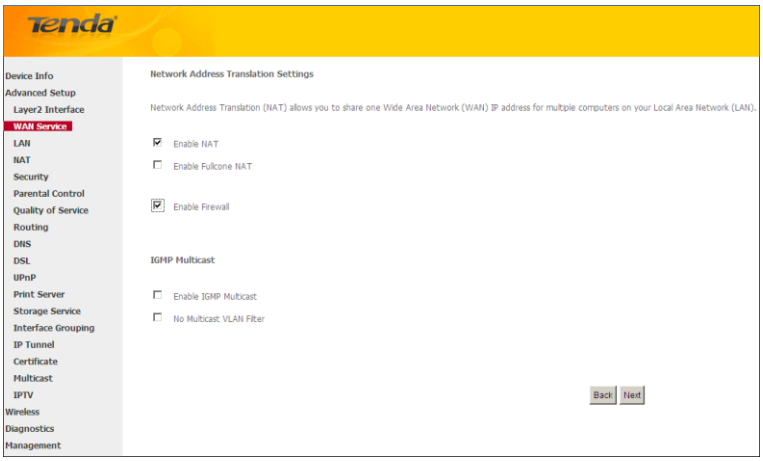
1. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
2. Click **Next.**



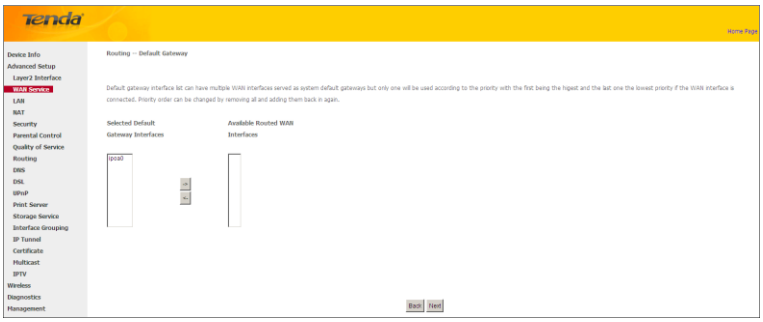
✧ **WAN IP Address:** The Internet IP address provided by your ISP for accessing Internet.

✧ **WAN Subnet Mask:** The subnet mask address provided by your ISP for accessing Internet.

Enter the WAN IP address and subnet mask assigned by your ISP. This information should have been provided to you by your ISP. If you cannot locate this information, ask your ISP to provide it. And then click **Next** to enter the following screen.



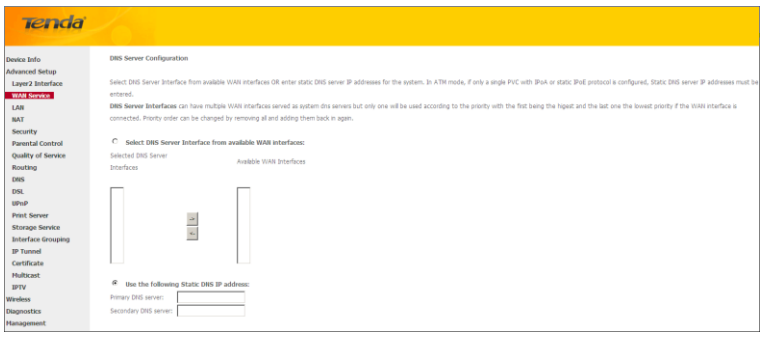
If you are unsure about the options on the screen above, keep the defaults and click **Next**.



Here you can configure the WAN gateway address. After you configure it click **Next**. The default setting is recommended.

Note:

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

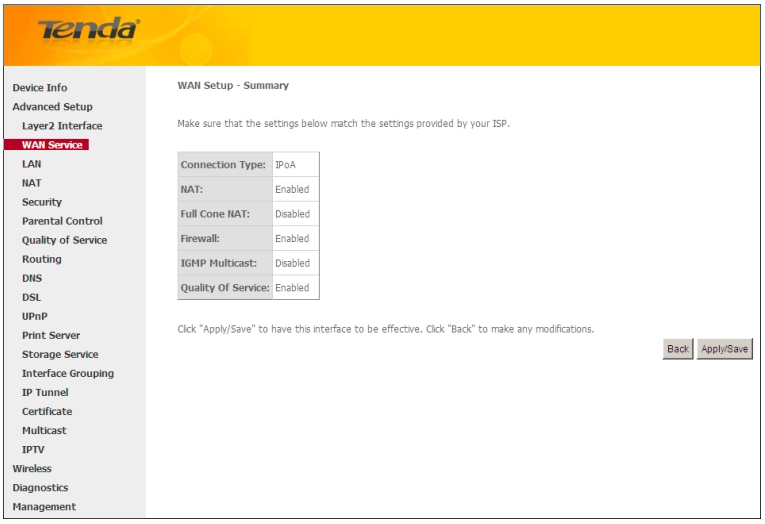


Here you can configure the WAN DNS address:

-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

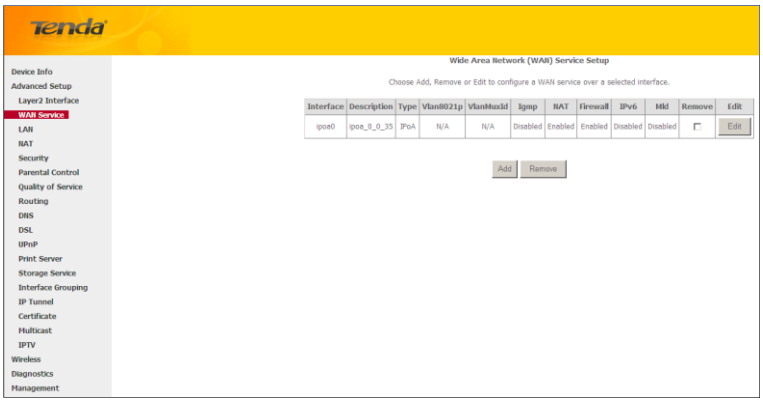
And then click **Next** to enter the following screen.



Note:

1. *DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.*
2. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
3. If you cannot locate the static DNS server IP information, ask your ISP to provide it.

Confirm your settings and then click Apply/Save to apply and save your settings. Your settings will then be displayed on the screen below:



To setup WAN Service for ETH Interface

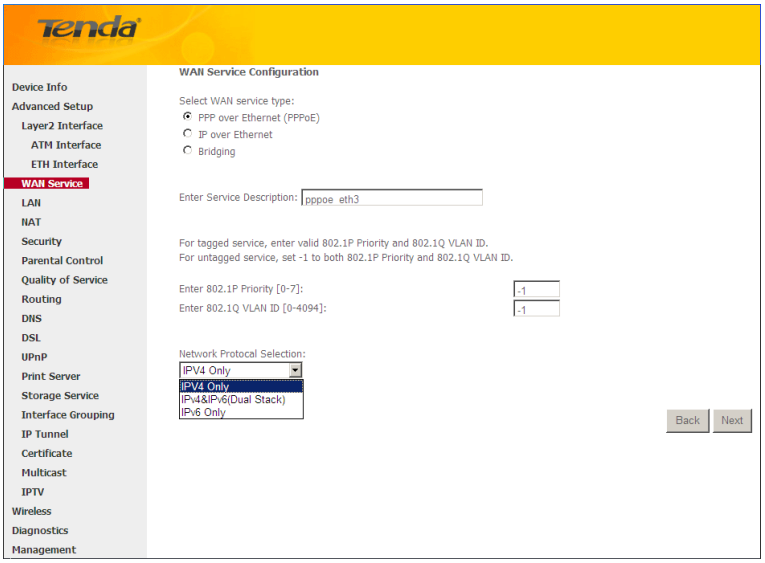
If you select and configured the **ETH Interface** (Ethernet uplink), follow steps below to configure the WAN service:
Two Internet connections: PPP over Ethernet (PPPoE) and IP over Ethernet (IPoE) are available in the Ethernet uplink mode.

Tip:

eth0, eth1, eth3 and eth3 respectively represent the LAN port1, LAN port2, LAN port3 and LAN port4 of the device.

PPP over Ethernet (PPPoE)

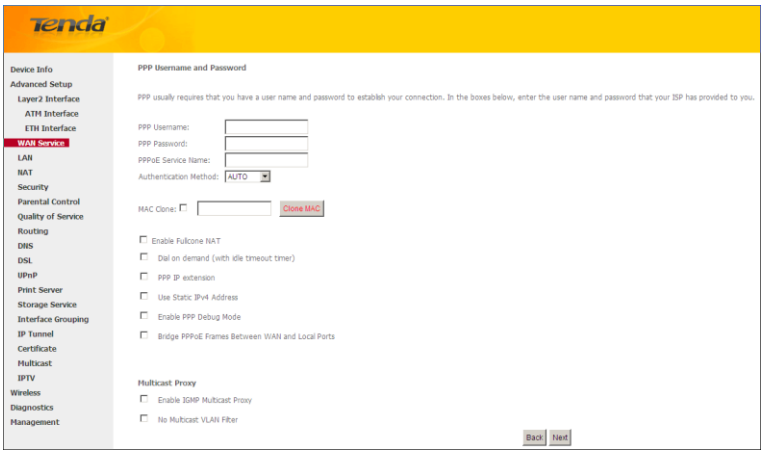
Click **Advanced Setup -> WAN Service -> Add,** select the configured interface and then click **Next** to enter the following screen.



1. Select PPPoE.
2. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
3. Select a network protocol: IPv4, IPv6 or IPv4 & IPv6 (dual stack).
4. Click **Next.**

Note:

If you select IPv6 or IPv4 & IPv6 (dual stack), skip to IPv6.



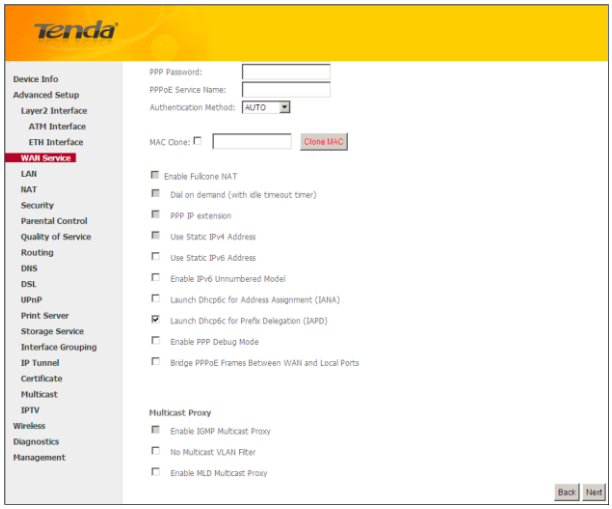
- ✧ **PPP User Name:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- ✧ **PPP Password:** This is for logging in to your ISP. If you cannot locate this information, ask your ISP to provide it.
- ✧ **PPPoE Service Name:** This information is provided by your ISP. Only enter it if instructed by your ISP.
- ✧ **Authentication Method:** This is used by ISP to authenticate the client that attempts to connect. If you are not sure, consult your ISP or select **Auto**.

- ✧ **Clone MAC:** Clicking this button copies the MAC address of your PC to the router. Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem, but some ISPs additionally register the MAC address of the network interface card in your computer when your account is first opened. They then accept traffic only from the MAC address of that computer. If so, configure your router to "clone" the MAC address from the authorized computer.
- ✧ **Dial on demand:** Connect to ISP only when there is traffic transmission. This saves your broadband Internet service bill.
- ✧ **PPP IP extension:** If enabled, all the IP addresses in outgoing packets including management packets on the WAN port will be changed to the device's WAN IP address. Only change the default settings if necessary.
- ✧ **Enable PPP Debug Mode:** Only enable this feature if supported by your ISP.
- ✧ **Bridge PPPoE Frames Between WAN and Local Ports:** If enabled, PPPoE dialup frame from LAN side will directly egress the WAN port without modification.
- ✧ **Multicast Proxy:** If enabled, the router will use multicast proxy.

If you are not sure about the options on this screen, simply enter your ISP user name and password and leave the other options unchanged from defaults. Click **Next.**

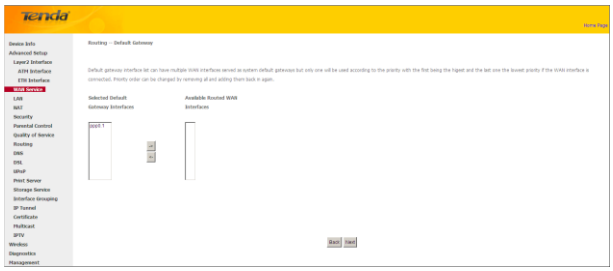
IPv6

If you select IPv4 as the network protocol, skip this section.



1. Check **Launch Dhcp6c for Prefix Delegation (IAPD).**
2. If your ISP is using stateful DHCPv6, check **Launch Dhcp6c for Address Assignment (IANA)** also. Or configure a static IP address.
3. Click **Next -> Next -> Apply/Save.**

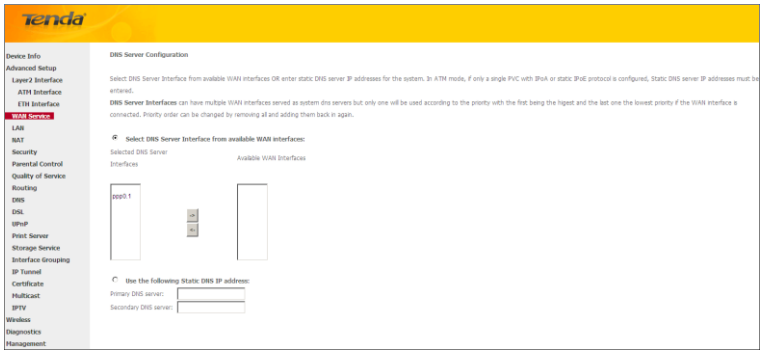
WAN Gateway



Here you can configure the WAN gateway address. After you configure it click **Next**. The default setting is recommended.

WAN DNS

Here you can configure the WAN DNS address. After you configure it click **Next**. The default setting is recommended if you cannot locate this information.

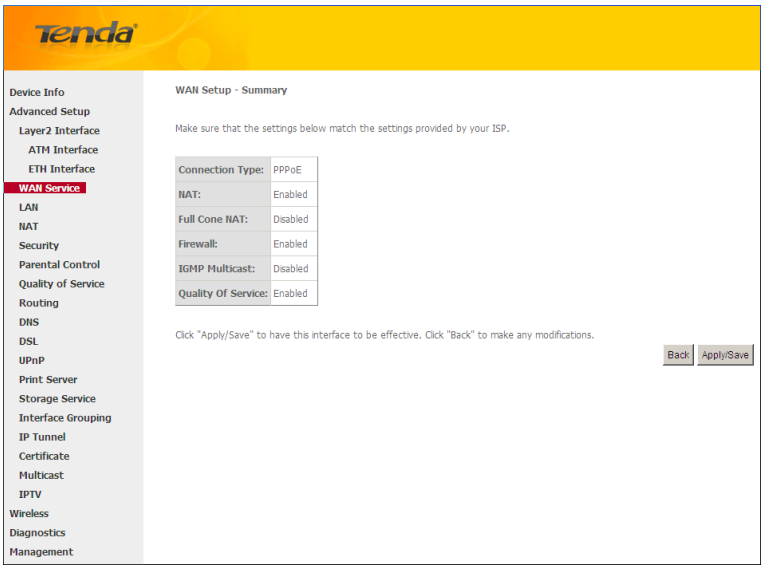


Here you can configure the WAN DNS address:

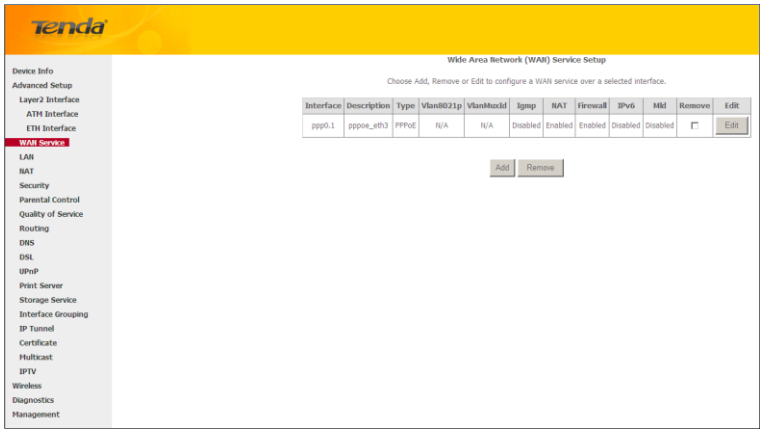
-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

And then click **Next**.



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.

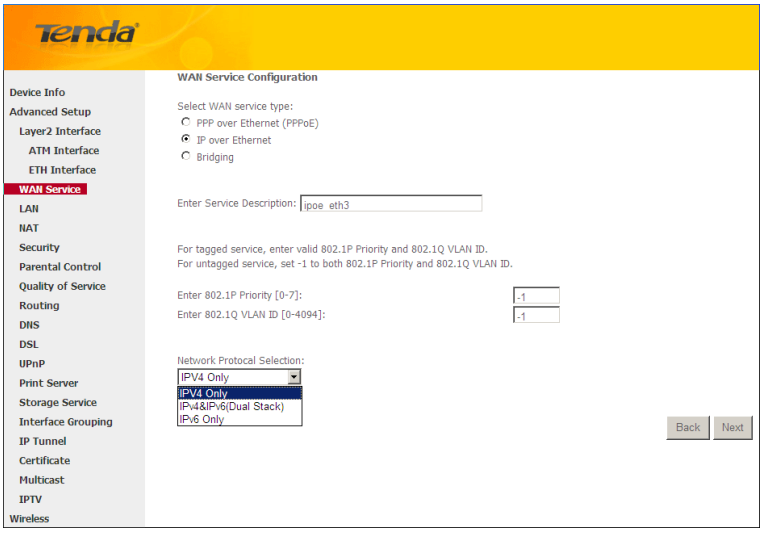


When the PPPoE connection is successful, you can access Internet.

IP over Ethernet (IPoE)

If your ISP uses DHCP to assign your IP address or if your ISP assigns you a static (fixed) IP address, IP subnet mask and the gateway IP address, you need to select the IP over Ethernet (IPoE).

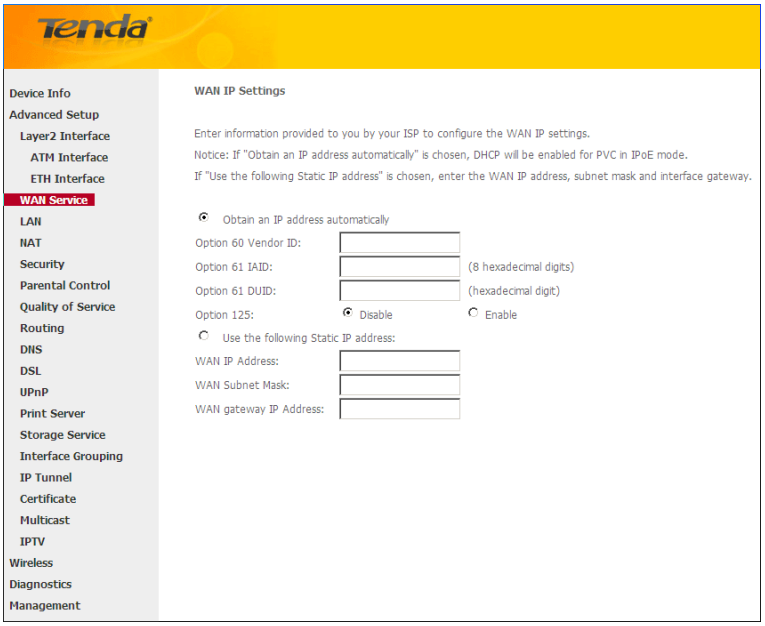
Click **Advanced Setup -> WAN Service -> Add,** select the configured interface and then click **Next** to enter the following screen.



1. Select IPoE.
2. Edit the **Enter Service Description.** This field is optional. We recommend that you keep the default.
3. Select a network protocol: IPv4, IPv6 or IPv4 & IPv6 (dual stack).
4. Click **Next.**

Note:

If you select IPv6 or IPv4 & IPv6 (dual stack), skip to IPv6.



✧ **Obtain an IP address automatically:** This allows the router to automatically acquire IP information from your ISP

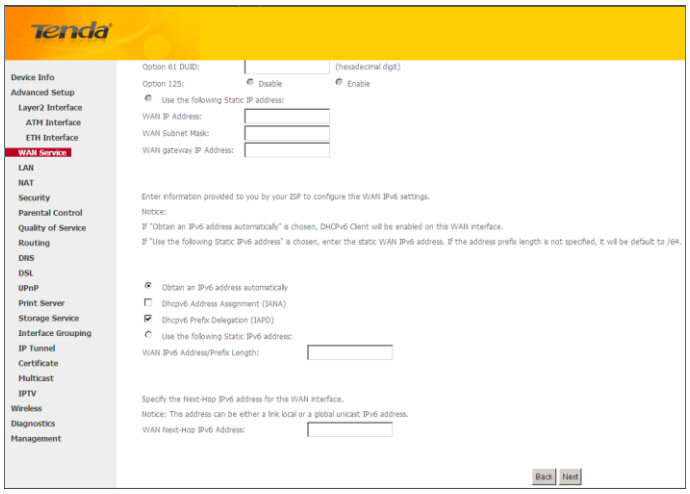
or your existing networking equipment.

- ✧ **Use the following Static IP address:** This allows you to specify the Static IP information provided by your ISP or that corresponds with your existing networking equipment.
- ✧ **WAN IP Address:** The Internet IP address provided by your ISP for accessing Internet.
- ✧ **WAN Subnet Mask:** The subnet mask address provided by your ISP for accessing Internet.
- ✧ **WAN gateway IP Address:** The gateway IP address provided by your ISP for accessing Internet.

Enter the IP address/ subnet mask/gateway IP address provided by your ISP or select **Obtain an IP address automatically** and then click the **Next** button.

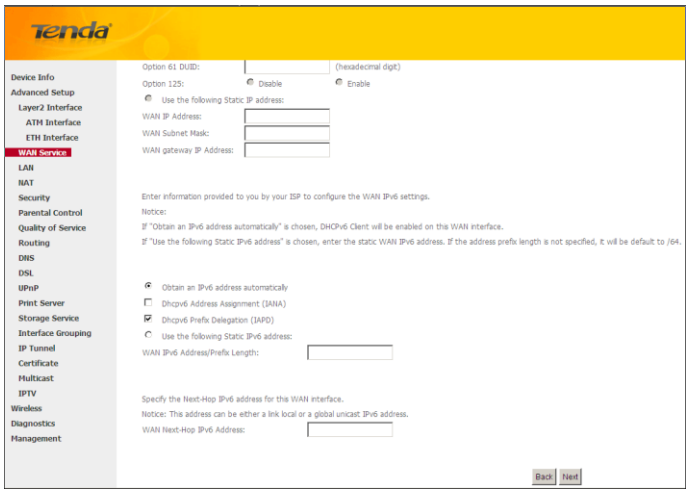
IPv6

If you select IPv4 as the network protocol, skip this section.



To obtain an IP address automatically:

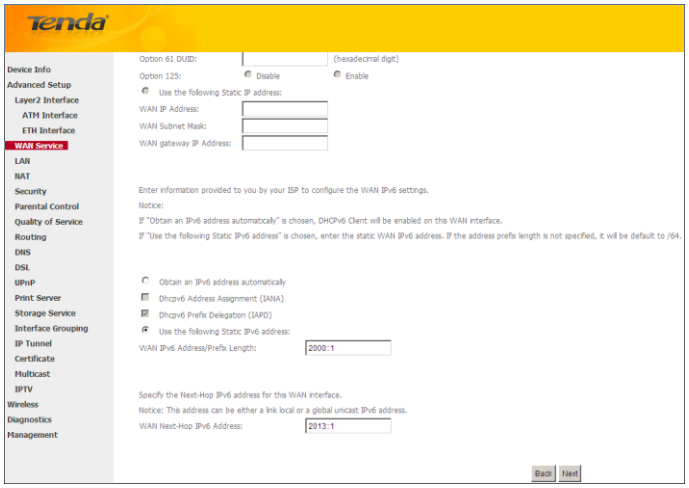
1. Select **Obtain an IP address automatically.**
2. Check **Launch Dhcp6c for Prefix Delegation (IAPD).**
3. If your ISP is using stateful DHCPv6, check **Launch Dhcp6c for Address Assignment (IANA)** also.
4. Click **Next -> Next -> Apply/Save.**



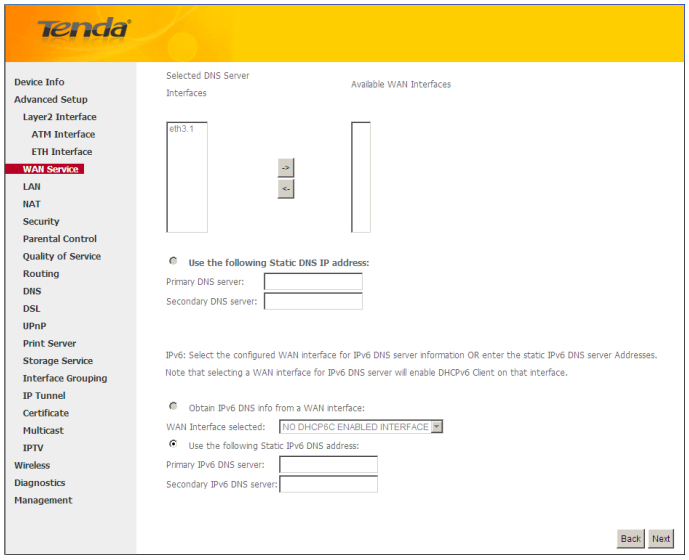
To configure a static IPv6 address

1. Select **Use the following Static IPv6 address.**

2. Configure **WAN IPv6 Address/Prefix Length** and **WAN Next-Hop IPv6 Address.**



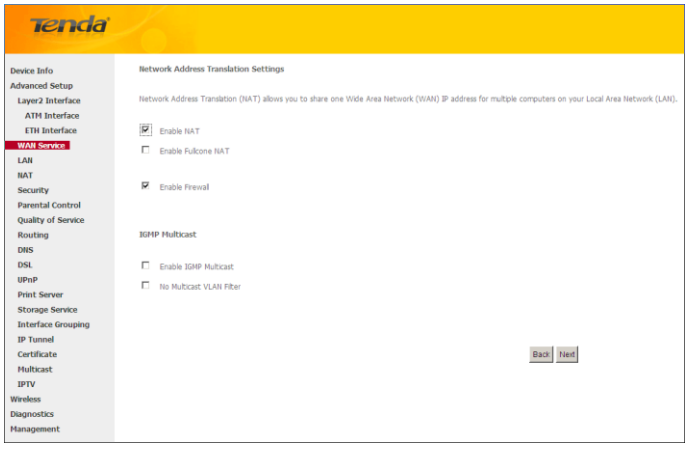
3. Click **Next -> Next** to enter the screen below.



4. Select **Use the following Static IPv6 DNS address** and manually enter the DNS server address. If you have two DNS server addresses, enter the second also.

5. Click **Next -> Apply/Save**.

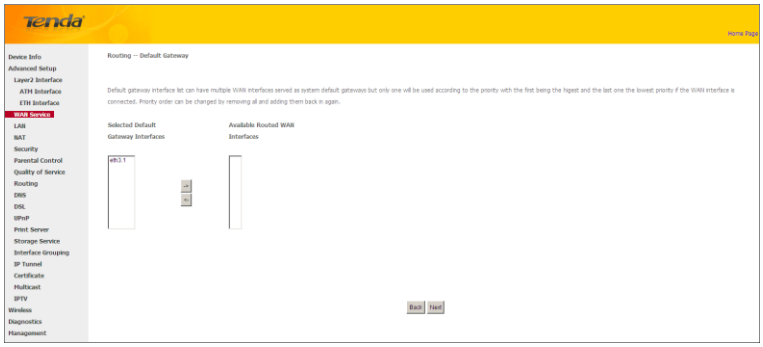
NAT



Here you can configure the NAT. If you are not an advanced user we recommend you to keep the default settings and

then click **Next**.

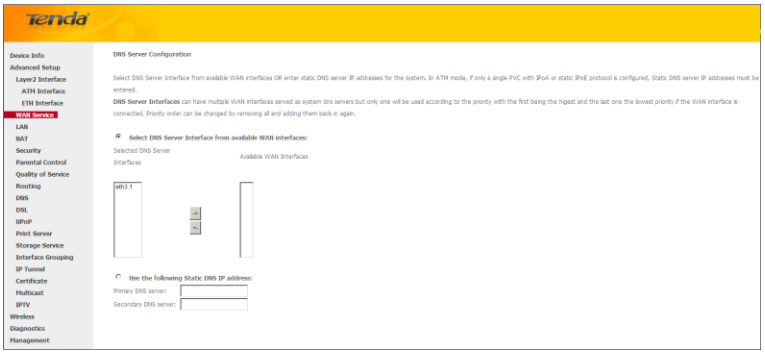
WAN Gateway



Here you can configure the WAN gateway address. After you configure it click **Next**. The default setting is recommended.

WAN DNS

Here you can configure the WAN DNS address. After you configure it click **Next**. The default setting is recommended if you cannot locate this information.

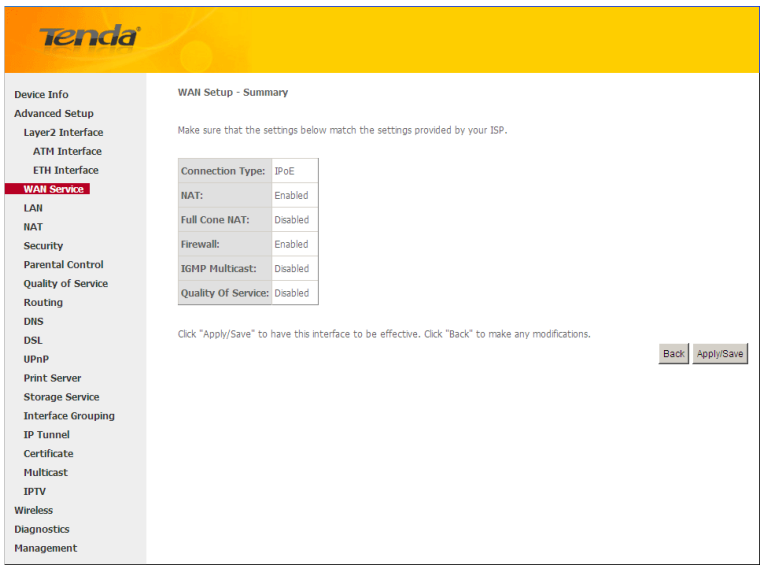


Here you can configure the WAN DNS address:

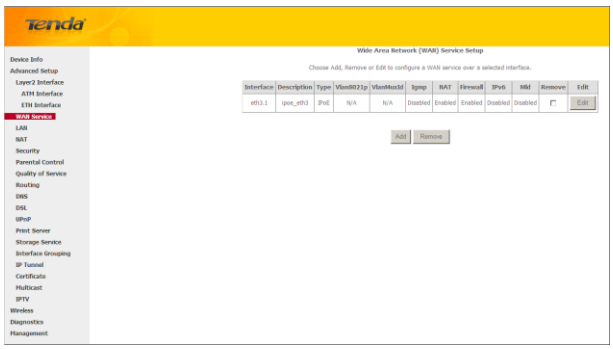
-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

And then click **Next**.



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.

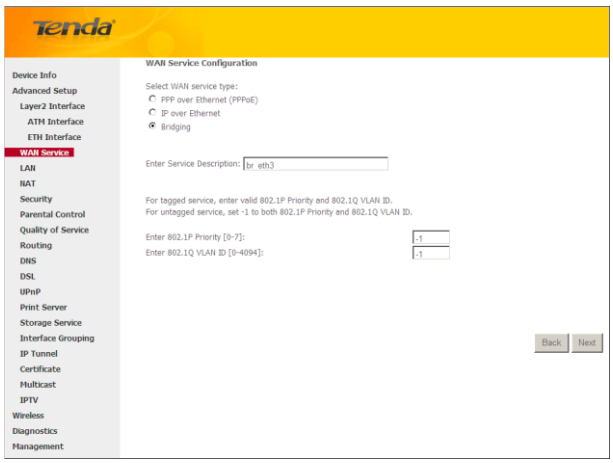


When the IPoE connection is successful, you can access Internet.

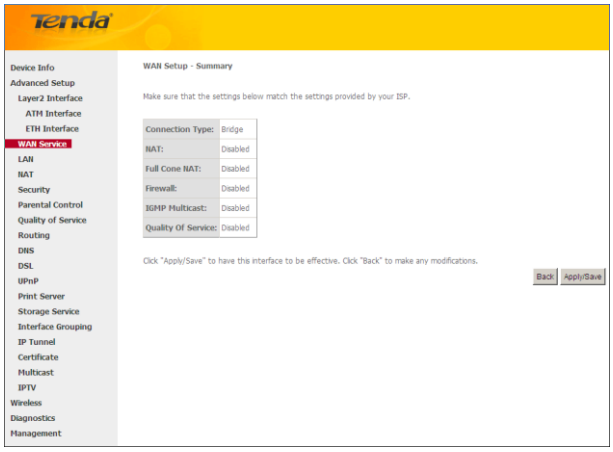
Bridging

If you wish to iniate a dialup directly from your PC for Internet access or enjoy the entire Internet connection (instead of sharing it with others), you can select the Bridging and create a dialup program on your PC.

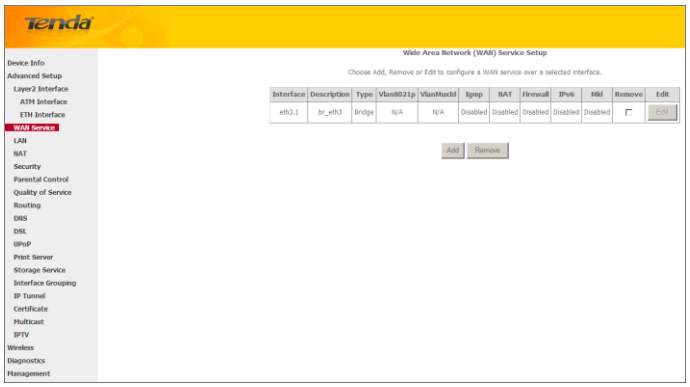
Click **Advanced Setup -> WAN Service -> Add,** select the configured interface and then click **Next** to enter the following screen.



Edit the **Service Description**, which is optional. And then click **Next**.



Here you can view your configurations. Click **Apply/Save** to save your settings if everything is correctly set.

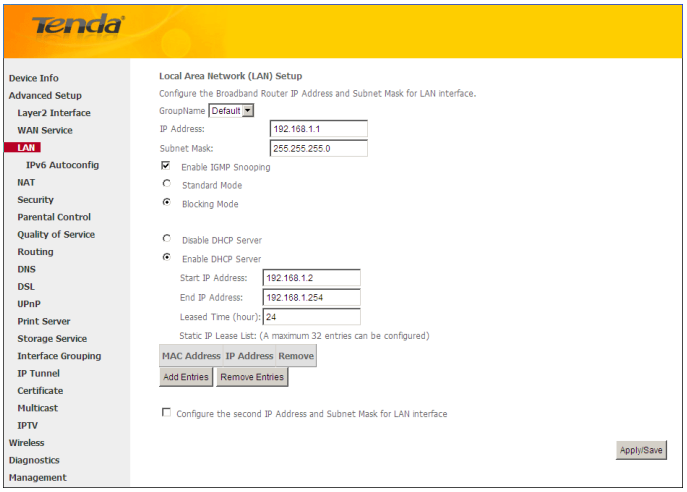


When the connection is successful, you can access Internet.

4.2.3 LAN Setup

Here you can configure the LAN IP Address and Subnet Mask. This IP address is to be used to access the device's settings through a web browser. Be sure to make a note of any changes you apply to this page.

IPv4



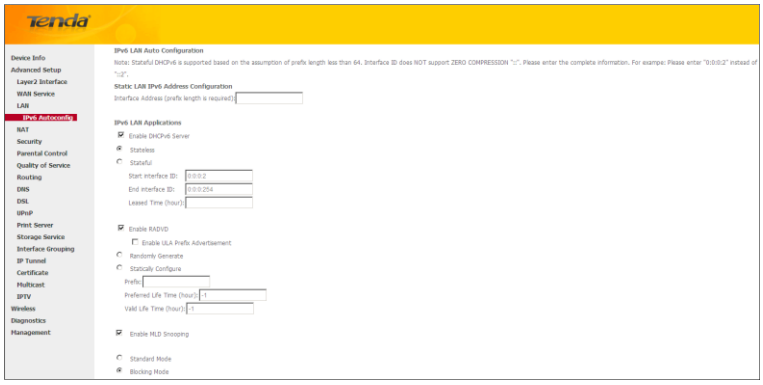
- ✧ **IP Address:** The device's LAN IP address. The default setting is 192.168.1.1.
- ✧ **Subnet Mask:** The LAN subnet mask of the device. Combined with the IP address, the IP Subnet Mask allows a device to know which other addresses are local to it, and which must be reached through a gateway or modem router. You can change the subnet mask to fit your network.
- ✧ **Enable IGMP Snooping**: Check to enable the IGMP Snooping feature and select either of the following two modes:
- ✧ **Configure the second IP Address and Subnet Mask for LAN interface:** If you want to configure two IP addresses for the LAN interface, you can check this option and enter the second IP Address and Subnet Mask manually.
- ✧ **Disable DHCP Server:** Click to disable the DHCP Server.
- ✧ **Enable DHCP Server:** Click to enable the DHCP Server.
- ✧ **Start IP Address:** Specify the start of the range for the pool of IP addresses in the same subnet as the router.
- ✧ **End IP Address:** Specify the end of the range for the pool of IP addresses in the same subnet as the router.
- ✧ **Leased Time:** The lease time is a time length that the IP address is assigned to each device before it is refreshed.

- **Static IP Lease List:** Displays a list of devices with reserved static IP addresses.
- **Add Entries:** Click to add a static IP lease entry. A maximum 32 entries can be configured.
- **Remove Entries:** Click to remove a static IP lease entry.
- **Apply/Save:** After you configure all the needed settings, click this button to apply and save them.

Tip:

DHCP (Dynamic Host Configuration Protocol) assigns an IP address to each device on the LAN/private network. When you enable the DHCP Server, the DHCP Server will automatically allocate an unused IP address from the IP address pool specified in this screen to the requesting device as long as the device is set to "Obtain an IP Address Automatically". By default, the router functions as a DHCP server.

IPv6 Autoconfig



Static LAN IPv6 Address Configuration

- **Interface Address (prefix length is required):** Enter the interface address.

Note:

1. IPv6 address can only be Aggregatable Global Unicast Addresses and Unique Local Address. Link-Local Unicast Addresses and Multicast Addresses are not permitted.

2. The IPv6 address must be entered with a prefix length.

IPv6 LAN Applications

- **Enable DHCPv6 Server:** Check to enable the DHCPv6 Server.
  - **Stateless:** If selected, IPv6 clients will generate IPv6 addresses automatically based on the Prefix Delegation's IPv6 prefix and their own MAC addresses.
  - **Stateful:** Stateful DHCPv6 is supported based on the assumption of prefix length less than 64. Select this option and configure the start/end interface ID and leased time. The router will automatically assign IPv6 addresses to IPv6 clients.

- **Leased Time (hour):** The lease time is a time length that the IP address is assigned to each device before it is refreshed.
- **Start interface ID/End interface ID:** Specify the start/end interface ID Interface ID does NOT support ZERO COMPRESSION "::". Please enter the complete information. For exampe: Please enter "0:0:0:2" instead of "::2".

✧ **Enable RADVD:** The RADVD (Router Advertisement Daemon) implements link-local advertisements of IPv6 router addresses and IPv6 routing prefixes using the Neighbor Discovery Protocol (NDP) and is used by system administrators in stateless autoconfiguration methods of network hosts on Internet Protocol version 6 networks. Check the checkbox to enable the RADVD.

- **Enable ULA Prefix Advertisement:** If enabled, the router will advertise ULA prefix periodically
- **Randomly Generate:** If selected, address prefix can be automatically generated.
- **Statically Configure:** If you select this option, you need to manually configure the address prefix and life time.
- **Prefix:** Specify the prefix.
- **Preferred Life Time (hour):** Specify the preferred life time in hour.
- **Valid Life Time (hour):** Specify the valid life time in hour.

✧ **Enable MLD Snooping:** MLD is used by IPv6 routers for discovering multicast listeners on a directly attached link. If disabled on layer2 devices, IPv6 multicast data packets will be broadcast on the entire layer2; if enabled, these packets will be multicast to only specified recipient instead of being broadcast on the entire layer2.

Tip:

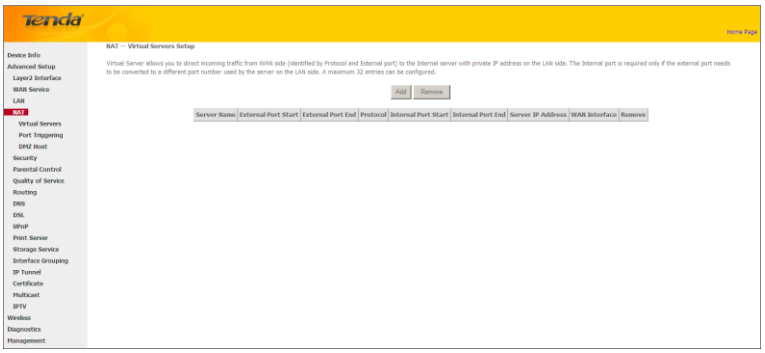
If you change the LAN IP address of the device, you will lose your connection to the device. You must type the new IP address into your browser address field to log in to the device and set all gateway addresses of the LAN PCs to this new address to access Internet. Be sure to write the new address on a sticky label and attach it to the bottom of the unit. You will need the new address to log in to the device in the future.

4.2.4 NAT

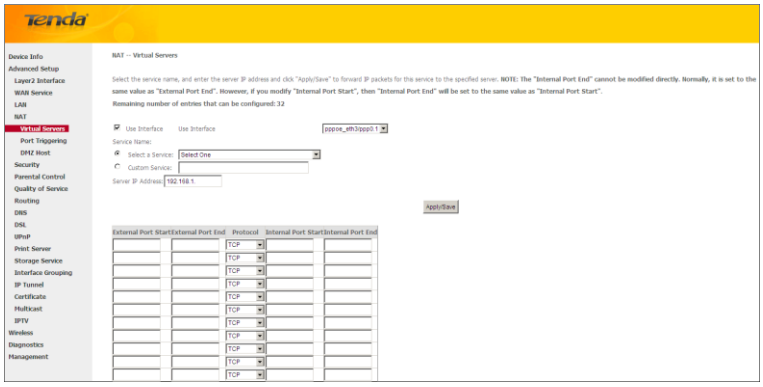
This section explais the following:

Virtual Server

The Virtual Server is useful for web servers, ftp servers, e-mail servers, gaming and other specialized Internet applications. When you enable the Virtual Server, the communication requests from the Internet to your router's WAN port will be forwarded to the specified LAN IP address.



To enter the virtual server screen, click **NAT -> Virtual Server** and then click the **Add** button to add rules.



- **Use Interface:** Select a WAN connection to which you wish to apply the rules. When there is only one WAN connection available, the rules will be automatically applied to it.
- **Service Name:**
  - **Select a Service option:** Allows you to select an existing service from the drop-down list.
  - **Custom Service:** Allows you to customize a service.
- **Server IP Address:** Enter the IP address of your local computer that will provide this service.
- **External Starting Port and External Ending Port:** These are the starting number and ending number for the public ports at the Internet interface.
- **Protocol:** Select the protocol from the Protocol drop-down list. If you are unsure, select TCP/UDP.
- **Internal Starting Port and Internal Ending Port:** These are the starting number and ending number for the ports of a computer on the router's local area network (LAN).

Note:

If you have enabled the UPnP functionality on both the router and your PC that is attached to one of the LAN port on the router, you will be prompted on the Virtual Server page that the UPnP interface is being used.

Application Example:

You have set up two servers on your LAN side:

- An FTP server (using the default port number of 21) at the IP address of 192.168.1.100
- A web server (using the default port number of 80) at the IP address of 192.168.1.110

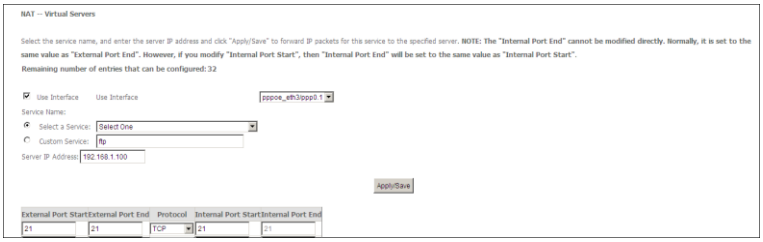
And want your friends on Internet to access the FTP server and web server on default ports. To access your FTP or web server from the Internet, a remote user has to know the Internet IP address or Internet name of your router, such as

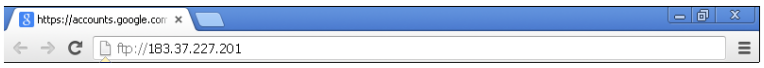
www.tendacn.com. In this example, we assume the Internet IP address of your router is 183.37.227.201. Then follow instructions below:

To configure the router to make your local FTP server public:

1. Click **NAT -> Virtual Server** to enter it and then click the **Add** button.
2. - Select FTP that you wish to host on your network from the **Select a Service** drop-down list. The port number (21) used by this service will then be automatically populated.

   - Or if you wish to define the service yourself, enter a descriptive name in the **Custom Service,** say My FTP, and then manully enter the port number (21) used by this service in the **Internal Starting Port, Internal Ending Port, External Starting Port and External Ending Port fields**.
3. Select a protocol from the **Protocol** drop-down list. If you are unsure, select **TCP/UDP**.
4. In the **Server IP Address** field, enter the last digit of the IP address of your local computer that offers this service. Here in this example, we enter 192.168.1.100.
5. Click the **Apply/Save** button.
6. Your friends on Internet will then be able to access your FTP server simply by entering "ftp://183.37.227.201" in his browser.

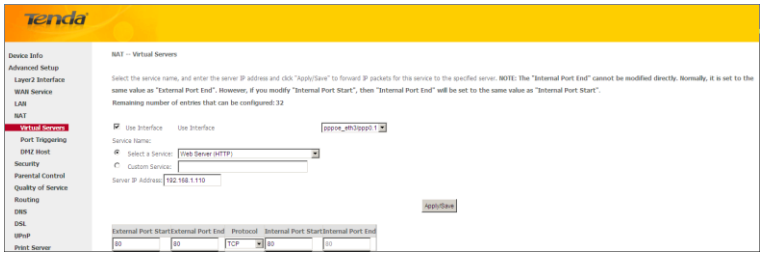




To configure your router to make your local web server public:

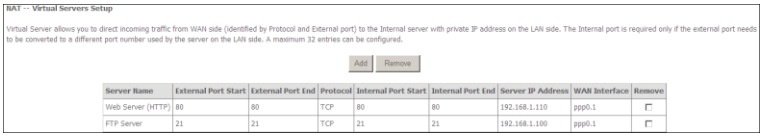
1. Click **NAT -> Virtual Server** to enter it and then click the **Add** button.
2. - Select **Web Server (HTTP)** that you wish to host on your network from the **Select a Service** drop-down list. The port number (80) used by this service will then be automatically populated.

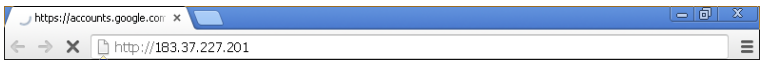
   - Or if you wish to define the service yourself, enter a descriptive name in the **Custom Service,** say My Web Server (HTTP), and then manully enter the port number (80) used by this service in the **Internal Starting Port, Internal Ending Port, External Starting Port and External Ending Port fields**.
3. Select a protocol from the **Protocol** drop-down list. If you are unsure, select **TCP/UDP**.
4. In the **Server IP Address** field, enter the last digit of the IP address of your local computer that offers this service. Here in this example, we enter 192.168.1.110.
5. Click the **Apply/Save** button.



6. Now you can view your configurations as seen in the screenshot below. Your friends on Internet will then be able to

access the web server simply by entering "http://183.37.227.201" in his browser.





Note:

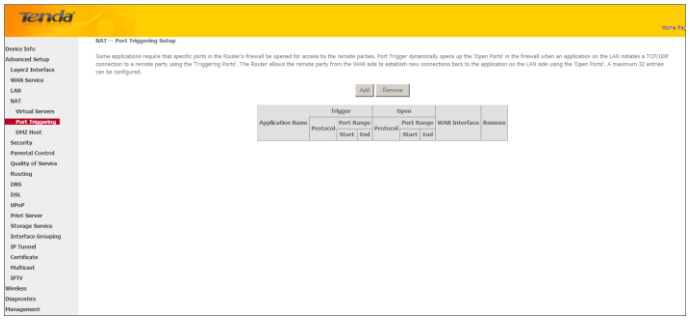
The "Internal Port End" cannot be modified directly. Normally, it is set to the same value as "External Port End". However, if you modify "Internal Port Start", then "Internal Port End" will be set to the same value as "Internal Port Start".

Tip:

If the service or game you wish to host on your network is not included in the list, manually add it in the Custom Service field and then add the port number used by it to the **Internal Starting Port, Internal Ending Port, External Starting Port and External Ending Port fields**.

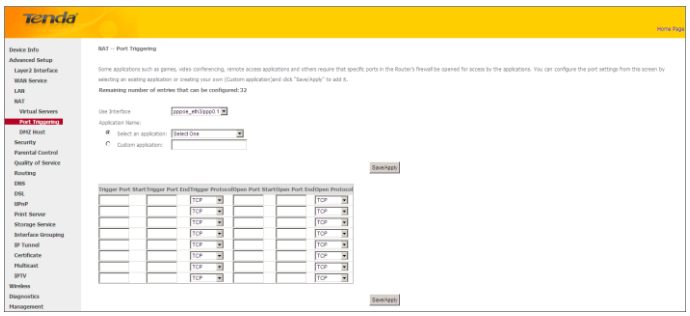
Port Triggering

Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'.



To enter the Port Triggering screen, click **NAT -> Port Triggering** and then click the **Add** button to add rules.

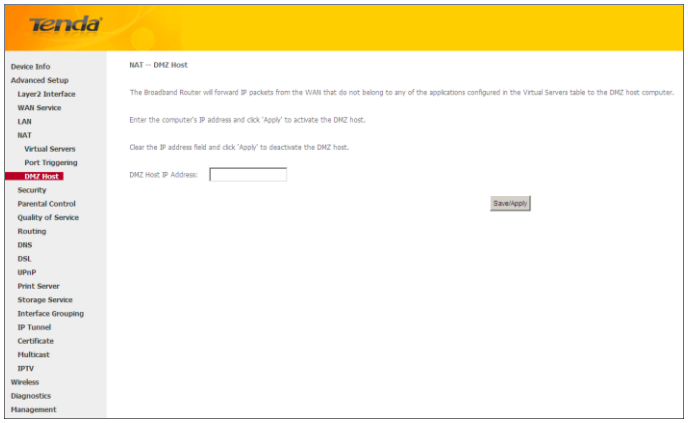
You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application) and click "Save/Apply" to add it.



- ✧ **Use Interface:** Select a WAN connection to which you wish to apply the rules. When there is only one WAN connection available, the rules will be automatically applied to it.
- ✧ **Application Name:** Two options are available:
  - Select an application
  - Custom application
- ✧ **Trigger Port Start/Trigger Port End:** The port range for an application to initiate connections.
- ✧ **Trigger Protocol:** Select the protocol from the drop-down list. If you are unsure, select TCP/UDP.
- ✧ **Open Port Start/ Open Port End:** These are the starting number and ending number for the ports that will be automatically opened by the built-in firewall when connections initiated by an application are established.

DMZ Host

The default DMZ (De-Militarized Zone) host feature is helpful when you are using some online games and videoconferencing applications that are not compatible with NAT (Network Address Translation).



DMZ Host IP Address: The IP Address of the device for which the router's firewall will be disabled. Be sure to assign a static IP Address to that device. The DMZ host should be connected to a LAN port of the device. Be sure to assign a static IP address to that DMZ host.