

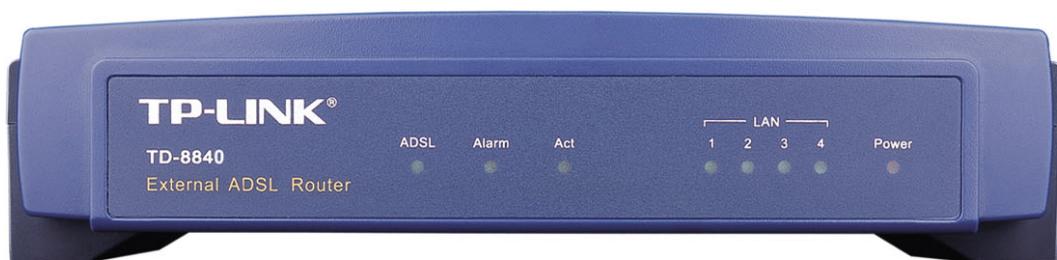


TP-LINK[®]

User Guide

TD-8840

External ADSL2+ Router



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FCC STATEMENT

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

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

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

CE Mark Warning

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

EC DECLARATION OF CONFORMITY (EUROPE)

In compliance with the EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC, this product meets the requirements of the following standards:

- EN55022
- EN55024
- EN60950

SAFETY NOTICES

Caution: Do not use this product near water, for example, in a wet basement or near a swimming pool.

Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

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Package contents

The following contents should be found in your box:

- One TD-8840 External ADSL2+ ROUTER
- One AC power Adapter for TD-8840 External ADSL2+ ROUTER
- One Resource CD for TD-8840 External ADSL2+ ROUTER, including:
 - This Guide
 - Other Helpful Information
 - Quick installation Guide Program
- Quick installation Guide
- One RJ45 cable
- Two RJ11 cable
- One ADSL splitter

Note: If any of the above items are damaged or missing, please contact the retailer from whom you purchased the TD-8840 External ADSL2+ ROUTER for assistance.

Chapter 1: Product Overview

TP-LINK® TD-8840 External ADSL2+ ROUTER is the latest product designed and manufactured by TP-LINK Technologies Co., Ltd. With TP-LINK's excellent circuit design and high quality production, we guarantee the ADSL2+ ROUTER's high performance, great stability and easy to use.

The TD-8840 uses integrated ADSL2+ transceiver and a 256-MHz MIPS32 CPU. The AFE supports full-rate ADSL connectivity conforming to the ITU and ANSI specifications; MIPS32 CPU with MMU and 16-KB I-cache/8-KB D-cache is integrated into the device.

In addition to the basic DMT physical layer functions, the ADSL PHY supports dual latency ADSL framing (fast and interleaved) and the I.432 ATM Physical Layer.

The TD-8840 is a complete plug-and-play solution. With standard Ethernet interface, it can be directly connected to any 10M/100M Ethernet devices, support Auto-MDIX.

The TD-8840 not only uses html (web mode through Ethernet port) to configure the ROUTER but also uses external utility software. You can download it from our website (<http://www.tp-link.com>).

1.1 Product main specification

- Adopt the high performance IC which integrate the AFE transceiver and the 256 MHZ MIPS32 CPU, guarantee that this product is efficient and steady.
- High speed and asymmetry data transmit mode, built-in 4-port switch realize multi-user to share wide-band internet access
- Support All ADSL2+ industrial standards
- Compatible with all mainstream DSLAM (CO)
- Firmware upgradeable
- Provide integrated access of internet and route function which face to SOHO user
- Advanced DMT modulation and demodulation
- Real-time Configuration and device monitoring
- Quick response semi-conductive surge protect circuit, provides reliable ESD and surge-protect function

1.2 Supporting protocol

- G.992.1 (G.dmt) - Annex A/B/C
- G.992.2 (G.lite) - Annex A/B/C
- ANSI T1.413
- G.992.3 (ADSL2) - Annex A/B/C/M and Annex L (RE-DSL) compliant
- G.992.5 (ADSL2+) Annex A/B/C and Annex L (RE-DSL) compliant
- ADSL dual latency (fast path and interleaved path)
- I.432 ATM physical layer compliant

- Supports RFC2364 (PPPoA)
- Supports RFC2516 (PPPoE)
- Supports RFC1483 (EoA)(Bridged *and Router)
- Supports RFC1577 (IPoA)

NOTE. “*” Needs the third-party software.

1.3 Transmit data-rate

- Max download data-rate: 24Mbps
- Max upload data-rate: 1Mbps
- Max line length: 6Km

1.4 ATM property

- AAL0, AAL5, OAM, RM, and raw cell types supported
- Direct hardware support for 4 Receive VCs, with additional RX VCs and TX VCs supported in software
- Full 24-bit Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI)

1.5 System support

- Support PVC
- Support NAT、DHCP and so on
- Support IEEE 802.3、IEEE 802.3u
- Support 10Base-T/100BASE-TX full-duplex or half duplex Ethernet
- Support Auto-MDIX

1.6 Working environment

- Operating temperature: 0 °C~40 °C
- Storage temperature: -40 °C~70 °C
- Humidity: 10%~90% (non-condensing)

1.7 Electric parameter

- Adaptor power Output: 9VAC/0.8A, 50Hz or 60 Hz
- Power consumption: 6W Maximum

Chapter 2: Hardware Installation Guide

The TD-8840 maintains five separate interfaces, four Ethernet and one ADSL interface. The Router should not be located where it will be exposed to moisture or excessive heat. Place the Router in a location where it can be safely connected to the various devices as well as to a power source.

2.1 System requirement

Confirm your computer has been installed with networking interface card (NIC) before connecting ADSL2+ ROUTER to your computer, with operating system supporting the TCP/IP protocol.

2.2 LED explanation

The front panel of ADSL2+ ROUTER includes one power indicator (RED) and seven function indicators (GREEN), as explained in chart 1-1:

Indicator	Description	Status	Function Details
PWR	Power	On Off	Power OK Power fail
ADSL	ADSL status	Slow flash Quick flash On	Self-detecting when power up Connecting to the telecom network Connection to telecom network OK
ALARM	Mistake	On Off	There is mistake when ADSL transmitting data or receiving data ADSL normal
ACT	Data	On Off	There is data transmitting or receiving on WAN port No data transmitting or receiving on WAN port
LAN 1~4	Ethernet	On Off Flash	1~4(LAN) port normal Connection on 1~4(LAN) port abnormal Data transmitting or receiving on 1~4(LAN) port

Chart 1-1

2.3 Rear-panel

- **ON/OFF:** Turn on/off the ADSL2+ ROUTER's power.
- **Power (9VAC/0.8A input):** please do not use any unknown power adaptor, otherwise your ADSL2+ ROUTER may be damaged.
- **RESET(reset default):** First press the reset button of ROUTER, then turn on the ROUTER's power for at least three seconds. It will resume the default

manufacturer's setup.

- **1~4(LAN):** Connect with your computer's NIC.
- **LINE(WAN):** Connect to the MODEM Port of Splitter or Connecting the telephone line.

2.4 Hardware installation procedures (figure2-1)

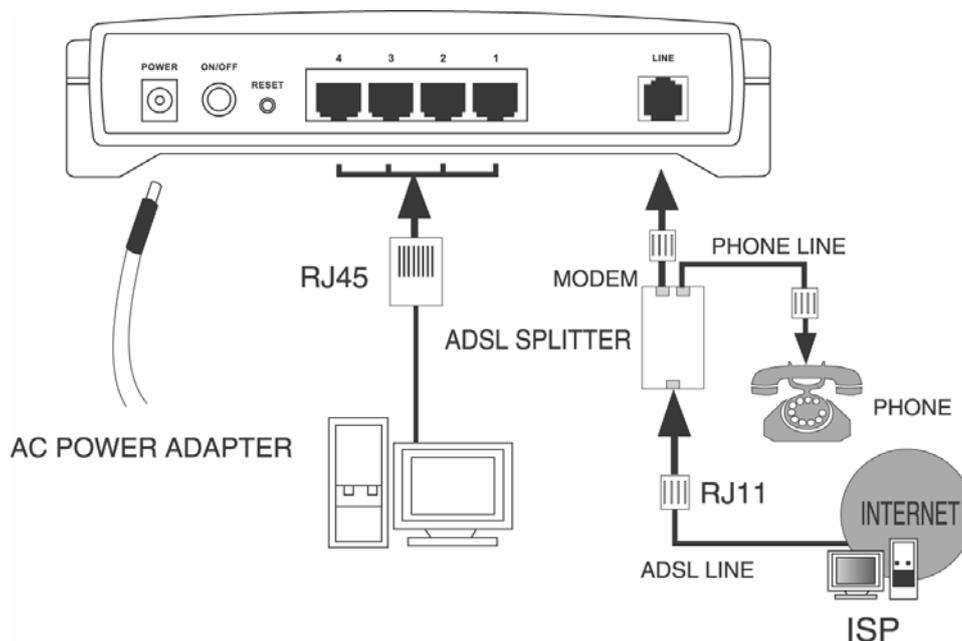
The procedure to install the Router can be described in general terms in the following steps:

First Step: Connecting the MODEM port of Splitter with the TD-8840 ADSL2+ ROUTER LINE port by telephone line. While you need to use a telephone, please attach telephone line into the phone of Splitter.

Second Step: Connect category 5 cable with RJ45 jacks to the ADSL2+ ROUTER's LAN port and your computer's NIC.

Third Step: Plug one end of the AC Power Adapter into the Power jack on the Ethernet ADSL2+ ROUTER and the other end to a standard electrical outlet.

Last Step: Check the line connection to see if everything is ready. Power up finally.



(Figure2-1)

Chapter 3: System Configuration

3.1 Computer Configuration

1. Connect the cable according to Chapter 2, turn on the power.
2. Change the IP address of your PC (Figure 3-1): Open TCP/IP Properties of the LAN card in your PC, enter the IP address as 192.168.1.* (* is any value between 2 to 254, Net mask is 255.255.255.0, Gateway is 192.168.1.1, DNS address is the value provided by ISP).

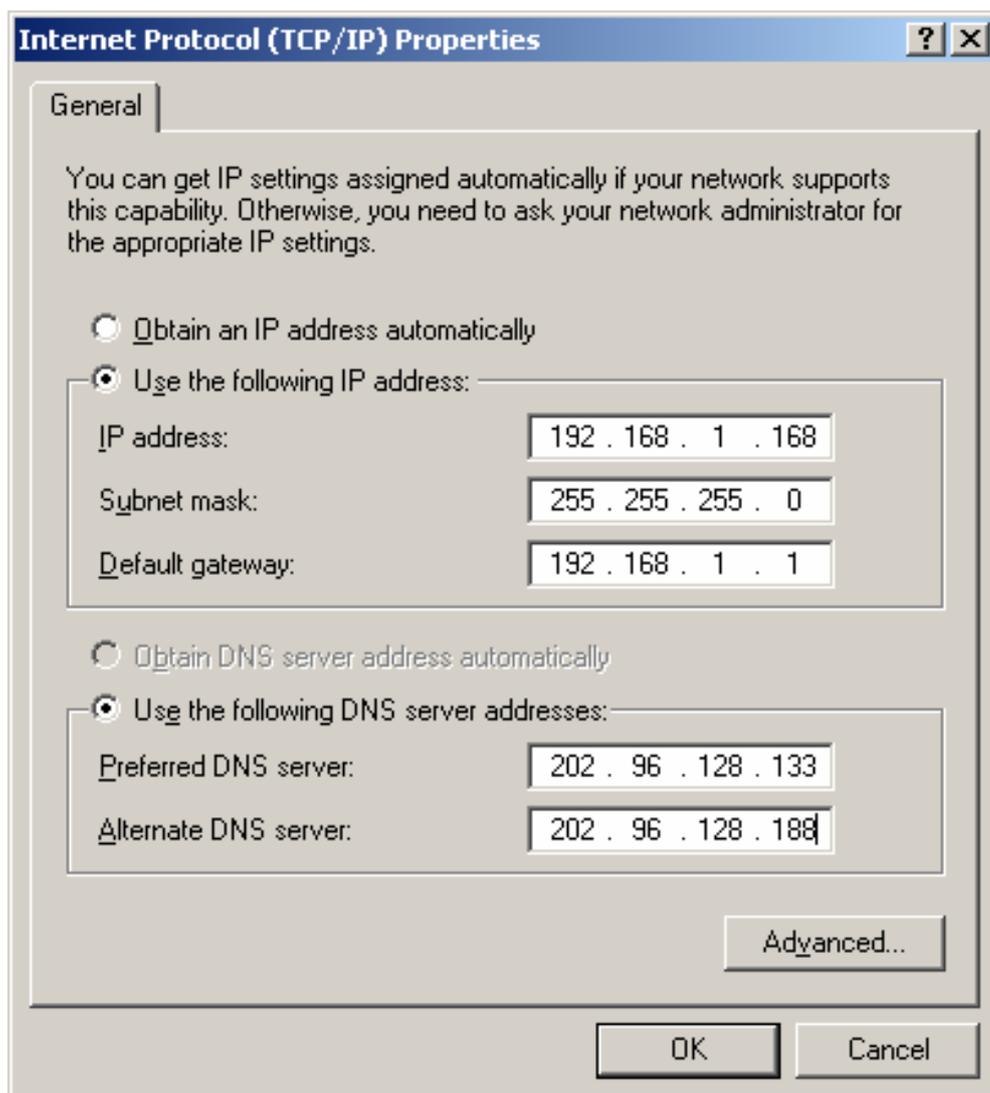


Figure 3-1

Please note:

Users of Windows 98 can open **TCP/IP Properties** according to the following: Right-click (Mouse) **Network Neighbor** -> Choose **Properties** -> Double-click **TCP/IP PCI Fast Ethernet Adapter**.

The users of Windows 2000/NT/XP can do the following: Right-click **Network Neighbor** -> Choose **Properties** -> Right-click **Local Connection** -> Choose **Properties** -> Double-click **Internet Protocol (TCP/IP)**.

NOTE: The words in fact may be different with this guide.

Remarks: you can check whether your configuration is successful through **PING** command. Enter **Ping 192.168.1.1**

If the screen looks like the following, you have been successful.

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<10ms TTL=128
 ...

If the screen looks like the following, the connection has failed. Please try again.

Pinging 192.168.1.1 with 32 bytes of data:
Request timed out.

3.2 Login

Startup Internet Explorer, and enter 192.168.1.1; then enter default user name(admin)、password(admin), When ADSL2+ connection is OK, you will see the Figure 3-2.



Figure 3-2

Then you will see the Figure 3-3. You will see some information such as link rate and so on.



Figure 3-3

Default value of user name and password is “admin” ; if you want to change them, please go to “**Management**” → “**Access control**”→“**Passwords**”. (Figure 3-4)

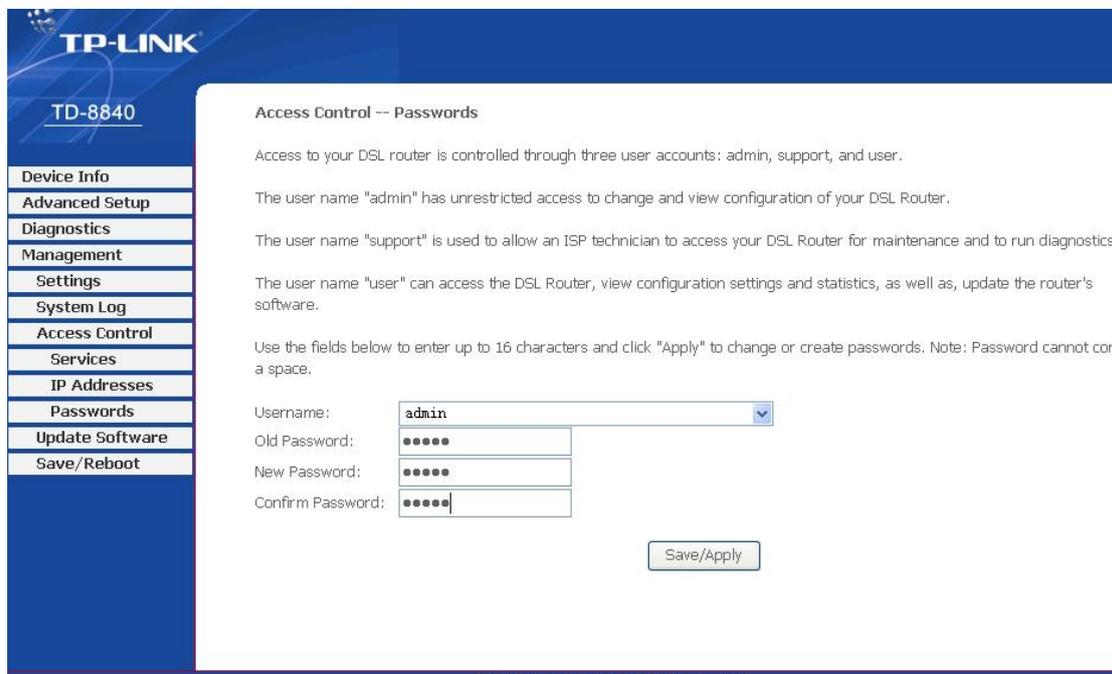


Figure 3-4

3.3 Web Setup

Choose “Advanced Setup”→”WAN”, you will enter the page of Wide Area Network (WAN) Setup, you will see the Figure 3-5.

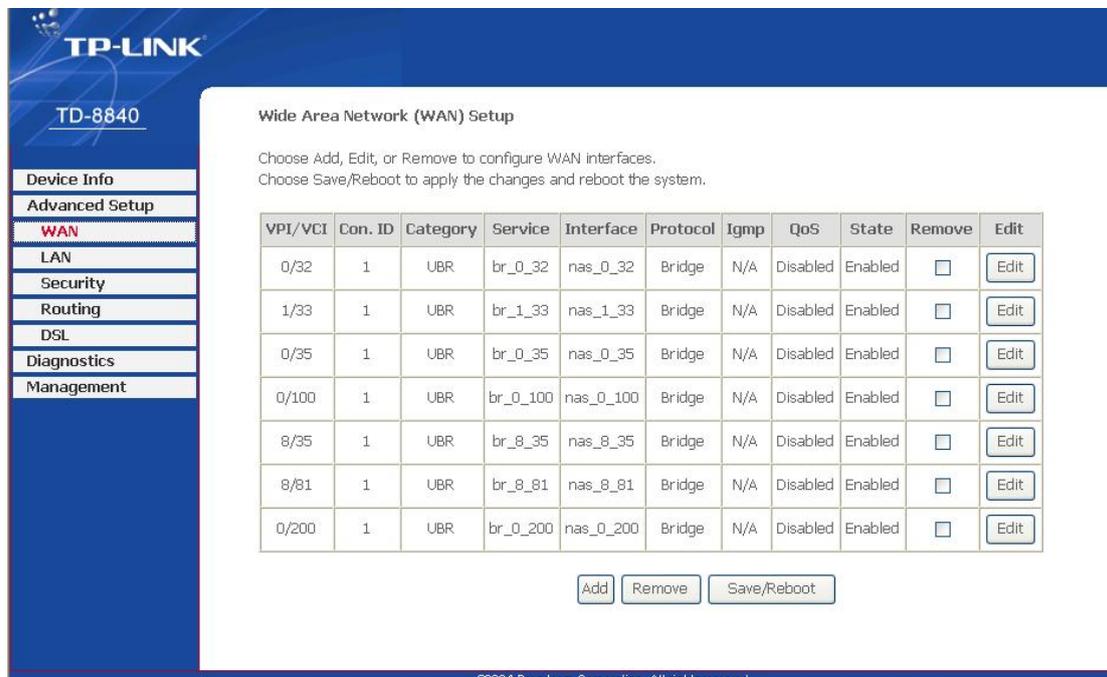


Figure 3-5

There are 7 PVC links in the WAN setup page, choose the fit PVC according to your needs, and then click the **edit** button, you will enter the page of ATM PVC Configuration (See Figure 3-6)

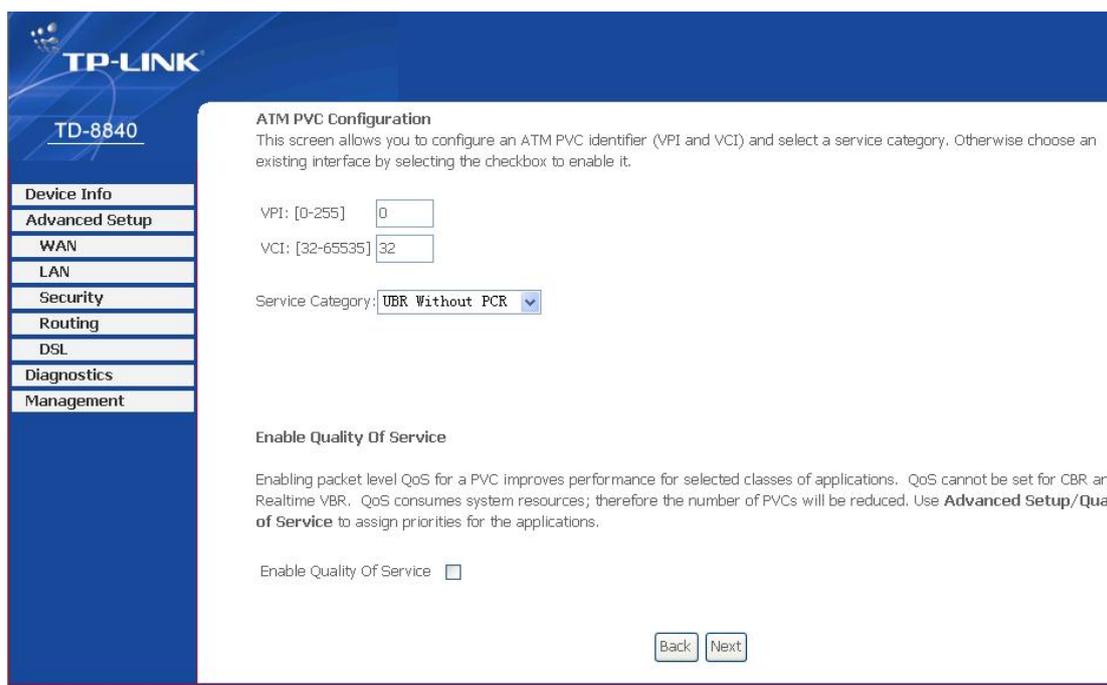


Figure 3-6

Enter **VPI/VCI** value and service category which is provided by your ISP, click **next** to enter the next step. You will see the figure 3-7.

NOTE: The type of network protocol selected may be different in different area, there are five types (Figure 3-7), So you should ask your ISP to acquire the local type of network protocol and Encapsulation mode.

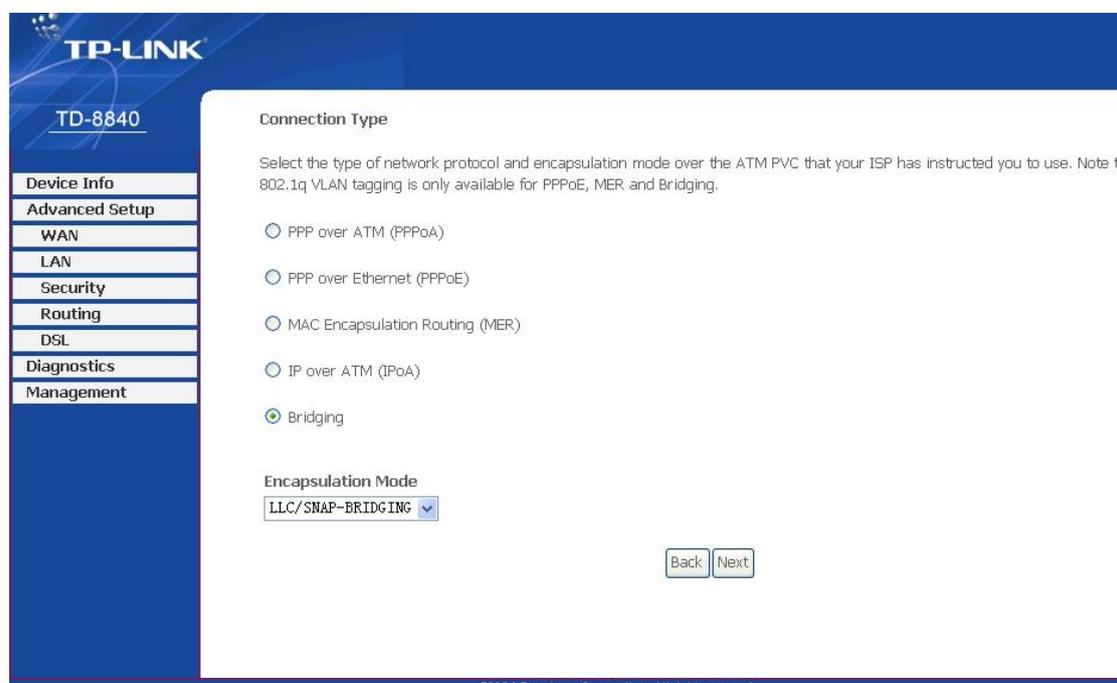


Figure 3-7

After choosing the proper protocol, enter the correct parameters supported by your ISP. Enable the configurations, then you will go to Internet.

➤ **PPP over ATM (PPPoA)**

If you select the protocol of PPP over ATM (PPPoA), you will see the figure 3-8, enter the value of user name and password which is provided by your ISP, after selecting the other function (often using the default setup), click the **next** button.

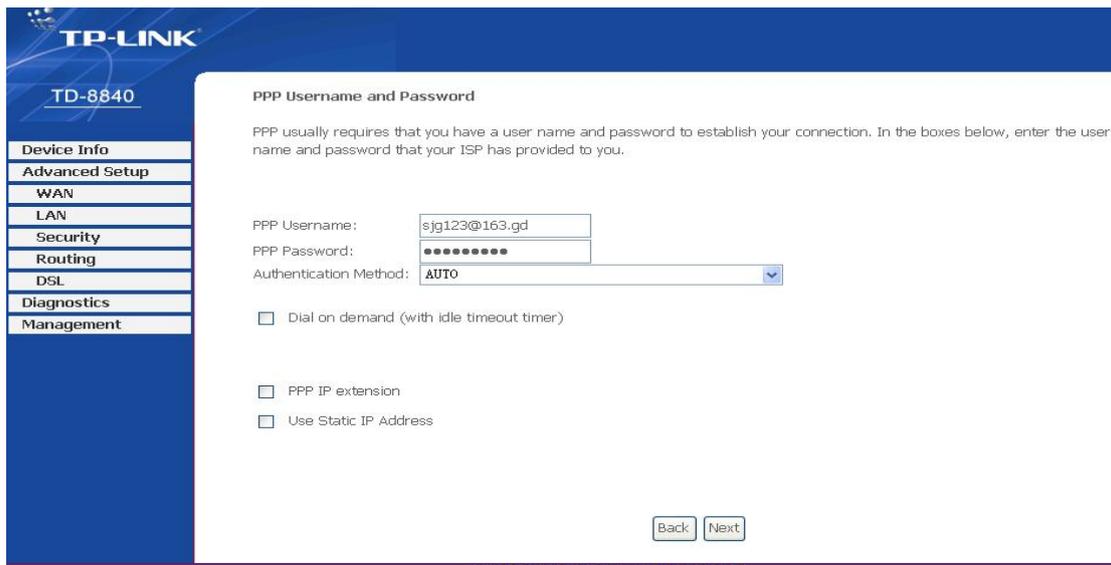


Figure 3-8

You will see the figure 3-9. Then turn on the selected functions according to your demands. Clicking the **next** button to enter the next step, you will see the Figure 3-10, finally click **save** to complete the configuration.

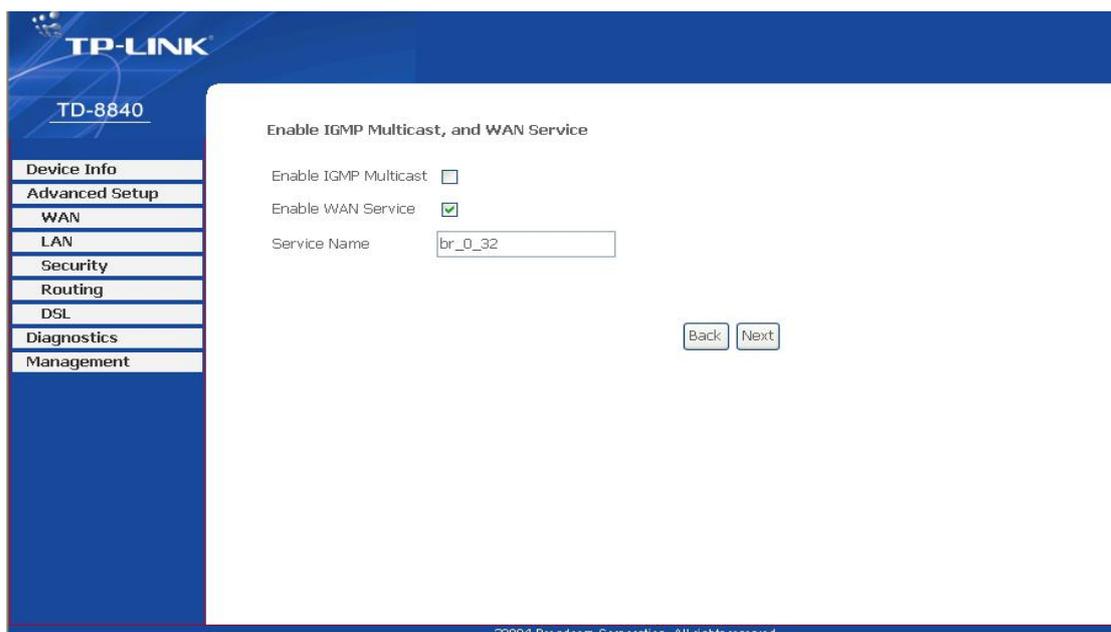


Figure 3-9

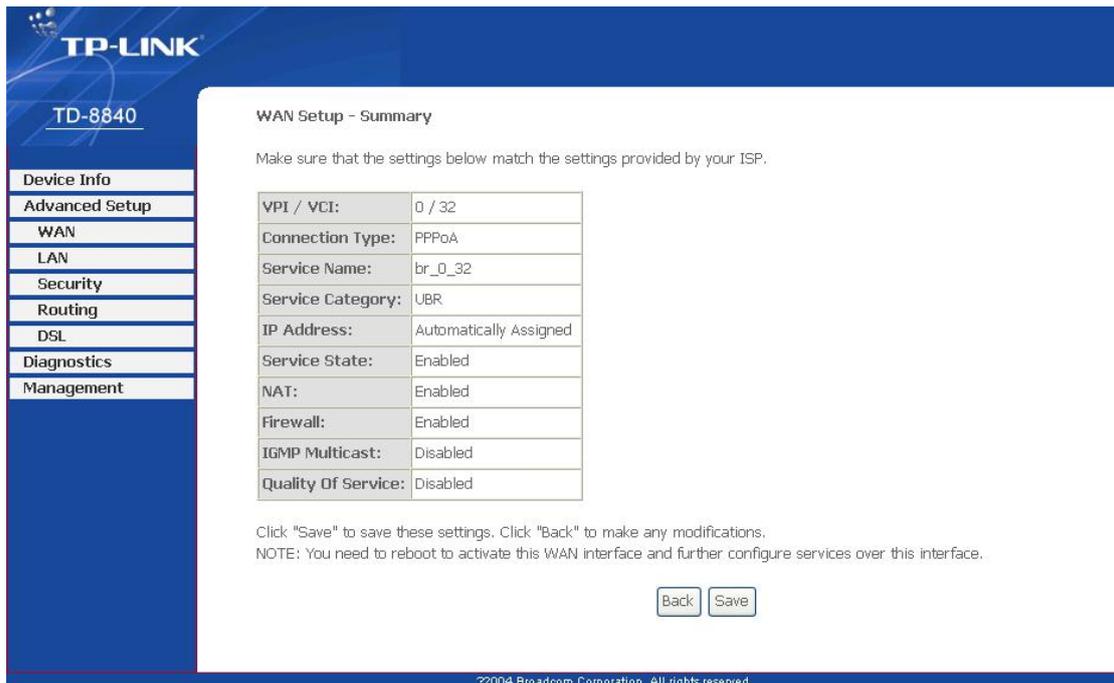


Figure 3-10

➤ **PPP over Ethernet (PPPoE)**

If you select the protocol of PPP over Ethernet (PPPoE), you will see the figure 3-11, enter the value of user name and password which is provided by your ISP, after selecting the other function(often using the default setup), click the **next** button.

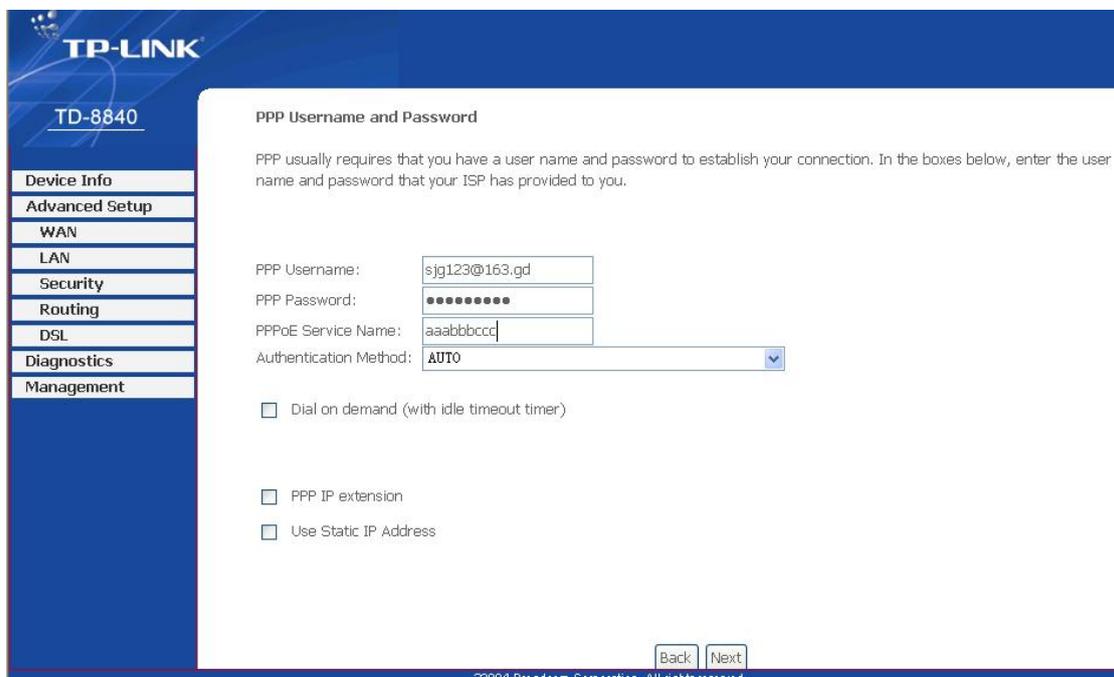


Figure 3-11

You will see the figure 3-12. Then turn on the selected functions according to your needs.

Clicking the **next** button to enter the next step, you will see the Figure 3-13, finally click **save** to complete the configuration.

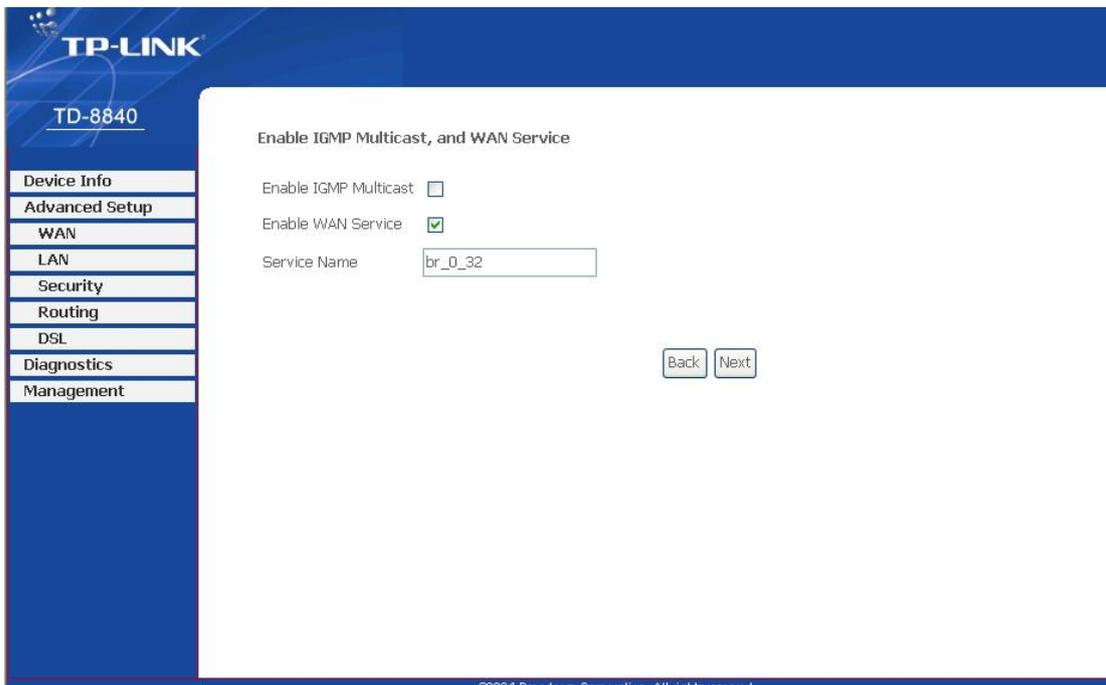


Figure 3-12

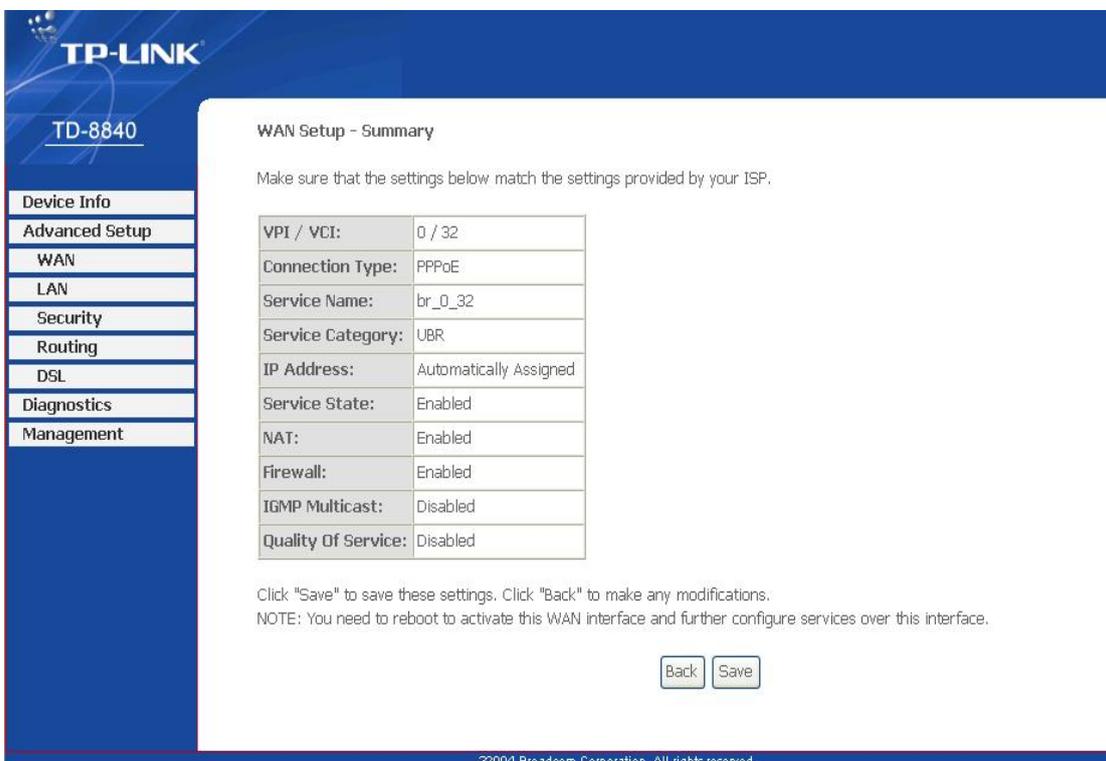


Figure 3-13

➤ **MAC Encapsulation Routing (MER)**

If you select the protocol of MAC Encapsulation Routing (MER), you will see the page(Figure 3-14). Enter the parameter and the way which is provided by your ISP, then click the **next** button.

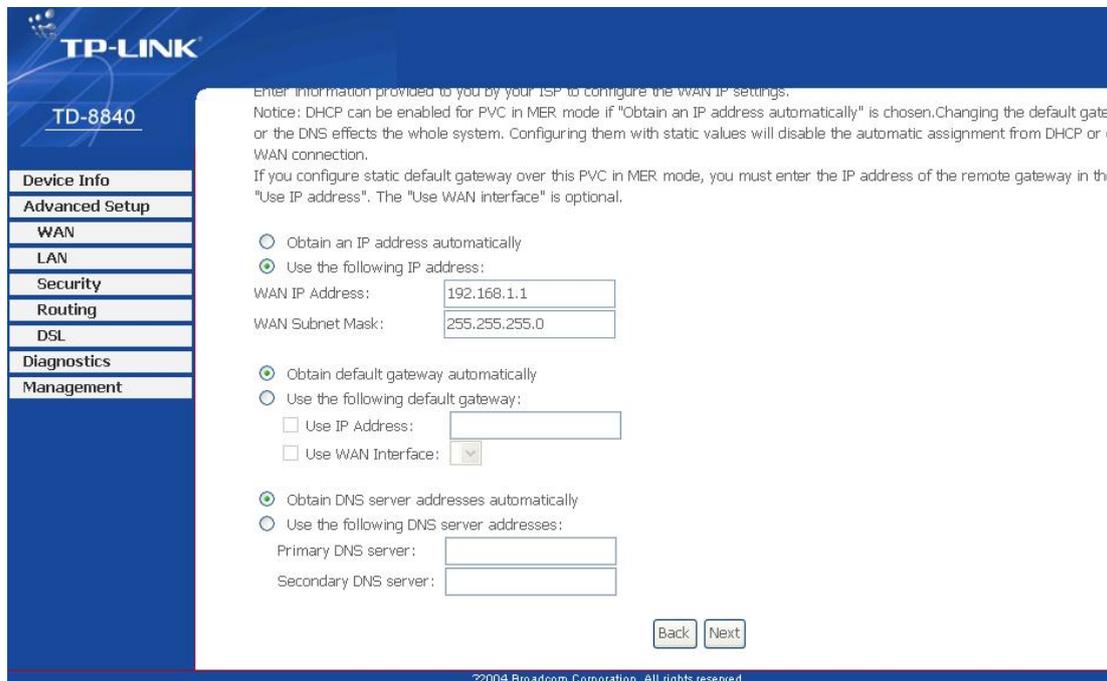


Figure 3-14

You will see the figure 3-15. Then turn on the selected functions according to your needs. Clicking the **next** button to enter the next step, you will see the Figure 3-16, finally click **save** to complete the configuration.

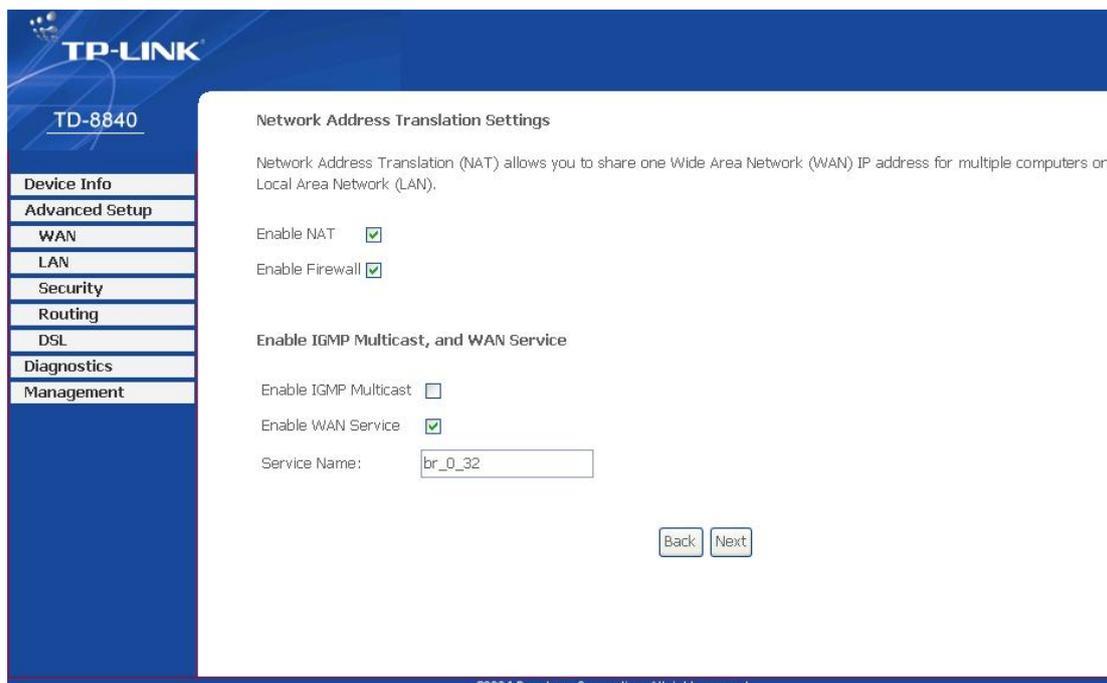


Figure 3-15

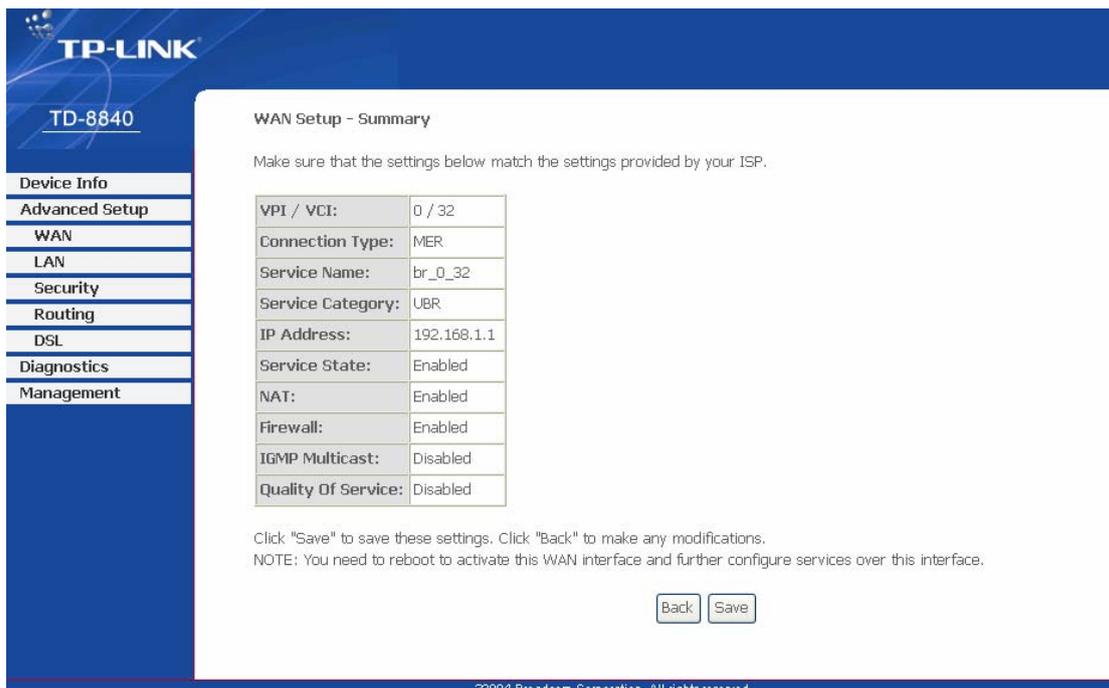


Figure 3-16

➤ **IP over ATM (IPoA)**

If you select the protocol of IP over ATM (IPoA), you will see the figure 3-17, enter the parameter and the way which is provided by your ISP, then click the **next** button.

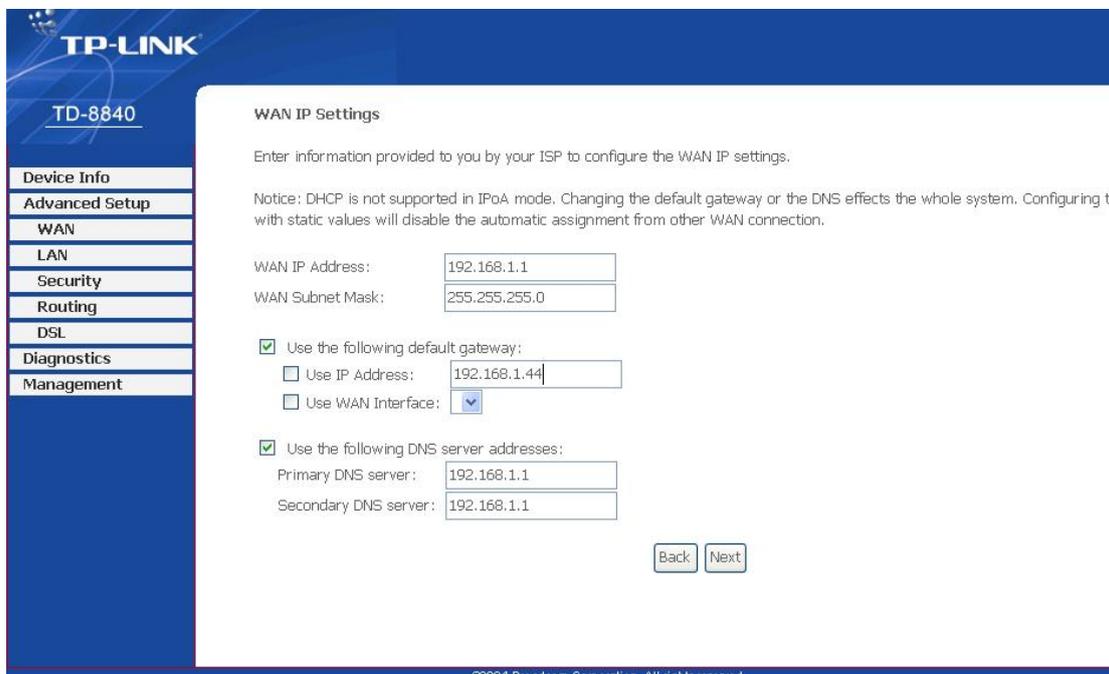


Figure 3-17

You will see the page (figure 3-18), then turn on the selected functions according to your demands. Clicking the **next** button to enter the next step, you will see the Figure 3-19,

finally press **save** to complete the configuration.

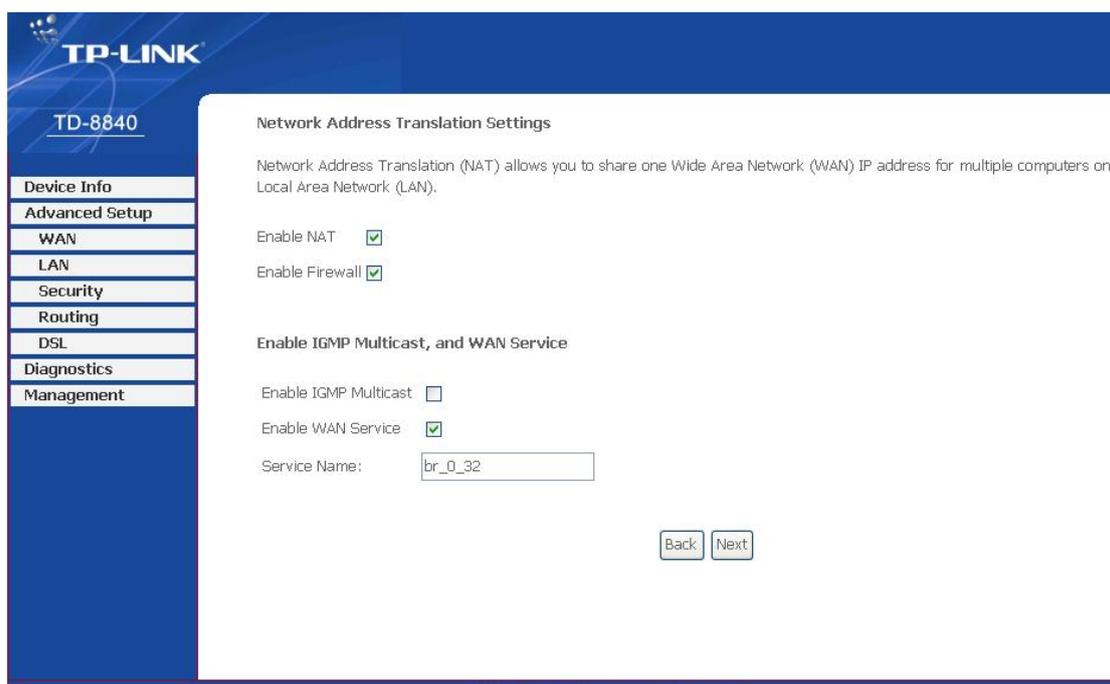


Figure 3-18

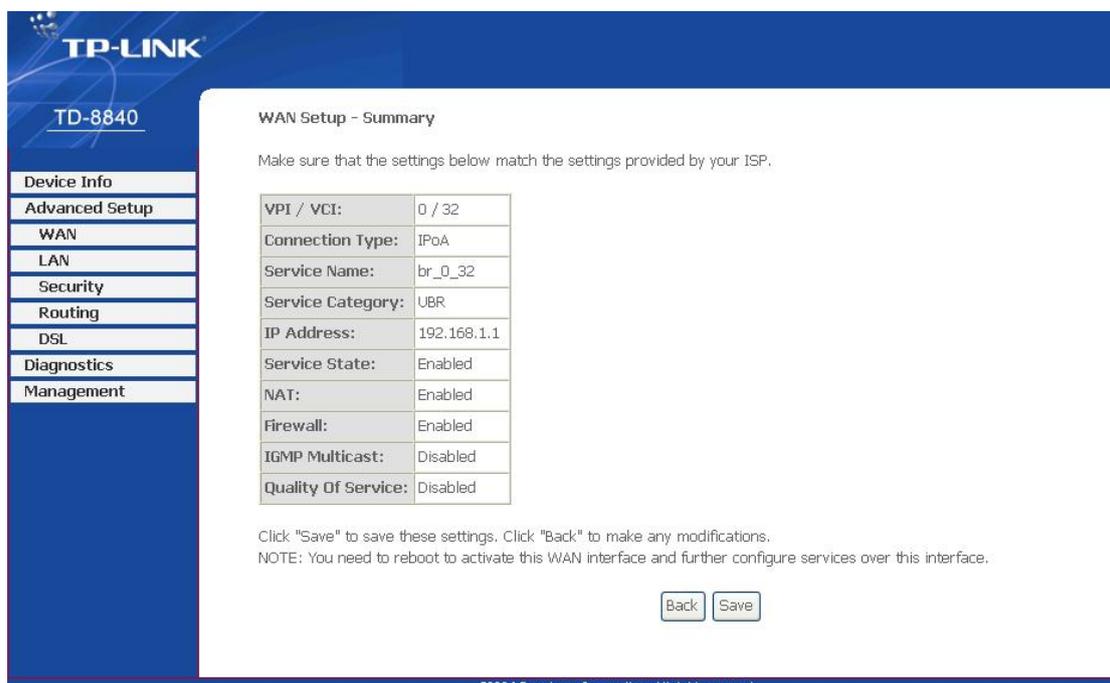


Figure 3-19

➤ **Bridging**

If you select the Bridging protocol, you just open the bridge service function options, you will see the figure 3-20, then click the **next** button, you will see the Figure 3-21, finally press **save** to complete the configuration.

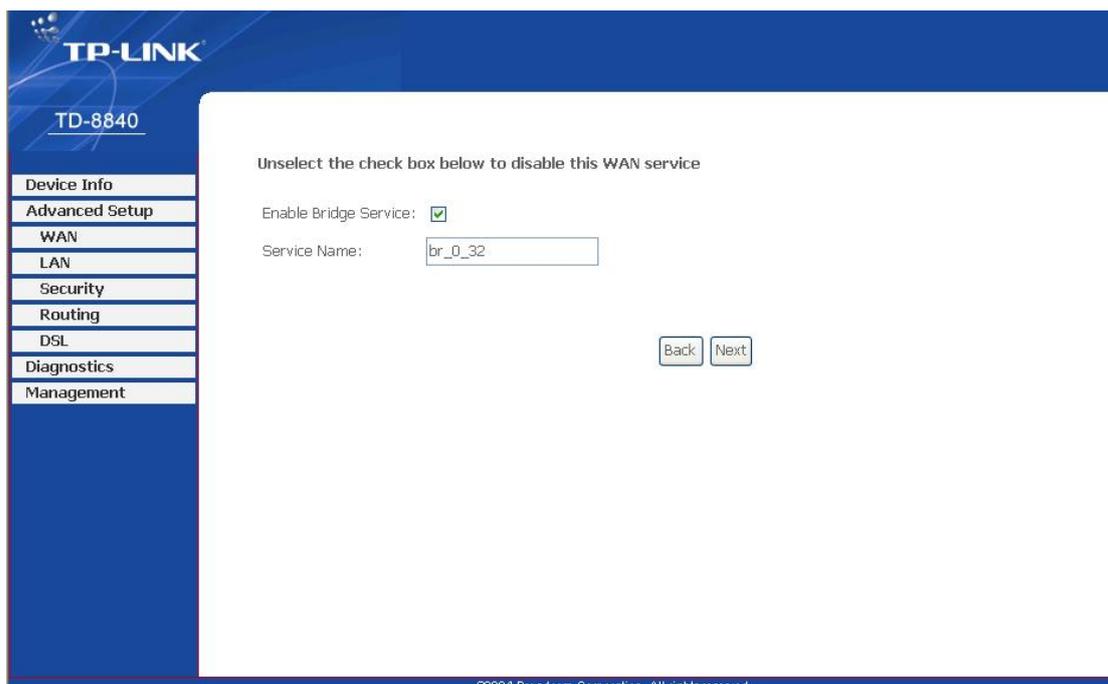


Figure 3-20

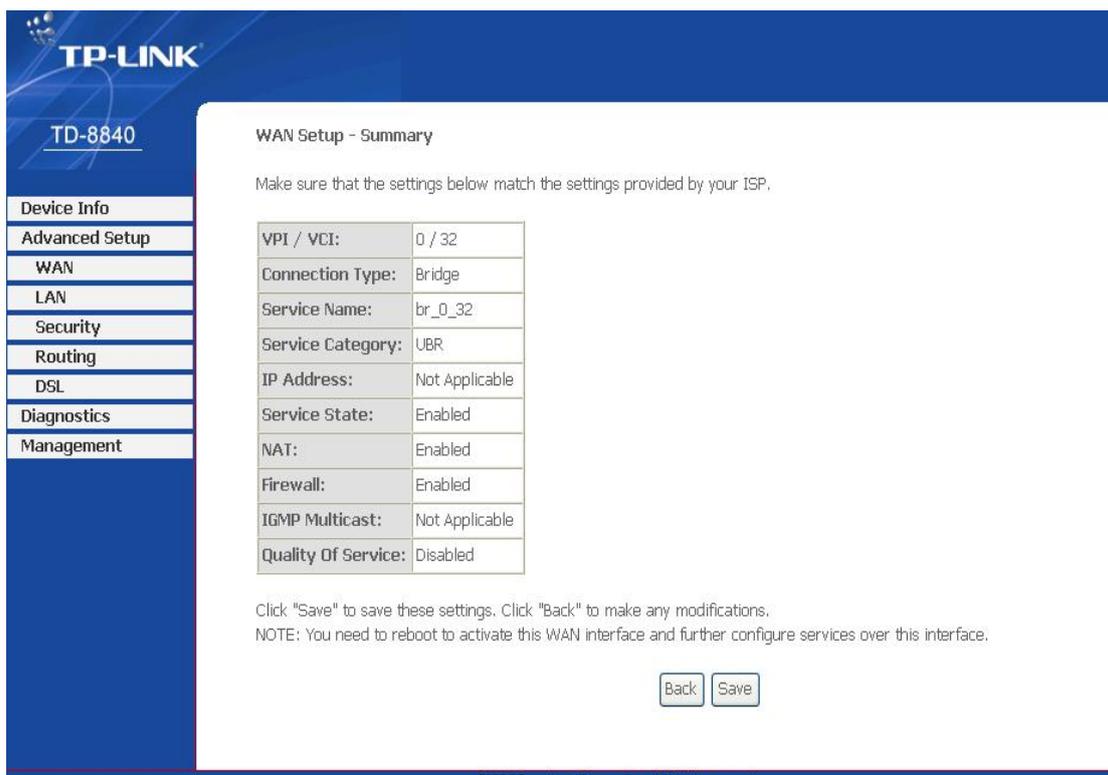


Figure 3-21

NOTE: After you complete the settings, the new settings must be saved and the Router must be restarted for the settings to go into effect. Please press the **Save/Reboot** button to restart, referring to the Figure 3-22.

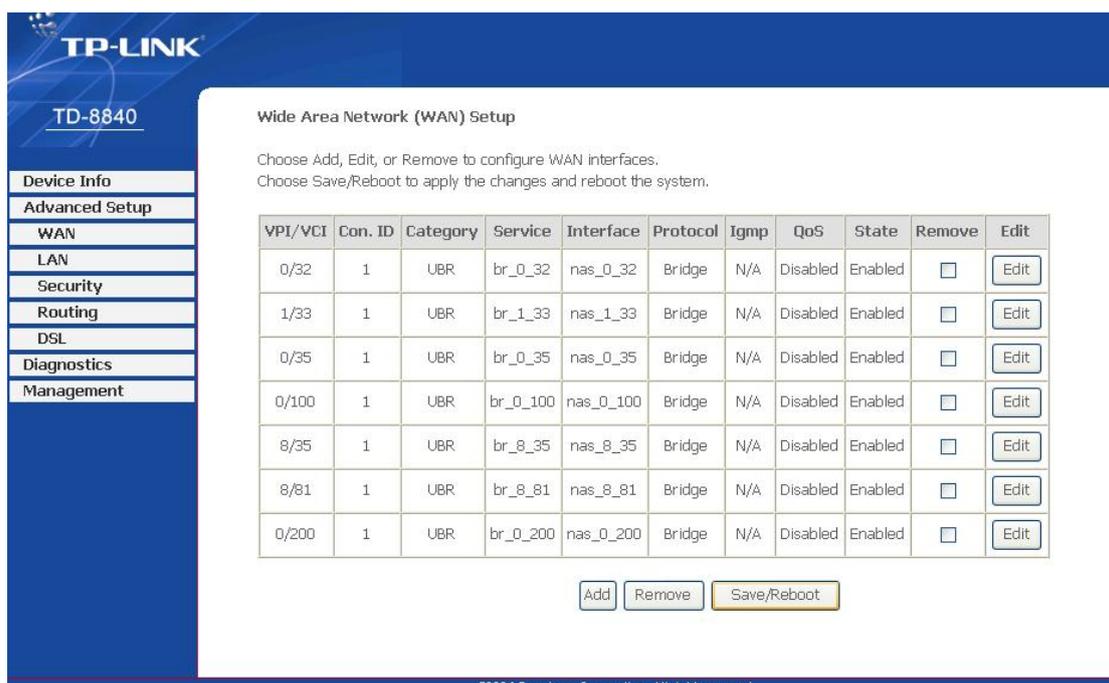


Figure 3-22

NOTE: All of the above setup is under windows XP OS.

3.4 Software Dial

If TD-8840 CPE work in bridged (RFC 1483 Bridged) mode when it connects Internet. You must to install dial software on your PC. There are some software working on WINDOWS in market, example for EnterNet3000、RASPPPoE、WinPeET.

How do I set up the connection in the windows XP?

- The users of Windows XP can click the **“start->All Programs->Accessories->Communications->New connection wizard”**, then click **Next** to enter the setting page.
- Please you select the **“connect to the internet”**, and then click the **Next** button to enter the next page and select the **“set up my connection manually”**, click **Next** to enter the next page.
- Please select the **“connect using a broadband connection that requires user name and password”**, click **Next** to type the name of your ISP in the current page, and then click **Next**.
- Type an **ISP account name** and **password**, if you have forgotten an existing account name or password, please connect with your ISP, click **Next**.
- To create the connection and close this wizard, click **finish** to add a shortcut to this connection to your desktop.
- When you assess the internet by ADSL, double-click this shortcut of dial connection in your desktop, type the account name and password, then click **connect** to connect the Internet.

Chapter 4: Advantage management setup

In order to satisfy customer's needs, feel free to utilize Advantage application and on-line software upgrade, we provided a perfect Web management interface for you, its main function is as follows:

- Upgrade software
- Modify the default IP address of the port of LAN(192.168.1.1)
- Modify the login password
- Configure DHCP
- Check the information of IP and the operation status
- Configure the NAT function
- Configure the DNS parameters
- Configure RIP(Routing Information Protocol)
- Configure IP route
- Configure Security rule
- Configure DSL parameter

NOTE: If you want to acquire further details, please access our website (www.tp-link.com) and consult the advantage user guide of TD-8840.

Chapter 5: FAQ

1. What related parameters are required to acquire ISP when you want to access the internet by ADSL2+ ROUTER?

- 1) Dial user: Connection protocol, User name, Password, Value of VCI/VPI, Encapsulation mode of AAL5 and so on.
- 2) Static IP user: Connection protocol, WAN IP Address, Subnet Mask, Gateway, Value of VCI/VPI, Encapsulation mode of AAL5 and so on.

2. About Connection protocol, VCI/VPI, Encapsulation mode of AAL5

- 1) This product supports the PPP protocol over ATM (PPPoA)、PPP over Ethernet (PPPoE)、MAC Encapsulation Routing (MER)、IP over ATM (IPoA) and Bridging. That may be used with any one of the five protocols above. Because the ISP in different areas supports different protocols, choosing protocol must be supported by ISP.
- 2) The VPI is the English abbreviation of the Virtual Path Identifier, the VCI is the English abbreviation of the Virtual Channel Identifier, the value of VCI/VPI must be compatible with the value that provided by ISP.
- 3) Encapsulation mode of AAL5 include: LLC/SNAP and VC_MAX(often using LLC/SNAP).

3. Why are the LAN Indicators and the NIC both bright, but the setting interface is inaccessible?

- 1) Use the **ping 192.168.1.1** order to check the Accuracy of connection.
- 2) Check the Accuracy of working NIC.
- 3) Whatever the setting the IP address of your computer (if you close the DHCP function, you can't obtain the IP address automatically, must specify the IP address of your computer manually).
- 4) Run the winipcfg order in the windows 95/98(run the ipconfig order in the windows 2000) to check the IP address setup, subnet mask, default gateway by DHCP.
- 5) Resume the ADSL default configuration if necessary.

4. Complete all configurations, but can't dial through computer

- 1) Check the indicator led of ADSL, it should be working normally.
- 2) Check the accuracy of parameter of value of VPI/VCI, Encapsulation mode of AAL5 and so on, whether you need to install the software of dial the number, such as Winpoet, Enternet.
- 3) This product has the PPP dial procedure inside, so you will not need to use the dial software if your protocol is PPPoA or PPPoE, ADSL will connect automatically.

You can check whether your router succeeds in connection with **PING** command.

5. In setting process, the connection is intermitted, how is this done?

Please re- log on to the pages, and configure once more.

Appendix A: Default Configuration

USER NAME	admin
PASSWORD	admin
IP ADDRESS	192.168.1.1
VPI/VCI	0/32,1/33,0/35,0/100,0/200,8/35,8/81

Appendix B: Contact Information

For help with the installation or operation of the TP-LINK TD-8840 External ADSL2+ ROUTER, please contact us.

E-mail: support@tp-link.com

Website: <http://www.tp-link.com>