

TP-LINK®

User Guide

TD-8840 User Guide

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.

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

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

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

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.

Package Contents

The following items should be found in your package:

- 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 cables
- > One ADSL splitter

Note:

Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your distributor.

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Chapter 1. Introduction

Thank you for choosing the TD-8840 External ADSL2+ Router.

1.1 Product Overview

With the 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. The AFE supports full-rate ADSL connectivity conforming to the ITU and ANSI specifications.

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).

1.2 Main Features

- > 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

1.3 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)

P Note:

"*" Needs the third-party software.

1.4 Transmit Data-rate

Max download data-rate: 24Mbps

Max upload data-rate: 3.5Mbps

Max line length: 6Km

1.5 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)

1.6 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

1.7 Working Environment

➤ Operating temperature: 0 °C~40 °C

Storage temperature: -40 °C ~70 °C

> Humidity: 10%~90% (non-condensing)

1.8 Conventions

The Router or TD-8840, or device mentioned in this User guide stands for TD-8840 External ADSL2+ Router without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation.

You can set the parameters according to your demand.

Chapter 2. Hardware Installation

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.

2.1.1 LED Explanation

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

Name	Status	Indication
PWR	On	Power on
1 VVIX	Off	Power off
	Slow flash	Self-detecting when power on
4 5 61	Quick flash	The LINE port is connecting to the ISP's network
ADSL	On	The LINE port has connected to ISP's network
	Off	The LINE port has no connection
ALARM	On	There is mistake when ADSL transmitting data or receiving data
ALAINI	Off	ADSL normal
ACT	On	There is data transmitting or receiving on WAN port
7.01	Off	No data transmitting or receiving on WAN port
	On	1~4(LAN) port normal
LAN(1-4)	Off	Connection on 1~4(LAN) port abnormal
	Flash	Data transmitting or receiving on 1~4(LAN) port

2.2 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): Press the reset button, then turn on the Router's power (keep the

button pressed) for at least three seconds, it will restore the settings to the default factory configuration.

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

2.3 Hardware Installation Procedures

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.

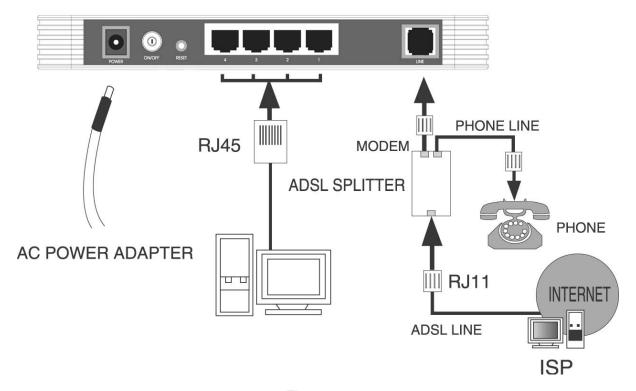


Figure 2-1

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).

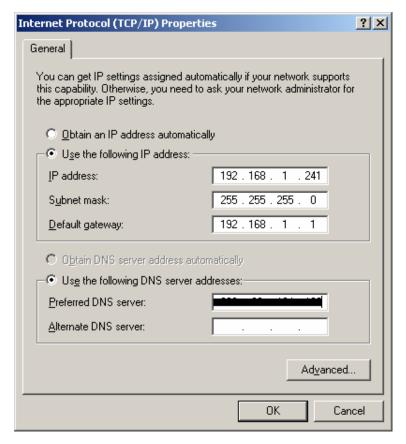


Figure 3-1

P 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.
- 2) 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).**
- 3) 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<1ms TTL=64

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli—seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Figure 3-2

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.

Request timed out.

Request timed out.

Request timed out.

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Figure 3-3

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 3-4

TD-8840

You will then see the Figure 3-5, in which some information such as link rate and so on is displayed.

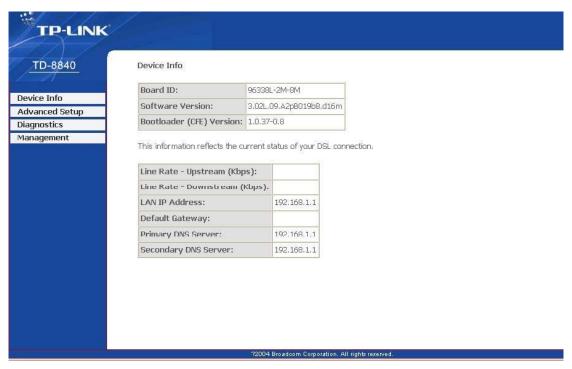


Figure 3-5

Default value of user name and password is "admin"; if you want to change them, please go to "Management" → "Access control" → "Passwords" changing them. (Figure 3-6)

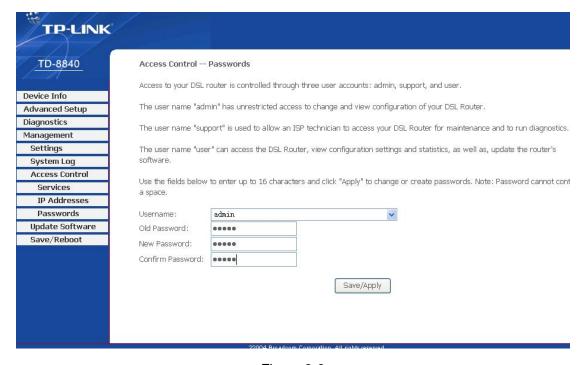


Figure 3-6

3.3 Web Setup

Choose "Advanced Setup"→"WAN", you will enter the page of Wide Area Network (WAN) Setup, you will see the Figure 3-7.

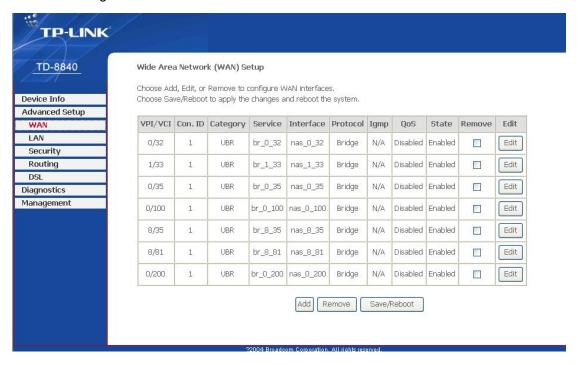


Figure 3-7

There are 7 PVC links in the **WAN** setup page, choose the appropriate PVC according to your need, and then click the **edit** button, you will enter the page of ATM PVC Configuration (See Figure 3-8)

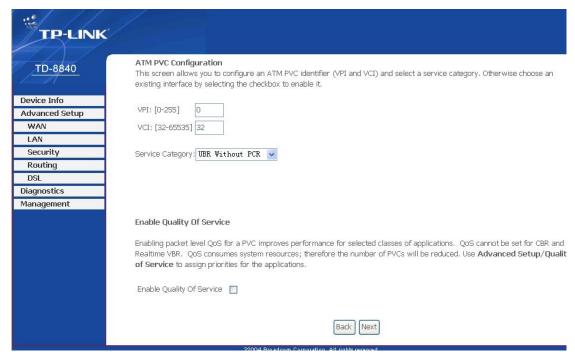


Figure 3-8

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 3-9.

The type of network protocol selected may be different in different areas, there are five types (Figure 3-9), So you should ask your ISP to acquire the local type of network protocol and Encapsulation mode.

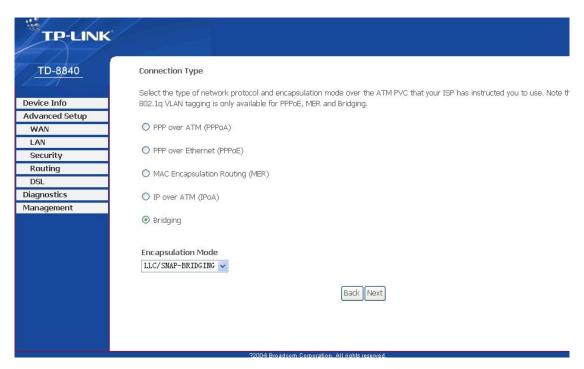


Figure 3-9

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 3-10, 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.

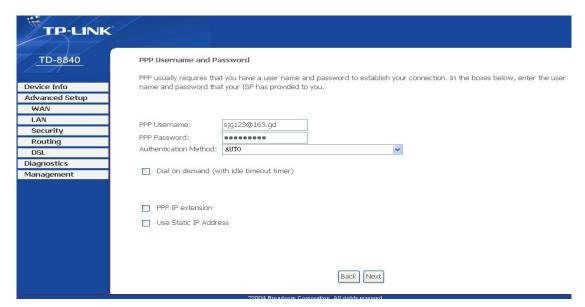


Figure 3-10

You will see the Figure 3-11, then turn on the selected functions according to your demands. Clicking the **next** button to enter the next step, you will see the Figure 3-12, finally click **save** to complete the configuration.



Figure 3-11

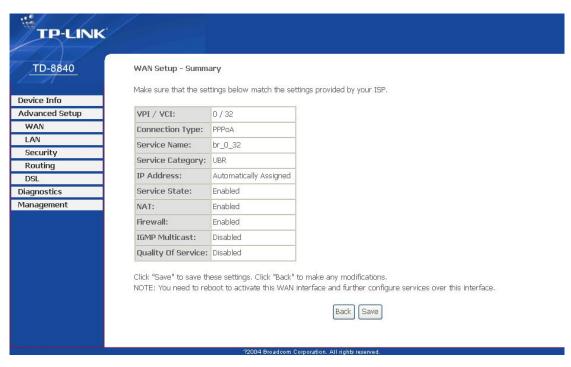


Figure 3-12

> PPP over Ethernet (PPPoE)

If you select the protocol of PPP over Ethernet (PPPoE), you will see the Figure 3-13, 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.

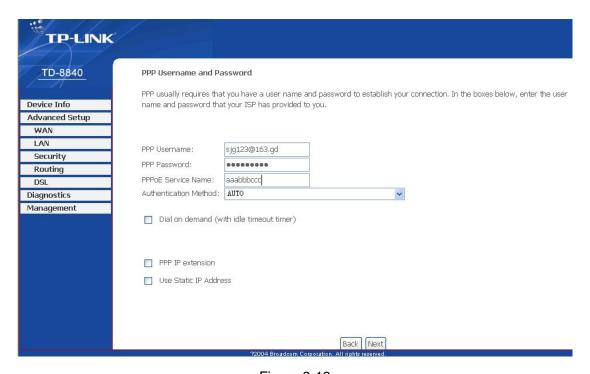


Figure 3-13

You will see the Figure 3-14, then turn on the selected functions according to your needs. Clicking

the **next** button to enter the next step, you will see the Figure 3-15, finally click **save** to complete the configuration.



Figure 3-14

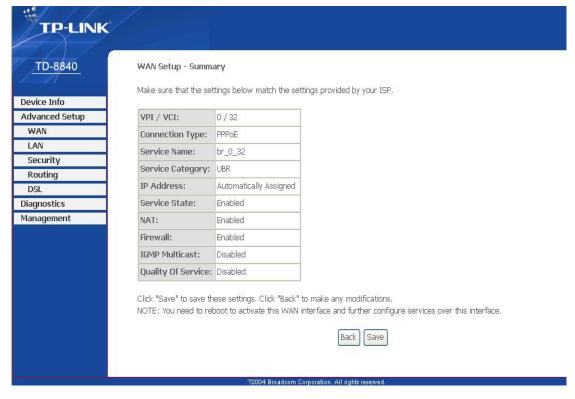


Figure 3-15

MAC Encapsulation Routing (MER)

If you select the protocol of MAC Encapsulation Routing (MER), you will see the page (Figure 3-16), Enter the parameter and the way which is provided by your ISP, then click the **next** button.

TP-LINK		
TD-8840 Device Info Advanced Setup WAN	Enter information provided to you by your ISP to configure the WAIN IP settings. Notice: DHCP can be enabled for PVC in MER mode if "Obtain an IP address automatically" is chosen. Changing the default gat or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or WAIN connection. If you configure static default gateway over this PVC in MER mode, you must enter the IP address of the remote gateway in the "Use IP address". The "Use WAIN interface" is optional.	of
LAN	Obtain an IP address automatically	
Security	Use the following IP address:	
Routing	WAN IP Address: 192.168.1.1	
DSL	WAN Subnet Mask: 255.255.255.0	
Diagnostics		
Management	Obtain default gateway automatically Use the following default gateway: Use IP Address: Use WAN Interface: Obtain DNS server addresses automatically Use the following DNS server addresses: Primary DNS server: Secondary DNS server: Back Next	
	?2004 Broadcom Corporation, All rights reserved.	

Figure 3-16

You will see the Figure 3-17, then turn on the selected functions according to your needs. Clicking the **next** button to enter the next step, you will see the Figure 3-18, finally click **save** to complete the configuration.

TP-LINK	
TD-8840	Network Address Translation Settings Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on y
Device Info	Local Area Network (LAN).
Advanced Setup	
WAN	Enable NAT 🔽
LAN	Enable Firewall
Security	
Routing	
DSL	Enable IGMP Multicast, and WAN Service
Diagnostics	
Management	Enable IGMP Multicast
	Enable WAN Service 🔽
	Service Name: br_0_32
	Back Next
	?2004 Broadcom Corporation, All rights reserved.

Figure 3-17

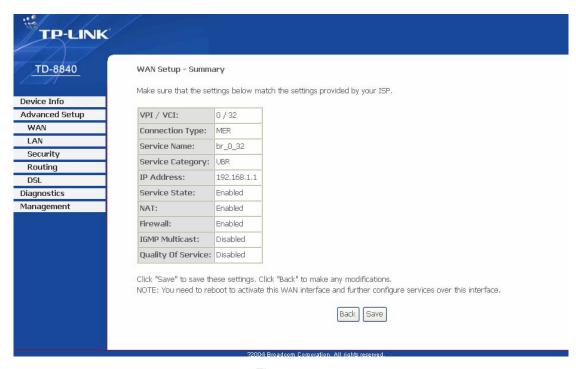


Figure 3-18

➢ IP over ATM (IPoA)

If you select the protocol of IP over ATM (IPoA), you will see the Figure 3-19, enter the parameter and the way which is provided by your ISP, then click the **next** button.

TP-LINK	
TD-8840	WAN IP Settings Enter information provided to you by your ISP to configure the WAN IP settings.
Device Info	
Advanced Setup WAN	Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring the with static values will disable the automatic assignment from other WAN connection.
LAN Security	WAN IP Address: 192.168.1.1
Routing	WAN Subnet Mask: 255.255.255.0
DSL	✓ Use the following default gateway:
Diagnostics	Use IP Address: 192.168.1.44
Management	Use WAN Interface:
	✓ Use the following DNS server addresses:
	Primary DNS server: 192.168.1.1
	Secondary DNS server: 192.168.1.1
	Back Next
	72004 Broadcom Corporation, All rights reserved.

Figure 3-19

You will see the page (Figure 3-20), then turn on the selected functions according to your needs. Clicking the **next** button to enter the next step, you will see the Figure 3-21, finally click **save** to

complete the configuration.

TP-LINK	
TD-8840	Network Address Translation Settings
	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on
Device Info	Local Area Network (LAN).
Advanced Setup	
WAN	Enable NAT 🔽
LAN	Enable Firewall
Security	an remarks to the result is
Routing	
DSL	Enable IGMP Multicast, and WAN Service
Diagnostics	
Management	Enable IGMP Multicast
	Enable WAN Service 🕝
	Service Name: br_0_32
	Back Next
	22004 Broadcom Connection, All Jidobs reserved

Figure 3-20

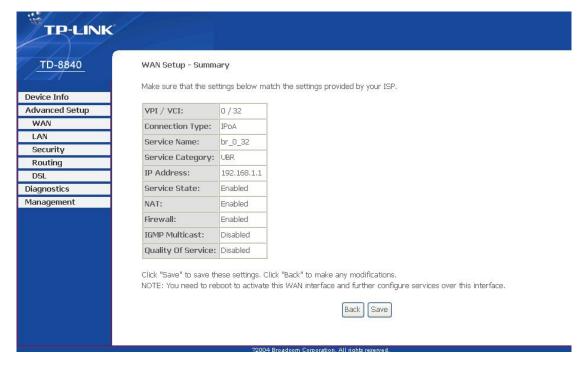


Figure 3-21

Bridging

If you select the Bridging protocol, you just open the bridge service function options, you will see the Figure 3-22, then click the **next** button, you will see the Figure 3-23, finally click **save** to complete the configuration.

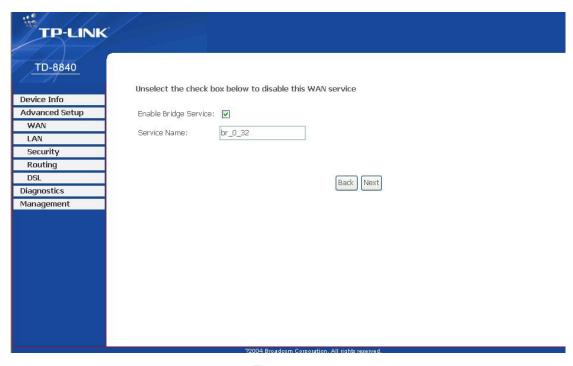


Figure 3-22

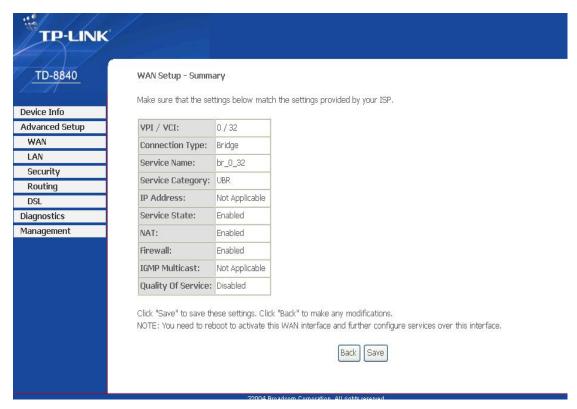


Figure 3-23

P Note:

After you complete any setup, the new setup must be saved and the Router must be restarted for the configuration to go into effect. Please click the Save/Reboot button to restart, referring to the Figure 3-24.

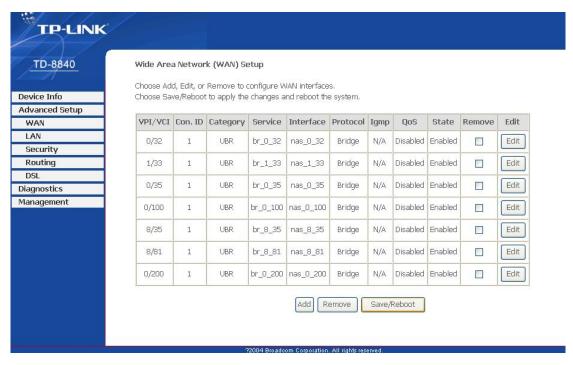


Figure 3-24

P 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 connecting Internet. You must 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 configuration 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.
- Enter an ISP account name and password, if you have forgotten an existing account name or password, please connect with your ISP, and 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, enter the account name and password, then click connect to connect the internet.

Chapter 4. Advantage Management Setup

In order to satisfy our customer's needs we offer an excellent Web management interface. Feel free to utilize the Advantage application and online software upgrades. The functions of the Web management interface are 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 Security rule
- ➤ Configure DSL parameter

Appendix A: FAQ

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

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

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

- This product supports the PPP protocol over ATM (PPPoA) PPP over Ethernet (PPPoE) MAC Encapsulation Routing (MER). IP over ATM (IPoA) and Bridging. You may be used with any one of the five protocols above. Because the ISP in different areas supports different protocol, you must choose the protocol which is supported by your 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 the LAN's and the NIC's LED both bright, but the configuration interface is inaccessible?

- 1) Use the order of **ping 192.168.1.1** to check the Accuracy of connection.
- 2) Check the Accuracy of working NIC.
- 3) Whatever the setup of the IP address on 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 whether setup the IP address, subnet mask, default gateway by DHCP.
- 5) Resume the ADSL Modem default configuration if necessary.

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

- 1) Check the indicator of ADSL, it should be working in 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 dial software, 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 Modem will connect automatically.
- 4) You can check whether your ADSL Modem succeeds in connection with **PING** command.

Appendix B: Default Config

User name	admin
Password	admin
IP Address	192.168.1.1