

# CT-5611 ADSL2+ Combo Router User's Manual

Version A1.0, February 03, 2006

---



## Warning

- Before servicing or disassembling this equipment, always disconnect all power and telephone lines from the device.
- Use an appropriate power supply and a UL Listed telephone line cord. Specification of the power supply is clearly stated in Appendix B - Specifications.

## **Preface**

This manual provides information to network administrators. It covers the installation, operation and applications of the ADSL2+ combo router.

The reader reading this manual is presumed to have a basic understanding of telecommunications. For product update, new product release, manual revision, software upgrade, technical support, etc., visit Comtrend Corporation at <http://www.comtrend.com>

This document is subject to change without notice.

## **Copyright**

Copyright© 2006 Comtrend Corporation. All rights reserved. The information and messages contained herein are proprietary to Comtrend Corporation. No part of this document may be translated, transcribed, reproduced, in any form, or by any means without prior written permission by Comtrend Corporation.

## Technical support

When you find the product out of service, or that it doesn't work properly, please contact technical support engineer for immediate servicing or email to [INT-support@comtrend.com](mailto:INT-support@comtrend.com)

# Table of Contents

<b>CHAPTER 1</b>	<b>INTRODUCTION.....</b>	<b>4</b>
1.1	FEATURES .....	4
1.2	APPLICATION .....	5
1.3	FRONT PANEL LED INDICATORS .....	6
<b>CHAPTER 2</b>	<b>INSTALLATION.....</b>	<b>8</b>
2.1	HARDWARE INSTALLATION.....	8
2.2	INSTALLING THE USB DRIVER.....	9
2.3	UN-INSTALLING THE USB DRIVER .....	13
<b>CHAPTER 3</b>	<b>LOGIN VIA THE WEB BROWSER.....</b>	<b>17</b>
3.1	IP ADDRESS .....	17
3.2	LOGIN PROCEDURE .....	18
3.3	DEFAULT SETTINGS .....	19
<b>CHAPTER 4</b>	<b>QUICK SETUP .....</b>	<b>20</b>
4.1	WAN.....	21
4.2	STATISTICS .....	22
4.2.1	<i>LAN Statistics</i> .....	23
4.2.2	<i>WAN Statistics</i> .....	24
4.2.3	<i>ATM statistics</i> .....	25
4.2.4	<i>ADSL Statistics</i> .....	27
4.2.5	<i>Route</i> .....	29
4.2.6	<i>ARP</i> .....	29
4.2.7	<i>DHCP</i> .....	30
<b>CHAPTER 5</b>	<b>QUICK SETUP .....</b>	<b>31</b>
5.1	AUTO QUICK SETUP.....	32
5.2	MANUAL QUICK SETUP.....	32
<b>CHAPTER 6</b>	<b>ADVANCED SETUP .....</b>	<b>48</b>
6.1	WAN.....	48
6.2	LAN .....	49
6.3	NAT .....	50
6.3.1	<i>Virtual Servers</i> .....	50
6.3.2	<i>Port Triggering</i> .....	51
6.3.3	<i>DMZ Host</i> .....	53
6.4	SECURITY.....	54
6.4.1	<i>IP Filtering</i> .....	54
6.4.2	<i>Parental Control</i> .....	57
6.5	QUALITY OF SERVICE.....	58
6.6	ROUTING.....	60
6.6.1	<i>Default Gateway</i> .....	60

6.6.2	<i>Static Route</i> .....	61
6.7	DNS.....	62
6.7.1	<i>DNS Server</i> .....	62
6.7.2	<i>Dynamic DNS</i> .....	62
6.8	DSL.....	64
<b>CHAPTER 7</b>	<b>DIAGNOSTICS</b> .....	<b>65</b>
<b>CHAPTER 8</b>	<b>MANAGEMENT</b> .....	<b>67</b>
8.1	SETTINGS .....	67
8.1.1	<i>Configuration Backup</i> .....	68
8.1.2	<i>Tools – Update Settings</i> .....	68
8.1.3	<i>Restore Default</i> .....	69
8.2	SYSTEM LOG.....	70
8.3	INTERNET TIME.....	72
8.4	ACCESS CONTROL.....	72
8.4.1	<i>Services</i> .....	73
8.4.2	<i>Access IP Addresses</i> .....	74
8.4.3	<i>Passwords</i> .....	75
8.5	UPDATE SOFTWARE.....	76
8.6	SAVE AND REBOOT .....	77
<b>APPENDIX A:</b>	<b>PIN ASSIGNMENTS</b> .....	<b>78</b>
<b>APPENDIX B:</b>	<b>SPECIFICATIONS</b> .....	<b>79</b>

# Chapter 1 Introduction

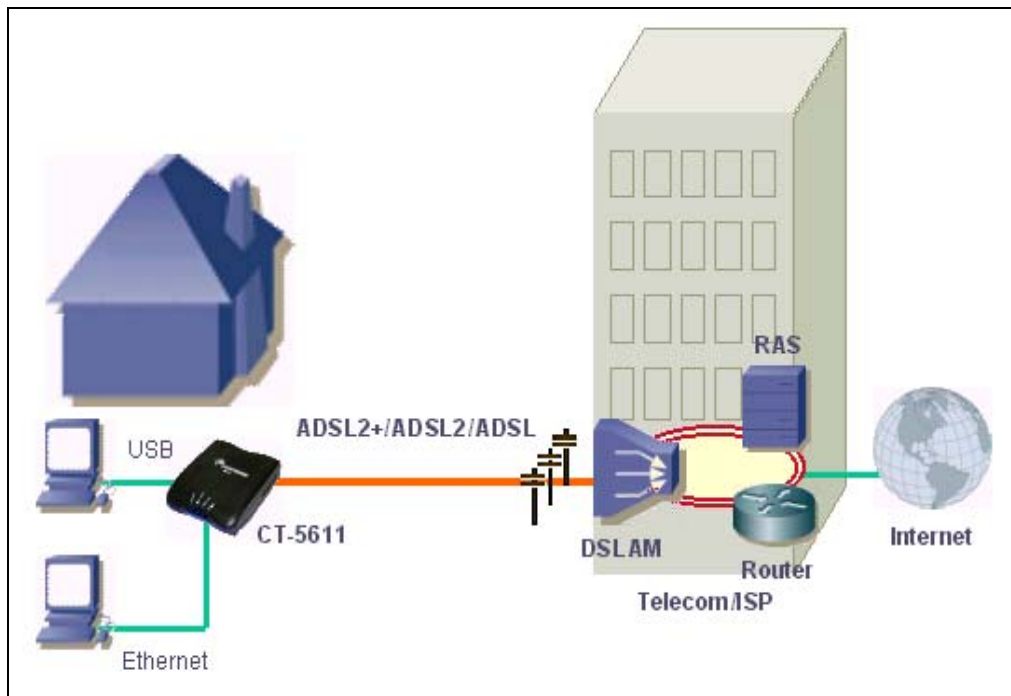
The CT-5611 ADSL2+ compact and high performance combo router provides one 10/100 Ethernet Interface and one USB interface, offering ADSL connectivity at speeds of up to 24 Mbps. It also has full routing capabilities to segment/route IP protocol, and supports advanced security functions.

## 1.1 Features

- IP filtering
- SPI (Stateful Packet Inspection)
- DoS protection
- Static route
- Dynamic IP assignment
- NAT/PAT
- IGMP Proxy
- DHCP Server/Relay/Client
- DNS Proxy
- Auto PVC configuration
- Up to 4 VCs
- Web-based management Remote configuration and upgrade
- Configuration backup and restoration
- FTP/TFTP server

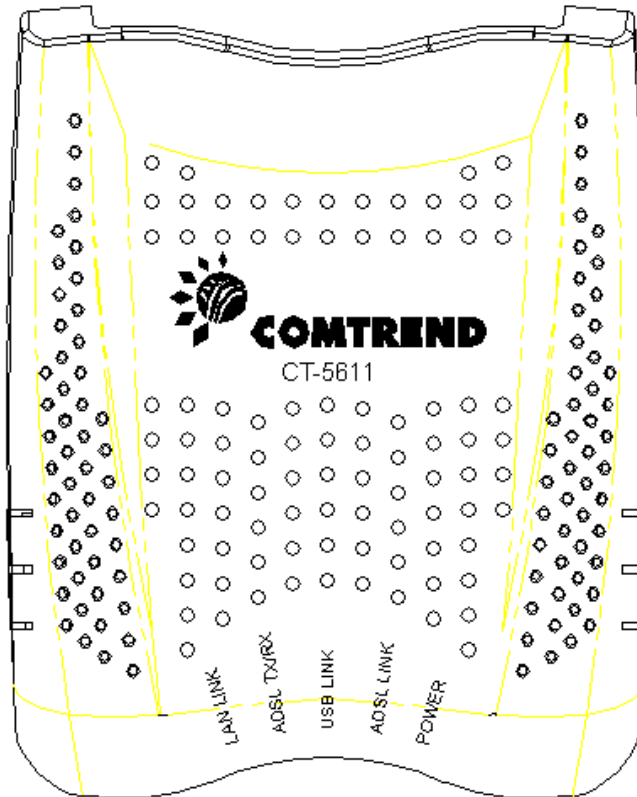
## 1.2 Application

The following diagram depicts the application of the CT-5611.



### 1.3 Front Panel LED Indicators

The front panel LEDs are shown in the picture below, followed by an explanation in the table below.



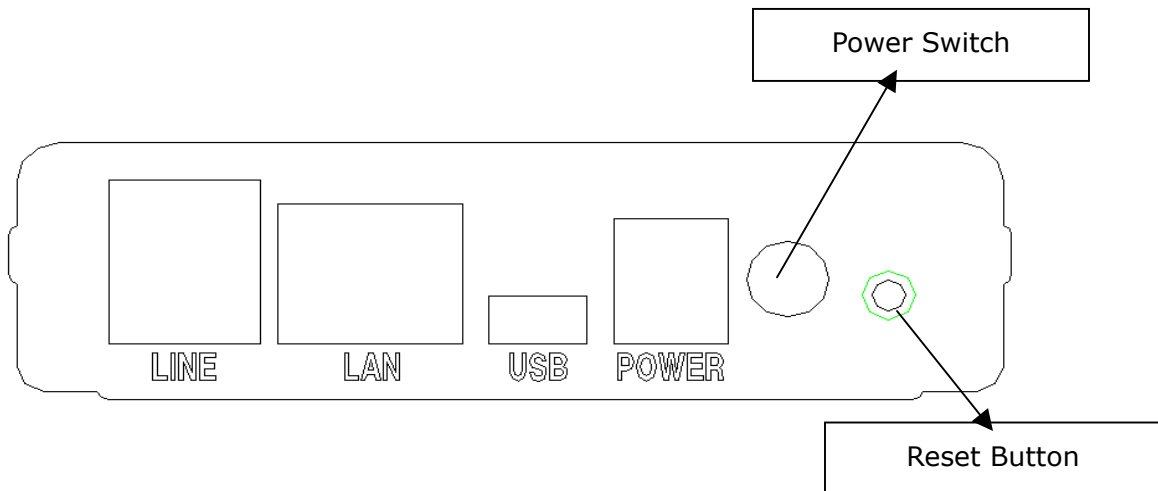
LED	Color	Mode	Function
POWER	Green	On	The router is powered up.
		Off	The router is powered down.
ADSL LINK	Green	On	The ADSL link is established.
		Off	The ADSL link is not established.
	Green	Blink	The ADSL link is training or some traffic is passing through ADSL.
USB	Green	On	A USB link is established.
		Off	A USB link is not established.
	Green	Blink	Data transmitting or receiving over USB.

<b>ADSL TR/RX</b>	Green	On	The ADSL TR/RX link is established.
		Off	The ADSL TR/RX link is not established.
	Green	Blink	The ADSL TR/RX link is training or some traffic is passing through ADSL TR/RX.
<b>LAN</b>	Green	On	An Ethernet Link is established.
		Off	An Ethernet Link is not established.
	Green	Blink	Data transmitting or receiving over LAN.



## Chapter 2 Installation

### 2.1 Hardware Installation



Follow the instructions below to complete the hardware connections.

#### Connection to LINE port

If you wish to connect both the router and a telephone, connect the LINE port to a POTS splitter with a RJ11 connection cable.

#### Connection to LAN port

To connect to a hub or PC, use a RJ45 cable. The port is auto-sensing MDI/X and either straight-through cable or crossover cable can be used.

#### Connection to USB port

Connect the USB port to a PC with a standard USB cable.

#### Connection to Power

Connect the **Power** jack to the shipped power cord. Attach the power adapter to the wall outlet or other AC source.

After all connections have been made, turn the power-switch to the on position. After powering on, the router performs a self-test. Wait for a few seconds until the test is finished, then the router will be ready to operate.

#### Reset Button

Restore the default parameters of the router by holding down the device's Reset button until the LED's start blinking simultaneously (about 5 seconds). After the device has rebooted successfully, and if the connection is established, the LAN LED, ADSL LED or USB LED will display in green, depending on the connection type.

**Caution 1:** If the router fails to power up, or it malfunctions, first verify that the power supply is connected correctly. Then power it on again. If the problem persists, contact our technical support engineers.

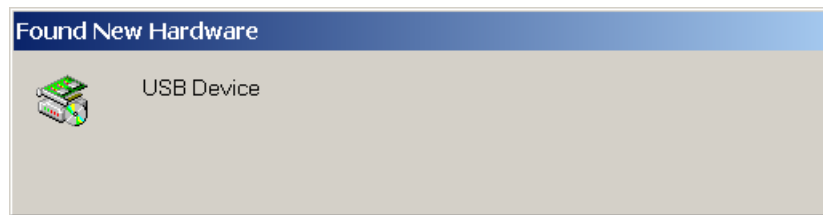
**Caution 2:** Before servicing or disassembling this equipment always disconnect all power cords and telephone lines from the wall outlet.

## 2.2 Installing the USB Driver

Before you connect your router's USB cable to your PC, you must load the ADSL USB drivers. The USB driver supports Windows 98, ME, 2000, and XP.

To connect the router to a PC using the USB interface, you need to use a standard USB cable and install the USB interface software. Follow the steps below:

**STEP 1:** Connect the USB router to the PC by plugging the flat connector of a standard USB cable into your PC, and plugging the square connector into the router. The screen will display as below:

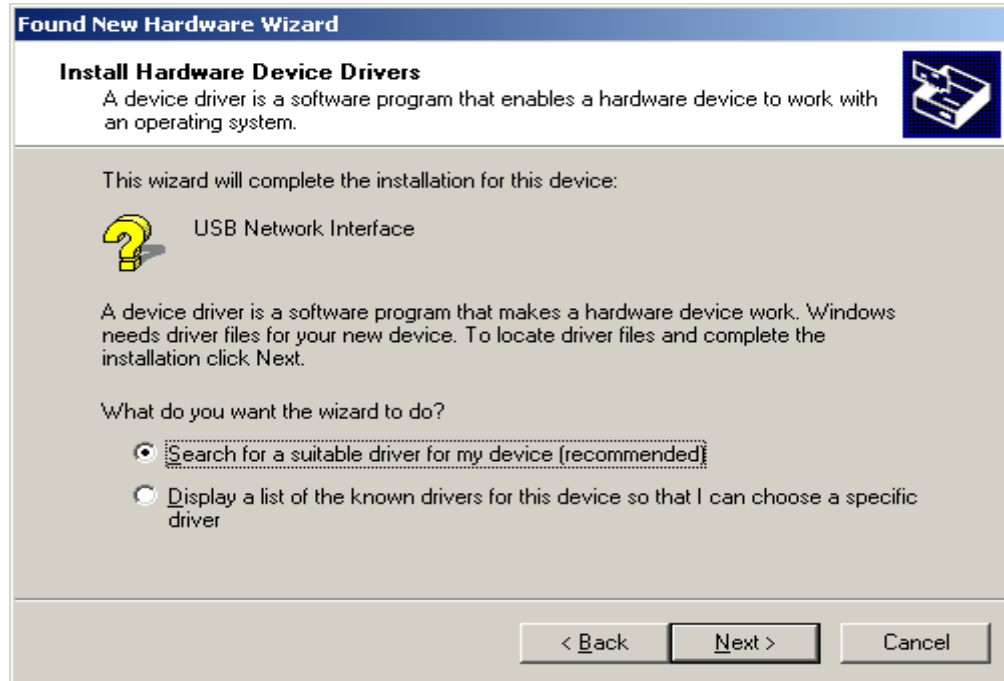


**STEP 2:** When the screen displays as below, click the **Next** button.

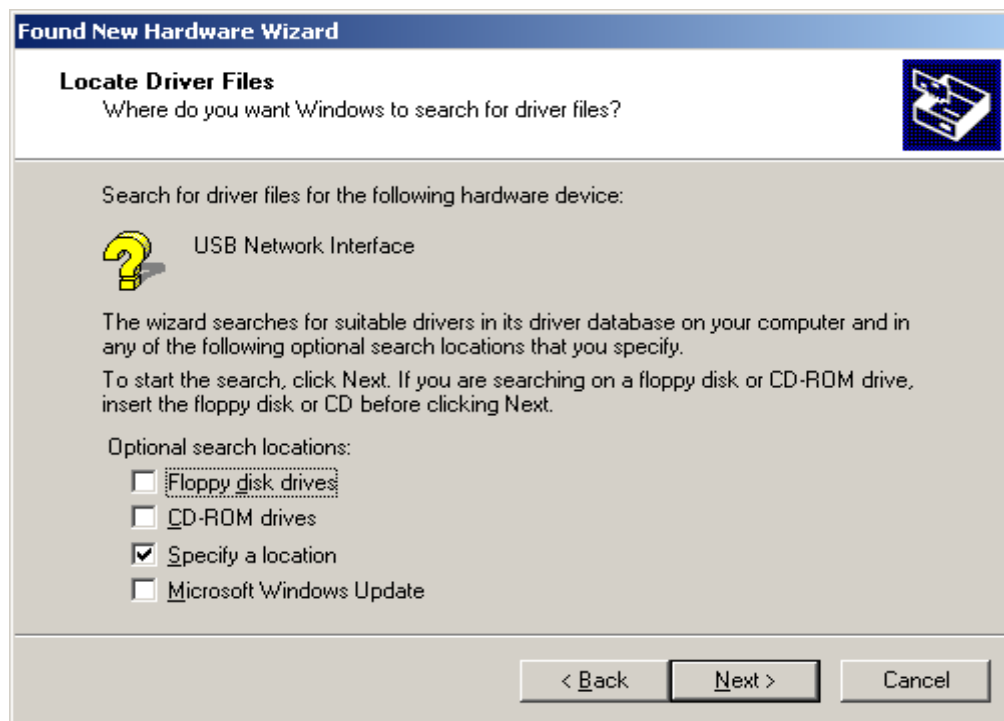


**Note:** This screen won't be displayed if the USB Driver has been previously un/installed.

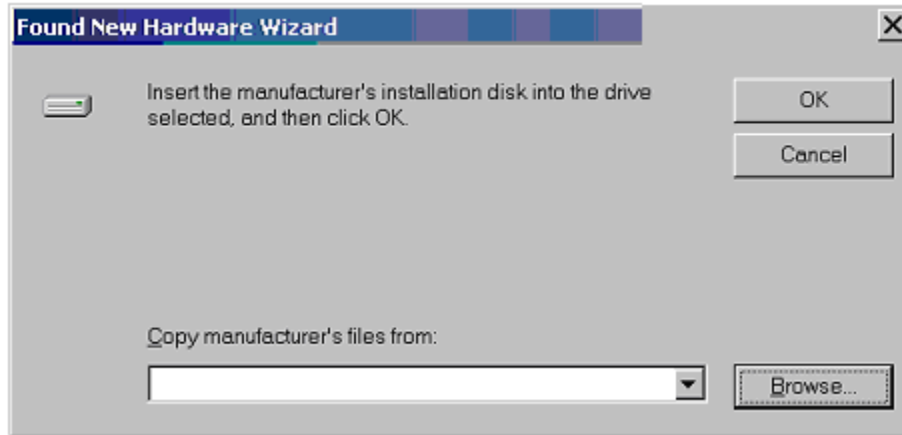
**STEP 3:** When the screen displays as below, select **Search for a suitable driver** and click the **Next** button.



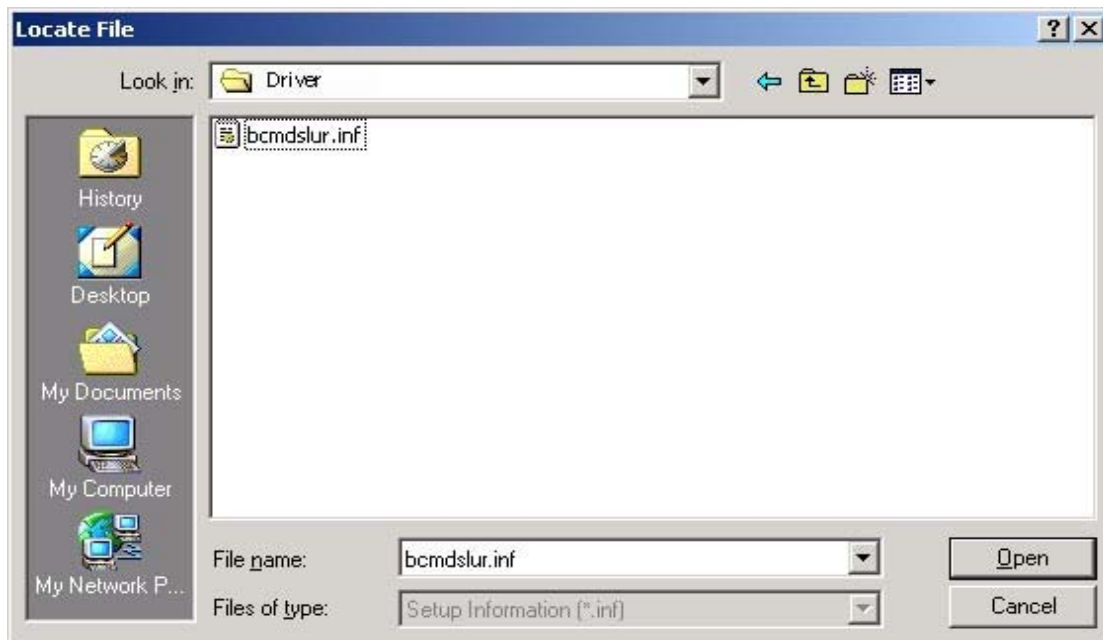
**STEP 4:** Select Specify a location and click the Next button. If you are installing the software from a disk, insert the disk.



**STEP 5:** Select the location of the file using the **Browse** button. Normally, the file is on the CD-ROM shipped with the device.



**STEP 6:** Locate the file, and push the **Open** button.



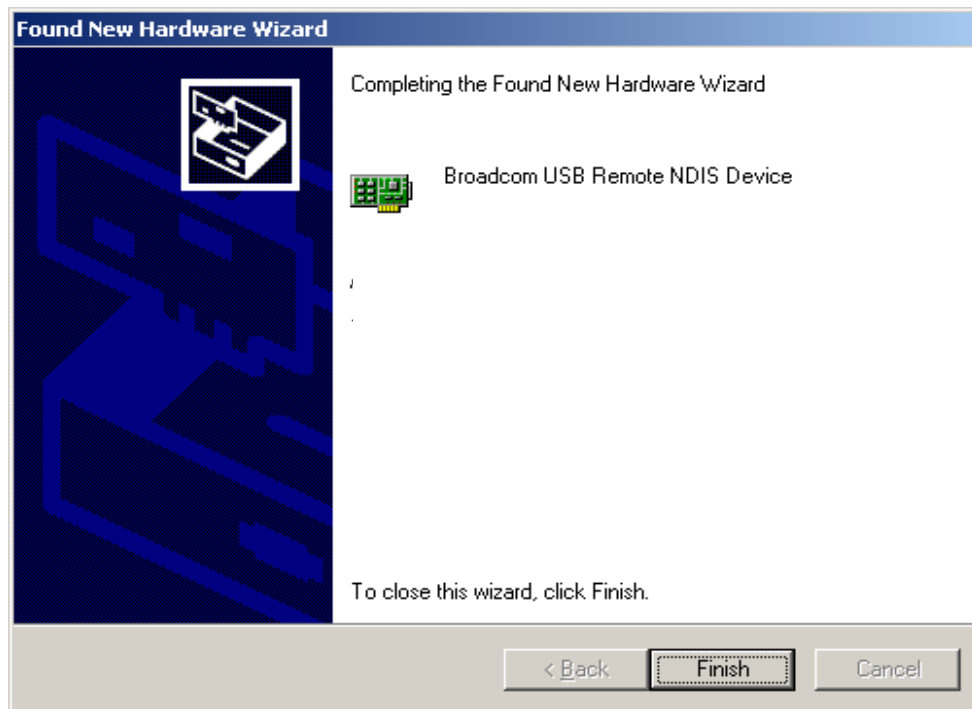
**STEP 7:** When the screen displays as below, push the **OK** button.



**STEP 8:** When the screen below displays, push the **NEXT** button.



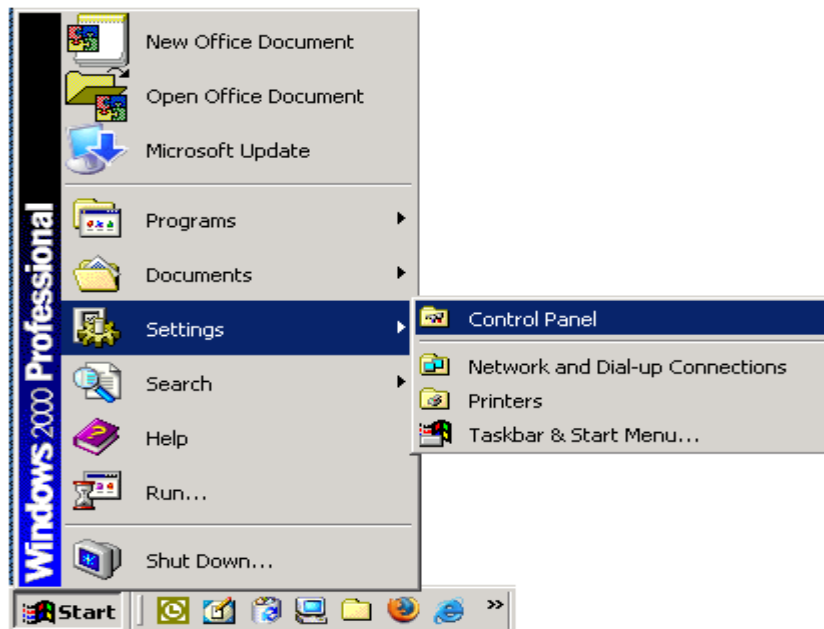
**STEP 9:** Click the **Finish** button, when the screen displays as below.



**STEP 10:** Installation is complete.

## 2.3 Un-installing the USB Driver

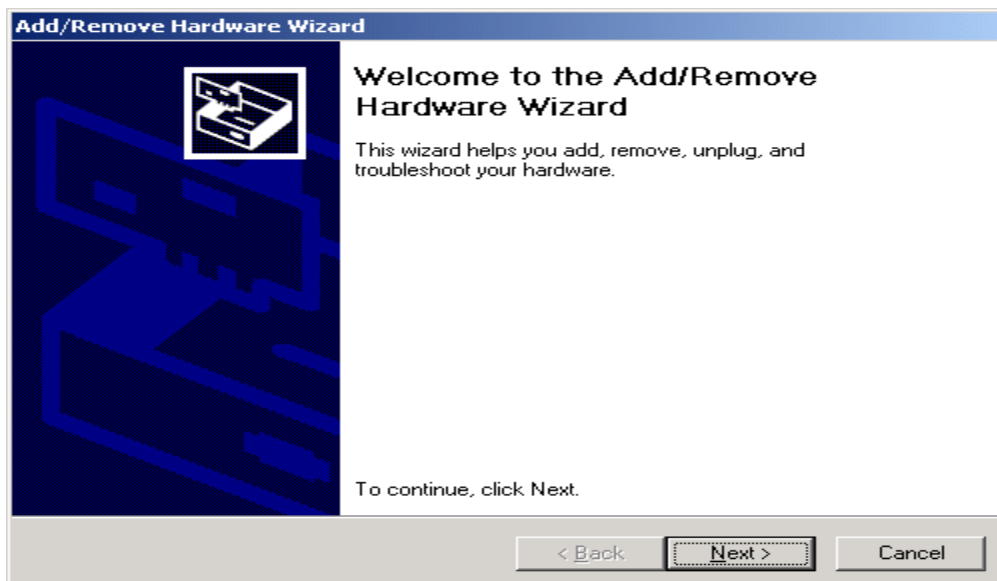
**STEP 1:** Click **Start**, **Settings** and then **Control Panel** as shown here.



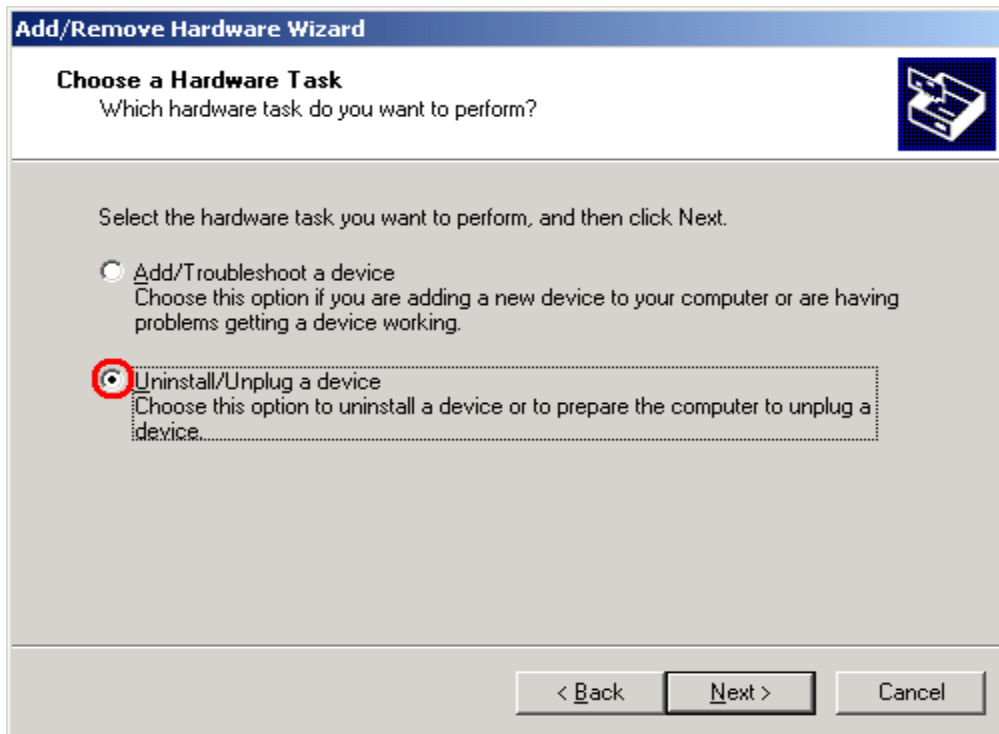
**STEP 2:** When the following screen is displayed, click on the Add/Remove Hardware Icon.



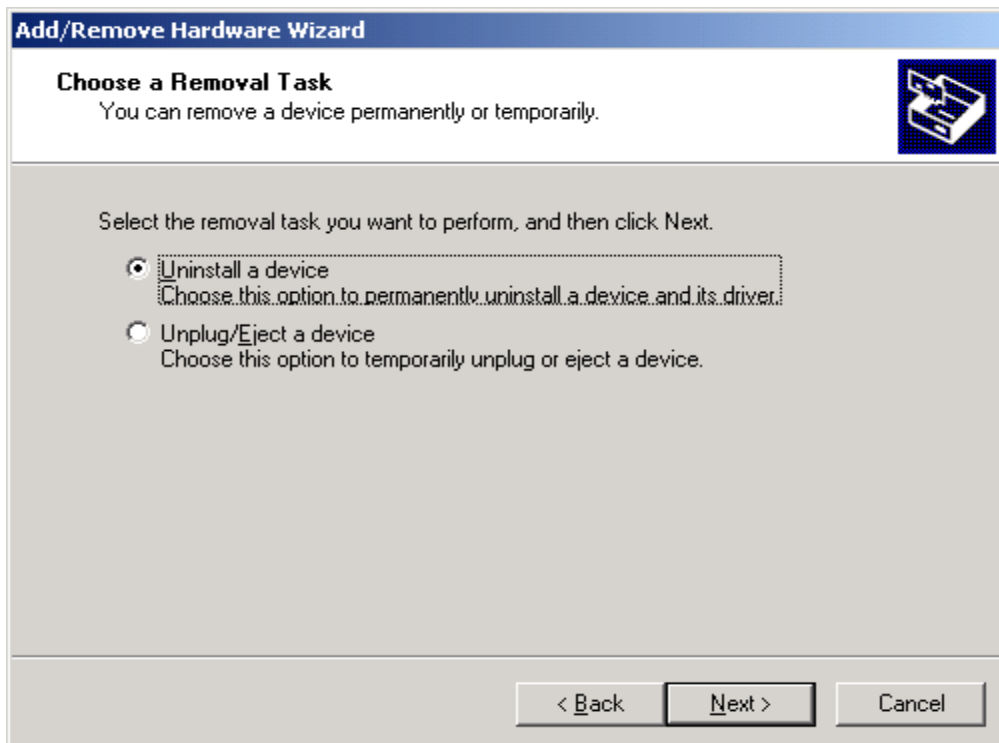
**STEP 3:** When the following screen is displayed, click **Next**.



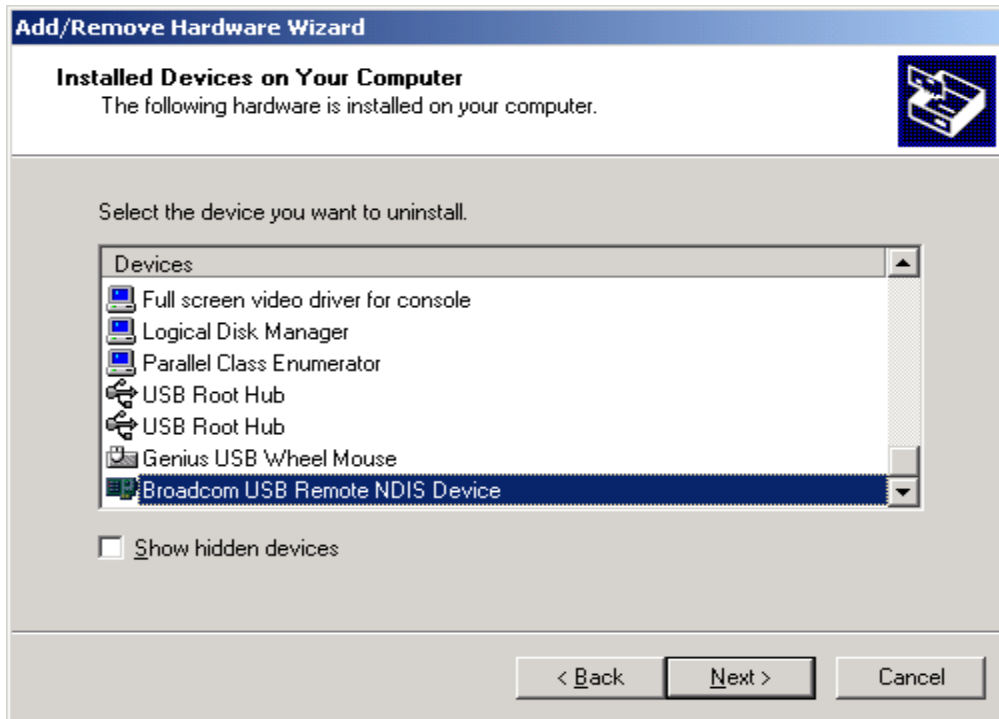
**STEP 4:** When the following screen is displayed, select **Uninstall/Unplug a device** (as shown here). Then, click **Next**.



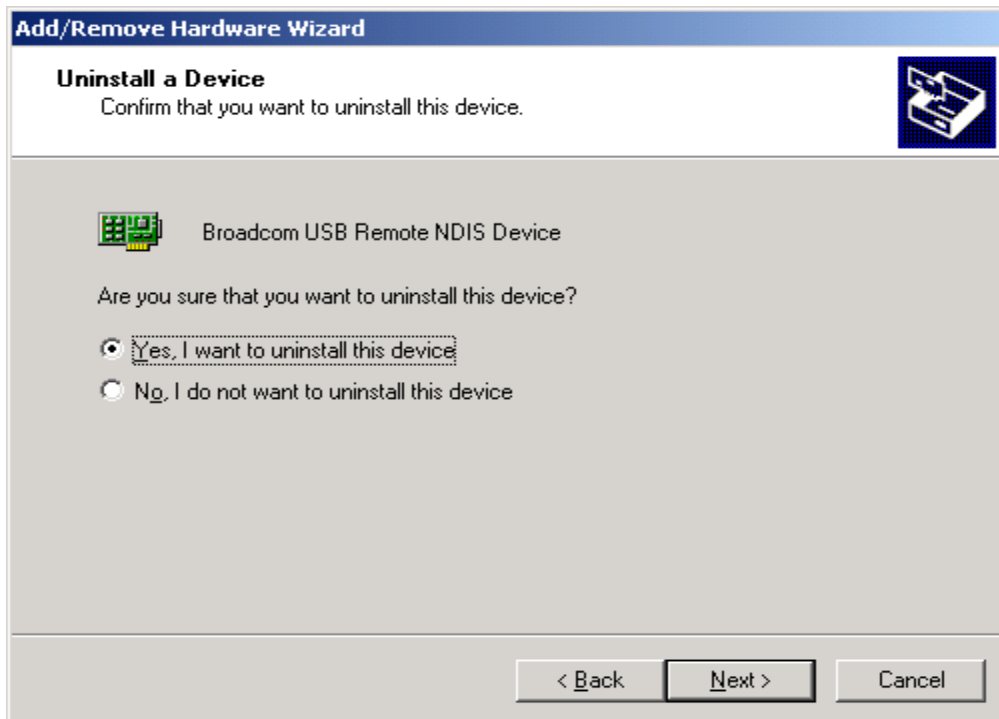
**STEP 5:** When the following screen is displayed, select **Uninstall a device** (as shown here). Then, click **Next**.



**STEP 6:** When the following screen is displayed, select the device that you want to uninstall. Then, click **Next**.



**STEP 7:** When the following screen is displayed, click **Next** to confirm that you want to uninstall the device.





**STEP 8:** When the following screen is displayed, click **Finish** as un-installation is complete.



## Chapter 3 Login via the Web Browser

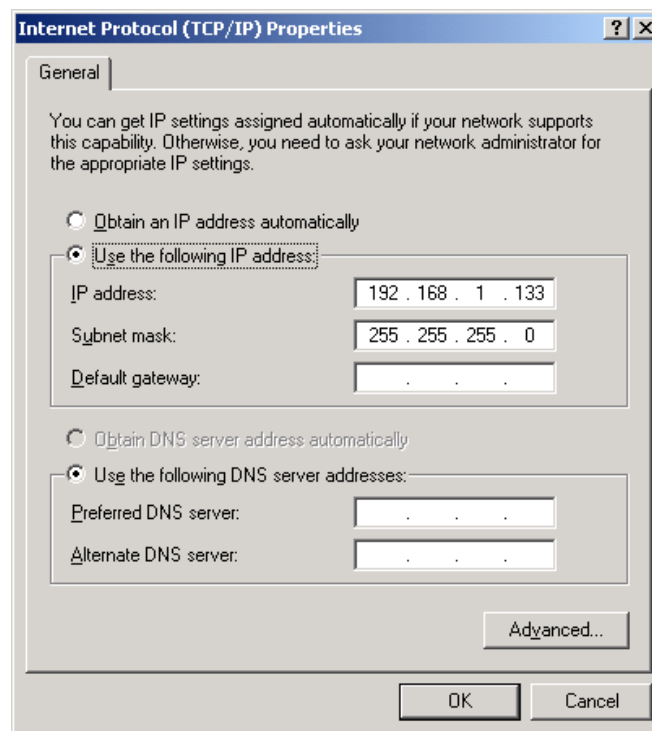
This section describes how to manage the router via a Web browser via the remote end. You can use a web browser such as Microsoft Internet Explorer, or Netscape Navigator. (The Web page is best viewed with Microsoft Internet Explorer 5.0 and later): A unique default user account is assigned with user name **root** and password **12345**. The user can change the default password later when logged in to the device.

### 3.1 IP Address

The default IP address of the CT-5611 (LAN port) is 192.168.1.1. To configure the CT-5611 for the first time, the configuration PC must have a static IP address within the 192.168.1.x subnet. Follow the steps below to configure your PC IP address to use subnet 192.168.1.x.

**STEP 1:** Right click on the Local Area Connection under the Network and Dial-Up connection window and select Properties.

**STEP 2:** Enter the TCP/IP screen and change the IP address to the domain of 192.168.1.x/24.



**STEP 3:** Click **OK** to submit the settings.


**STEP 4:** Start your Internet browser with the default IP address 192.168.1.1.

## 3.2 Login Procedure

Perform the following steps to bring up the Web user interface and configure the CT-5611. To log on to the system from the Web browser, follow the steps below:

**STEP 1:** Start your Internet browser. Type the IP address for the router in the Web address field. For example, if the IP address is 192.168.1.1, type **http://192.168.1.1**

**STEP 2:** You will be prompted to enter your user name and password. Type **root** in the user name field and **12345** in the password field, and click **OK**. These values can be changed later in the Web User Interface by selecting the **Management** link.



The image shows a web browser dialog box titled "Enter Network Password". It contains a key icon and the text "Please type your user name and password." Below this, there are fields for "Site:" (192.168.1.1) and "Realm:" (DSL Router). The "User Name" field contains "root" and the "Password" field contains "xxxxx". There is a checkbox labeled "Save this password in your password list" which is unchecked. At the bottom right are "OK" and "Cancel" buttons.

**STEP 3:** After successfully logging in, you will reach the Quick Setup menu.



The image shows the "COMTREND ADSL Router" Quick Setup screen. The left sidebar contains links: "Device Info", "Quick Setup", "Advanced Setup", "Diagnostics", and "Management". The main content area is titled "Quick Setup" and contains the text: "This Quick Setup will guide you through the steps necessary to configure your DSL Router." Below this is the section "ATM PVC Configuration" with the instruction "Select the check box below to enable DSL Auto-connect process." There is a checkbox labeled "DSL Auto-connect" which is checked.

### 3.3 Default Settings

During power on initialization, the CT-5611 initializes all configuration attributes to default values. It will then read the configuration profile from the Permanent Storage section on the flash memory. The default attributes are overridden when identical attributes with different values are configured. The configuration profile in Permanent Storage can be created via the Web user interface, the console, or telnet user interface, or other management protocols. The factory default configuration can be restored either by pushing the reset button for more than five seconds, or by clicking the Restore Default Configuration option in the Restore Settings screen.

The following default settings are present when setting up the router for the first time. The PC running the browser can be attached to the Ethernet or the USB.

- LAN port IP address: 192.168.1.1
- Local administrator account name: root
- Local administrator account password: 12345
- Local non- administrator account name: user
- Local non- administrator account password: user
- Remote WAN access: disabled
- Remote WAN access account name: support/support
- Remote WAN access account password: support/support
- NAT and firewall: disabled
- DHCP server on LAN interface: enable
- WAN IP address: none

## Chapter 4 Quick Setup

After login, the **Quick Setup** screen appears as shown.

**COMTREND**  
**ADSL Router**

Device Info  
**Quick Setup**  
Advanced Setup  
Diagnostics  
Management

**Quick Setup**

This Quick Setup will guide you through the steps necessary to configure your DSL Router.

**ATM PVC Configuration**

Select the check box below to enable DSL Auto-connect process.

☒ DSL Auto-connect

Next

**Note:** The selections available on the left side of menu are based upon the configured connection.

## 4.1 WAN

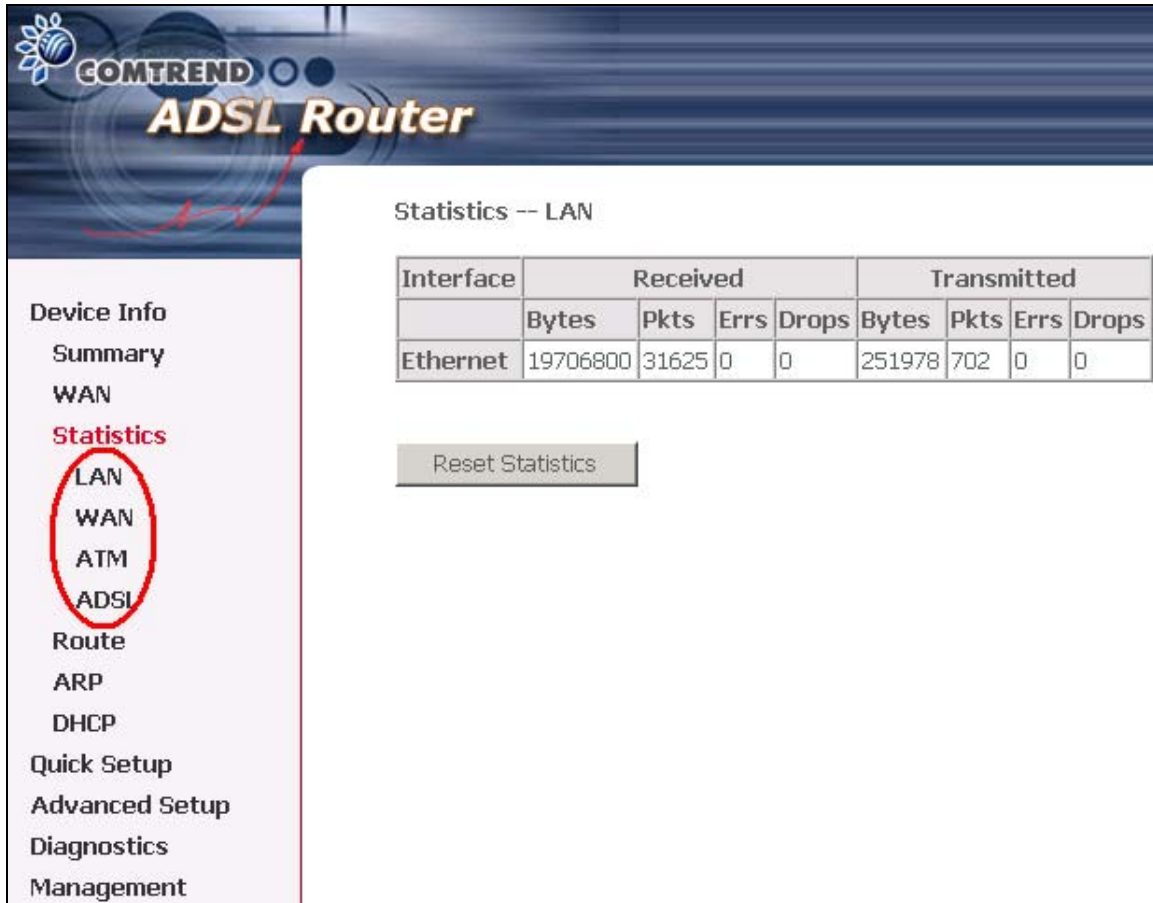
Click **Device Info** on the menu bar to display the WAN option. Then, click **WAN** on the Device Info menu bar to display the configured PVC(s) and the status.

The screenshot shows the COMTREND ADSL Router web interface. On the left is a sidebar menu with the following items: Device Info, Summary, WAN (highlighted in red), Statistics, Route, ARP, DHCP, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled 'WAN Info' and contains a table with the following columns: VPI/VCI, Con. ID, Category, Service, Interface, Protocol, Igmp, QoS, State, Status, and IP Address. The table is currently empty.

VPI/VCI	Shows the values of the ATM VPI/VCI
Con. ID	Shows the connection ID
Category	Shows the ATM service classes
Service	Shows the name for WAN connection
Interface	Shows connection interfaces
Protocol	Shows the connection type, such as PPPoE, PPPoA, etc.
IGMP	Shows the statue of the IGMP function
QoS	Shows if QoS is enabled or disabled
State	Shows the connection state of the WAN connection
Status	Lists the status of DSL link
IP Address	Shows IP address for WAN interface

## 4.2 Statistics

Selection of the Statistics screen provides statistics for the Network Interface of LAN, WAN, ATM and ADSL. All statistics screens are updated every 15 seconds.



COMTREND  
**ADSL Router**

Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	19706800	31625	0	0	251978	702	0	0

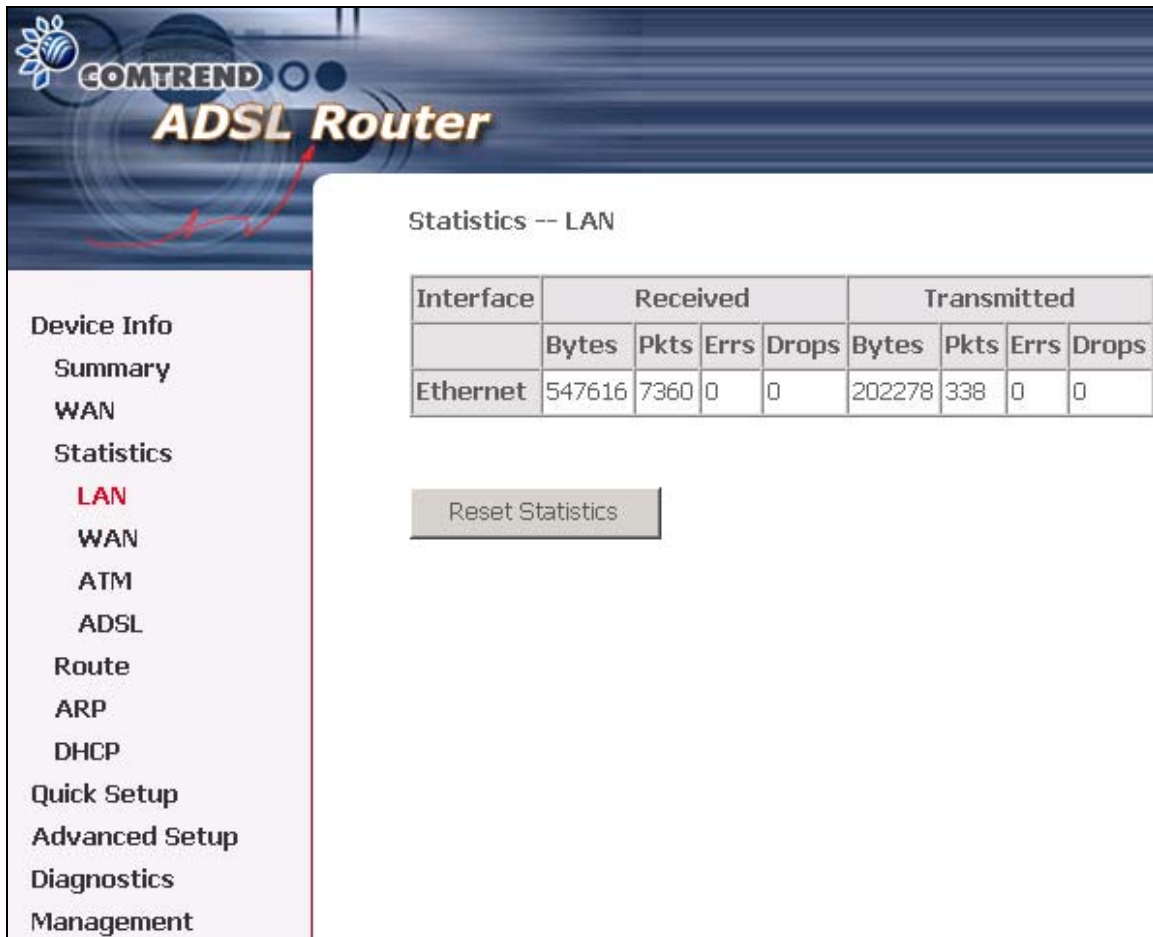
Reset Statistics

Device Info

- Summary
- WAN
- Statistics**
  - LAN
  - WAN
  - ATM
  - ADSL
- Route
- ARP
- DHCP
- Quick Setup
- Advanced Setup
- Diagnostics
- Management

### 4.2.1 LAN Statistics

The Network Statistics screen shows interface statistics for Ethernet and USB interfaces. (The Network Statistics screen shows interface statistics for LAN of Ethernet and USB interfaces. This shows byte transfer, packet transfer, Error and Drop statistics for the LAN interface.)



The screenshot displays the Comtrend ADSL Router web interface. The top banner features the Comtrend logo and the text "ADSL Router". On the left, a vertical menu lists various configuration options: Device Info, Summary, WAN, Statistics, LAN (highlighted in red), WAN, ATM, ADSL, Route, ARP, DHCP, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Statistics -- LAN" and contains a table with network statistics for the Ethernet interface. The table has columns for Interface, Received (Bytes, Pkts, Errs, Drops), and Transmitted (Bytes, Pkts, Errs, Drops). The data shows 547616 bytes received, 7360 packets received, 0 errors, and 0 drops. Transmitted statistics are 202278 bytes, 338 packets, 0 errors, and 0 drops. Below the table is a "Reset Statistics" button.

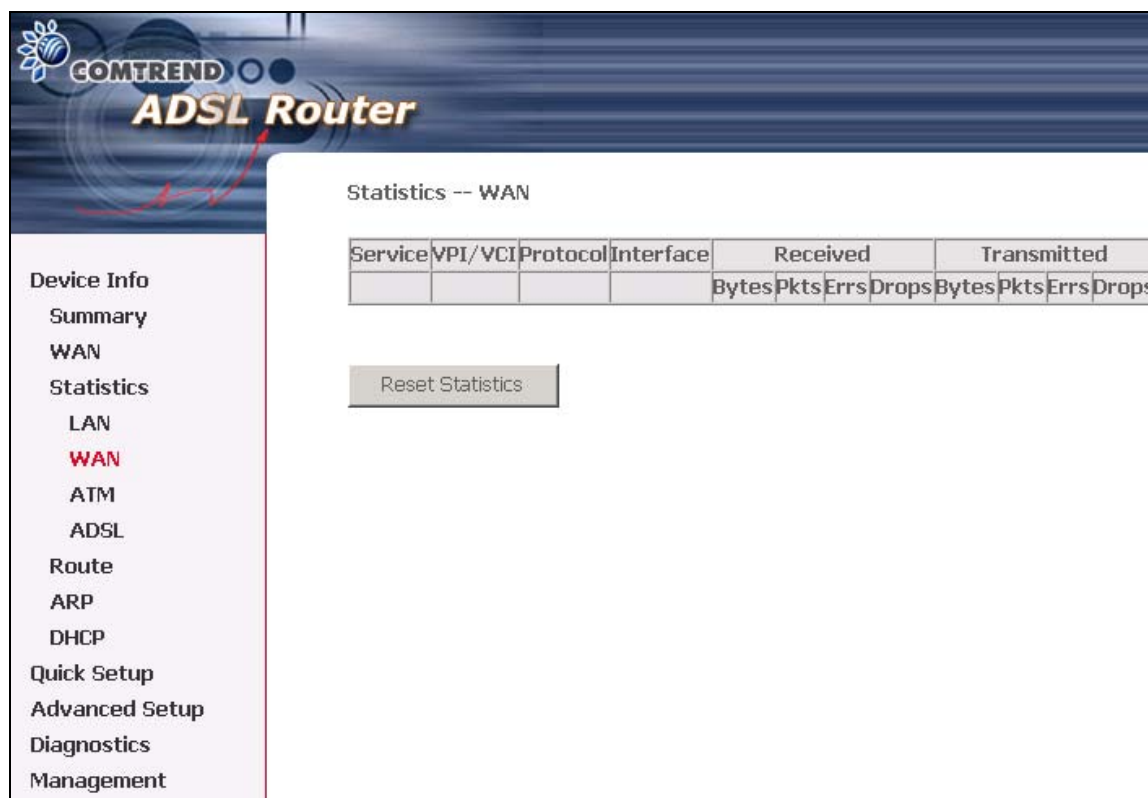
Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	547616	7360	0	0	202278	338	0	0

[Reset Statistics](#)



## 4.2.2 WAN Statistics

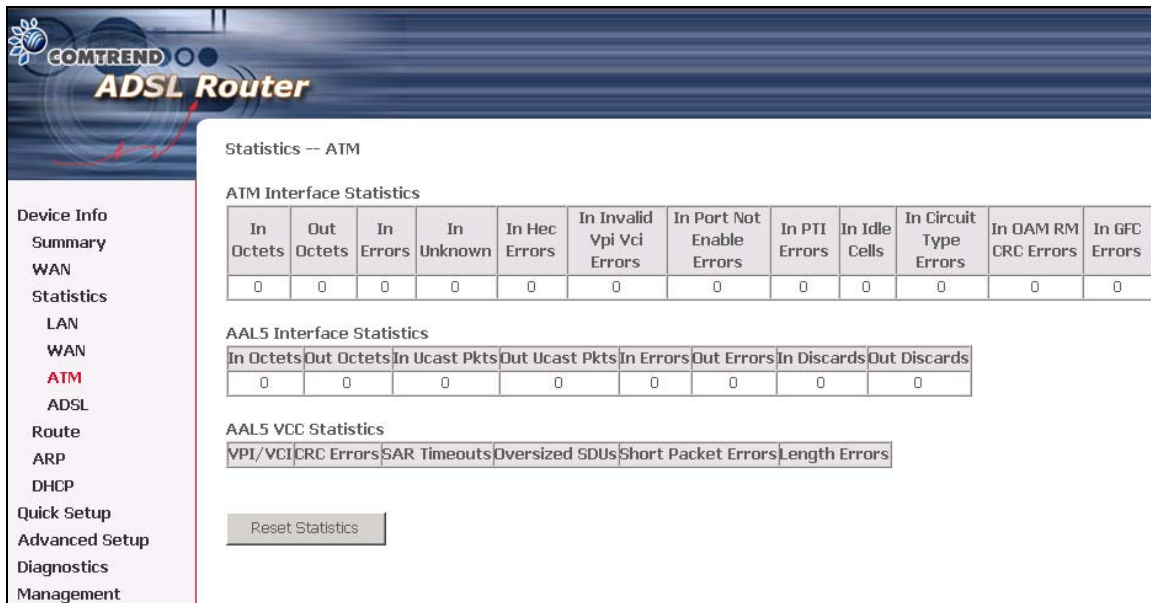
The following figure shows the WAN statistics screen.



Service		Shows the service type
VPI/VCI		Shows the values of the ATM VPI/VCI
Protocol		Shows the connection type, such as pppoe, PPPoA, etc.
Interface		Shows connection interfaces
Received/Transmitted Bytes	-	Rx/TX (receive/transmit) packet in Byte
Pkts	-	Rx/TX (receive/transmit) packets
Errs	-	Rx/TX (receive/transmit) the packets which are errors,
Drops	-	Rx/TX (receive/transmit) the packets which are dropped

### 4.3.3 ATM statistics

The following figure shows the ATM statistics screen.



#### ATM Interface Statistics

Field	Description
In Octets	Number of received octets over the interface
Out Octets	Number of transmitted octets over the interface
In Errors	Number of cells dropped due to uncorrectable HEC errors
In Unknown	Number of received cells discarded during cell header validation, including cells with unrecognized VPI/VCI values, and cells with invalid cell header patterns. If cells with undefined PTI values are discarded, they are also counted here.
In Hec Errors	Number of cells received with an ATM Cell Header HEX error
In Invalid Vpi Vci Errors	Number of cells received with an unregistered VCC address.
In Port Not Enabled Errors	Number of cells received on a port that has not been enabled.
In PTI Errors	Number of cells received with an ATM header Payload Type Indicator (PTI) error
In Idle Cells	Number of idle cells received
In Circuit Type Errors	Number of cells received with an illegal circuit type
In Oam RM CRC Errors	Number of OAM and RM cells received with CRC errors
In GFC Errors	Number of cells received with a non-zero GFC.

### ATM AAL5 Layer Statistics over ADSL interface

Field	Description
In Octets	Number of received AAL5/AAL0 CPCS PDU octets
Out Octets	Number of received AAL5/AAL0 CPCS PDUs octets transmitted
In Ucast Pkts	Number of received AAL5/AAL0 CPCS PDUs passed to a higher-layer for transmission
Out Ucast Pkts	Number of received AAL5/AAL0 CPCS PDUs received from a higher layer for transmissions
In Errors	Number of received AAL5/AAL0 CPCS PDUs received that contain an error. The types of errors counted include CRC-32 errors.
Out Errors	Number of received AAL5/AAL0 CPCS PDUs that could be transmitted due to errors.
In Discards	Number of received AAL5/AAL0 CPCS PDUs discarded due to an input buffer overflow condition.
Out Discards	This field is not currently used

### ATM AAL5 LAYER STATISTICS FOR EACH VCC OVER ADSL INTERFACE

Field	Descriptions
CRC Errors	Number of PDUs received with CRC-32 errors
SAR TimeOuts	Number of partially re-assembled PDUs, which were discarded because they were not fully re-assembled within the required period of time. If the re-assembly time is not supported then, this object contains a zero value.
Over Sized SDUs	Number of PDUs discarded because the corresponding SDU was too large
Short Packets Errors	Number of PDUs discarded because the PDU length was less than the size of the AAL5 trailer
Length Errors	Number of PDUs discarded because the PDU length did not match the length in the AAL5 trailer

#### 4.2.4 ADSL Statistics

The following figure shows the ADSL Network Statistics screen. Within the ADSL Statistics window, a bit Error Rate Test can be started using the ADSL BER Test button. The Reset button resets the statistics.

**COMTREND ADSL Router**

**Statistics -- ADSL**

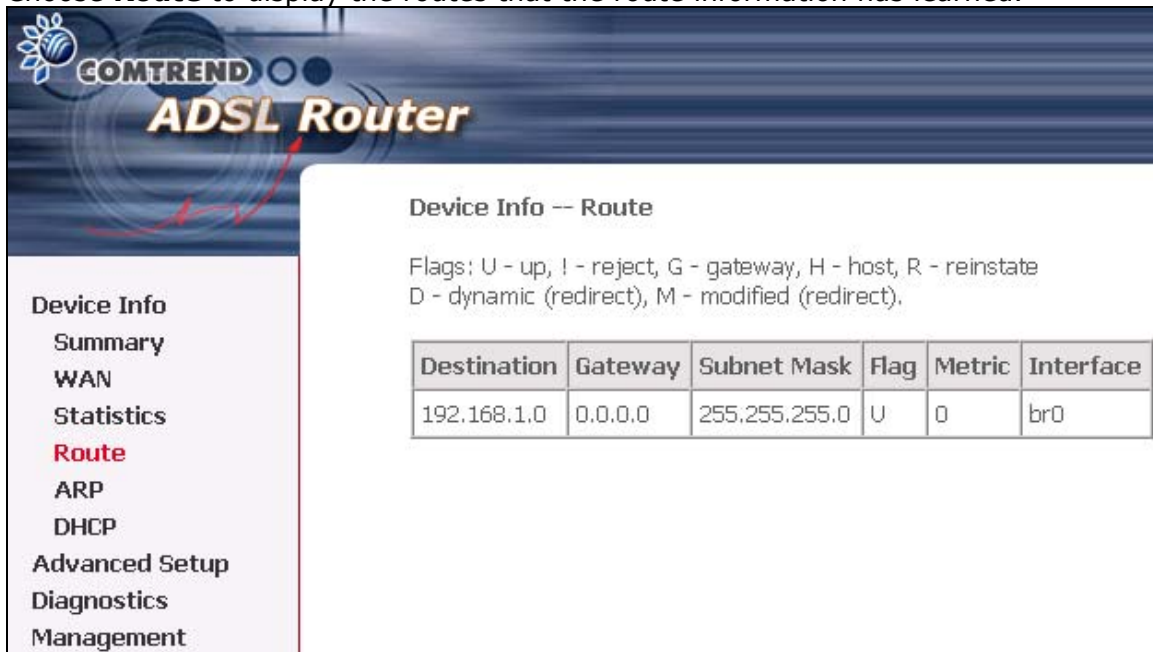
Mode:		
Type:		
Line Coding:		
Status:		Link Down
Link Power State:		LO
	Downstream	Upstream
SNR Margin (dB):		
Attenuation (dB):		
Output Power (dBm):		
Attainable Rate (Kbps):		
Rate (Kbps):		
Super Frames:		
Super Frame Errors:		
RS Words:		
RS Correctable Errors:		
RS Uncorrectable Errors:		
HEC Errors:		
OCD Errors:		
LCD Errors:		
Total Cells:		N/A
Data Cells:		N/A
Bit Errors:		N/A
Total ES:		
Total SES:		
Total UAS:		

ADSL BER Test    Reset Statistics

<b>Field</b>	<b>Description</b>
Mode	Modulation protocol G.dmt, G.lite, T1.413, ADSL2, ADSL2+
Type	Channel type Interleave or Fast
Line Coding	Trellis On/Off
Status	Lists the status of the DSL link
Link Power State	Link output power state.
SNR Margin (dB)	Signal to Noise Ratio (SNR) margin
Attenuation (dB)	Estimate of average loop attenuation in the downstream direction.
Output Power (dBm)	Total upstream output power
Attainable Rate (Kbps)	The sync rate you would obtain.
Rate (Kbps)	Current sync rate.
Super Frames	Total number of super frames
Super Frame Errors	Number of super frames received with errors
RS Words	Total number of Reed-Solomon code errors
RS Correctable Errors	Total Number of RS with correctable errors
RS Uncorrectable Errors	Total Number of RS words with uncorrectable errors
HEC Errors	Total Number of Header Error Checksum errors
OCD Errors	Total Number of out-of-cell Delineation errors
LCD Errors	Total number of Loss of Cell Delineation
Total ES:	Total Number of Errored Seconds
Total SES:	Total Number of Severely Errored Seconds
Total UAS:	Total Number of Unavailable Seconds

#### 4.2.5 Route

Choose **Route** to display the routes that the route information has learned.

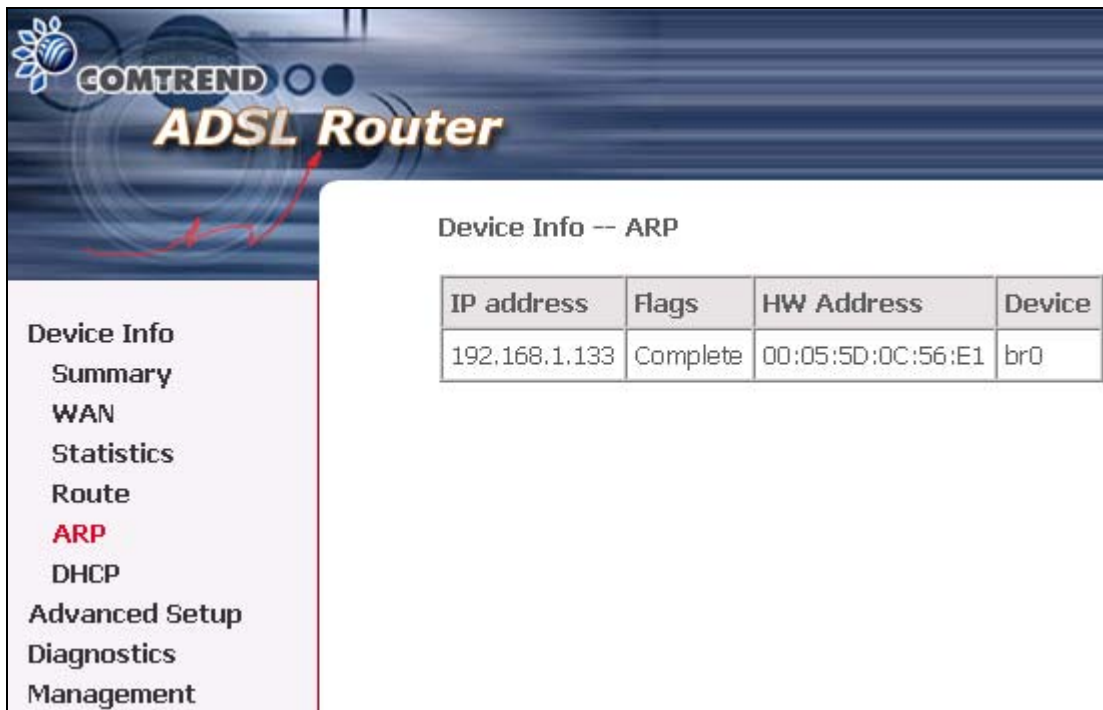


The screenshot shows the COMTREND ADSL Router web interface. The left sidebar contains a menu with the following items: Device Info, Summary, WAN, Statistics, **Route** (highlighted in red), ARP, DHCP, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- Route". Below the title, there is a legend for flags: U - up, I - reject, G - gateway, H - host, R - reinstate, D - dynamic (redirect), M - modified (redirect). Below the legend is a table with the following data:

Destination	Gateway	Subnet Mask	Flag	Metric	Interface
192.168.1.0	0.0.0.0	255.255.255.0	U	0	br0

#### 4.2.6 ARP

Click **ARP** to display the ARP information.



The screenshot shows the COMTREND ADSL Router web interface. The left sidebar contains a menu with the following items: Device Info, Summary, WAN, Statistics, Route, **ARP** (highlighted in red), DHCP, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- ARP". Below the title is a table with the following data:

IP address	Flags	HW Address	Device
192.168.1.133	Complete	00:05:5D:0C:56:E1	br0

## 4.2.7 DHCP

Click DHCP to display the DHCP information.



The image shows the web interface of a COMTREND ADSL Router. The header features the COMTREND logo and the text "ADSL Router". On the left is a navigation menu with the following items: Device Info, Summary, WAN, Statistics, Route, ARP, DHCP (highlighted in red), Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- DHCP Leases" and contains a table with the following data:

Hostname	MAC Address	IP Address	Expires In
trevor-owens	00:30:DA:5B:79:07	192.168.1.2	2 hours, 58 minutes, 9 seconds

## Chapter 5 Quick Setup

The Quick Setup allows the user to configure the ADSL router for DSL connectivity and Internet access. It also guides the user through the WAN network setup first and then the LAN interface setup. You can either manually customize the router or follow the online instruction to set up the router.

The CT-5611 ADSL router supports the following five network operating modes over an ATM PVC WAN interface.

PPP over Ethernet (PPPoE)

PPP over ATM (PPPoA)

MAC Encapsulated Routing (MER)

IP over ATM (IPoA)

Bridging

The following configuration considerations apply:

The WAN network operating mode operation depends on the service provider's configuration on the Central Office side and Broadband Access Server for the PVC. If the service provider provides PPPoE service, then the connection selection depends on whether the LAN-side device (typically a PC) is running a PPPoE client or whether the CT-5611 is to run the PPPoE client. The CT-5611 can support both cases simultaneously.

If some or none of the LAN-side devices do not run PPPoE client, then select PPPoE.

If every LAN-side device is running a PPPoE client, then select Bridge In PPPoE mode. CT-5611 also supports pass-through PPPoE sessions from the LAN side while simultaneously running a PPPoE client from non-PPPoE LAN devices.

NAPT and firewall are always enabled when PPPoE mode is selected, but they can be enabled or disabled by the user when MER or IPoA is selected, NAPT and firewall are always disabled when Bridge mode is selected.

Depending on the network operating mode, and whether NAPT and firewall are enabled or disabled, the main panel will display or hide the NAPT/Firewall menu. For instance, at initial setup, the default network operating mode is Bridge. The main panel will not show the NAPT and Firewall menu.

**Note:** Up to eight PVC profiles can be configured and saved on the flash memory. To activate a particular PVC profile, you need to navigate all the Quick Setup pages until the last summary page, then click on the Finish button and reboot the system.



## 5.1 Auto Quick Setup

The auto quick setup requires the ADSL link to be up. The ADSL router will automatically detect the PVC. You only need to follow the online instructions that you are prompted.

1. Select Quick Setup to display the DSL Quick Setup screen.

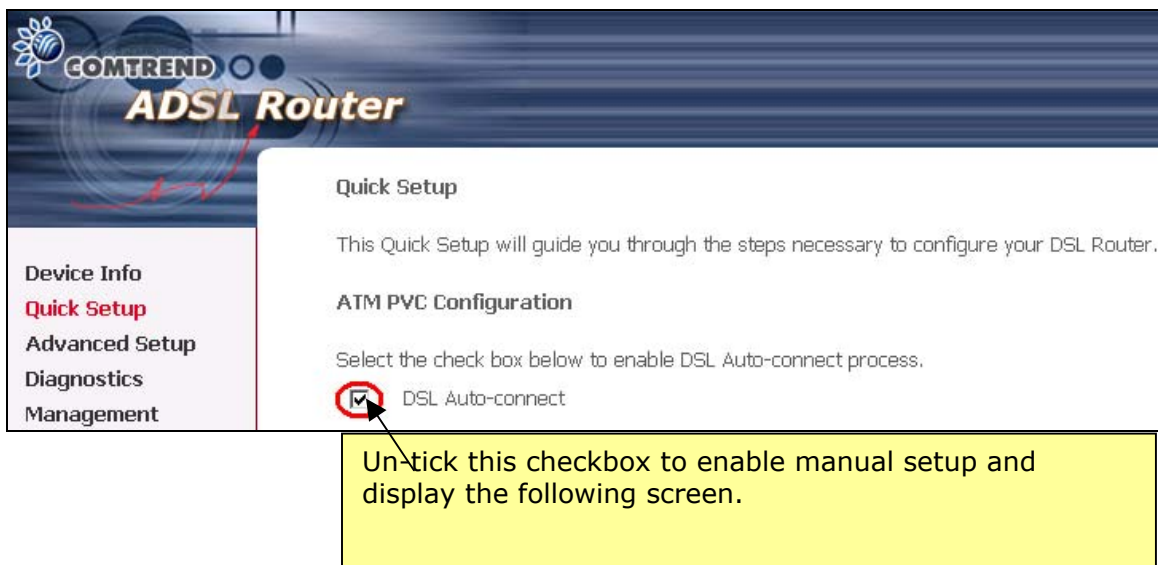


2. Click Next to start the setup process. Follow the online instructions to complete the setting. This procedure will skip some processes like PVC index, or encapsulation.

3. After the settings are complete, you can use the ADSL service.

## 5.2 Manual Quick Setup

STEP 1: Click Quick Setup and un-tick the DSL Auto-connect checkbox to enable manual configuration of the connection type.



**Quick Setup**

This Quick Setup will guide you through the steps necessary to configure your DSL Router.

**ATM PVC Configuration**

Select the check box below to enable DSL Auto-connect process.

☐ DSL Auto-connect

The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless your ISP instructs you otherwise.

VPI: [0-255]

VCI: [32-65535]

**STEP 2:** Enter the Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI). Select Enable Quality Of Service if required. Click Next.

**STEP 3:** Then, choose the Encapsulation mode.

**COMTREND ADSL Router**

**Device Info**  
Quick Setup  
Advanced Setup  
Diagnostics  
Management

**Connection Type**

Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use. Note that 802.1q VLAN tagging is only available for PPPoE, MER and Bridging.

☐ PPP over ATM (PPPoA)

☐ PPP over Ethernet (PPPoE)

☐ MAC Encapsulation Routing (MER)

☐ IP over ATM (IPoA)

☒ Bridging

**Encapsulation Mode**

**STEP 4:** Click Next to display the following screen. Choosing different connection types pops up different settings requests. Enter appropriate settings that are requested by your service provider. The following descriptions state each connection type setup separately.

- PPP over ATM (PPPoA) and PPP over Ethernet (PPPoE)
1. Select the **PPP over ATM (PPPoA)** or **PPP over Ethernet (PPPoE)** radio button and click **Next**. The following screen appears:

The screenshot shows the 'PPP Username and Password' configuration page of a COMTREND ADSL Router. The page has a blue header with the COMTREND logo and 'ADSL Router' text. On the left, there is a vertical menu with options: 'Device Info', 'Quick Setup', 'Advanced Setup', 'Diagnostics', and 'Management'. The main content area is white and contains the following fields and options:

- PPP Username and Password** (Section Header)
- Text: 'PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.'
- Form fields:
  - PPP Username: [Text Input]
  - PPP Password: [Text Input]
  - PPPoE Service Name: [Text Input]
  - Authentication Method: [Dropdown Menu showing 'AUTO']
- Checkboxes:
  - ☐ Dial on demand (with idle timeout timer)
  - ☐ PPP IP extension
  - ☐ Use Static IP Address
- MTU: [Text Input showing '1492']
- Buttons: 'Back' and 'Next' at the bottom right.

## PPP USERNAME/PPP PASSWORD

The PPP Username and the PPP password requirement are dependent on the particular requirements of the ISP or the ADSL service provider. The WEB user interface allows a maximum of 256 characters in the PPP user name and a maximum of 32 characters in PPP password.

### Authentication Method

Choose from AUTO, PAP, CHAP and MSCHAP.

### Encapsulation Mode

Choosing different connection types provides different encapsulation modes.

- PPPoA- VC/MUX, LLC/ENCAPSULATION
- PPPoE- LLC/SNAP BRIDGING, VC/MUX
- MER- LLC/SNAP-BRIDGING, VC/MUX
- IPoA- LLC/SNAP-ROUTING, VC MUX
- Bridging- LLC/SNAP-BRIDGING, VC/MUX

## Disconnect if no activity

The CT-5611 can be configured to disconnect if there is no activity for a period of time by selecting the **Dial on demand** check box. When the checkbox is ticked, you need to enter the inactivity timeout period. The timeout period ranges from 1 minute to 4320 minutes.

☒ Dial on demand (with idle timeout timer)

Inactivity Timeout (minutes) [1-4320]:

## PPP IP Extension

The PPP IP Extension is a special feature deployed by some service providers. Unless your service provider specially requires this setup, do not select it. The PPP IP Extension supports the following conditions:

- Allows only one PC on the LAN
- The public IP address assigned by the remote side using the PPP/IPCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the PC's LAN interface through DHCP. Only one PC on the LAN can be connected to the remote, since the DHCP server within the ADSL router has a single IP address to assign to a LAN device.
- NAPT and firewall are disabled when this option is selected.
- The ADSL router becomes the default gateway and DNS server to the PC through DHCP using the LAN interface IP address.
- The ADSL router extends the IP subnet at the remote service provider to the LAN PC. That is, the PC becomes a host belonging to the same IP subnet.
- The ADSL router bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the router's LAN IP address.

## Use Static IP Address

Unless your service provider specially requires this setup, do not select it. If selected, enter your static IP address.

## MTU

This option allows us to change the MTU size for WAN interface, PPPoE and PPPoA. The default value is 1492 for PPPoE and 1500 for PPPoA.

2. Click **Next** to display the screen below.

**Enable IGMP Multicast checkbox:** Tick the checkbox to enable IGMP multicast (proxy). IGMP (Internet Group Membership Protocol) is a protocol used by IP hosts to report their multicast group memberships to any immediately neighboring multicast routers.

**Enable WAN Service checkbox:** Tick this item to enable the ATM service. Untick it to stop the ATM service.

**Service Name:** This is user-defined.

COMTREND  
**ADSL Router**

Device Info  
Quick Setup  
Advanced Setup  
Diagnostics  
Management

Enable IGMP Multicast, and WAN Service

Enable IGMP Multicast ☐

Enable WAN Service ☒

Service Name

Back Next

3. After entering your settings, select **Next**. The following screen appears. This page allows the user to configure the LAN interface IP address, subnet mask and DHCP server. If the user would like this ADSL router to assign dynamic IP address, DNS server and default gateways to other LAN devices, select the button **Enable DHCP server on the LAN** to enter the starting IP address and end IP address and DHCP leased time.

**COMTREND**  
**ADSL Router**

**Device Info**  
**Quick Setup**  
**Advanced Setup**  
**Diagnostics**  
**Management**

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface

IP Address: 192.168.1.1  
Subnet Mask: 255.255.255.0

☐ Disable DHCP Server  
☒ Enable DHCP Server

Start IP Address: 192.168.1.2  
End IP Address: 192.168.1.254  
Leased Time (hour): 24


☐ Configure the second IP Address and Subnet Mask for LAN interface

Back Next

The Device Setup page allows the user to configure the LAN interface IP address and DHCP server. If the user would like this ADSL router to assign dynamic IP addresses, DNS server and default gateway to other LAN devices, select the radio box **Enable DHCP server on the LAN** to enter the starting IP address and end IP address and DHCP lease time. This configures the router to automatically assign IP addresses, default gateway address and DNS server addresses to each of your PCs.

Select **Enable DHCP Server Relay** (if required), and enter the DHCP Server IP Address.

4. Click **Next** to display the WAN Setup-Summary screen that presents the entire configuration summary. Click **Save/Reboot** if the settings are correct. Click **Back** if you wish to modify the settings.



Device Info

Quick Setup

Advanced Setup

Diagnostics

Management

### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	PPPoE
Service Name:	pppoe_0_35_1
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

Back

Save/Reboot

5. After clicking **Save/Reboot**, the router will save the configuration to the flash memory, and reboot. The Web UI will not respond until the system is brought up again. After the system is up, the Web UI will refresh to the Device Info page automatically. The CT-5611 is ready for operation and the LEDs display as described in the LED description tables.

- MAC Encapsulation Routing (MER)

To configure MER, do the following.

1. Select **Quick Setup** and click **Next**.
2. Enter the PVC Index provided by the ISP and click **Next** and click **Next**
3. Select the MAC Encapsulation Routing (MER) radio button, and click **Next**. The following screen appears.

**COMTREND ADSL Router**

**Device Info**  
**Quick Setup**  
**Advanced Setup**  
**Diagnostics**  
**Management**

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.  
 Notice: DHCP can be enabled for PVC in MER mode if "Obtain an IP address automatically" is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN 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 WAN interface" is optional.

☒ Obtain an IP address automatically  
☐ Use the following IP address:  
 WAN IP Address:   
 WAN Subnet Mask:

☒ Obtain default gateway automatically  
☐ Use the following default gateway:  
☐ Use IP Address:   
☐ Use WAN Interface: mer\_0\_35/nas\_0\_35

☒ Obtain DNS server addresses automatically  
☐ Use the following DNS server addresses:  
 Primary DNS server:   
 Secondary DNS server:

Back Next

Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP Client can be enabled for PVC in MER mode if **Obtain an IP address automatically** is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN 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 WAN interface" is optional.

The ISP should provide the values that must be entered in the entry fields.



4. Click **Next** to display the following screen appears.

The screenshot shows the 'Network Address Translation Settings' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Device Info', 'Quick Setup', 'Advanced Setup', 'Diagnostics', and 'Management'. The main content area has a title 'Network Address Translation Settings' and a descriptive paragraph: 'Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN)'. Below this are three checkboxes: 'Enable NAT' (checked), 'Enable Firewall' (checked), and 'Enable IGMP Multicast, and WAN Service'. Under the last checkbox, there are two more checkboxes: 'Enable IGMP Multicast' (unchecked) and 'Enable WAN Service' (checked). A 'Service Name' field contains the text 'mer\_0\_35'. At the bottom right are 'Back' and 'Next' buttons.

**Enable NAT checkbox:** If the LAN is configured with a private IP address, the user should select this checkbox. The NAT submenu on the left side main panel will be displayed after reboot. The user can then configure NAT-related features after the system comes up. If a private IP address is not used on the LAN side (i.e the LAN side is using a public IP), this checkbox should be de-selected. When the system comes back after reboot, the NAT submenu will not be displayed on the left main panel. The default setting for Mer is enabled.

**Enable Firewall checkbox:** If the firewall checkbox is selected, the security submenu on the left side main panel will be displayed after system reboot. The user can then configure firewall features after the system comes up. If firewall is not used, this checkbox should be de-selected to free up system resources for better performance. When system comes back after reboot, the Security submenu will not be displayed on the left main panel. The default setting for Mer is enabled.

**Enable IGMP Multicast:** Tick the checkbox to enable IGMP multicast (proxy). IGMP (Internet Group Membership Protocol) is a protocol used by IP hosts to report their multicast group memberships to any immediately neighboring multicast routers.

**Enable WAN Service:** Tick the checkbox to enable the WAN (ADSL) service. If this item is not selected, you will not be able to use the ADSL service.

**Service Name:** This is User-defined.

5. Upon completion, click **Next**. The following screen appears.

**COMTREND ADSL Router**

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

☐ Disable DHCP Server  
☒ Enable DHCP Server

Start IP Address:

End IP Address:

Leased Time (hour):

☐ Enable DHCP Server Relay  
 DHCP Server IP Address:

☐ Configure the second IP Address and Subnet Mask for LAN interface

Back Next

**Note:** If the NAT function is enabled, this DHCP Server Relay won't be displayed as an option.

The Device Setup page allows the user to configure the LAN interface IP address and DHCP server. If the user would like this ADSL router to assign dynamic IP addresses, DNS server and default gateway to other LAN devices, select the radio box **Enable DHCP server on the LAN** to enter the starting IP address and end IP address and DHCP lease time. This configures the router to automatically assign IP addresses, default gateway address and DNS server addresses to each of your PCs.

Note that the router's default IP address is 192.168.1.1 and the default private address range provided by the ISP server in the router is 192.168.1.2 through 192.168.1.254.

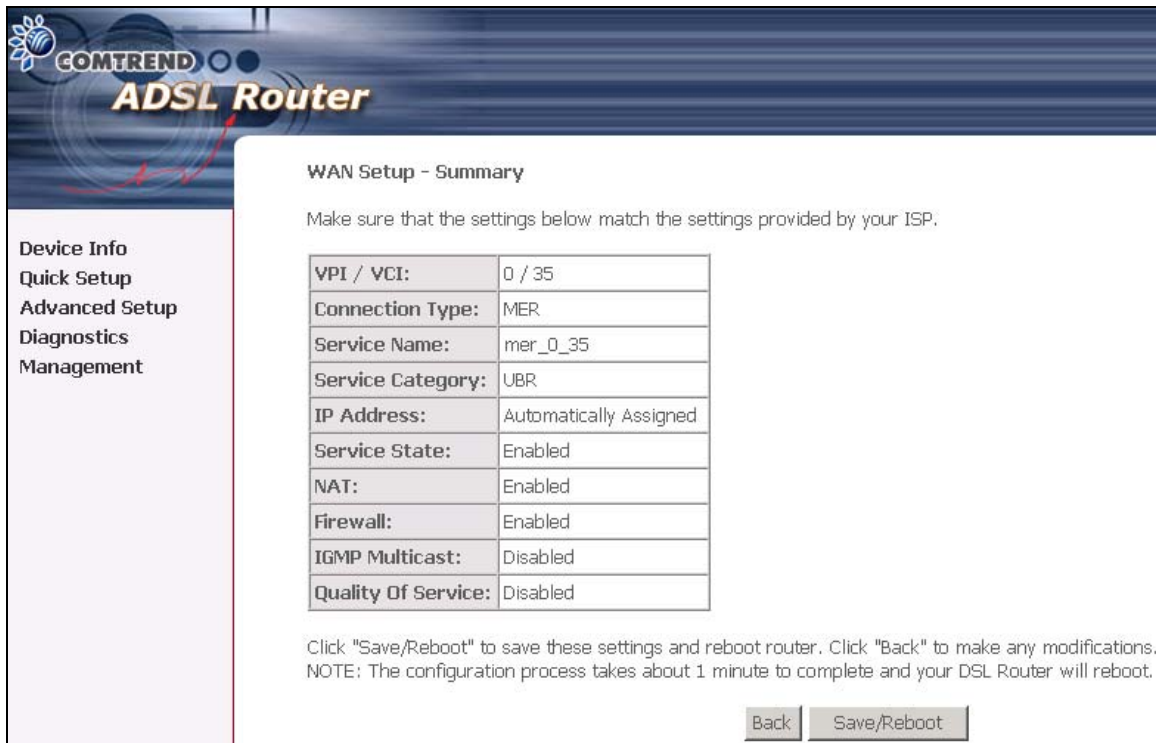
Select **Enable DHCP Server Relay** (if required), and enter the DHCP Server IP Address.

**Note:** Ethernet and USB interfaces (and the wireless LAN interface on the CT-5611) share the same subnet since they are bridged within the router.

If the NAT function is enabled, this DHCP Server Relay won't be displayed as an option.

- After entering your settings, select **Next** to display the following screen. The WAN Setup-Summary screen presents the entire configuration summary. Click **Save/Reboot** if the settings are correct. Click **Back** if you wish to modify the settings.

The following screen will be displayed.



**COMTREND ADSL Router**

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	MER
Service Name:	mer_0_35
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

After clicking **Save/Reboot**, the router will save the configuration to the flash memory, and reboot. The Web UI will not respond until the system is brought up again. After the system is up, the Web UI will refresh to the Device Info page automatically. The CT-5611 is ready for operation and the LEDs display as described in the LED description tables.

- IP Over ATM

To configure IP Over ATM,

1. Select **Quick Setup** and click **Next**.
2. Enter the PVC Index and click **Next**.
3. Type the VPI and VCI values provided by the ISP and click **Next**.
4. Select the IP over ATM (IPoA) radio button and click **Next**. The following screen appears.

The screenshot shows the 'WAN IP Settings' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Device Info', 'Quick Setup', 'Advanced Setup', 'Diagnostics', and 'Management'. The main content area has a title 'WAN IP Settings' and a subtitle 'Enter information provided to you by your ISP to configure the WAN IP settings.' Below this is a notice: 'Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.' The form includes fields for 'WAN IP Address' (0.0.0.0) and 'WAN Subnet Mask' (0.0.0.0). There are two main sections: 'Use the following default gateway:' with sub-options for 'Use IP Address' and 'Use WAN Interface' (selected, showing 'ipoa\_0\_35/ipa\_0\_35'), and 'Use the following DNS server addresses:' with fields for 'Primary DNS server' and 'Secondary DNS server'. At the bottom right are 'Back' and 'Next' buttons.

Notice that DHCP is not supported over IPoA. The user must enter the IP address or WAN interface for the default gateway setup, and the DNS server addresses provided by the ISP.

5. Click **Next**. The following screen appears.

The screenshot shows the 'Network Address Translation Settings' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Device Info', 'Summary', 'WAN', 'Statistics', 'Route', 'ARP', 'DHCP', 'Quick Setup', 'Advanced Setup', 'Diagnostics', and 'Management'. The main content area has a title 'Network Address Translation Settings' and a subtitle 'Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).' The form includes checkboxes for 'Enable NAT' (checked), 'Enable Firewall' (checked), and 'Enable IGMP Multicast, and WAN Service'. Below this are checkboxes for 'Enable IGMP Multicast' (unchecked) and 'Enable WAN Service' (checked). There is a 'Service Name' field with the value 'ipoa\_0\_35'. At the bottom right are 'Back' and 'Next' buttons.

### Enable NAT checkbox

If the LAN is configured with a private IP address, the user should select this checkbox. The NAT submenu on the left side main panel will be displayed after reboot. The user can then configure NAT-related features after the system comes up. If a private IP address is not used on the LAN side (i.e the LAN side is using a public IP), this checkbox should be de-selected. When the system comes back after reboot, the NAT submenu will not be displayed on the left main panel. The default setting for Mer is enabled.

### Enable Firewall checkbox

If the firewall checkbox is selected, the security submenu on the left side main panel will be displayed after system reboot. The user can then configure firewall features after the system comes up. If firewall is not used, this checkbox should be de-selected to free up system resources for better performance. When system comes back after reboot, the Security submenu will not be displayed on the left main panel. The default setting for Mer is enabled.

### Enable Quality Of Service

Enabling IP QoS for a PVC improves performance for selected classes of applications. However, since IP QoS also consumes system resources, the number of PVCs will be reduced consequently. Use **Advanced Setup/Quality of Service** to assign priorities for the applications.

6. Click **Next** to display the following screen. The Device Setup page allows the user to configure the LAN interface IP address and DHCP server if the user would like this ADSL router to assign dynamic IP addresses, DNS server and default gateway to other LAN devices. Select the button Enable DHCP server on the LAN to enter the starting IP address and end IP address and DHCP lease time.

**COMTREND ADSL Router**

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

☐ Disable DHCP Server

☒ Enable DHCP Server

Start IP Address:

End IP Address:

Leased Time (hour):

☐ Configure the second IP Address and Subnet Mask for LAN interface

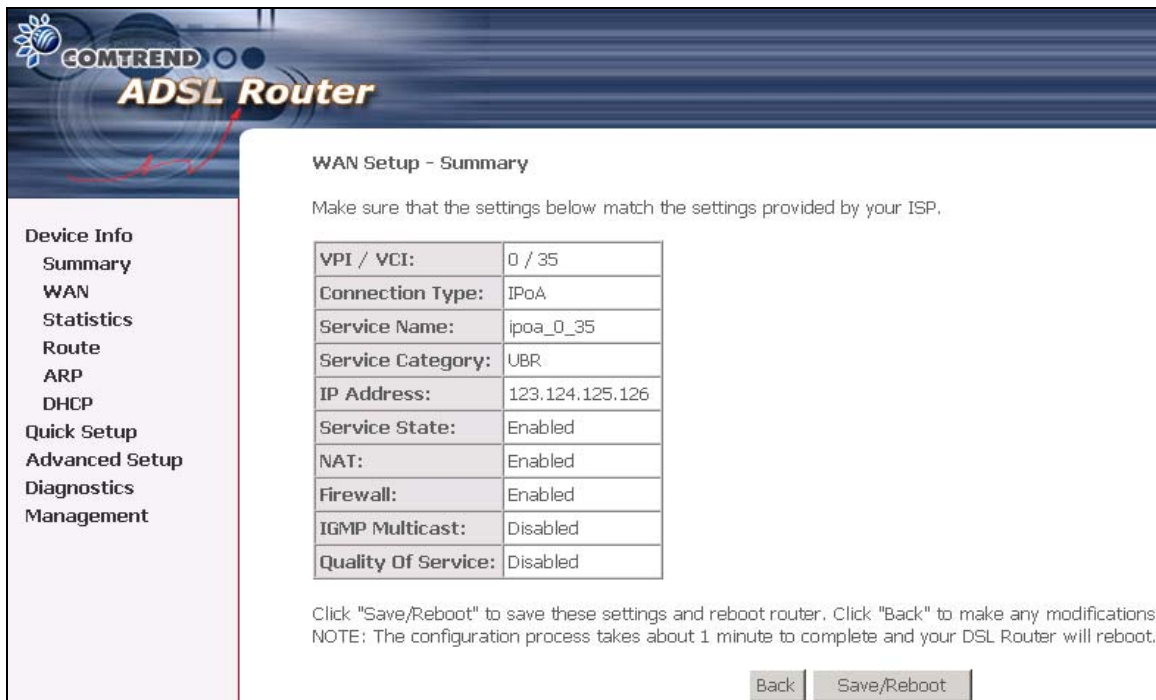
The user must configure the IP Address and the Subnet Mask. To use the DHCP service on the LAN, select the **Enable DHCP server** checkbox, and enter the Start IP addresses, the End IP address and DHCP lease time. This configures the router to automatically assign IP addresses, default gateway address and DNS server addresses to each of your PCs.

Select **Enable DHCP Server Relay** (if required), and enter the DHCP Server IP Address.

Note that the router's default IP address is 192.168.1.1 and the default private address range provided by ISP server in the router is 192.168.1.2 through 192.168.1.254.

7. The WAN Setup-Summary screen presents the entire configuration summary. Click **Save/Reboot** if the settings are correct. Click **Back** if you wish to modify the settings.

The following screen will be displayed.



**COMTREND ADSL Router**

**Device Info**  
Summary  
WAN  
Statistics  
Route  
ARP  
DHCP  
Quick Setup  
Advanced Setup  
Diagnostics  
Management

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	IPoA
Service Name:	ipoa_0_35
Service Category:	UBR
IP Address:	123.124.125.126
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

9. After clicking **Save/Reboot**, the router will save the configuration to the flash memory, and reboot. The Web UI will not respond until the system is brought up again. After the system is up, the Web UI will refresh to the Device Info page automatically. The CT-5611 is ready for operation and the LEDs display as described in the LED description tables.

- Bridging

Select the bridging mode. To configure Bridging, do the following.

1. Select Quick Setup and click **Next**.
2. Enter the PVC Index and click **Next**.
3. Type in the VPI and VCI values provided by the ISP and click Next.
4. Select the Bridging radio button and click **Next**. The following screen appears. To use the bridge service, tick the checkbox, Enable Bridge Service, and enter the service name.

The screenshot shows the 'COMTREND ADSL Router' configuration interface. On the left is a sidebar with navigation links: 'Device Info', 'Quick Setup', 'Advanced Setup', 'Diagnostics', and 'Management'. The main content area has a title 'Unselect the check box below to disable this WAN service'. Below this, there is a checkbox labeled 'Enable Bridge Service:' which is checked. Next to it is a text input field labeled 'Service Name:' containing the text 'br\_0\_35'. At the bottom right of the main area are 'Back' and 'Next' buttons.

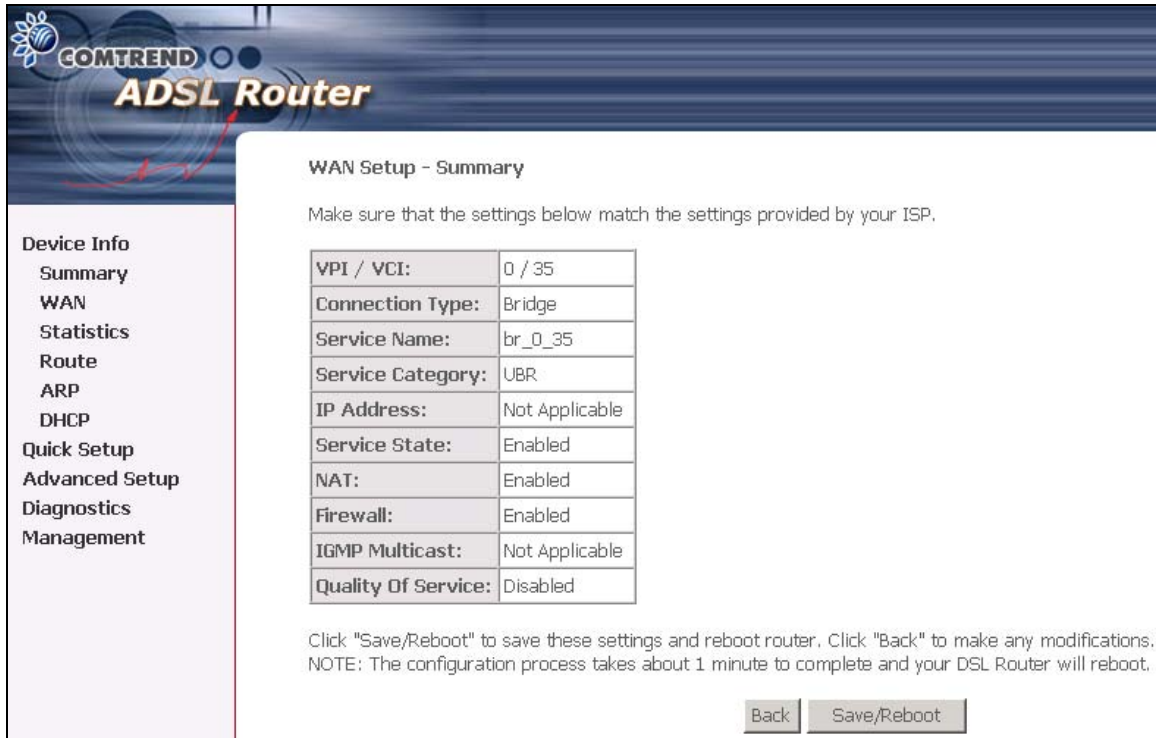
5. Click the **Next** button to continue. Enter the IP address for the LAN interface. The default IP address is 192.168.1.1. The LAN IP interface in bridge operating mode is needed for local users to manage the ADSL router. Notice that there is no IP address for the WAN interface in bridge mode, and the remote technical support cannot access the ADSL router.

The screenshot shows the 'COMTREND ADSL Router' configuration interface at the 'Device Setup' step. The sidebar on the left is the same as in the previous screenshot. The main content area has a title 'Device Setup' and a subtitle 'Configure the DSL Router IP Address and Subnet Mask for your Local Area Network (LAN)'. Below this, there are two text input fields: 'IP Address:' with the value '192.168.1.1' and 'Subnet Mask:' with the value '255.255.255.0'. At the bottom right of the main area are 'Back' and 'Next' buttons.



6. Click the **Next** button

The following screen will be displayed.



**COMTREND ADSL Router**

**Device Info**

- Summary
- WAN**
- Statistics
- Route
- ARP
- DHCP
- Quick Setup
- Advanced Setup
- Diagnostics
- Management

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	Bridge
Service Name:	br_0_35
Service Category:	UBR
IP Address:	Not Applicable
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Not Applicable
Quality Of Service:	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

The WAN Setup-Summary screen presents the entire configuration summary. Click **Save/Reboot** if the settings are correct. Click **Back** if you wish to modify the settings.



## Chapter 6 Advanced Setup

This chapter explains: WAN, LAN, Routing, DSL and Port Mapping.....

The screenshot shows the 'Wide Area Network (WAN) Setup' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Advanced Setup' highlighted, and sub-items for WAN, LAN, Routing, DSL, Port Mapping, Diagnostics, and Management. The main content area has instructions to 'Choose Add, Edit, or Remove to configure WAN interfaces' and 'Choose Save/Reboot to apply the changes and reboot the system.' Below this is a table with columns: VPI/VCI, Con. ID, Category, Service, Interface, Protocol, Igmp, QoS, State, Remove, and Edit. At the bottom right are buttons for 'Add', 'Remove', and 'Save/Reboot'.

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Remove	Edit
---------	---------	----------	---------	-----------	----------	------	-----	-------	--------	------

Add Remove Save/Reboot

VPI/VCI	ATM VPI (0-255) / VCI (32-65535)
Con. ID	ID for WAN connection
Category	ATM service category, e.g. UBR, CBR...
Service	Name of the WAN connection
Interface	Name of the interface for WAN
Protocol	Shows bridge or router mode
IGMP	Shows enable or disable IGMP proxy
QoS	Shows enable or disable IGMP QoS
State	Shows enable or disable WAN connection

### 6.1 WAN

This screenshot is identical to the one above, showing the 'Wide Area Network (WAN) Setup' page. The difference is in the left sidebar, where 'WAN' is now highlighted under the 'Advanced Setup' section, and 'LAN' is no longer highlighted.

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Remove	Edit
---------	---------	----------	---------	-----------	----------	------	-----	-------	--------	------

Add Remove Save/Reboot

For further information on WAN please refer to section: 4.1, Page 21.

## 6.2 LAN

Configure the DSL Router IP Address and Subnet Mask for LAN interface. Save button only saves the LAN configuration data. Save/Reboot button saves the LAN configuration data and reboots the router to make the new configuration effective.

**IP Address:** Enter the IP address for the LAN port.

**Subnet Mask:** Enter the subnet mask for the LAN port.

COMTREND ADSL Router

Local Area Network (LAN) Setup

Configure the DSL Router IP Address and Subnet Mask for LAN interface. Save button only saves the LAN configuration data. Save/Reboot button saves the LAN configuration data and reboots the router to make the new configuration effective.

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

☐ Enable IGMP Snooping

☐ Disable DHCP Server

☒ Enable DHCP Server

Start IP Address: 192.168.1.2

End IP Address: 192.168.1.254

Leased Time (hour): 24

☐ Enable DHCP Server Relay

DHCP Server IP Address:

☐ Configure the second IP Address and Subnet Mask for LAN interface

Save Save/Reboot

To configure a secondary IP address for the LAN port, click the box as shown below.

☒ Configure the second IP Address and Subnet Mask for LAN interface

IP Address:

Subnet Mask:

Save Save/Reboot

**IP Address:** Enter the secondary IP address for the LAN port.

**Subnet Mask:** Enter the secondary subnet mask for the LAN port.

## 6.3 NAT

To display the NAT function, you need to enable the NAT feature in the WAN Setup.

### 6.3.1 Virtual Servers

Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.



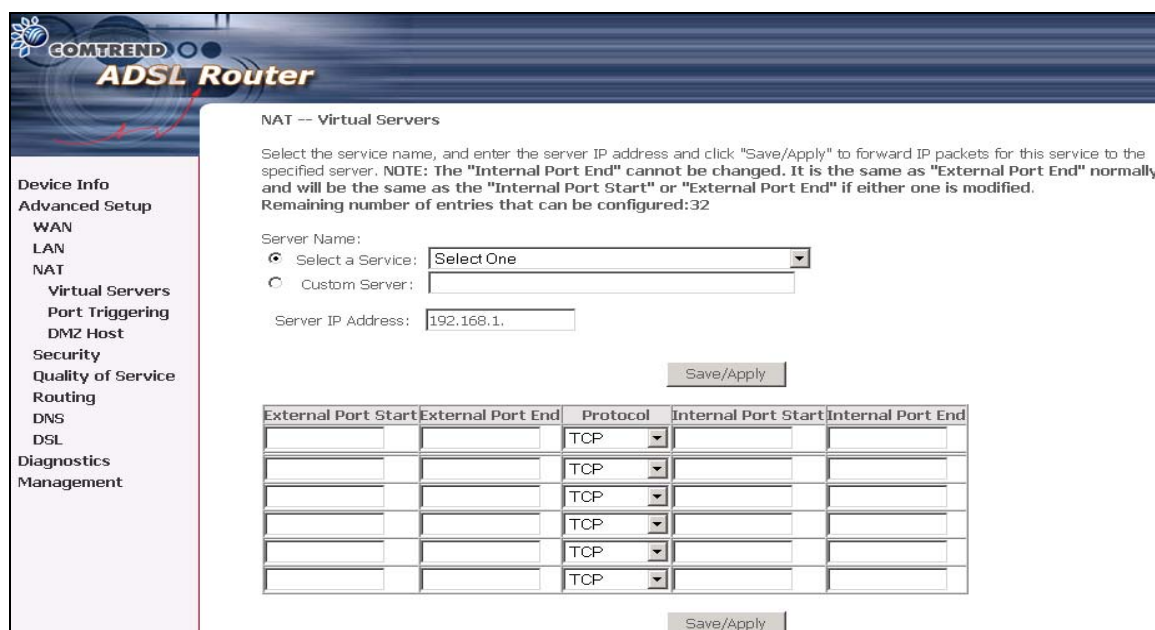
**COMTREND ADSL Router**

**NAT -- Virtual Servers Setup**

Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.

Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	Remove
-------------	---------------------	-------------------	----------	---------------------	-------------------	-------------------	--------

To add a Virtual Server, simply click the Add button. The following will be displayed.



**COMTREND ADSL Router**

**NAT -- Virtual Servers**

Select the service name, and enter the server IP address and click "Save/Apply" to forward IP packets for this service to the specified server. NOTE: The "Internal Port End" cannot be changed. It is the same as "External Port End" normally and will be the same as the "Internal Port Start" or "External Port End" if either one is modified. Remaining number of entries that can be configured:32

Server Name:

☒ Select a Service:

☐ Custom Server:

Server IP Address:

External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>

Select a Service Or Custom Server	User should select the service from the list. Or User can enter the name of their choice.
Server IP Address	Enter the IP address for the server.
External Port Start	Enter the starting external port number (when you select Custom Server). When a service is selected the port ranges are automatically configured.
External Port End	Enter the ending external port number (when you select Custom Server). When a service is selected the port ranges are automatically configured.
Protocol	User can select from: TCP, TCP/UDP or UDP.
Internal Port Start	Enter the internal port starting number (when you select Custom Server). When a service is selected the port ranges are automatically configured
Internal Port End	Enter the internal port ending number (when you select Custom Server). When a service is selected the port ranges are automatically configured.

### 6.3.2 Port Triggering

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. 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'. A maximum 32 entries can be configured.

**COMTREND ADSL Router**

**NAT -- Port Triggering Setup**

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. 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'. A maximum 32 entries can be configured.

Application	Trigger		Open		Remove
Name	Protocol	Port Range	Protocol	Port Range	
		Start End		Start End	

To add a Trigger Port, simply click the Add button. The following will be displayed.

**COMTREND ADSL Router**

**NAT -- 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. 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.  
 Remaining number of entries that can be configured: 32

Application Name:

☒ Select an application: Select One

☐ Custom application:

Save/Apply

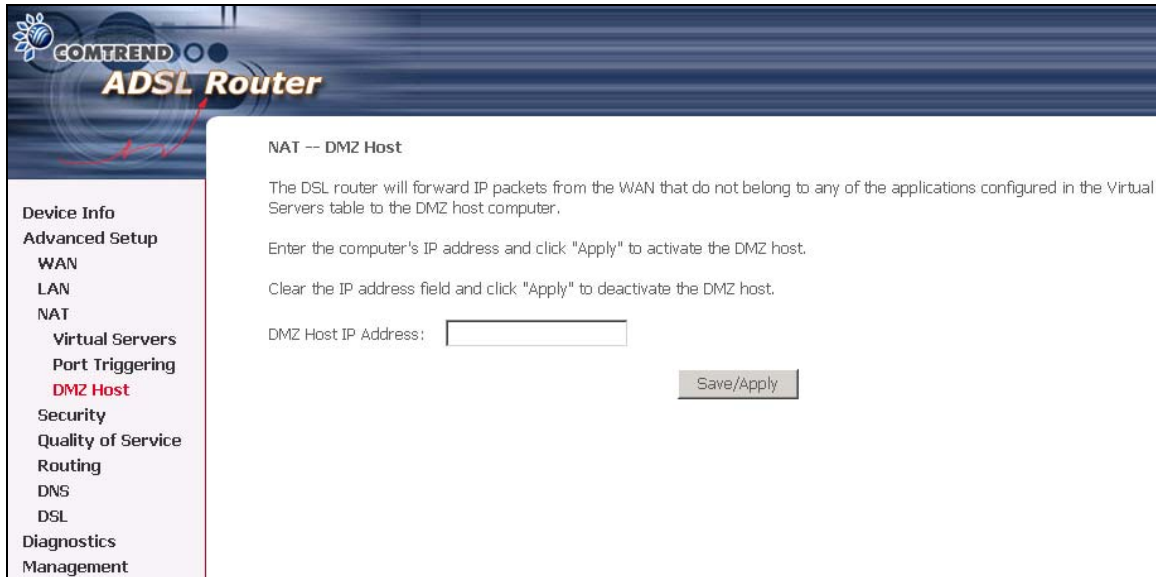
Trigger Port Start	Trigger Port End	Trigger Protocol	Open Port Start	Open Port End	Open Protocol
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP

Save/Apply

Select an Application Or Custom Application	User should select the application from the list. Or User can enter the name of their choice.
Trigger Port Start	Enter the starting trigger port number (when you select custom application). When an application is selected the port ranges are automatically configured.
Trigger Port End	Enter the ending trigger port number (when you select custom application). When an application is selected the port ranges are automatically configured.
Trigger Protocol	User can select from: TCP, TCP/UDP or UDP.
Open Port Start	Enter the starting open port number (when you select custom application). When an application is selected the port ranges are automatically configured.
Open Port End	Enter the ending open port number (when you select custom application). When an application is selected the port ranges are automatically configured.
Open Protocol	User can select from: TCP, TCP/UDP or UDP.

### 6.3.3 DMZ Host

The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.



The screenshot shows the web interface of a COMTREND ADSL Router. The top banner features the COMTREND logo and the text "ADSL Router". On the left is a vertical navigation menu with the following items: Device Info, Advanced Setup, WAN, LAN, NAT, Virtual Servers, Port Triggering, DMZ Host (highlighted in red), Security, Quality of Service, Routing, DNS, DSL, Diagnostics, and Management. The main content area is titled "NAT -- DMZ Host". It contains the following text: "The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.", "Enter the computer's IP address and click 'Apply' to activate the DMZ host.", and "Clear the IP address field and click 'Apply' to deactivate the DMZ host.". Below this text is a label "DMZ Host IP Address:" followed by an empty text input field. To the right of the input field is a button labeled "Save/Apply".

Enter the computer's IP address and click "Apply" to activate the DMZ host.

Clear the IP address field and click "Apply" to deactivate the DMZ host.

## 6.4 Security

To display the Security function, you need to enable the firewall feature in the WAN Setup.

### 6.4.1 IP Filtering

IP filtering allows you to create a filter rule to identify outgoing/incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.

## Outgoing

Note: The default setting for Outgoing is Blocked.




The screenshot shows the 'Outgoing IP Filtering Setup' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Security' highlighted, and 'IP Filtering' selected under it. The main content area has a title 'Outgoing IP Filtering Setup' and a paragraph explaining that by default, all outgoing IP traffic from LAN is allowed, but some can be blocked by setting up filters. Below this is a table with columns: Filter Name, Protocol, Source Address / Mask, Source Port, Dest. Address / Mask, Dest. Port, and Remove. There are 'Add' and 'Remove' buttons below the table.

Filter Name	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
-------------	----------	-----------------------	-------------	----------------------	------------	--------

To add a filtering rule, simply click the Add button. The following screen will be displayed.





Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
IP Filtering  
Outgoing  
**Incoming**  
Parental Control  
Quality of Service  
Routing  
DNS  
DSL  
Diagnostics  
Management

### Add IP Filter -- Outgoing

The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.

Filter Name:

Protocol:

Source IP address:

Source Subnet Mask:

Source Port (port or port:port):

Destination IP address:


Destination Subnet Mask:

Destination Port (port or port:port):

Filter Name	Type a name for the filter rule.
Protocol	User can select from: TCP, TCP/UDP, UDP or ICMP.
Source IP address	Enter source IP address.
Source Subnet Mask	Enter source subnet mask.
Source Port (port or port:port)	Enter source port number.
Destination IP address	Enter destination IP address.
Destination Subnet Mask	Enter destination subnet mask.
Destination port (port or port:port)	Enter destination port number.

## Incoming

Note: The default setting for Incoming is Accepted.



Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
IP Filtering  
Outgoing  
**Incoming**  
Parental Control  
Quality of Service  
Routing  
DNS  
DSL  
Diagnostics  
Management

### Incoming IP Filtering Setup

By default, all incoming IP traffic from the WAN is blocked when the firewall is enabled. However, some IP traffic can be **ACCEPTED** by setting up filters.

Choose Add or Remove to configure incoming IP filters.

Filter Name	VPI/VCI	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>							



To add a filtering rule, simply click the Add button. The following screen will be displayed.

The screenshot shows the 'Add IP Filter -- Incoming' configuration page of a COMTREND ADSL Router. The left sidebar contains a navigation menu with the following items: Device Info, Advanced Setup (WAN, LAN, NAT), Security (IP Filtering, Outgoing, Incoming), Parental Control, Quality of Service, Routing, DNS, DSL, Diagnostics, and Management. The 'Incoming' option under Security is selected. The main content area is titled 'Add IP Filter -- Incoming' and includes a descriptive paragraph: 'The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.' Below this text are several input fields: 'Filter Name:' (text box), 'Protocol:' (dropdown menu), 'Source IP address:' (text box), 'Source Subnet Mask:' (text box), 'Source Port (port or port:port):' (text box), 'Destination IP address:' (text box), 'Destination Subnet Mask:' (text box), and 'Destination Port (port or port:port):' (text box). Further down, there is a section titled 'WAN Interfaces (Configured in Routing mode and with firewall enabled only)' with the instruction 'Select at least one or multiple WAN interfaces displayed below to apply this rule.' This section contains two checked checkboxes: 'Select All' and 'pppoe\_0\_35\_1/has\_0\_35'. At the bottom right of the form is a 'Save/Apply' button.

To configure the parameters, please reference **Outgoing** table above.

## 6.4.2 Parental Control

Parental control: allows parents, schools, and libraries to set access times for Internet use.

COMTREND ADSL Router

Time of Day Restrictions -- A maximum 16 entries can be configured.

Username	MAC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start	Stop	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>											

Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
IP Filtering  
**Parental Control**  
Quality of Service  
Routing  
DNS  
DSL  
Diagnostics  
Management

To add a parental control, simply click the Add button. The following screen will be displayed.

COMTREND ADSL Router

Time of Day Restriction

This page adds time of day restriction to a special LAN device connected to the Router. The 'Browser's MAC Address' automatically displays the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window and type "ipconfig /all".

User Name

☒ Browser's MAC Address

☐ Other MAC Address

Days of the week ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat ☐ Sun

Click to select ☐ ☐ ☐ ☐ ☐ ☐ ☐

Start Blocking Time (hh:mm)

End Blocking Time (hh:mm)

Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
IP Filtering  
**Parental Control**  
Quality of Service  
Routing  
DNS  
DSL  
Diagnostics  
Management

Username:	To set access Internet user name
MAC:	To set what MAC to access Internet
Mon, Tue, Wed, Thu, Fri, Sat, Sun:	To set what day can be access Internet
Start, Stop:	To set time range for Internet Blocking

## 6.5 Quality of Service

To display the Security function, you need to enable the QoS feature in the WAN Setup.

The screenshot shows the 'Quality of Service Setup' page of a COMTREND ADSL Router. The left sidebar contains a menu with options: Device Info, Advanced Setup, WAN, LAN, NAT, Security, Quality of Service (highlighted in red), Routing, DNS, DSL, Diagnostics, and Management. The main content area is titled 'Quality of Service Setup' and includes the instruction: 'Choose Add or Remove to configure network traffic classes.' Below this is a table with columns for MARK and TRAFFIC CLASSIFICATION RULES. The table has a header row with 'Class Name', 'Priority', 'IP Precedence', 'IP Type of Service', 'WAN 802.1p', 'Lan Port', 'Protocol', 'Source Addr./Mask', 'Source Port', 'Dest. Addr./Mask', 'Dest. Port', '802.1p', and 'Remove'. Below the table are 'Add' and 'Remove' buttons.

MARK					TRAFFIC CLASSIFICATION RULES								
					SET-1						SET-2		
Class Name	Priority	IP Precedence	IP Type of Service	WAN 802.1p	Lan Port	Protocol	Source Addr./Mask	Source Port	Dest. Addr./Mask	Dest. Port	802.1p	Remove	

Choose Add to configure network traffic classes. The following screen will be displayed:

The screenshot shows the 'Add Network Traffic Class Rule' page of a COMTREND ADSL Router. The left sidebar contains a menu with options: Device Info, Advanced Setup, WAN, LAN, NAT, Security, Quality of Service (highlighted in red), Routing, DNS, DSL, Diagnostics, and Management. The main content area is titled 'Add Network Traffic Class Rule' and includes the instruction: 'The screen creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the rule.' Below this is a 'Traffic Class Name:' field. Then, there is a section 'Assign Priority and/or IP Precedence and/or Type Of Service for the class' with the instruction: 'If non-blank value is selected for 'Mark IP Precedence' and/or 'Mark IP Type Of Service', the corresponding TOS byte in the IP header of the upstream packet will be overwritten by the selected value.' This section includes fields for 'Assign ATM Transmit Priority:', 'Mark IP Precedence:', 'Mark IP Type Of Service:', and 'Mark 802.1p if 802.1q is enabled on WAN:'. Below this is a section 'Specify Traffic Classification Rules' with the instruction: 'Enter the following conditions either for IP level, SET-1, or for IEEE 802.1p, SET-2.' This section includes fields for 'SET-1' (Physical LAN Port, Protocol, Source IP Address, Source Subnet Mask, UDP/TCP Source Port (port or port:port), Destination IP Address, Destination Subnet Mask, UDP/TCP Destination Port (port or port:port)) and 'SET-2' (802.1p Priority:). At the bottom is a 'Save/Apply' button.

**Add Network Traffic Class Rule**

The screen creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the rule.

Traffic Class Name:

**Assign Priority and/or IP Precedence and/or Type Of Service for the class**

If non-blank value is selected for 'Mark IP Precedence' and/or 'Mark IP Type Of Service', the corresponding TOS byte in the IP header of the upstream packet will be overwritten by the selected value.

Assign ATM Transmit Priority:

Mark IP Precedence:

Mark IP Type Of Service:

Mark 802.1p if 802.1q is enabled on WAN:

**Specify Traffic Classification Rules**

Enter the following conditions either for IP level, SET-1, or for IEEE 802.1p, SET-2.

**SET-1**

Physical LAN Port:

Protocol:

Source IP Address:

Source Subnet Mask:

UDP/TCP Source Port (port or port:port):

Destination IP Address:

Destination Subnet Mask:

UDP/TCP Destination Port (port or port:port):

**SET-2**

802.1p Priority:

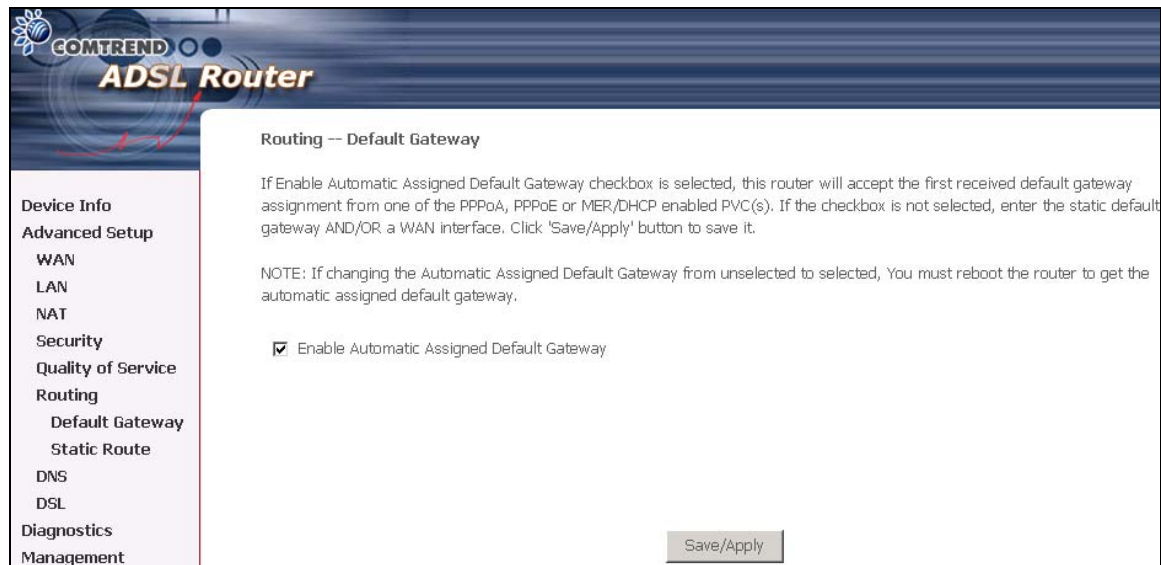
Traffic Class Name	Enter name for traffic class
Assign ATM Transmit Priority	Select Low, Medium or High.
Mark IP Precedence	Select between 1-7. The lower the digit shows the higher the priority
Mark IP Type Of Service	Select either: Normal Service, Minimize Cost, Maximize Reliability, Maximize Throughput, Minimize Delay
Mark 802.1p if 802.1q is enabled on WAN	Select between 1-7. The lower the digit shows the higher the priority
Physical LAN Port	User can select from: ENET, ENET(1-4), USB or Wireless.
Protocol	User can select from: TCP, TCP/UDP, UDP or ICMP.
Source IP Address	Enter the source IP address.
Source Subnet Mask	Enter the subnet mask for the source IP address.
UDP/TCP Source Port (port or port:port)	Enter source port number.
Destination IP address	Enter destination IP address.
Destination Subnet Mask	Enter destination subnet mask.
UDP/TCP Destination port (port or port:port)	Enter destination port number.
802.1p Priority	Select between 0-7. The lower the digit shows the higher the priority

## 6.6 Routing

The Routing dialog box allows you to configure Default gateway and Static Route.

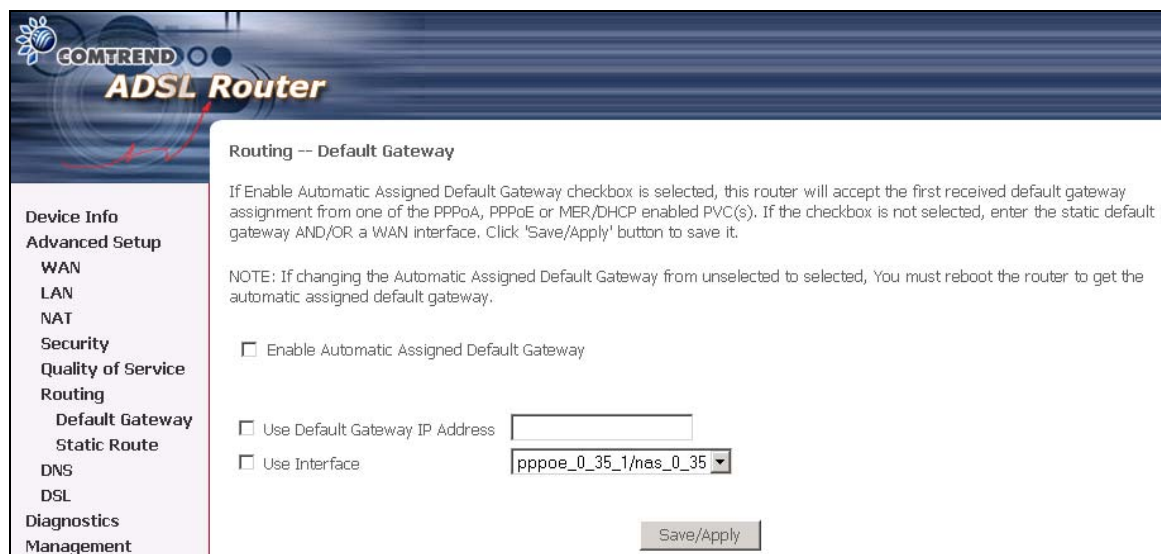
### 6.6.1 Default Gateway

If '**Enable Automatic Assigned Default Gateway**' checkbox is selected, this router will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s). If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface. Click 'Save/Apply' button to save it.



The screenshot shows the 'COMTREND ADSL Router' configuration interface. On the left is a sidebar menu with options: Device Info, Advanced Setup, WAN, LAN, NAT, Security, Quality of Service, Routing, Default Gateway, Static Route, DNS, DSL, Diagnostics, and Management. The 'Routing -- Default Gateway' section is active. It contains a text block explaining the automatic gateway assignment process, a note about rebooting the router, and a checked checkbox labeled 'Enable Automatic Assigned Default Gateway'. A 'Save/Apply' button is at the bottom right.

**NOTE:** If changing the Automatic Assigned Default Gateway from unselected to selected, You must reboot the router to get the automatic assigned default gateway.



This screenshot shows the same configuration page as above, but with the 'Enable Automatic Assigned Default Gateway' checkbox unchecked. Below it, there are two options: 'Use Default Gateway IP Address' with an empty text input field, and 'Use Interface' with a dropdown menu showing 'pppoe\_0\_35\_1/nas\_0\_35'. The 'Save/Apply' button remains at the bottom right.

## 6.6.2 Static Route

Choose **Static Route** to display the Static Route screen. The Static Route screen lists the configured static routes, and allows configuring static routes. Choose **Add** or **Remove** to configure the static routes.

The screenshot shows the 'Static Route' configuration page of a COMTREND ADSL Router. The left sidebar contains a menu with the following items: Device Info, Advanced Setup, WAN, LAN, NAT, Security, Quality of Service, Routing (highlighted), Default Gateway, Static Route (highlighted in red), DNS, DSL, Diagnostics, and Management. The main content area is titled 'Routing -- Static Route (A maximum 32 entries can be configured)'. It features a table with the following headers: Destination, Subnet Mask, Gateway, Interface, and Remove. Below the table are two buttons: 'Add' and 'Remove'.

To add static route, click the **Add** button to display the following screen. Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click **Save/Apply** to add the entry to the routing table.

The screenshot shows the 'Static Route Add' configuration page of a COMTREND ADSL Router. The left sidebar is identical to the previous screenshot, with 'Routing' and 'Static Route' highlighted. The main content area is titled 'Routing -- Static Route Add'. It contains the following text: 'Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Save/Apply" to add the entry to the routing table.' Below this text are the following fields: 'Destination Network Address:' with a text input box, 'Subnet Mask:' with a text input box, a checkbox for 'Use Gateway IP Address' (unchecked) with a text input box, and a checked checkbox for 'Use Interface' with a dropdown menu showing 'mer\_0\_35/nas\_0\_35'. At the bottom right is a 'Save/Apply' button.

## 6.7 DNS

### 6.7.1 DNS Server

If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.

The screenshot shows the 'DNS Server Configuration' page of a COMTREND ADSL Router. The left sidebar contains a menu with 'DNS Server' highlighted in red. The main content area has a title 'DNS Server Configuration' and a paragraph explaining the 'Enable Automatic Assigned DNS' checkbox. Below the text is a checkbox labeled 'Enable Automatic Assigned DNS' which is checked. At the bottom right of the main area is a 'Save' button.

COMTREND ADSL Router

Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
Quality of Service  
Routing  
DNS  
**DNS Server**  
Dynamic DNS  
DSL  
Diagnostics  
Management

**DNS Server Configuration**

If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.

☒ Enable Automatic Assigned DNS

Save

### 6.7.2 Dynamic DNS

The Dynamic DNS service allows you to map a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.

The screenshot shows the 'Dynamic DNS' configuration page of a COMTREND ADSL Router. The left sidebar contains a menu with 'Dynamic DNS' highlighted in red. The main content area has a title 'Dynamic DNS' and a paragraph explaining the service. Below the text is a table with columns 'Hostname', 'Username', 'Service', 'Interface', and 'Remove'. Below the table are 'Add' and 'Remove' buttons.

COMTREND ADSL Router

Device Info  
Advanced Setup  
WAN  
LAN  
NAT  
Security  
Quality of Service  
Routing  
DNS  
DNS Server  
**Dynamic DNS**  
DSL  
Diagnostics  
Management

**Dynamic DNS**

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.

Choose Add or Remove to configure Dynamic DNS.

Hostname	Username	Service	Interface	Remove
----------	----------	---------	-----------	--------

Add Remove



To add a dynamic DNS service, simply click the Add button. The following screen will be displayed:

**COMTREND ADSL Router**

**Add dynamic DDNS**

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

D-DNS provider:

Hostname:

Interface:

**DynDNS Settings**

Username:

Password:

D-DNS provider	Select a dynamic DNS provider from the list
Hostname	Enter the name for the dynamic DNS server.
Interface	Select the interface from the list
Username	Enter the username for the dynamic DNS server.
Password	Enter the password for the dynamic DNS server.



## 6.8 DSL

To access the DSL settings, First click On **Advanced Setup** and then click on **DSL**. The DSL Settings dialog box allows you to select an appropriate modulation mode.

**COMTREND ADSL Router**

**DSL Settings**

Select the modulation below.

- ☒ G.Dmt Enabled
- ☒ G.lite Enabled
- ☒ T1.413 Enabled
- ☒ ADSL2 Enabled
- ☒ AnnexL Enabled
- ☒ ADSL2+ Enabled
- ☒ AnnexM DISABLED

Select the phone line pair below.

- ☒ Inner pair
- ☐ Outer pair

Capability

- ☒ Bitswap Enable
- ☐ SRA Enable

Save/Apply

Option	Description
G.dmt Enabled	Sets G.Dmt if you want the system to use G.Dmt mode.
G.Lite Enabled	Sets G.Lite if you want the system to use G.Lite mode.
T1.413	Sets the T1.413 if you want the system to use only T1.413 mode.
ADSL2 Enabled	The device can support the functions of the ADSL2.
AnnexL Enabled	The device can support/enhance the long loop test.
ADSL2+ Enabled	The device can support the functions of the ADSL2+.
AnnexM	Covers a higher "upstream" data rate version, by making use of some of the downstream channels.
Inner Pair	Reserved only
Outer Pair	Reserved only
Bitswap Enable	Allows bitswaping function
SRA Enable	Allows seamless rate adaptation

## Chapter 7 Diagnostics

The Diagnostics menu provides feedback on the connection status of the CT-5611 and the ADSL link. The individual tests are listed below. If a test displays a fail status, click **Rerun Diagnostic Tests** at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click **Help** and follow the troubleshooting procedures.

mer\_0\_35 Diagnostics

Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

Test the connection to your local network

Test your Ethernet Connection:	PASS	<a href="#">Help</a>
Test your USB Connection:	DOWN	<a href="#">Help</a>

Test the connection to your DSL service provider

Test ADSL Synchronization:	FAIL	<a href="#">Help</a>
Test ATM OAM F5 segment ping:	FAIL	<a href="#">Help</a>
Test ATM OAM F5 end-to-end ping:	FAIL	<a href="#">Help</a>

Test the connection to your Internet service provider

Ping default gateway:	FAIL	<a href="#">Help</a>
Ping primary Domain Name Server:	PASS	<a href="#">Help</a>
Test Loopback IP:		<a href="#">Help</a>

Test Test With OAM F4

Test	Description
Ethernet Connection	<b>Pass:</b> indicates that the Ethernet interface from your computer is connected to the LAN port of your DSL Router. A flashing or solid green LAN LED on the router also signifies that an Ethernet connection is present and that this test is successful. <b>Fail:</b> Indicates that the DSL Router does not detect the Ethernet interface on your computer.
USB connection	<b>Pass:</b> Indicates that the USB interface from your computer is connected to the LAN port of your DSL router. <b>Down:</b> Indicates that the DSL Router does not detect the USB interface on your computer.

ADSL Synchronization	<p><b>Pass:</b> Indicates that the DSL modem has detected a DSL signal from the telephone company. A solid WAN LED on the router also indicates the detection of a DSL signal from the telephone company.</p> <p><b>Fail:</b> indicates that the DSL modem does not detect a signal from the telephone company's DSL network. The WAN LED will continue to flash green.</p>
ISP Connection	<p><b>Pass:</b> Indicates we can access the WAN service like the Gateway and DNS.</p> <p><b>Fail:</b> Indicates we cannot access the WAN side.</p>

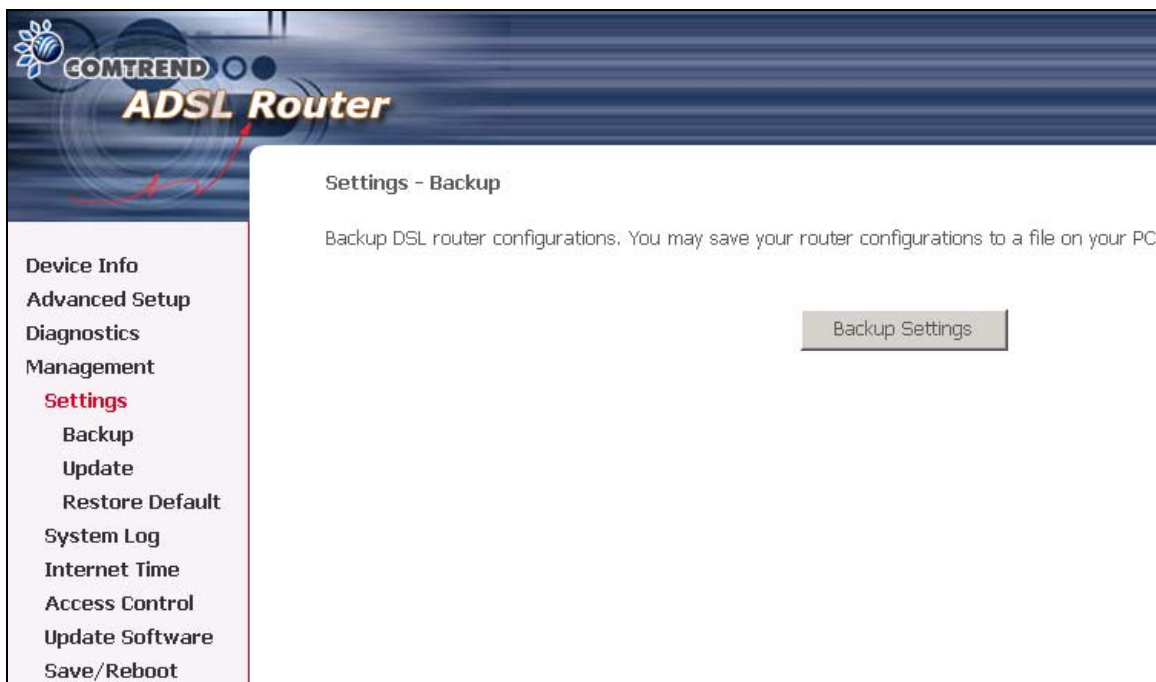
## Chapter 8 Management

The Management section of the CT-5611 supports the following maintenance functions and processes:

- Settings
- System log
- Internet Time
- Access Control
- Update software
- Save/Reboot

### 8.1 Settings

The Settings option allows you to back up your settings to a file, retrieve the setting file, and restore the settings.



### 8.1.1 Configuration Backup

The Backup option under Management>Settings, save your router configurations to a file on your PC. Click BACKUP Settings in the main window. You will be prompted to define the location of the backup file to save. After choosing the file location, click **Backup Settings**. The file will then be saved to the assigned location.



### 8.1.2 Tools – Update Settings

The Update option under Management>Settings update your router settings using your saved files.



### 8.1.3 Restore Default

Clicking the Restore Default Configuration option in the Restore Settings screen can restore the original factory installed settings.



**NOTE:** This entry has the same effect as the hardware reset-to-default button. The CT-5611 board hardware and the boot loader support the **reset to default** button. If the reset button is continuously pushed for more than 5 seconds, the boot loader will erase the entire configuration data saved on the flash memory.

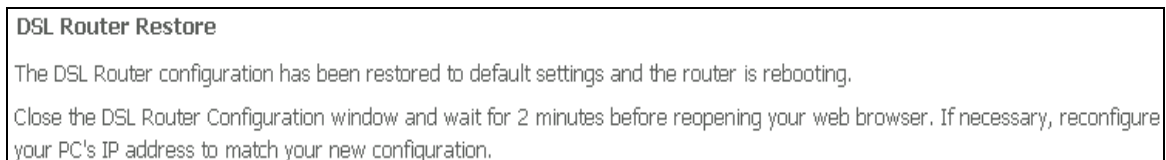
**NOTE:** Restoring system settings, requires a system reboot. This necessitates that the current Web UI session be closed and restarted. Before restarting, the connected PC must be configured with a static IP address in the 192.168.1.x subnet in order to configure the CT-5611.

Default settings

The CT-5611 default settings are

- LAN port IP= 192.168.1.1, subnet mask = 255.255.255.0
- Local user name: root
- Password: 12345
- Remote user name: support
- Remote user password: support

After the Restore Default Configuration button is selected, the following screen appears. Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.



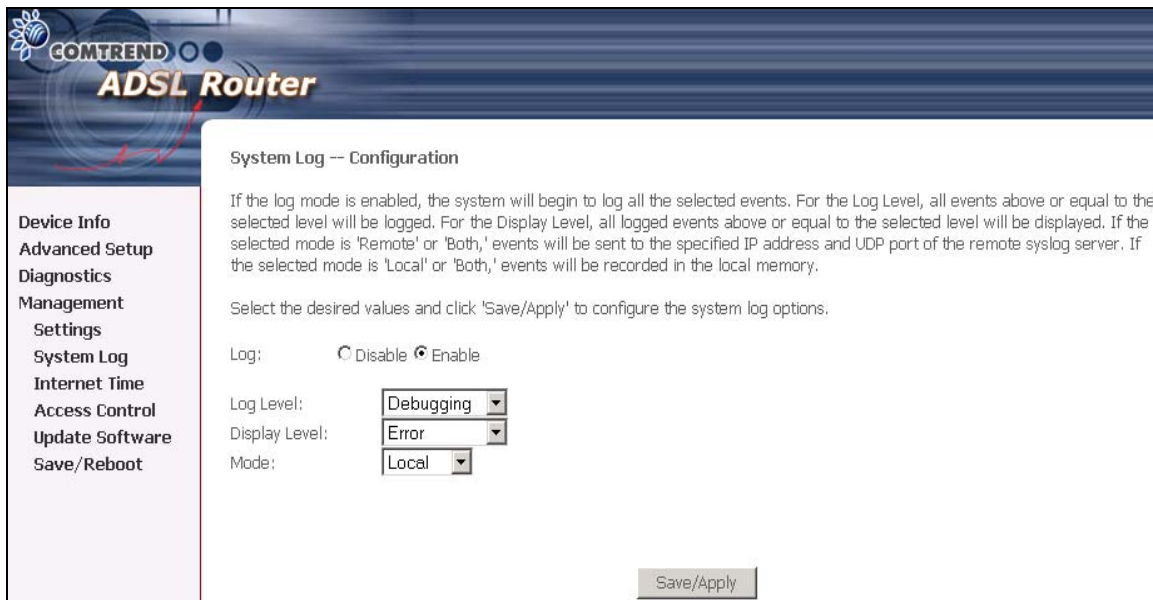
## 8.2 System Log

The System Log option under Management>Settings allows you to view the system events log, or to configure the System Log options. The default setting of system log is disabled. Follow the steps below to enable and view the system log.

1. Click **Configure System Log** to display the following screen.



2. Select from the desired Log options described in the following table, and then click **Save/Apply**.



Option	Description
Log	Indicates whether the system is currently recording events. The user can enable or disable event logging. By default, it is disabled. To enable it, tick Enable and then Apply button.
Log level	<p>Allows you to configure the event level and filter out unwanted events below this level. The events ranging from the highest critical level "Emergency" down to this configured level will be recorded to the log buffer on the CT-5611 SDRAM. When the log buffer is full, the newer event will wrap up to the top of the log buffer and overwrite the old event. By default, the log level is "Debugging," which is the lowest critical level. The following log levels are</p> <ul style="list-style-type: none"> <li>• Emergency = system is unusable</li> <li>• Alert = action must be taken immediately</li> <li>• Critical = critical conditions</li> <li>• Error = Error conditions</li> <li>• Warning = normal but significant condition</li> <li>• Notice= normal but insignificant condition</li> <li>• Informational= provides information for reference</li> <li>• Debugging = debug-level messages</li> </ul> <p>Emergency is the most serious event level, whereas Debugging is the least important. For instance, if the log level is set to Debugging, all the events from the lowest Debugging level to the most critical level Emergency level will be recorded. If the log level is set to Error, only Error and the level above will be logged.</p>
Display Level	Allows the user to select the logged events and displays on the <b>View System Log</b> page for events of this level and above to the highest Emergency level.
Mode	<p>Allows you to specify whether events should be stored in the local memory, or be sent to a remote syslog server, or both simultaneously.</p> <p>If remote mode is selected, view system log will not be able to display events saved in the remote syslog server.</p> <p>When either Remote mode or Both mode is configured, the WEB UI will prompt the user to enter the Server IP address and Server UDP port.</p>

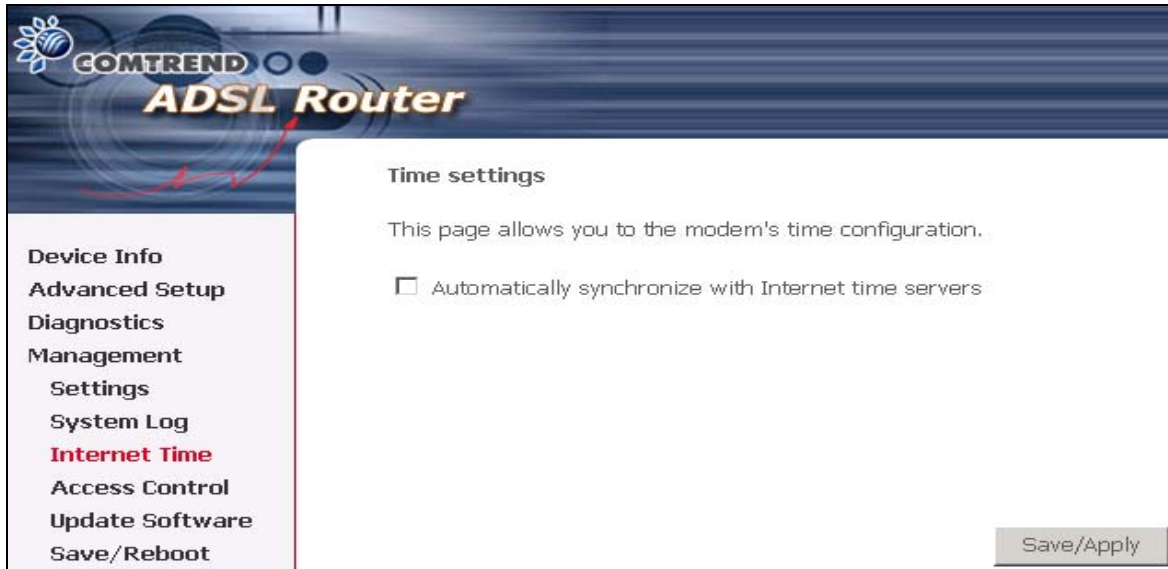
3. Click **View System Log**. The results are displayed as follows.

System Log			
Date/Time	Facility	Severity	Message
Jan 1 00:00:12	syslog	emerg	BCM96345 started: BusyBox v1.00 (2005.11.22-10:58+0000)
Jan 1 00:00:12	user	crit	kernel: eth0 Link UP.
<div>Refresh Close</div>			



## 8.3 Internet Time

The Internet Time option under Management menu bar configures the Modem's time. To automatically synchronize with Internet timeservers, tick the corresponding box displayed on the screen. Then click **Save/Apply**.



The screenshot shows the COMTREND ADSL Router web interface. The left sidebar contains a menu with the following items: Device Info, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time (highlighted in red), Access Control, Update Software, and Save/Reboot. The main content area is titled "Time settings" and contains the text: "This page allows you to the modem's time configuration." Below this text is a checkbox labeled "Automatically synchronize with Internet time servers". At the bottom right of the main content area is a "Save/Apply" button.

## 8.4 Access Control

The Access Control option under Management menu bar configures the access-related parameters, including three parts: Services, IP Address, and Passwords.



The screenshot shows the COMTREND ADSL Router web interface. The left sidebar contains a menu with the following items: Device Info, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time, Access Control (highlighted in red), Services, IP Addresses, Passwords, Update Software, and Save/Reboot. The main content area is titled "Access Control -- Services" and contains the text: "A Service Control List ('SCL') enables or disables services from being used." Below this text is a table with the following data:

Services	LAN	WAN
FTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
ICMP	Enable	Enable
TELNET	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
TFTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

At the bottom right of the main content area is a "Save/Apply" button.

**Note:** LAN and WAN side are present on the screen if the WAN interface is UP. Only the LAN side will be displayed if the ADSL or WAN interface is down.

### 8.4.1 Services

The Services option limits or opens the access services over the LAN or WAN. These services are provided FTP, HTTP, ICMP, SNMP, SSH (Security Socket Share), TELNET, and TFTP. Enable the service by checking the item in the corresponding checkbox, and then click **Save/Apply**.

Access Control -- Services

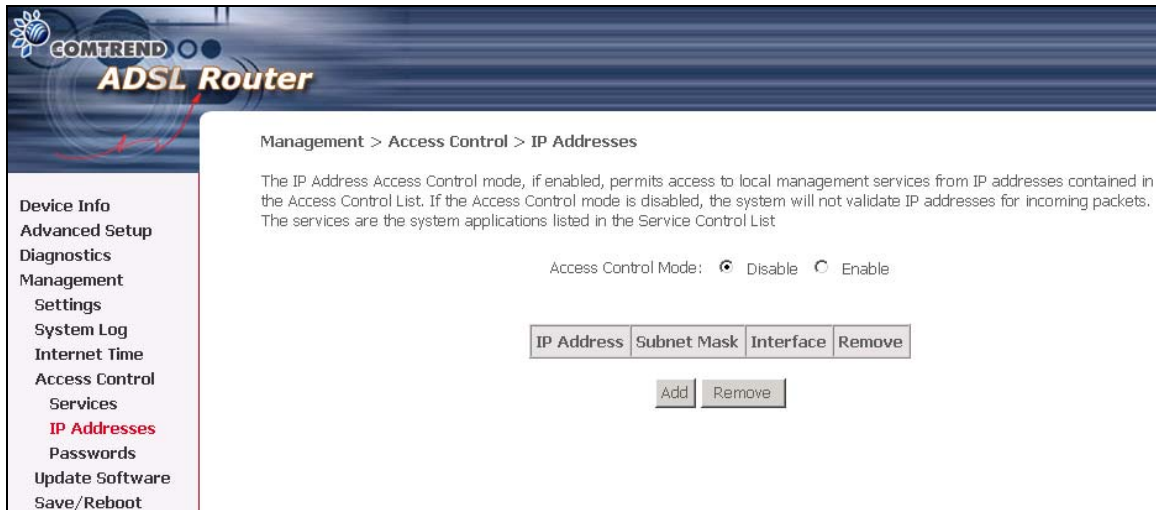
A Service Control List ("SCL") enables or disables services from being used.

Services	LAN	WAN
FTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
ICMP	Enable	Enable
TELNET	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
TFTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

Save/Apply

## 8.4.2 Access IP Addresses

The IP Addresses option limits the access by IP address. If the Access Control Mode is enabled, only the allowed IP addresses can access the router. Before you enable it, configure the IP addresses by clicking the **Add** button. Enter the IP address and click **Apply** to allow the PC with this IP address managing the DSL Router.



The screenshot displays the web interface of a COMTREND ADSL Router. The left sidebar contains a navigation menu with the following items: Device Info, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time, Access Control, Services, **IP Addresses** (highlighted in red), Passwords, Update Software, and Save/Reboot. The main content area is titled "Management > Access Control > IP Addresses". It includes a descriptive paragraph: "The IP Address Access Control mode, if enabled, permits access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List". Below this text, the "Access Control Mode" is set to "Disable" (indicated by a selected radio button). A table with four columns is present: "IP Address", "Subnet Mask", "Interface", and "Remove". Below the table are two buttons: "Add" and "Remove".

COMTREND  
**ADSL Router**

Management > Access Control > IP Addresses

The IP Address Access Control mode, if enabled, permits access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List

Access Control Mode: ☒ Disable ☐ Enable

IP Address	Subnet Mask	Interface	Remove
------------	-------------	-----------	--------

### 8.4.3 Passwords

The Passwords option configures the access passwords for the router. Access to your DSL router is controlled through three user accounts: admin, support, and user.

- "root" has unrestricted access to change and view configuration of your DSL Router.
- "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.
- "user" can access the Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click Apply to change or create passwords.



The screenshot shows the web interface of a COMTREND ADSL Router. The left sidebar contains a menu with the following items: Device Info, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time, Access Control, Services, IP Addresses, Passwords (highlighted in red), Update Software, and Save/Reboot. The main content area is titled "Access Control -- Passwords". It contains the following text: "Access to your DSL router is controlled through three user accounts: root, support, and user." followed by three paragraphs explaining the roles of "root", "support", and "user". Below this is a note: "Use the fields below to enter up to 16 characters and click 'Apply' to change or create passwords. Note: Password cannot contain a space." There are four input fields: "Username:" (a dropdown menu), "Old Password:", "New Password:", and "Confirm Password:". A "Save/Apply" button is located at the bottom right of the form.

**COMTREND ADSL Router**

**Access Control -- Passwords**

Access to your DSL router is controlled through three user accounts: root, support, and user.

The user name "root" has unrestricted access to change and view configuration of your DSL Router.

The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.

The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.

Username:

Old Password:

New Password:

Confirm Password:

## 8.5 Update software

The Update Software screen allows you to obtain an updated software image file from your ISP. Manual software upgrades from a locally stored file can be performed using the following screen.

The screenshot shows the 'Update Software' page of a Comtrend ADSL Router. On the left is a vertical navigation menu with the following items: Device Info, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time, Access Control, Update Software (highlighted in red), and Save/Reboot. The main content area has a title 'Tools -- Update Software'. It contains three numbered steps: Step 1: Obtain an updated software image file from your ISP. Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file. Step 3: Click the "Update Software" button once to upload the new image file. Below the steps is a note: 'NOTE: The update process takes about 2 minutes to complete, and your DSL Router will reboot.' At the bottom, there is a text input field labeled 'Software File Name:' followed by a 'Browse...' button. To the right of this is a large 'Update Software' button.

**Step 1:** Obtain an updated software image file from your ISP.

**Step 2:** Enter the path to the image file location in the box below or click the **Browse** button to locate the image file.

**Step 3:** Click the "Update Software" button once to upload the new image file.

**NOTE:** The update process takes about 2 minutes to complete, and your DSL Router will reboot.

## 8.6 Save and Reboot

The Save/Reboot option saves the configurations and reboots the router. Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.



## Appendix A: Pin Assignments

### Line port (RJ11)

Pin	Definition	Pin	Definition
1	-	4	ADSL_TIP
2	-	5	-
3	ADSL_RING	6	-

#### Pin Assignments of the RJ11 Port

### LAN Port (RJ45)

Pin	Definition	Pin	Definition
1	Transmit data+	5	NC
2	Transmit data-	6	Receive data-
3	Receive data+	7	NC
4	NC	8	NC

#### Pin assignments of the LAN Port

## Appendix B: Specifications

### Rear Panel

RJ-11 X1 for ADSL, RJ-45 X 1 for LAN, USB X 1 for LAN, Reset Button X 1, Power switch X 1

### ADSL

Standard	ITU-T G.992.5, ITU-T G.992.3, ITU-T G.992.1, ANSI T1.413 Issue 2
G.992.5 (ADSL2+)	Downstream : 24 Mbps      Upstream : 1.3 Mbps
G.992.3 (ADSL2)	Downstream : 12 Mbps      Upstream : 1.3 Mbps
G.DMT	Downstream: 8 Mbps      Upstream: 832 Kbps

### Ethernet

Standard	IEEE 802.3, IEEE 802.3u
10/100 BaseT	Auto-sense
MDI/MDIX	Yes

### ATM Attributes

RFC 2364 (PPPoA), RFC 2684 (RFC 1483) Bridge/Route; RFC 2516 (PPPoE); RFC 1577 (IPoA)	
Support PVCs	4
AAL type	AAL5
ATM service class	UBR/CBR/VBR
ATM UNI support	UNI3.1/4.0
OAM F4/F5	Yes

### Management

SNMP, Telnet, Web-based management, Configuration backup and restoration  
Software upgrade via HTTP, TFTP server, or FTP server

### Bridge Functions

Transparent bridging and learning	IEEE 802.1d
Spanning Tree Algorithm	Yes
IGMP Proxy	Yes

### Routing Functions

Static route, NAT/PAT, DHCP Server/DHCP Relay, DNS Proxy, ARP

### Security Functions

Authentication protocols      PAP, CHAP,  
TCP/IP/Port filtering rules, Port triggering/Forwarding, Packet and MAC  
address filtering, access control,



**Application Passthrough**

PPTP, L2TP, IPSec, VoIP, Yahoo messenger, ICQ, RealPlayer, NetMeeting, MSN, X-box, etc

**Power Supply**

External power adapter      110 Vac or 220 Vac

**Environment Condition**

Operating temperature      0 ~ 50 degrees Celsius  
Relative humidity      5 ~ 90% (non-condensing)

**Dimensions**

114 mm (W) x 32 mm (H) x 92 mm (D)

**Certifications**

FCC Part 15 class B, FCC Part 68, CE

**Note: Specifications are subject to change without notice**