

# CT-5071

## ADSL2+ Router

### User's Manual

Version A1.2, February 10, 2006

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## Preface

This manual provides information to network administrators. It covers the installation, operation and applications of the ADSL 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.



### 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.

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## 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)

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# Chapter 1 Introduction

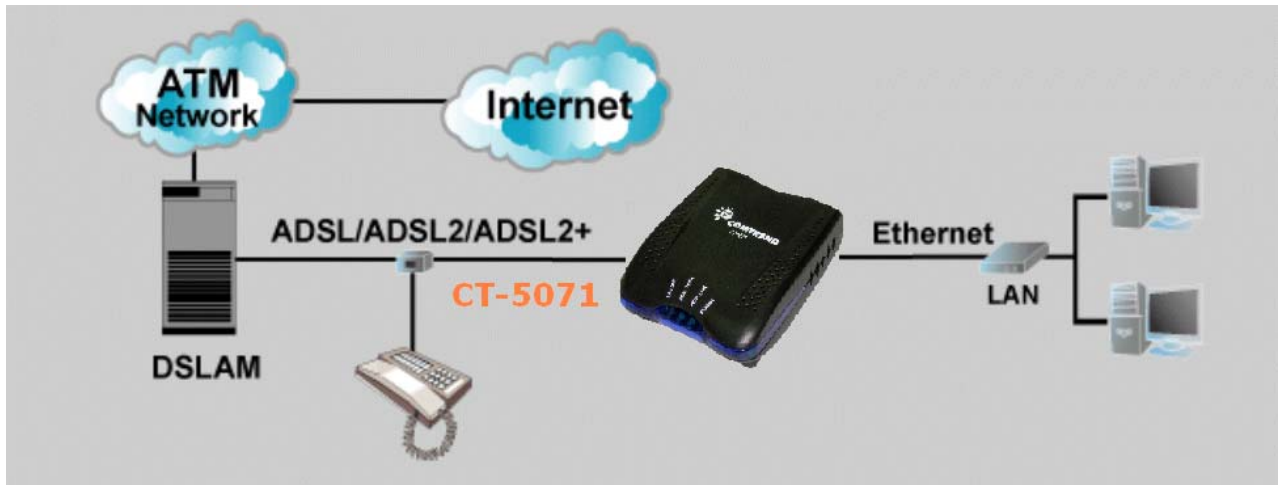
The CT-5071 is a wired Local Area Network ADSL2+ router. One 10/100 Base-T Ethernet port provides wired LAN. The CT-5071 ADSL router provides state of the art security features such as Firewall and VPN pass through. The CT-5071 is designed for residential applications that require wired connectivity to an ADSL broadband network. The CT-5071 supports up to 4 contiguous virtual connections allowing for multiple simultaneous Internet connections.

## 1.1 Features

- IP/MAC address filtering
- Static route/RIP/RIP v2 routing functions
- Dynamic IP assignment
- NAT/PAT
- IGMP Proxy
- DHCP Server/Relay/Client
- DNS Proxy
- Up to 4 VCs
- Web-based management
- Remote configuration and upgrade
- Configuration backup and restoration
- FTP/TFTP server

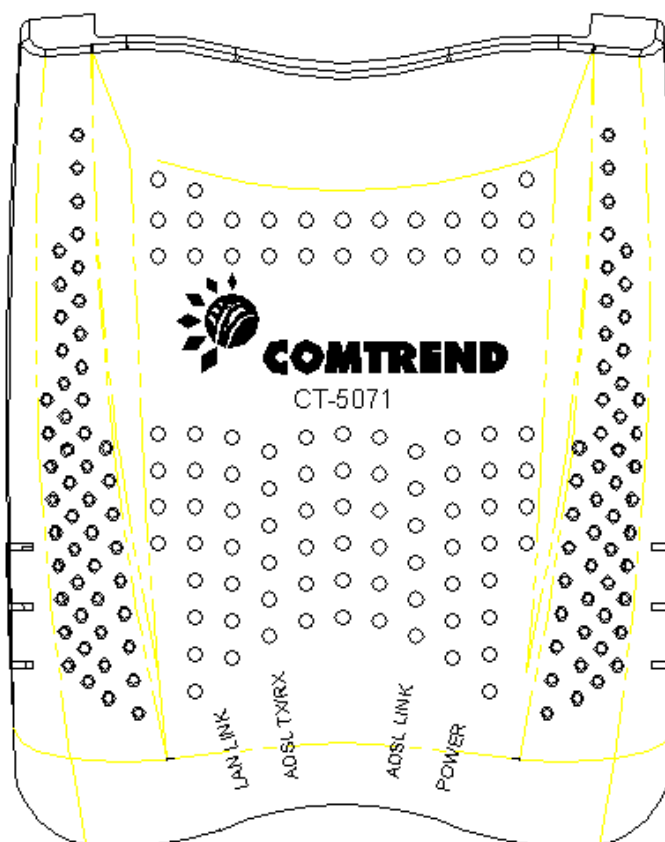
## 1.2 Application

The following diagram depicts the application of the CT-5071.



### 1.3 Front Panel LED Indicators

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

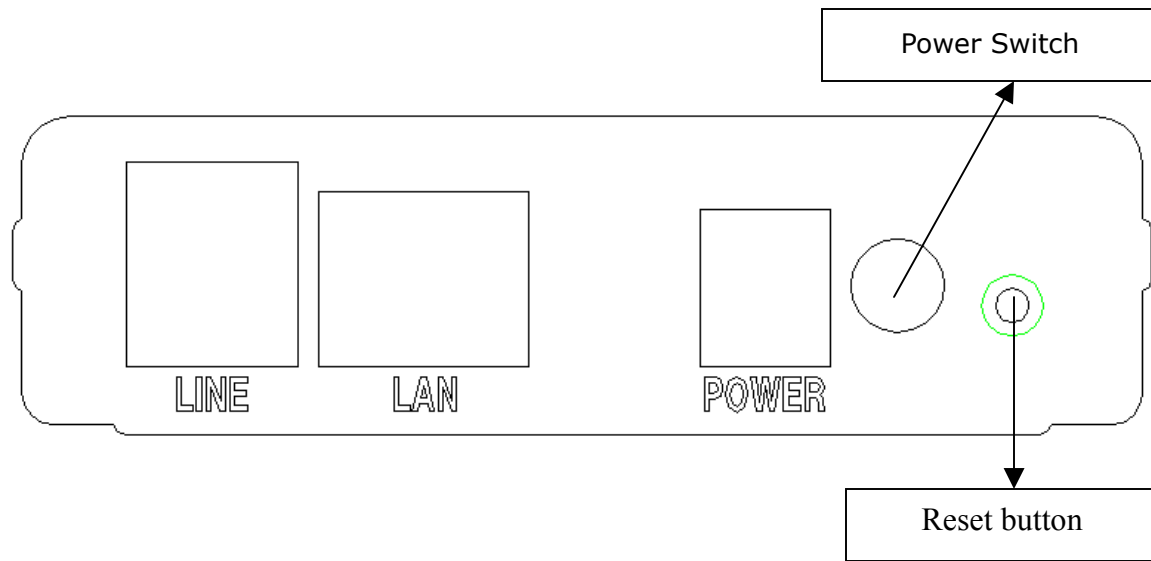


LED	Color	Mode	Function
<b>POWER</b>	Green	On	The router is powered up.
		Off	The router is powered down.
<b>ADSL LINK</b>	Green	On	The ADSL link is established.
		Off	The ADSL link is not established
	Green	Blink	The ADSL link is training
<b>ADSL TX/RX</b>	Green	On	Normal operating status
		Off	The ADSL link is terminated.
	Green	Blink	Data transmitting or receiving over ADSL.
<b>LAN Link</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

In the rear panel, there is a reset button. It is used to load the factory default settings. Hold down the button until the LED's start blinking simultaneously (about 5 seconds). After the device has booted successfully, the factory default settings are retrieved.



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. You can connect the router to up to four LAN devices. The ports are auto-sensing MDI/X and either straight-through cable or crossover cable can be used.

#### 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, push the power-switch in, 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.

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**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 this equipment always disconnect all power cords



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and telephone lines from the wall outlet.

## Chapter 3 Login via the Web Browser

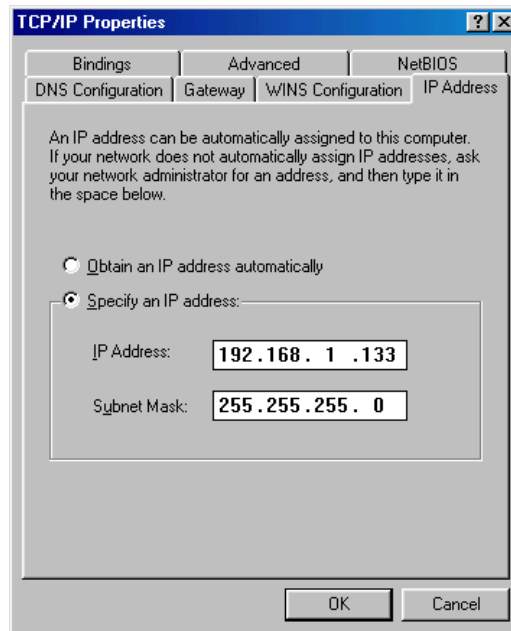
This section describes how to manage the router via a Web browser via the remote end. You can use a web browser such as Microsoft Internet Explorer, or Netscape Navigator. (The Web page is best viewed with Microsoft Internet Explorer 5.0 and later): A unique default user account is assigned with user 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-5071 (LAN port) is 192.168.1.1. To configure the CT-5071 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.

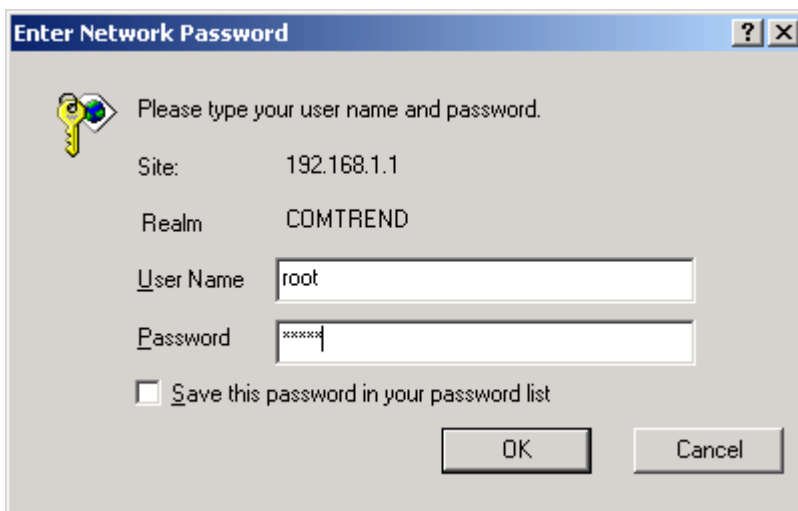
**STEP 4:** Start your Internet browser with the default IP address 192.168.1.1.

## 3.2 Login Procedure

Perform the following steps to bring up the Web user interface and configure the CT-5071. 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 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.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.1

Realm: COMTREND

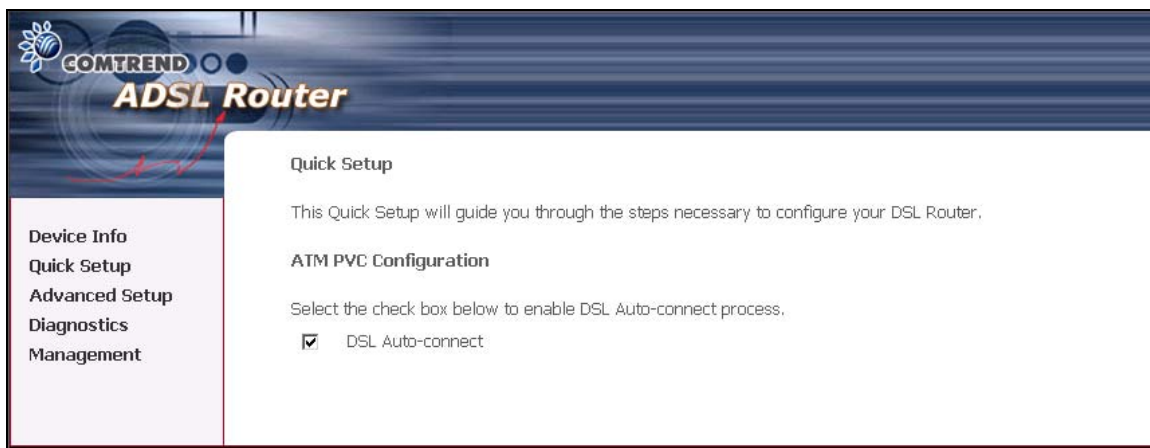
User Name: root

Password: \*\*\*\*\*

Save this password in your password list

OK Cancel

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



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

### 3.2.1 Default Settings

During power on initialization, the CT-5071 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 or telnet user interface, or other management protocols. To load the factory default settings, hold the reset button down for at least 5 seconds until the power indicator blinks, 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.

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

## Chapter 4 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-5071 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-5071 is to run the PPPoE client. The CT-5071 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-5071 also supports pass-through PPPoE sessions from the LAN side while simultaneously running a PPPoE client from non-PPPoE LAN devices.
- NAT 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, NAT and firewall are always disabled when Bridge mode is selected.
- Depending on the network operating mode, and whether NAT and firewall are enabled or disabled, the main panel will display or hide the NAT/Firewall menu. For instance, at initial setup, the default network operating mode is Bridge. The main panel will not show the NAT 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.

## 4.1 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.

## 4.2 Manual Quick Setup

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



Un-tick this checkbox to enable manual setup and display the following screen.

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.

The screenshot shows the configuration interface for a Comtrend ADSL Router. On the left is a navigation menu with options: Device Info, Quick Setup, Advanced Setup, Diagnostics, and Management. The main area is titled 'Connection Type' and contains the instruction: 'Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.' There are five radio button options: PPP over ATM (PPPoA), PPP over Ethernet (PPPoE), MAC Encapsulation Routing (MER), IP over ATM (IPoA), and Bridging. The 'Bridging' option is selected. Below this is the 'Encapsulation Mode' section with a dropdown menu currently set to 'LLC/SNAP-BRIDGING'. At the bottom right are 'Back' and 'Next' buttons.

**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 on a COMTREND ADSL Router. The page has a dark blue header with the COMTREND logo and 'ADSL Router' text. On the left, there is a navigation 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:** A text input field.
- PPP Password:** A text input field.
- Authentication Method:** A dropdown menu currently set to 'AUTO'.
- Dial on Demand (with idle timeout timer)
- Inactivity Timeout (minutes) [1-4320]:** A text input field with '0' entered.
- PPP IP extension
- Enable NAT
- Enable Firewall

At the bottom right of the main content area, there are two buttons: 'Back' and 'Next'.

## 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.

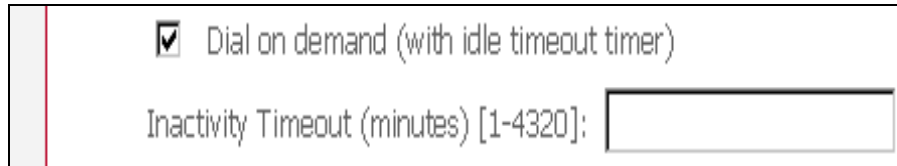
## Encapsulation Mode

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-5071 can be configured to disconnect if there is no activity for a period of time by selecting the **Disconnect if no activity** 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.



The screenshot shows a configuration window with a checked checkbox labeled "Dial on demand (with idle timeout timer)". Below it is a text input field labeled "Inactivity Timeout (minutes) [1-4320]:" which is currently empty.

## 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.

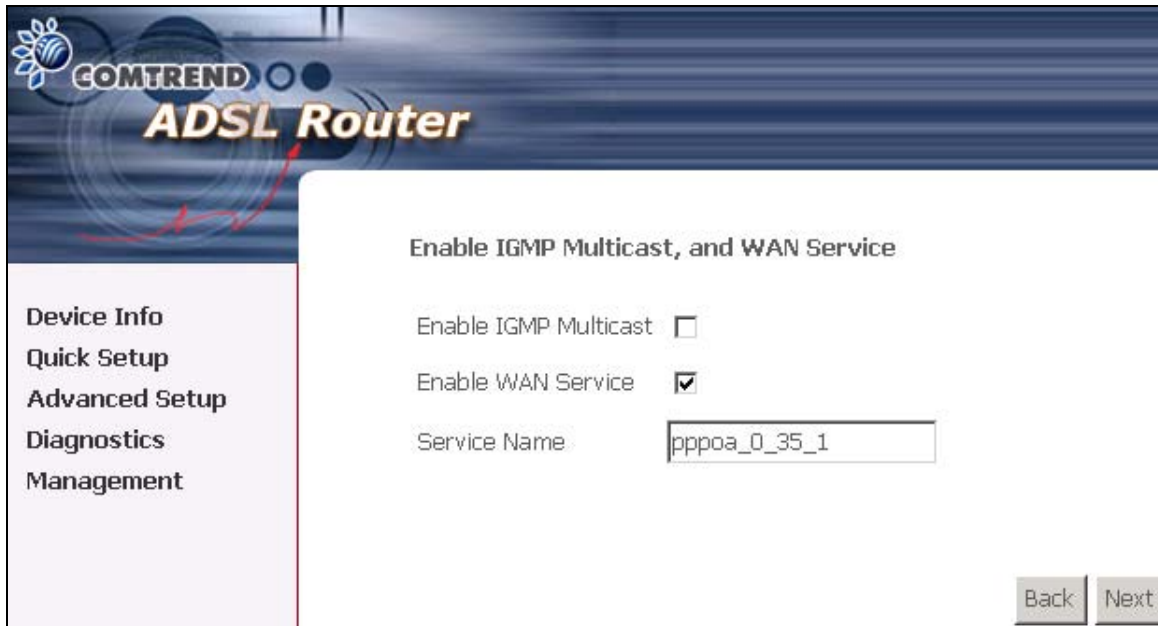
2. Click **Next** to display the screen below.

**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.

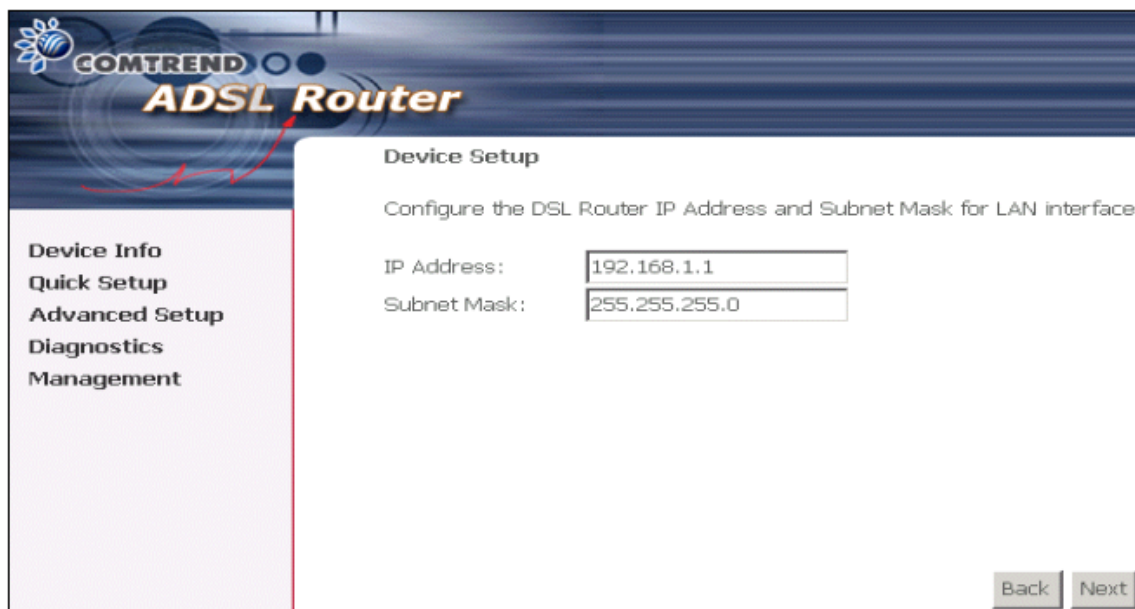
**Enable WAN Service checkbox:** Tick this item to enable the ADSL service. Untick it to stop the ADSL service.

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





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.



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.

**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:	PPPoA
Service Name:	pppoa_0_35_1
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Disabled
Firewall:	Disabled
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](#)

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

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-5071 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.

**GOMTREND ADSL Router**

**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

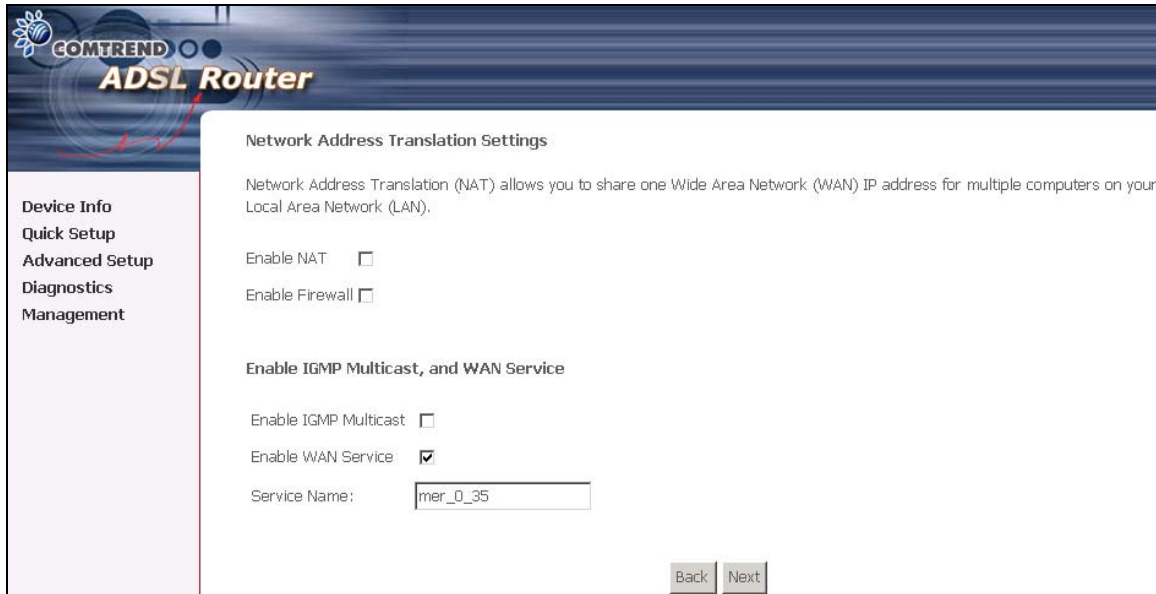
Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP 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 configuration interface for a Comtrend ADSL Router. The page title is "COMTREND ADSL Router". On the left side, there is a navigation menu with the following items: "Device Info", "Quick Setup", "Advanced Setup", "Diagnostics", and "Management". The main content area is titled "Network Address Translation Settings". It contains the following text: "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 text are three checkboxes: "Enable NAT" (unchecked), "Enable Firewall" (unchecked), and "Enable IGMP Multicast, and WAN Service". Under the "Enable IGMP Multicast, and WAN Service" section, there are two checkboxes: "Enable IGMP Multicast" (unchecked) and "Enable WAN Service" (checked). Below these checkboxes is a text input field labeled "Service Name:" with the value "mer\_0\_35" entered. At the bottom right of the page, there are two buttons: "Back" and "Next".

**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, this checkbox should be de-selected to free up system resources for better performance. When the system comes back after reboot, the NAT submenu will not be displayed on the left main panel.

**Enable Firewall checkbox:** If the firewall checkbox is selected, the firewall 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 Firewall submenu will not be displayed on the left main panel.

**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

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.

6. 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.

**COMTREN**  
**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:	192.168.1.2
Service State:	Enabled
NAT:	Disabled
Firewall:	Disabled
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

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

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-5071 is ready for operation and the LEDs display as described in the LED description tables.

- IP Over ATM (IPoA)

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 configuration page for a Comtrend ADSL Router. The page has a dark blue header with the Comtrend logo and 'ADSL Router' text. On the left, there is a navigation menu with the following items: Device Info, Quick Setup, Advanced Setup, WAN, LAN, Routing, DSL, Diagnostics, and Management. The main content area is titled 'WAN IP Settings' and contains the following text: 'Enter information provided to you by your ISP to configure the WAN IP settings.' and a notice: 'Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system with static values will disable the automatic assignment from other WAN connection.'

The configuration fields are as follows:

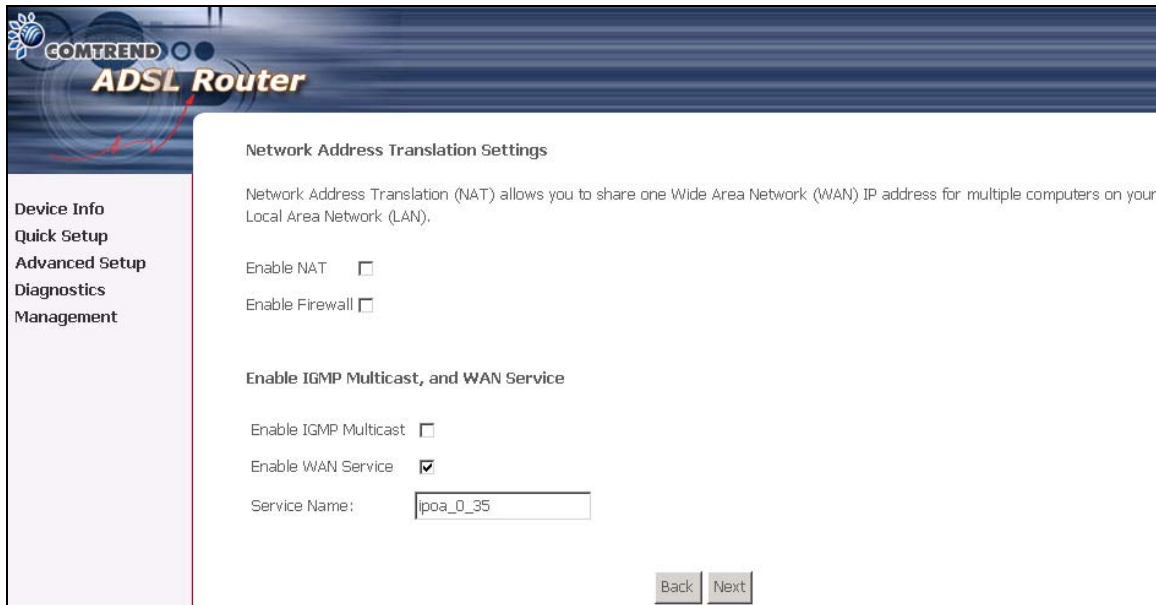
- WAN IP Address:
- WAN Subnet Mask:
- Use the following default gateway:
  - Use IP Address:
  - Use WAN Interface:
- Use the following DNS server addresses:
  - Primary DNS server:
  - Secondary DNS server:

At the bottom right, there 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.





### 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, this checkbox should be de-selected to free up system resources for better performance. When the system comes back after reboot, the NAT submenu will not be displayed on the left main panel.

### Enable Firewall checkbox

If the firewall checkbox is selected, the firewall 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 Firewall submenu will not be displayed on the left main panel.

### 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):

Enable DHCP Server Relay  
 DHCP Server IP Address:

Configure the second IP Address and Subnet Mask for LAN interface

Back Next

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.

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**

**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:	192.168.1.2
Service State:	Enabled
NAT:	Disabled
Firewall:	Disabled
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.

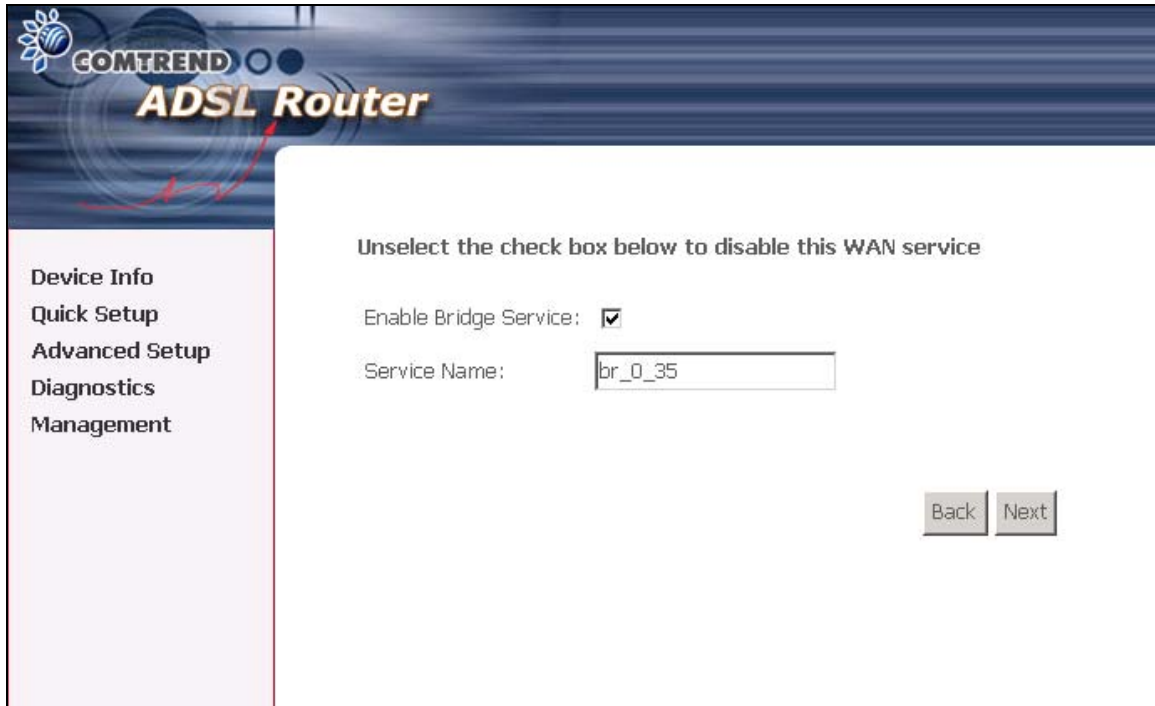
**Device Info**  
**Quick Setup**  
**Advanced Setup**  
**Diagnostics**  
**Management**

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-5071 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 configuration page for a GOMTREND ADSL Router. The page has a dark blue header with the GOMTREND logo and 'ADSL Router' text. On the left, there is a navigation menu with options: Device Info, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area has a white background and contains the following text and form elements:

Unselect the check box below to disable this WAN service

Enable Bridge Service:

Service Name:

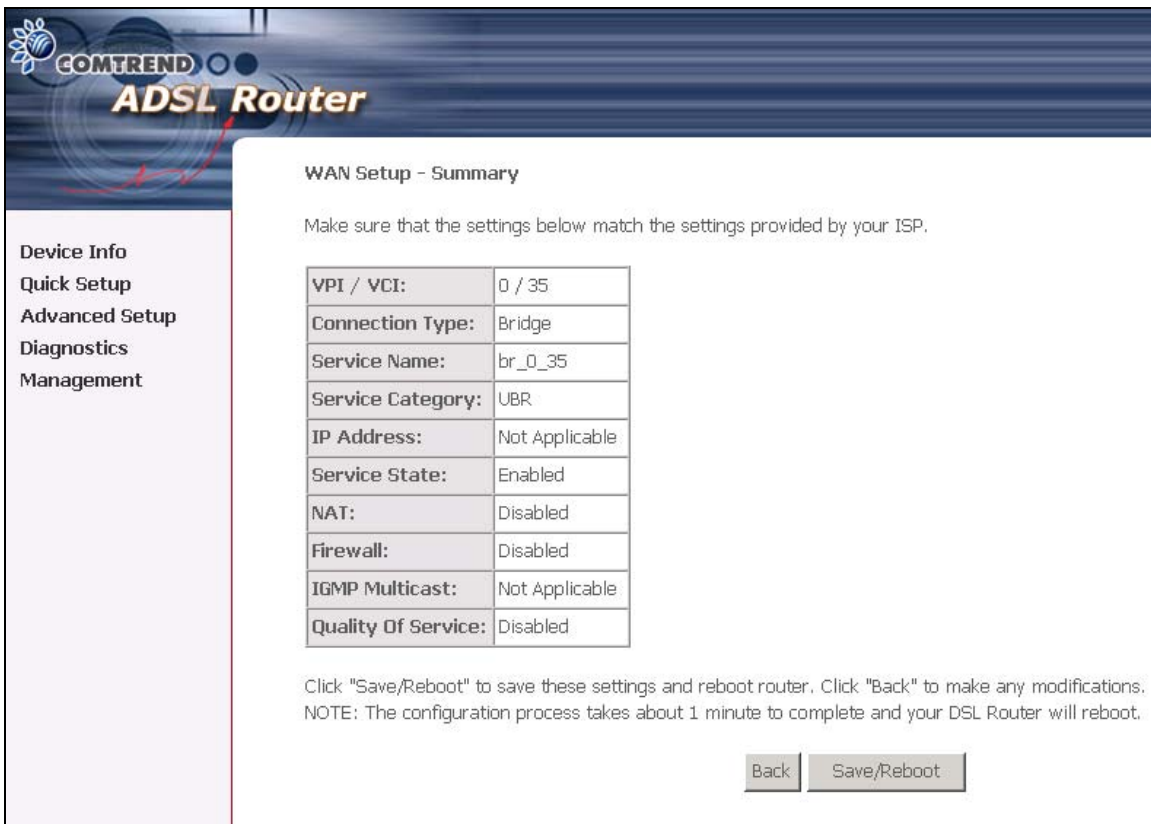
At the bottom right, there are two buttons: 'Back' and 'Next'.

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.



6. Click the **Next** button

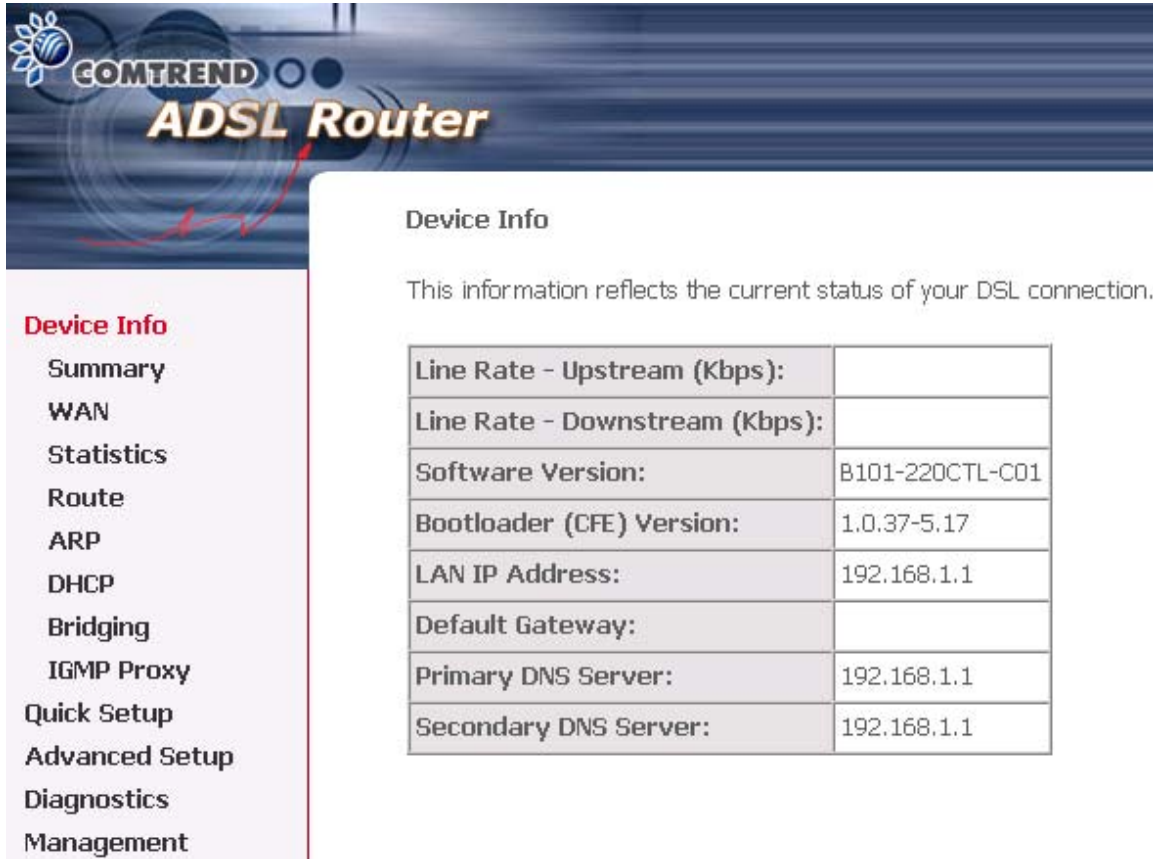
The following screen will be displayed.



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 5 Device Info

After login, the **Device Info** screen appears as shown.



**Device Info**

This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	
Line Rate - Downstream (Kbps):	
Software Version:	B101-220CTL-C01
Bootloader (CFE) Version:	1.0.37-5.17
LAN IP Address:	192.168.1.1
Default Gateway:	
Primary DNS Server:	192.168.1.1
Secondary DNS Server:	192.168.1.1

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

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

## 5.1 WAN

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

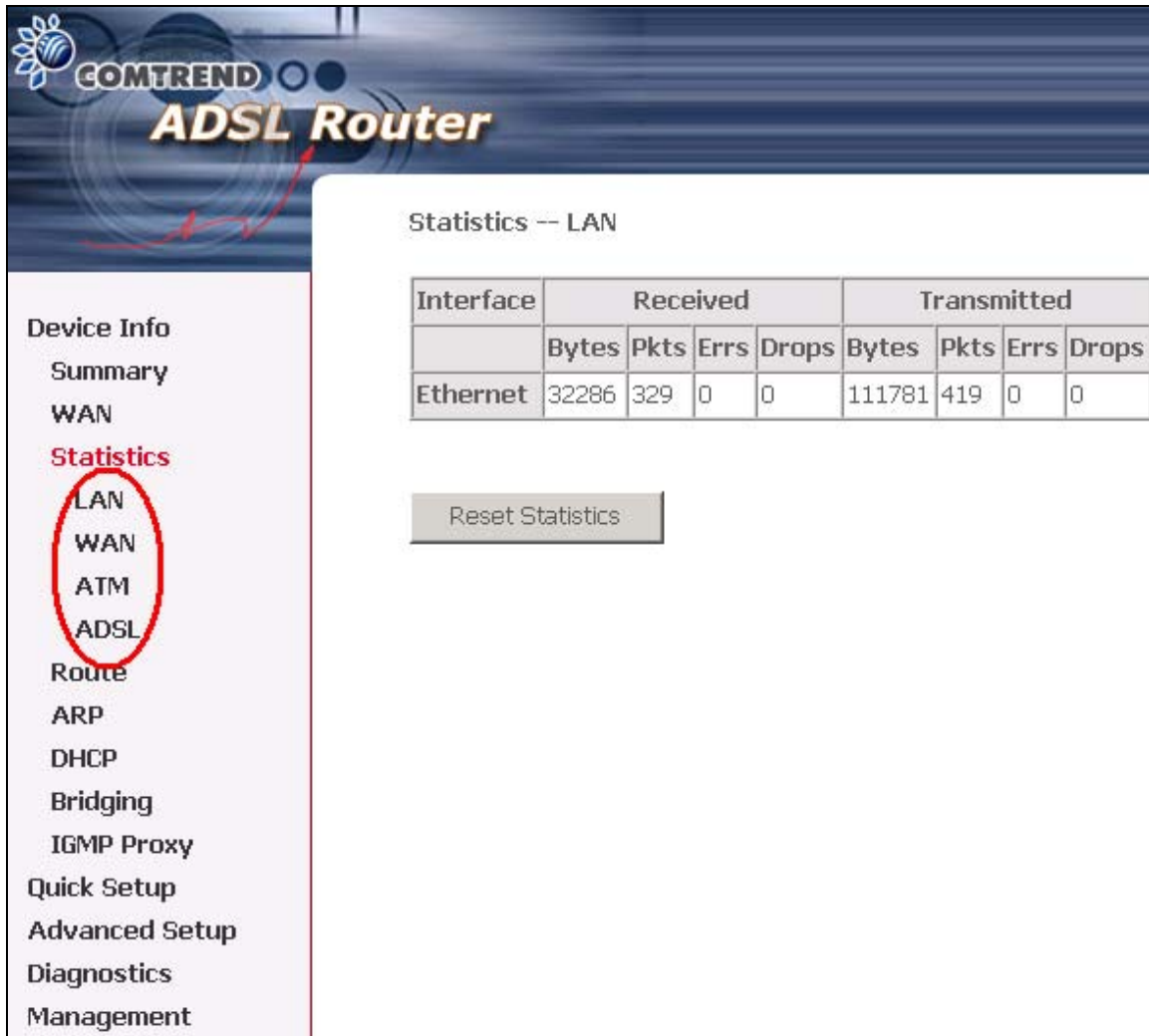
The screenshot shows the COMTREND ADSL Router web interface. On the left is a navigation menu with options: Device Info, Summary, WAN (highlighted in red), Statistics, Route, ARP, DHCP, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled 'WAN Info' and contains a table with the following data:

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Status	IP Address
0/35	1	UBR	mer_0_35	nas_0_35	MER	Disabled	Disabled	Enabled	ADSL Link Down	

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 the statue of the QoS function
State	Shows the connection state of the WAN connection
Status	Lists the status of DSL link
IP Address	Shows IP address for WAN interface

## 5.2 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.



The screenshot displays the Comtrend ADSL Router web interface. The top header features the Comtrend logo and the text "ADSL Router". On the left side, there is a navigation menu with the following items: Device Info, Summary, WAN, Statistics (highlighted in red), LAN (circled in red), WAN, ATM, ADSL, Route, ARP, DHCP, Bridging, IGMP Proxy, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Statistics -- LAN" and contains a table with the following data:

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	32286	329	0	0	111781	419	0	0

Below the table is a "Reset Statistics" button.

### 5.2.1 LAN Statistics

The Network Statistics screen shows interface statistics for ATM AAL5 interface and Ethernet interfaces. (The Network Statistics screen shows interface statistics for LAN of Ethernet interfaces. This shows byte transfer, packet transfer, Error and Drop statistics for the LAN interface.)

Device Info

Summary

WAN

Statistics

**LAN**

WAN

ATM

ADSL

Route

ARP

DHCP

Bridging

IGMP Proxy

Quick Setup

Advanced Setup

Diagnostics

Management

Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	57060	580	0	0	175711	704	0	0

Reset Statistics



## 5.2.2 WAN Statistics

Statistics -- WAN

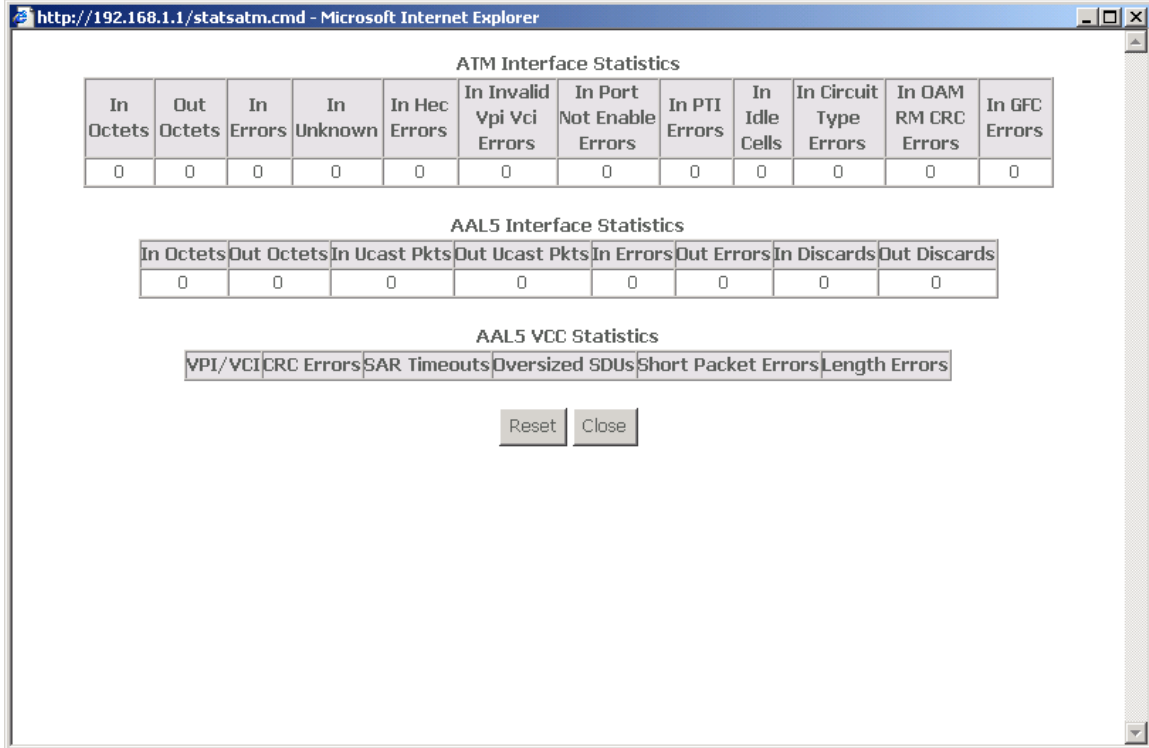
Service	VPI/VCI	Protocol	Interface	Received				Transmitted					
				Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops		

Reset Close

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

### 5.2.3 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

### 5.2.4 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.

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:		
Data Cells:		
Bit Errors:		
Total ES:		
Total SES:		
Total UAS:		
<input type="button" value="ADSL BER Test"/> <input type="button" value="Reset"/> <input type="button" value="Close"/>		

<b>Field</b>	<b>Description</b>
Mode	Modulation protocol G.DMT or T1.413
Type	Channel type Interleave or Fast
Line Coding	Line Coding format, that can be selected G.dmt, G.lite, T1.413, ADSL2, Annex L and Annex M
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 Cells	Total number of ATM cells (including idle and data cells).
Data Cells	Total number of ATM data cells.
Bit Errors	Total number of bit errors.
Total ES:	Total Number of Errored Seconds
Total SES:	Total Number of Severely Errored Seconds
Total UAS:	Total Number of Unavailable Seconds

### 5.2.5 Route

Choose **Route** to display the routes that the router 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**, ARP, DHCP, Bridging, IGMP Proxy, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- Route" and includes the following text: "Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate, D - dynamic (redirect), M - modified (redirect)." Below this text 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

### 5.2.6 ARP

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

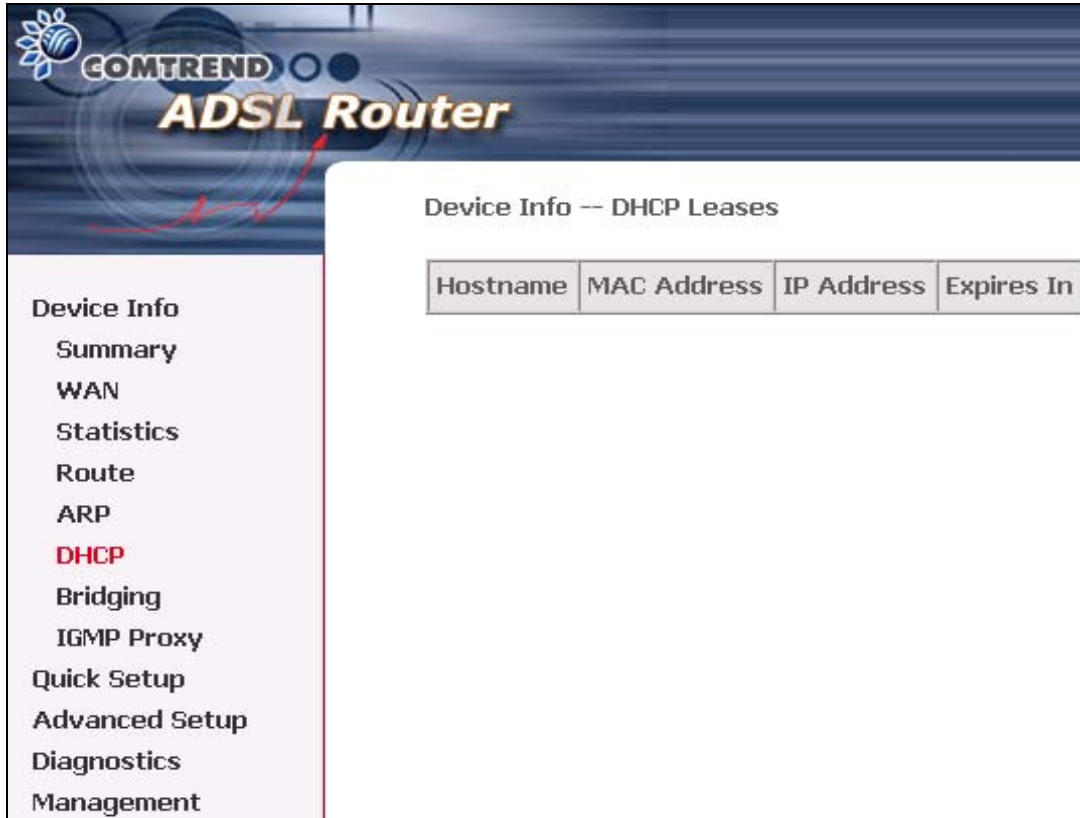
The screenshot shows the Comtrend ADSL Router web interface. The left sidebar contains a menu with the following items: Device Info, Summary, WAN, Statistics, Route, **ARP**, DHCP, Bridging, IGMP Proxy, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- ARP" and includes the following table:

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

Below the table, there is a checkbox labeled "Enable ARP Proxy" and a "Save/Apply" button.

## 5.2.7 DHCP

Click **DHCP** to display the DHCP information.



The screenshot displays the Comtrend ADSL Router web interface. The top banner features the Comtrend logo and the text "ADSL Router". On the left side, there is a vertical navigation menu with the following items: Device Info, Summary, WAN, Statistics, Route, ARP, **DHCP** (highlighted in red), Bridging, IGMP Proxy, Quick Setup, Advanced Setup, Diagnostics, and Management. The main content area is titled "Device Info -- DHCP Leases" and contains a table with the following headers: Hostname, MAC Address, IP Address, and Expires In. The table body is currently empty.

Hostname	MAC Address	IP Address	Expires In
----------	-------------	------------	------------

## Chapter 6 Advanced Setup

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

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
Firewall	Shows if the Firewall enabled or disabled
Nat	Shows if the Network Address Translation(NAT) is enabled or disabled.
QoS	Shows enable or disable IGMP QoS
State	Shows enable or disable WAN connection

### 6.1 WAN



For further information on WAN please reference section: 5.1, Page 29.

## 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.

The screenshot shows the 'Local Area Network (LAN) Setup' page of a COMTREND ADSL Router. The page has a left sidebar with navigation options: Device Info, Quick Setup, Advanced Setup, WAN, LAN, Routing, DSL, Diagnostics, and Management. The main content area is titled 'Local Area Network (LAN) Setup' and contains the following fields and options:

- IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0
- Loopback IP and Subnetmask:
  - IP Address: 127.0.0.1
  - Subnetmask: 255.0.0.0
- Configure the second IP Address and Subnet Mask for LAN interface
- 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: [empty field]

At the bottom right, there are two buttons: 'Save' and 'Save/Reboot'.

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

This close-up view shows the checkbox option:  Configure the second IP Address and Subnet Mask for LAN interface. Below this checkbox are two empty input fields for 'IP Address:' and 'Subnet Mask:'. At the bottom right, the 'Save' and 'Save/Reboot' buttons are visible.

**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

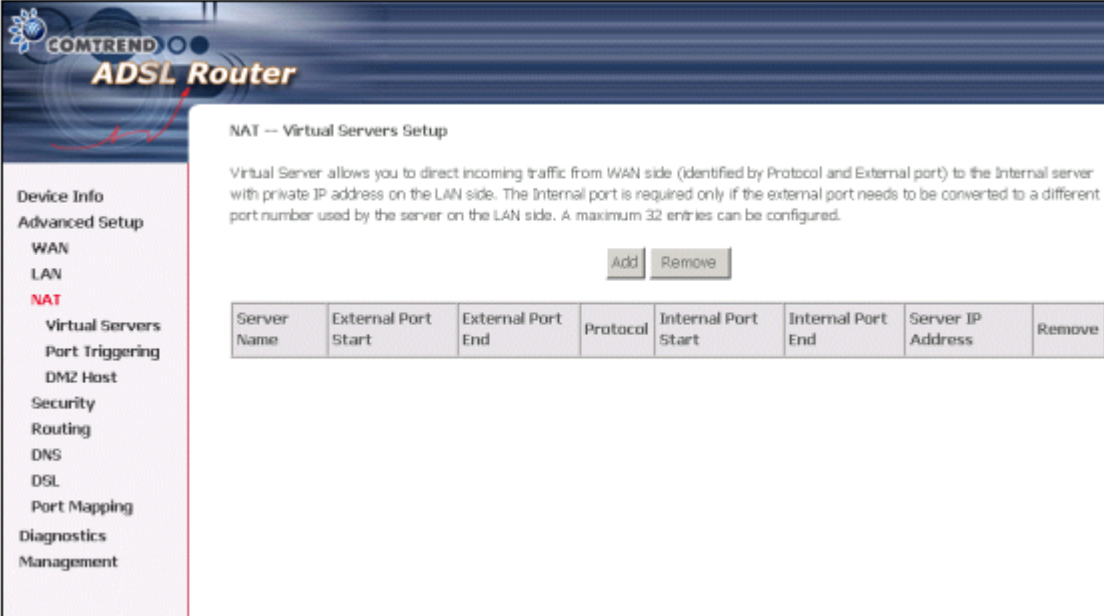
**Note:** This option is not available for bridge mode.

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

### 6.3.1 Virtual Servers

**Note:** This option is not available for Bridge mode.

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.

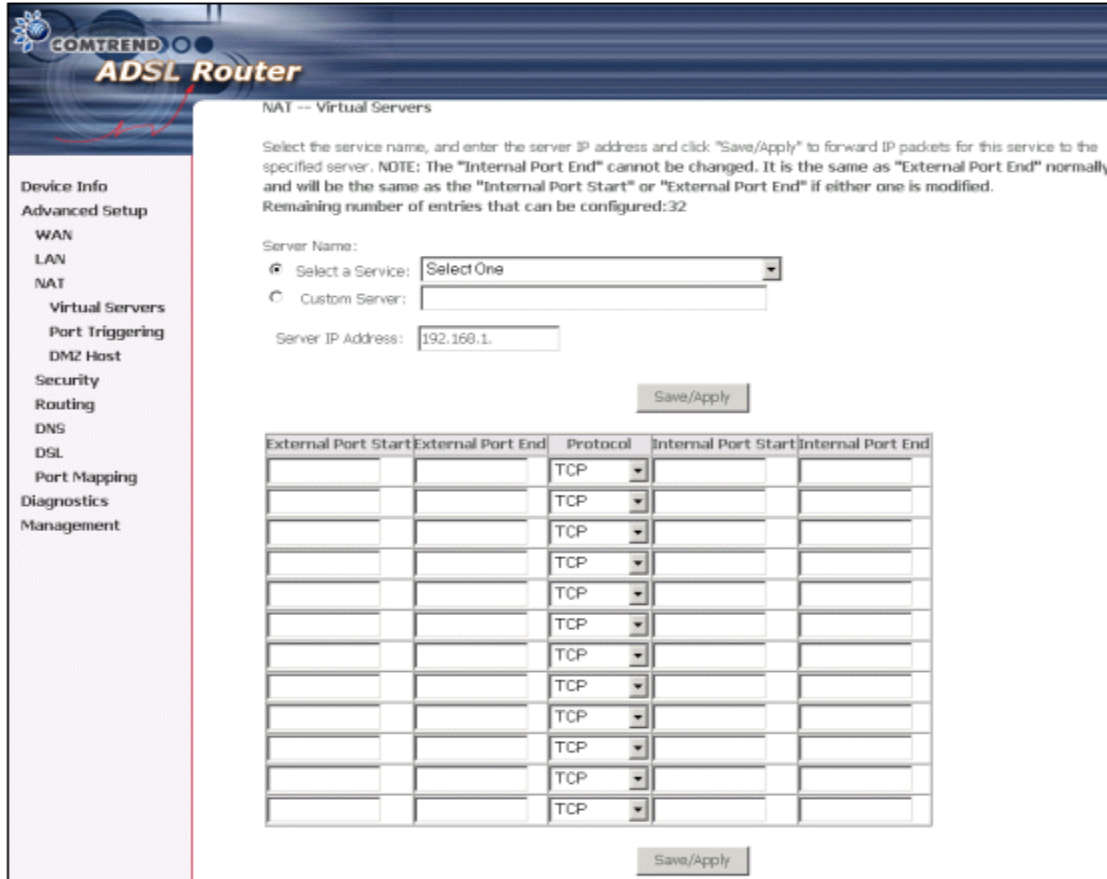


NAT -- Virtual Servers Setup

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.



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.

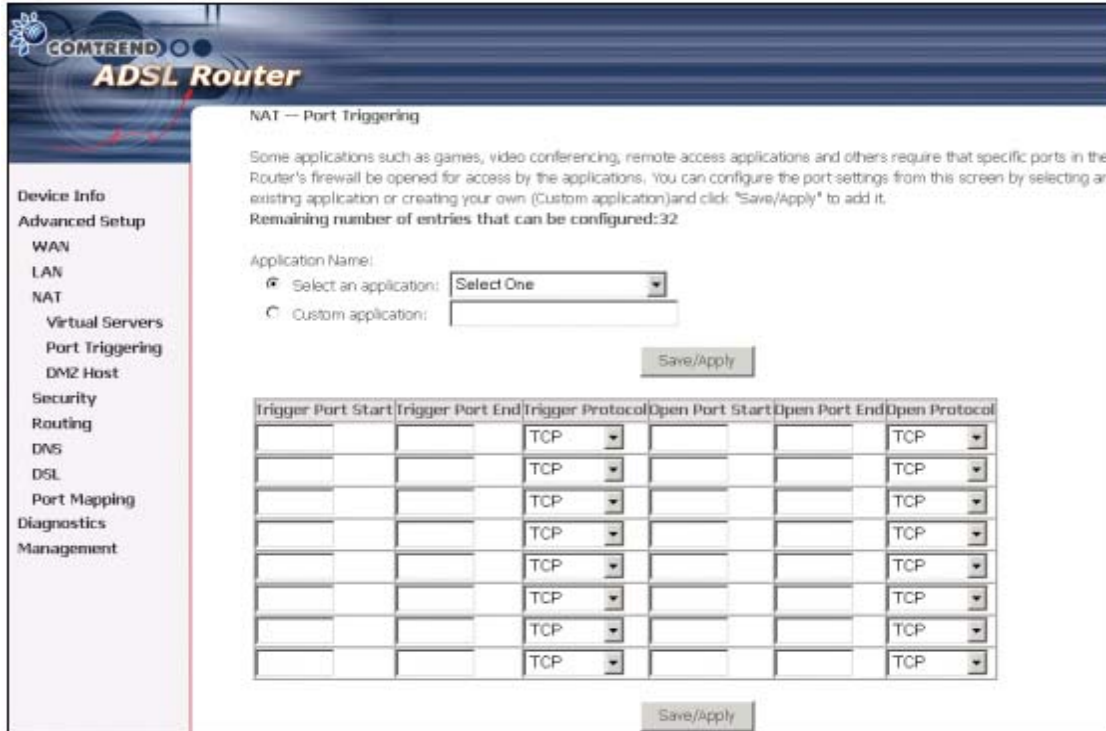
### 6.3.2 Port Triggering

**Note:** This option is not available for Bridge mode.

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.



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

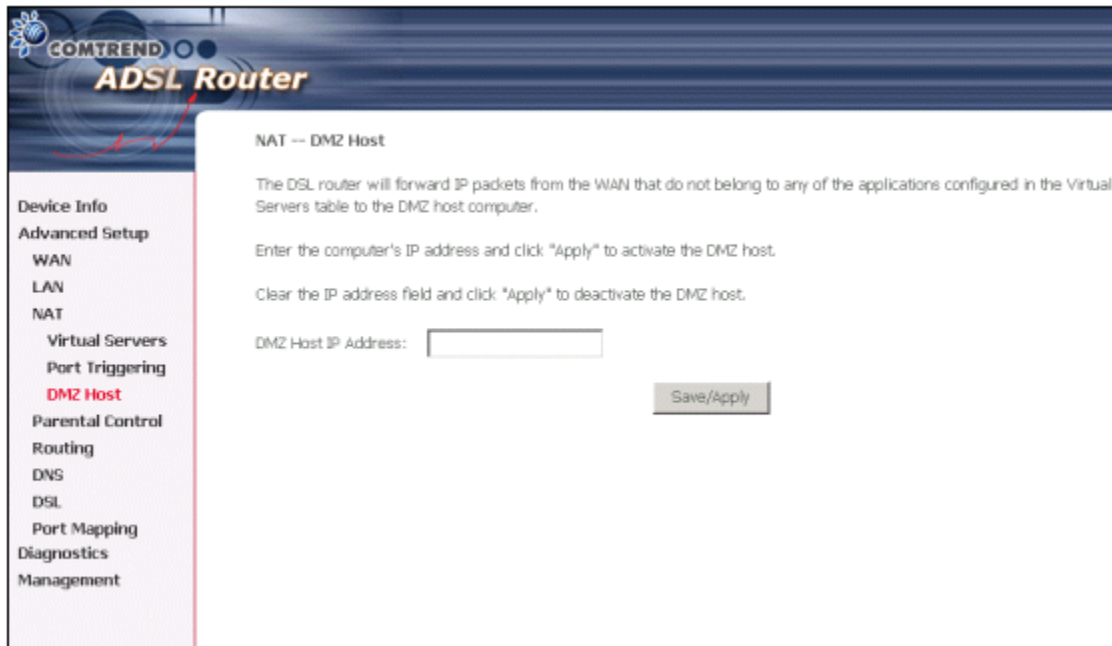


Select an Application Or Custom Application	User should select the application from the list. Or User can enter the name of their choice.
Trigger Port Start	Enter the starting trigger port number (when you select custom application). When an application is selected the port ranges are automatically configured.
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

**Note:** This option is not available for Bridge mode.

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.

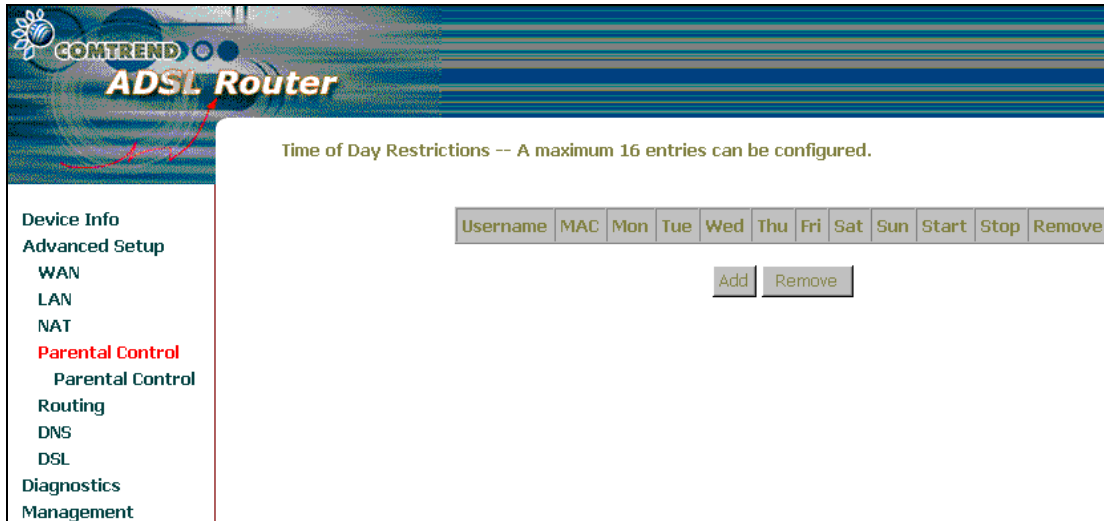


Enter the computer's IP address and click "Apply" to activate the DMZ host.  
Clear the IP address field and click "Apply" to deactivate the DMZ host.

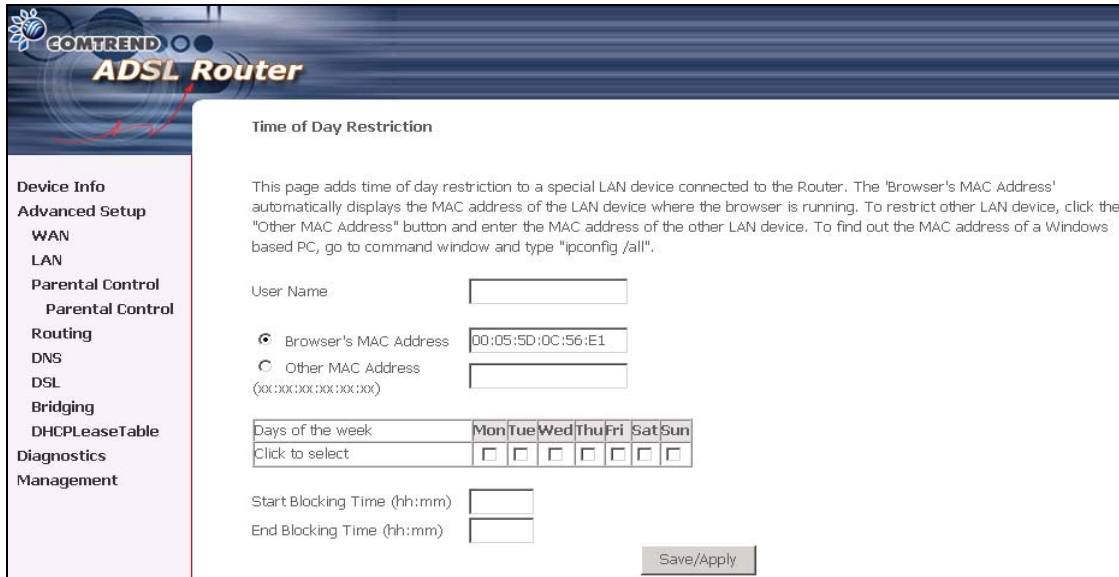
## 6.4 Security

### 6.4.1 Parental Control

Click on Parental Control in the menu bar.



Then click Add. The following screen will be displayed.



Input your User Name. Select the day of the week and the time that you want the restriction in place (as shown below).

**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

Start Blocking Time (hh:mm):

End Blocking Time (hh:mm):

Then click Save/Apply. The following screen will be displayed.

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

Username	MAC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start	Stop	Remove
comtrend	00:05:5d:a0:e8:84				x				17:10	17:12	<input type="checkbox"/>

## 6.4.2 MAC Filtering

Mac Filtering is only available for Bridged mode.

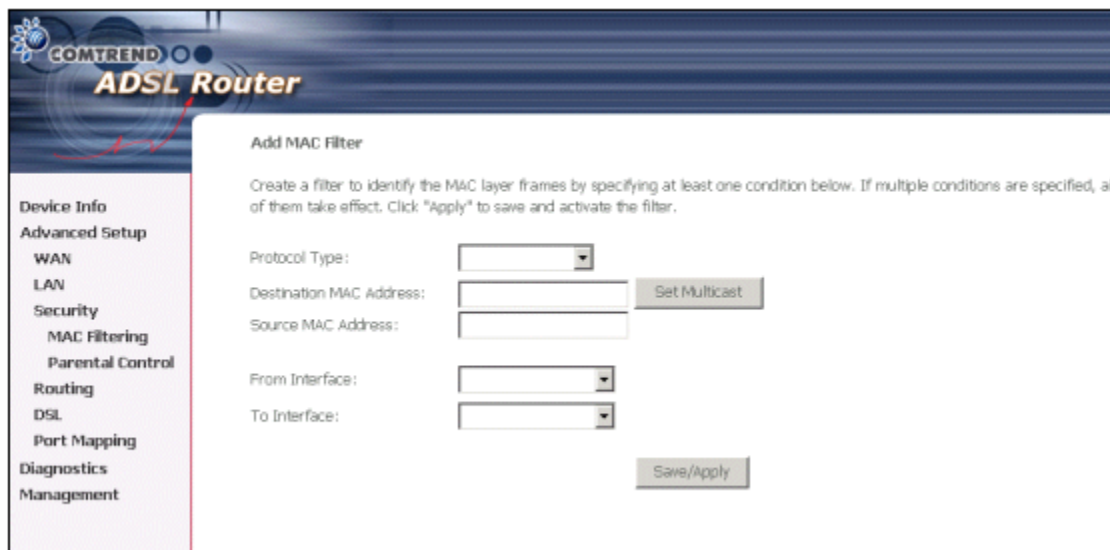
Each network device has a unique MAC address. You can block or forward the packets based on the MAC addresses. The MAC Filtering Setup screen allows setting up the MAC filtering policy and the MAC filtering rules. MAC Filtering is only effective on ATM PVCs configured in Bridge mode.

The policy **FORWARDED** means that all MAC layer frames will be **FORWARDED** except those matching with any of the specified rules in the following table. **BLOCKED** means that all MAC layer frames will be **BLOCKED** except those matching with any of the specified rules in the following table. The default is FORWARD; you change by clicking the **Change Policy** button.





Choose **Add** or **Remove** to configure MAC filtering rules. The following screen pops up when you click **Add**. Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click **Apply** to save and activate the filter.



Option	Description
Protocol type	PPPoE, IPv4, IPv6, AppleTalk, IPX, NetBEUI, IGMP
Destination MAC Address	Define the destination MAC address
Source MAC Address	Define the source MAC address

Set Multicast	Click this button, it will automatically set the multicast MAC address.
From Interface	Select the incoming packet interface
To Interface	Select the outgoing packet interface

### 6.4.3 IP Filtering

This option is only available for PPPoE and PPPoA.

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



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

**COMTREND ADSL Router**

**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

The screenshot shows the 'Incoming IP Filtering Setup' page in the COMTREND ADSL Router web interface. 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), Routing (DNS, DSL), Port Mapping, Diagnostics, and Management. The 'Incoming' option under Security is highlighted in red. The main content area is titled 'Incoming IP Filtering Setup' and contains the following text: '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.' Below this, it says 'Choose Add or Remove to configure incoming IP filters.' There is a table with the following columns: Filter Name, VPI/VCI, Protocol, Source Address / Mask, Source Port, Dest. Address / Mask, Dest. Port, and Remove. Below the table are two buttons: 'Add' and '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' page in the COMTREND ADSL Router web interface. The left sidebar is the same as in the previous screenshot, with 'Incoming' highlighted. The main content area is titled 'Add IP Filter -- Incoming' and contains the following text: '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, there 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). Below these fields, there is a section titled 'WAN Interfaces (Configured in Routing mode and with firewall enabled only)' with the text 'Select at least one or multiple WAN interfaces displayed below to apply this rule.' There are two checkboxes: 'Select All' (checked) and 'pppoe\_0\_35\_1/ppp\_0\_35\_1' (checked). At the bottom right, there is a 'Save/Apply' button.

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

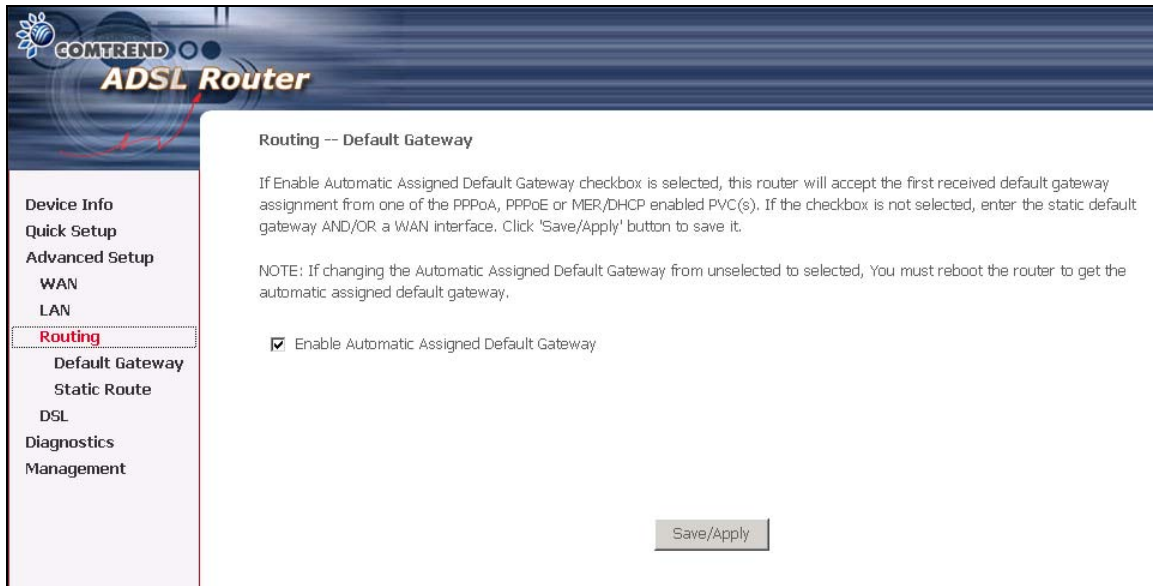
## 6.5 Routing

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

### 6.5.1 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.

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



The screenshot displays the configuration interface for a COMTREND ADSL Router. The left sidebar contains a navigation menu with the following items: Device Info, Quick Setup, Advanced Setup, WAN, LAN, Routing (highlighted in red), Default Gateway, Static Route, DSL, Diagnostics, and Management. The main content area is titled "Routing -- Default Gateway" and contains the following text:

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.

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

Enable Automatic Assigned Default Gateway

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

## 6.5.2 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 COMTREND ADSL Router web interface. The left sidebar contains a navigation menu with the following items: Device Info, Quick Setup, Advanced Setup, WAN, LAN, Routing, Default Gateway, **Static Route** (highlighted), 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 five columns: Destination, Subnet Mask, Gateway, Interface, and Remove. Below the table are two buttons: "Add" and "Remove".

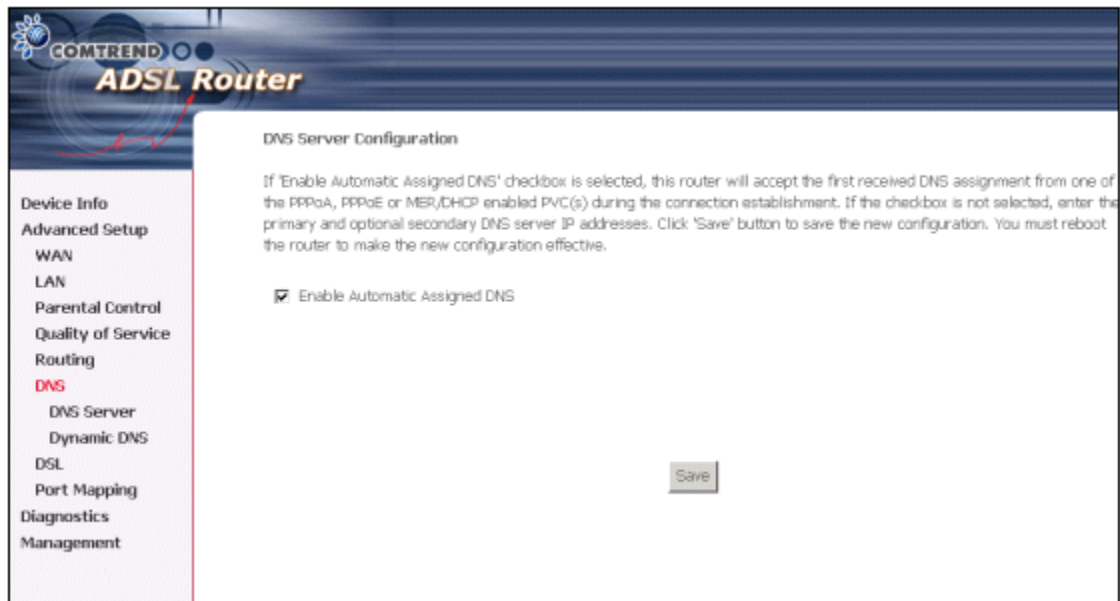
To add static route, click the **Add** button to display the following screen. Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click **Save/Apply** to add the entry to the routing table.

The screenshot shows the COMTREND ADSL Router web interface with the "Static Route" menu item selected. 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 four input fields: "Destination Network Address:" (text box), "Subnet Mask:" (text box), "Use Gateway IP Address" (checkbox) with a text box, and "Use Interface" (checkbox) with a dropdown menu. A "Save/Apply" button is located at the bottom right of the form.

## 6.6 DNS

### 6.6.1 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.



### 6.6.2 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.

For this option to be available (displayed on your screen), you need to have set up a WAN PPPoE or PPPoA interface. This can be done at [www.dyndns.org](http://www.dyndns.org). Here you will register your host name, username and password.

Click on the Dynamic DNS button. The following screen will be displayed.

The screenshot shows the Comtrend ADSL Router web interface. The top header 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" (highlighted), "WAN", "LAN", "NAT", "Parental Control", "Routing", "DNS", "DNS Server", "Dynamic DNS" (highlighted in red), "DSL", "Diagnostics", and "Management". The main content area is titled "Dynamic DNS" and contains the following text: "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." Below this is the instruction: "Choose Add or Remove to configure Dynamic DNS." At the bottom of the main area are two buttons: "Add" and "Remove".

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



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.

To add a dynamic DDNS, select your D-Dns provider. Then input Hostname, Username and Password. Click Save/Apply. The following screen will be displayed.

## 6.7 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

Select the phone line pair below.

- Inner pair
- Outer pair

Capability

- Bitswap Enable
- SRA Enable

Save/Apply

Option	Description
G.dmt/G.lite	Sets G.Dmt/G.lite if you want the system to use either G.Dmt or 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-5071 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.

**COMTREND ADSL Router**

**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 DSL service provider**

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

**Test the connection to your Internet service provider**

Test PPP server connection:	PASS	<a href="#">Help</a>
Test authentication with ISP:	PASS	<a href="#">Help</a>
Test the assigned IP address:	PASS	<a href="#">Help</a>
Ping default gateway:	PASS	<a href="#">Help</a>
Ping primary Domain Name Server:	PASS	<a href="#">Help</a>
Test Loopback IP:	PASS	<a href="#">Help</a>

[Rerun Diagnostic Tests](#)

Test	Description
Ethernet Connection	<p><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.</p> <p><b>Fail:</b> Indicates that the DSL Router does not detect the Ethernet interface on your computer.</p>
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>

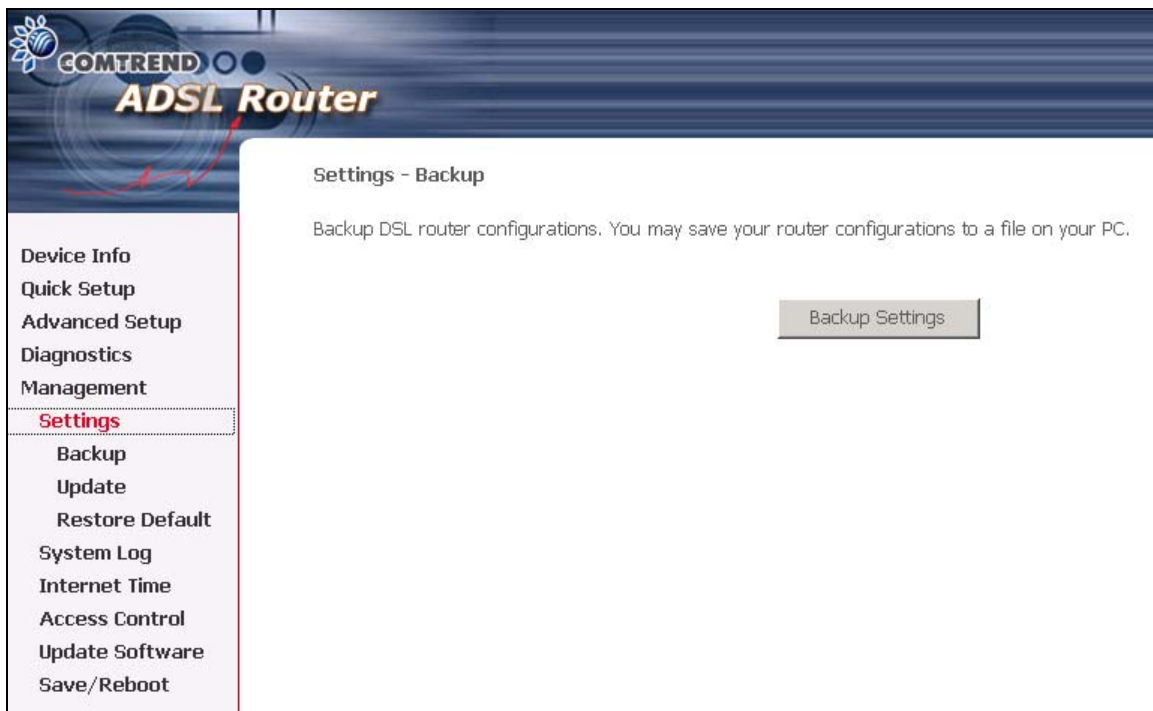
## Chapter 8 Management

The Management section of the CT-5071 supports the following maintenance functions and processes:

- System log
- Update software
- Restore Settings
- Local Access
- User Access
- Remote Access

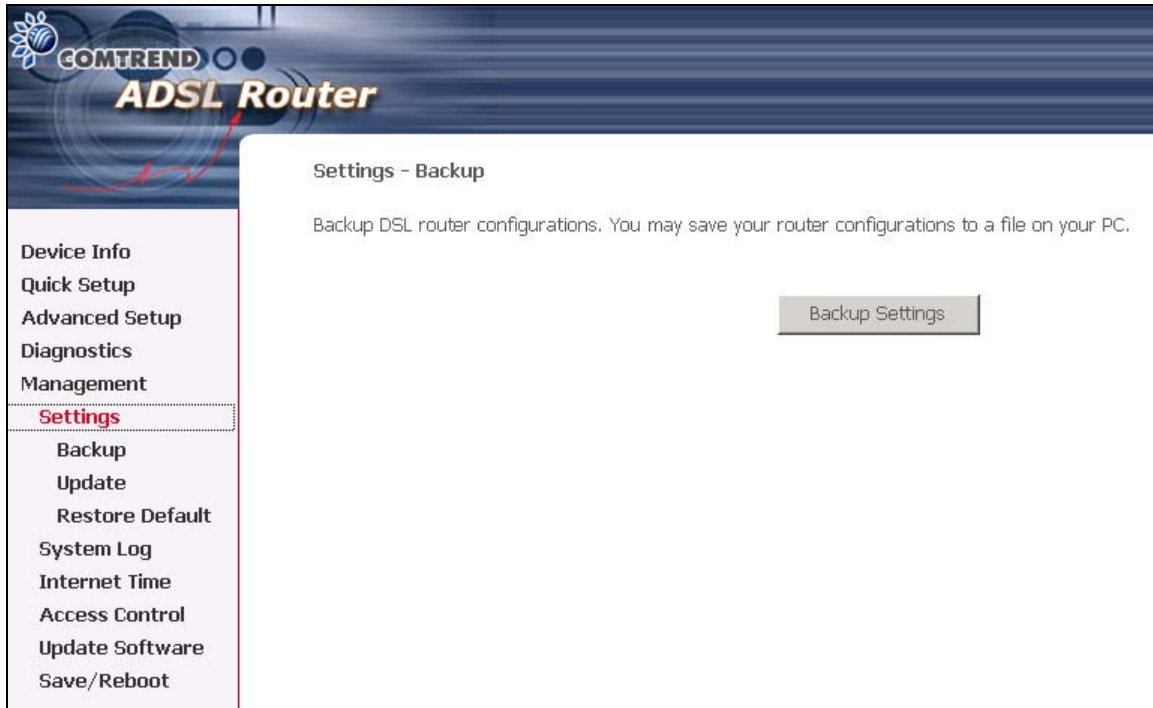
### 8.1 Settings

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.



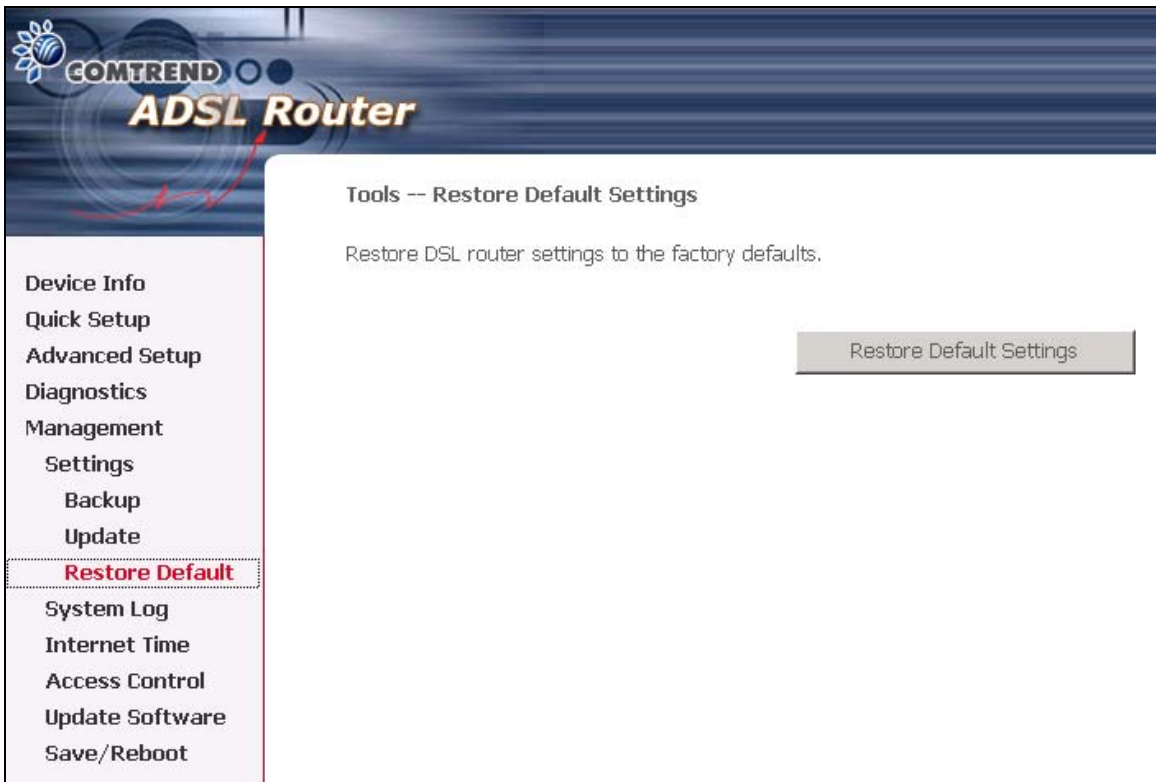
### 8.1.2 Configuration Restoration

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-5071 board hardware and the boot loader support the **reset to default** button. If the reset button is continuously pushed for more than 5 seconds until the power indicator blinks, 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-5071.

#### Default settings

The CT-5071 default settings are

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

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.

#### DSL Router Restore

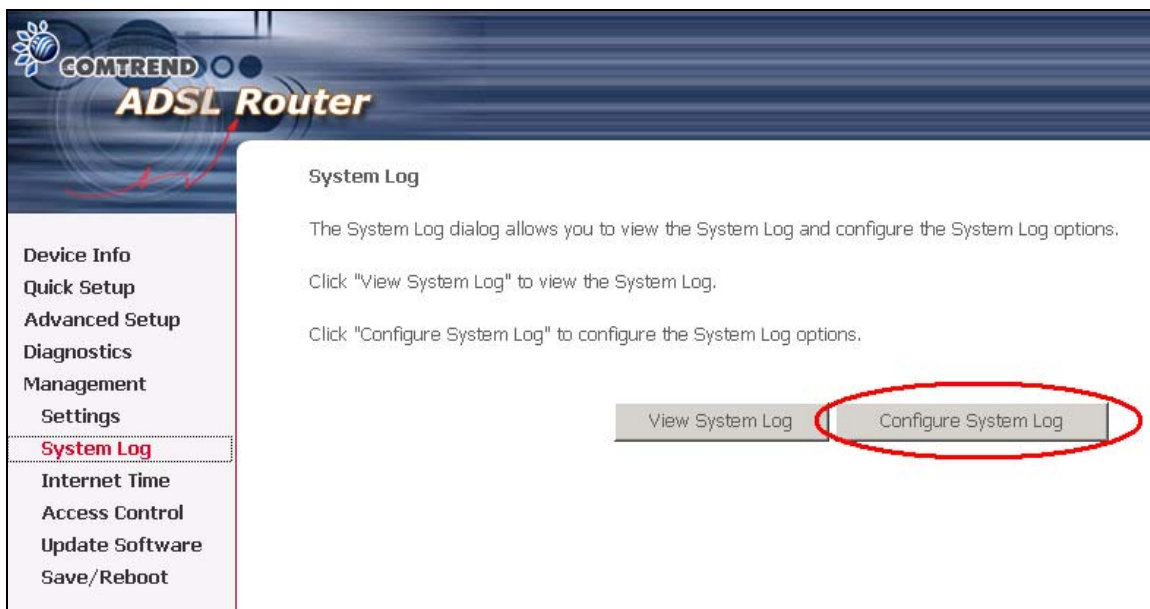
The DSL Router configuration has been restored to default settings and the router is rebooting.

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.

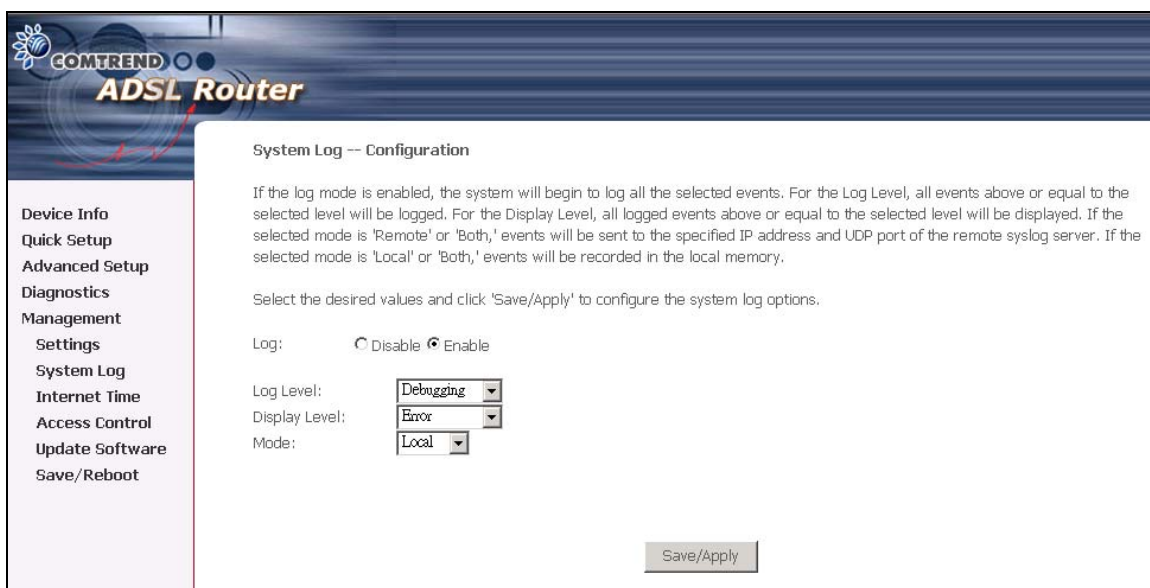
## 8.2 System Log

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-5071 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>• 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 v0.60.4 (2004.09.14-06:30+0000)
Jan 1 00:00:17	user	crit	klogd: USB Link UP.
Jan 1 00:00:19	user	crit	klogd: eth0 Link UP.

### 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**.

**COMTREND ADSL Router**

**Time settings**

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

Save/Apply

Device Info  
Quick Setup  
Advanced Setup  
Diagnostics  
Management  
Settings  
System Log  
**Internet Time**  
Access Control  
Update Software  
Save/Reboot

**COMTREND ADSL Router**

**Access Control -- Services**

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

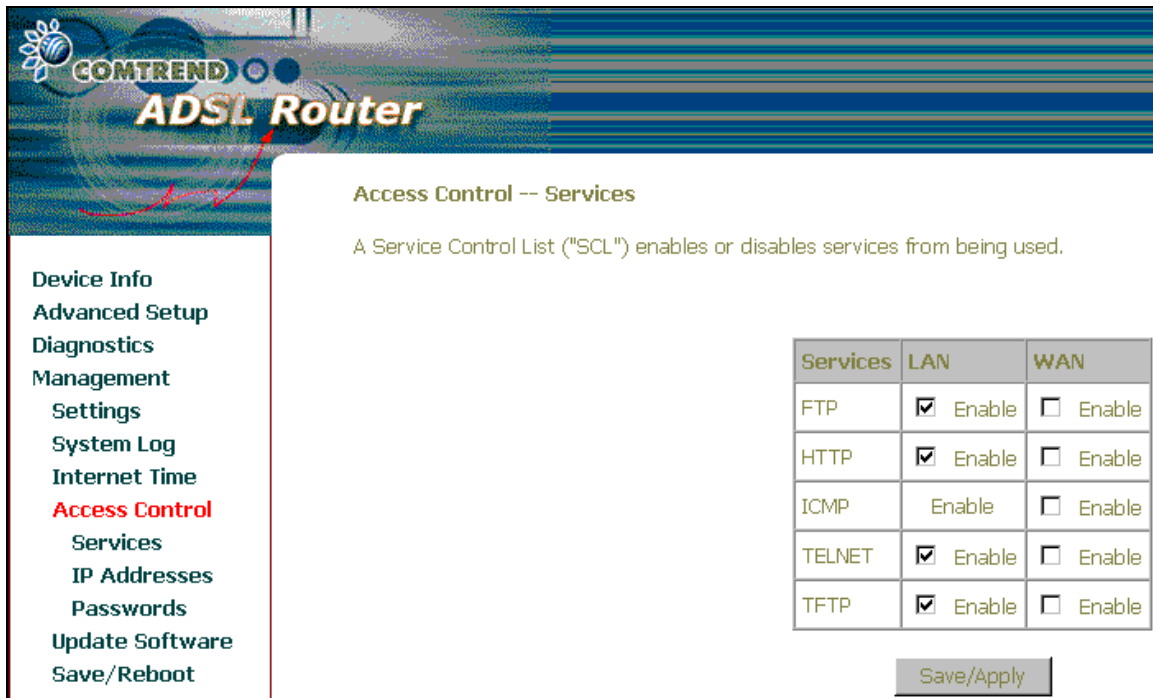
Services	LAN	WAN
FTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
ICMP	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable
TELNET	<input checked="" type="checkbox"/> Enable	<input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

Save/Apply

Device Info  
Advanced Setup  
Diagnostics  
Management  
Settings  
System Log  
Internet Time  
**Access Control**  
Services  
IP Addresses  
Passwords  
Update Software  
Save/Reboot

## 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 displays the web management interface for a COMTREND ADSL Router. The page title is "Access Control -- Services". Below the title, a descriptive text states: "A Service Control List ("SCL") enables or disables services from being used." The main content area features a table with columns for "Services", "LAN", and "WAN". The table lists six services: FTP, HTTP, ICMP, TELNET, and TFTP. For each service, there are two checkboxes: one for "LAN" and one for "WAN". The "LAN" checkboxes for FTP, HTTP, TELNET, and TFTP are checked, while the "WAN" checkboxes are unchecked. The "ICMP" row shows "Enable" text next to the LAN checkbox. A "Save/Apply" button is located at the bottom right of the table area. On the left side of the interface, a navigation menu lists various options: 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.

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	<input type="checkbox"/> Enable
TELNET	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
TFTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

Save/Apply

### 8.4.1 Services

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

**COMTREND**  
**ADSL Router**

Access Control -- Services

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

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

Save/Apply

Device Info  
Quick Setup  
Advanced Setup  
Diagnostics  
Management  
Settings  
System Log  
Internet Time  
**Access Control**  
Services  
IP Addresses  
Passwords  
Update Software  
Save/Reboot

## 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.



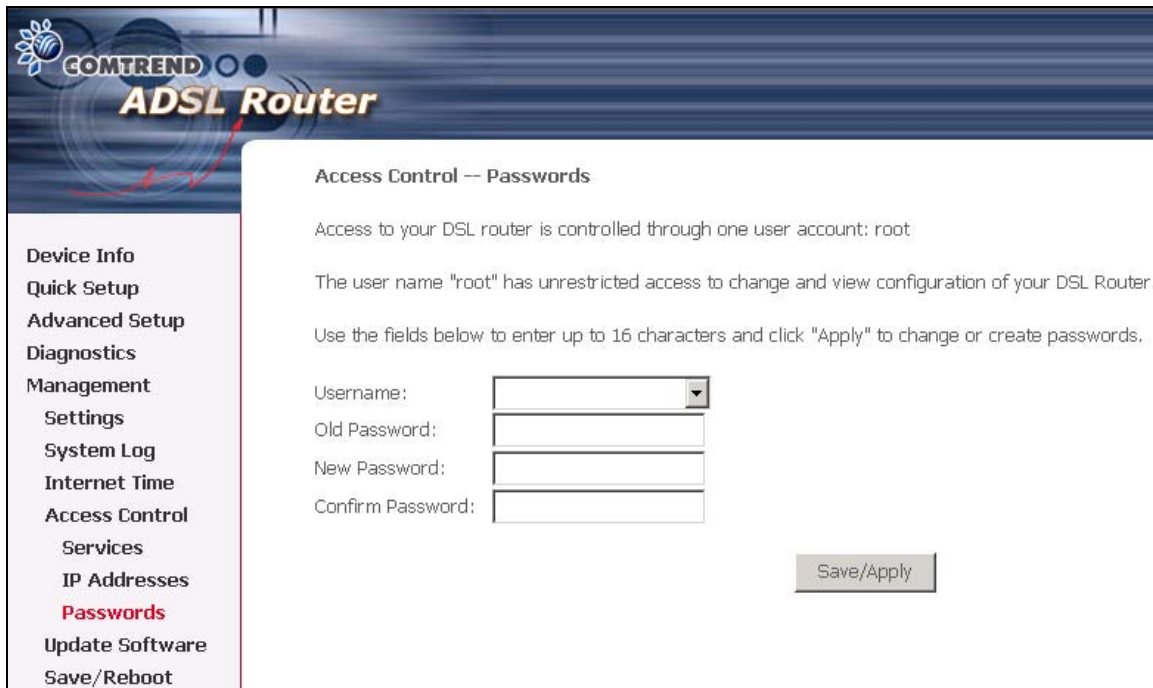
The screenshot displays the web interface of a COMTREND ADSL Router. The top header features the COMTREND logo and the text "ADSL Router". A left-hand navigation menu includes options such as "Device Info", "Quick Setup", "Advanced Setup", "Diagnostics", "Management", "Settings", "System Log", "Internet Time", "Access Control", "Services", "IP Addresses" (highlighted in red), "Passwords", "Update Software", and "Save/Reboot".

The main content area is titled "Access Control -- IP Address". It contains 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 the text, the "Access Control Mode" is set to "Disable" via a radio button. There are two rows of buttons: the first row has "IP Address" and "Remove" buttons, and the second row has "Add" and "Remove" buttons.

### 8.4.3 Password Change

To change the current password, do the following. Select Username – root. Enter Old Password and New Password. Then enter the new password again in the Confirm Password box to verify the new password. Then, click Save/Apply button.



**COMTREND**  
**ADSL Router**

**Device Info**  
**Quick Setup**  
**Advanced Setup**  
**Diagnostics**  
**Management**  
**Settings**  
**System Log**  
**Internet Time**  
**Access Control**  
**Services**  
**IP Addresses**  
**Passwords**  
**Update Software**  
**Save/Reboot**

**Access Control -- Passwords**

Access to your DSL router is controlled through one user account: root

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

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

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 Comtrend ADSL Router web interface. The left sidebar contains a navigation menu with the following items: Device Info, Quick Setup, Advanced Setup, Diagnostics, Management, Settings, System Log, Internet Time, Access Control, Update Software (highlighted in red), and Save/Reboot. The main content area is titled 'Tools -- Update Software' and contains the following instructions:

**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.

Below the instructions is a form with a text input field labeled 'Software File Name:' and a 'Browse...' button. At the bottom right of the form is an 'Update Software' button.

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

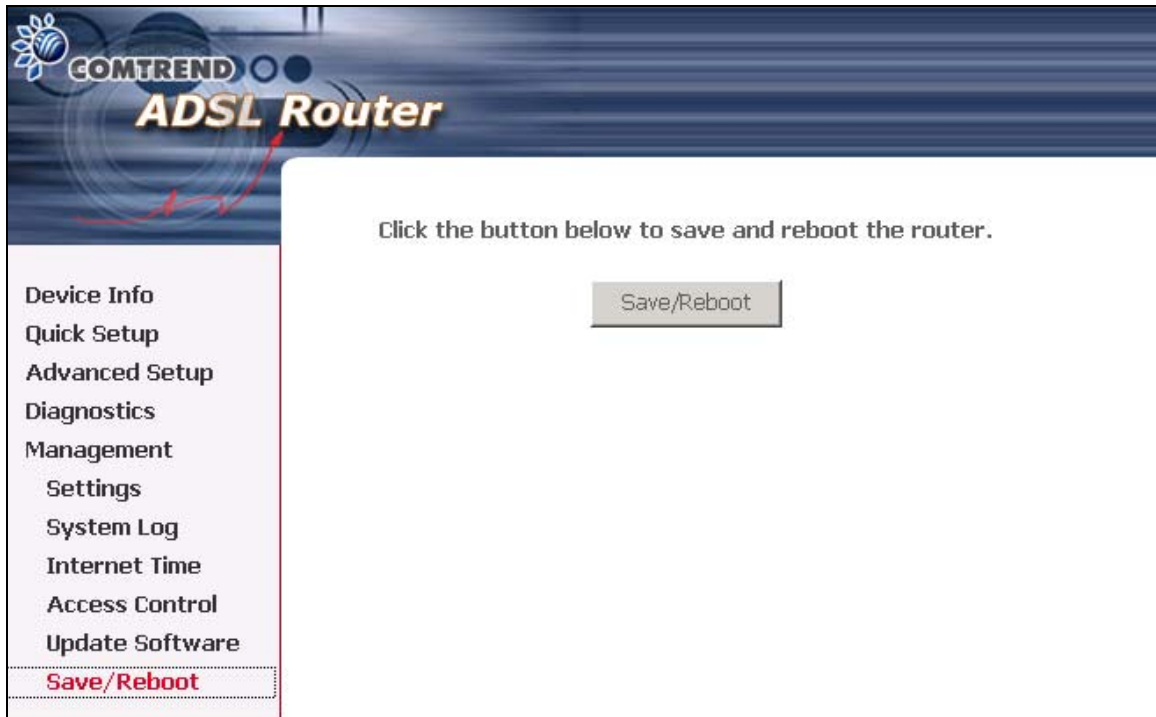
**Step 2:** Enter the path to the image file location in the box below or click the **Browse** button to locate the image file.

**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)

<b>Pin</b>	<b>Definition</b>	<b>Pin</b>	<b>Definition</b>
1	-	4	ADSL_TIP
2	-	5	-
3	ADSL_RING	6	-

#### Pin Assignments of the RJ11 Port

### LAN Port (RJ45)

<b>Pin</b>	<b>Definition</b>	<b>Pin</b>	<b>Definition</b>
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, Reset Button X 1, Power Jack X 1, Power switch X 1

### ADSL

Standard ANSI T1.413 Issue 2, ITU-T G.992.1, G.992.2 , G.992.3, G.994.1  
G.992.5 (ADSL2+) Downstream : 24 Mbps Upstream : 1.3 Mbps  
G.992.3 (ADSL2) Downstream : 12 Mbps Upstream : 1.3 Mbps

Mbps

G.DMT data rate Downstream: 11 Mbps Upstream: 1 Mbps  
G.lite data rate Downstream: 1.5 Mbps Upstream: 512 Kbps  
Auto-negotiation rate adaptation

### Ethernet

Standard IEEE 802.3, IEEE 802.3u  
10/100 BaseT Auto-sense  
MDI/MDX support

### ATM Attributes

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

### Management

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

### Routing Functions

Static route, RIP, and RIPv2, NAT/PAT, DHCP Server/DHCP Relay, DNS  
Proxy, ARP  
IGMP Proxy

### 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**

92mm (W) x 34mm (H) x 114mm (D)

**Certifications**

FCC Part 15 class B, FCC Part 68, CE

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