

**COMTREND**

# VR-3053

## Home Gateway

### User Manual



## Preface

This manual provides information related to the installation and operation of this device. The individual reading this manual is presumed to have a basic understanding of telecommunications terminology and concepts.

If you find the product to be inoperable or malfunctioning, please contact technical support for immediate service by email at [INT-support@comtrend.com](mailto:INT-support@comtrend.com)

For product update, new product release, manual revision, or software upgrades, please visit our website at <http://www.comtrend.com>

## Important Safety Instructions

With reference to unpacking, installation, use, and maintenance of your electronic device, the following basic guidelines are recommended:

- Do not use or install this product near water, to avoid fire or shock hazard. For example, near a bathtub, kitchen sink or laundry tub, or near a swimming pool. Also, do not expose the equipment to rain or damp areas (e.g. a wet basement).
- Do not connect the power supply cord on elevated surfaces. Allow it to lie freely. There should be no obstructions in its path and no heavy items should be placed on the cord. In addition, do not walk on, step on, or mistreat the cord.
- Use only the power cord and adapter that are shipped with this device.
- To safeguard the equipment against overheating, make sure that all openings in the unit that offer exposure to air are not blocked.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightening. Also, do not use the telephone to report a gas leak in the vicinity of the leak.
- Never install telephone wiring during stormy weather conditions.

### CAUTION:

- To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.
- Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.
- Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.
- Do not stack equipment or place equipment in tight spaces, in drawers, or on carpets. Be sure that your equipment is surrounded by at least 2 inches of air space.
- If this Home Gateway Router cause harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

- To prevent interference with cordless phones, ensure that gateway is at least 5 feet ( 1.5m )from the cordless phone base station.
- If you experience trouble with this equipment, you disconnect it from the network until the problem has been corrected or until you are sure that equipment is not malfunctioning.
- If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable alarm equipment consult your telephone company or a qualified installer.



### **WARNING( ATTENTION )**

- Disconnect the power line from the device before servicing.
- For indoor use only
- Do NOT open the casing
- Do NOT use near water
- Do NOT insert sharp objects into the RJ-11 jack
- Keep away from the fire
- For use in ventilated environment / space
- Use 26 AWG or larger cable connect to RJ-11 port
  
- Débranchez l'alimentation électrique avant l'entretien
- Cet appareil est conçu pour l'usage intérieur seulement
- N'ouvrez pas le boîtier
- N'utilisez pas cet appareil près de l'eau
- N'insérez pas d'objets tranchants dans la prise
- RJ-11N'approchez pas du feu
- Veuillez utiliser dans un environnement aéré
- Veuillez utiliser fil électrique de 26AWG pour port RJ-11

Power Specifications( Alimentation ) :

Input 12Vdc, 2A

### **FCC & ISED**

#### **User Information**

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

Aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

This Class B digital apparatus complies with Canadian ICES-003.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 Canada. Pour réduire le risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisies de façon que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour une communication réussie.

Cet appareil est conforme à la norme RSS Industrie Canada exempts de licence norme(s).

Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne peut pas provoquer d'interférences et
2. Cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

## **Radiation Exposure**

### **FCC**

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

### **ISED**

This device complies with the ISED radiation exposure limit set forth for an

uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme avec l'exposition aux radiations ISED définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimum de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec une autre antenne ou transmetteur.

The Ringer Equivalence Number (REN) indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

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**NOTE:** This document is subject to change without notice.

## Protect Our Environment



This symbol indicates that when the equipment has reached the end of its useful life, it must be taken to a recycling centre and processed separate from domestic waste.

The cardboard box, the plastic contained in the packaging, and the parts that make up this router can be recycled in accordance with regionally established regulations. Never dispose of this electronic equipment along with your household waste; you may be subject to penalties or sanctions under the law. Instead, please be responsible and ask for disposal instructions from your local government.

### Save Our Environment

When this equipment has reached the end of its useful life, it must be taken to a recycling centre and processed separately from domestic waste.

The cardboard box, the plastic in the packaging, and the parts that make up this device can be recycled in accordance with regionally established regulations. Never dispose of this electronic equipment along with your household waste.

You may be subject to penalties or sanctions under the law. Instead, ask for disposal instructions from your municipal government.

Please be responsible and protect our environment.

**FC IC**

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## Chapter 1 Introduction

VR-3053 is a Multi-DSL router using the Intel solution. It not only provides both ADSL and 35b VDSL but also integrated 5 Giga Ethernet ports and WLAN 802.11n 2.4GHz frequency band and 802.11ac 5GHz Frequency band. Therefore, VR-3053 is designed for high speed applications. VR-3053 also follows TR-069 making central management (ACS) very easy.

## Chapter 2 Installation

### 2.1 Hardware Setup



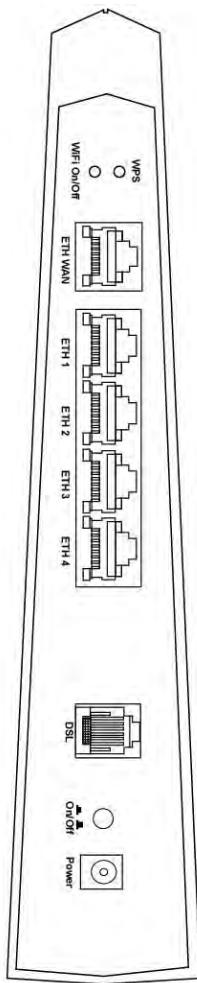
#### **Non-stackable**

This device is not stackable – do not place units on top of each other, otherwise damage could occur.

Follow the instructions below to complete the hardware setup.

### 2.1.1 Back Panel

The figure below shows the back panel of the device.



#### WiFi On/Off

Press and release the WiFi button to enable the WiFi function. To disable WiFi, press and release the WiFi button.

#### WPS Button

Press the WPS button less than 2 seconds to enable WPS which will allow 2 minutes for WiFi connection.

#### ETH WAN PORT

This port is designated to be used for Ethernet WAN functionality only. Use 1000-BASE-T RJ-45 cables to connect to Gigabit WAN server, or 10/100BASE-T RJ-45 cables for standard network usage. This port is auto-sensing MDI/X; so either straight-through or crossover cable can be used.

#### LAN (Ethernet) Ports

You can connect the router to up to four LAN devices using RJ45 cables. The ports are auto-sensing MDI/X and either straight-through or crossover cable can be used.

**DSL**

Connect to the DSL port with the DSL RJ11 cable.

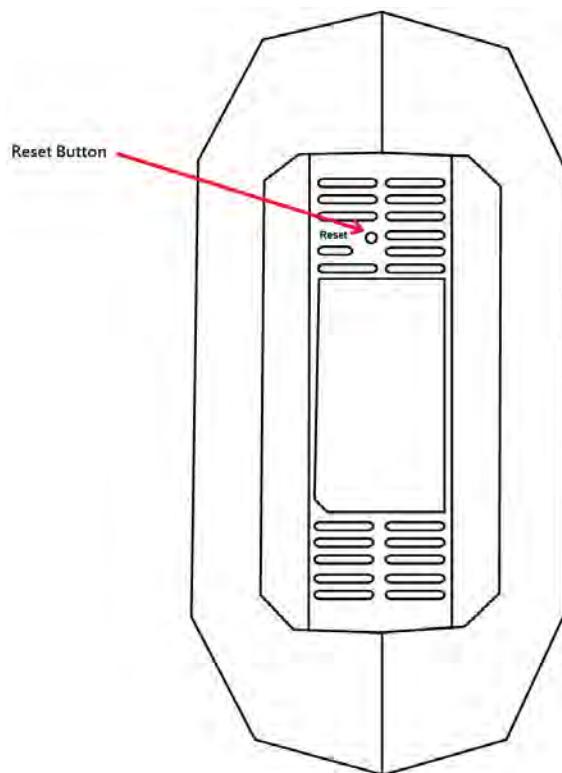
**Power ON**

Press the power button to the OFF position (OUT). Connect the power adapter to the power port. Attach the power adapter to a wall outlet or other AC source. Press the power button to the ON position (IN). If the Power LED displays as expected then the device is ready for setup (see section – LED Indicators).

**Caution 1:** If the device fails to power up, or it malfunctions, first verify that the power cords are connected securely and then power it on again. If the problem persists, contact technical support.

**Caution 2:** Before servicing or disassembling this equipment, disconnect all power cords and telephone lines from their outlets.

### 2.1.2 Bottom Panel



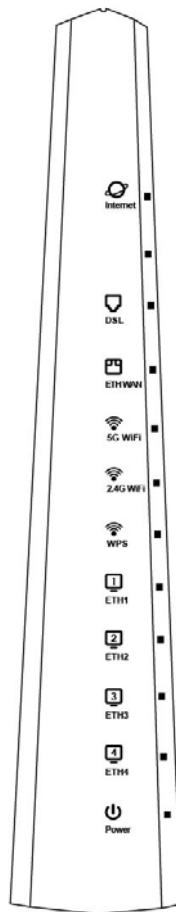
#### Reset Button

Restore the default parameters of the device by pressing the Reset button for 10 seconds. After the device has rebooted successfully, the front panel should display as expected (see section [2.1.3 Front Panel](#) for details).

**NOTE:** If pressed down for more than 60 seconds, the VR-3053 will go into a firmware update state (CFE boot mode). The firmware can then be updated using an Internet browser pointed to the default IP address.

### 2.1.3 Front Panel

The front panel LED indicators are shown below and explained in the following table. This information can be used to check the status of the device and its connections.



LED	Color	Mode	Function
INTERNET	Green	On	IP connected and no traffic detected. If an IP or PPPoE session is dropped due to an idle timeout, the light will remain blue. The light will turn red when it attempts to reconnect and DHCP or PPPoE fails.
		Off	Modem power off, modem in bridged mode or WAN connection not present.
		Blink	IP connected and IP Traffic is passing through the device (either direction)
	Red	On	Device attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.)
DSL	Green	On	xDSL Link is established.
		Off	xDSL Link is not established.
		Blink	xDSL Link is training or data transmitting.

ETH WAN	Green	On	Ethernet WAN is connected.
		Off	Ethernet WAN is not connected.
		Blink	Ethernet WAN is transmitting/ receiving.
5G WiFi	Green	On	Wi-Fi enabled.
		Off	Wi-Fi disabled.
		Blink	Data transmitting or receiving over WLAN.
2.4G WiFi	Green	On	Wi-Fi enabled.
		Off	Wi-Fi disabled.
		Blink	Data transmitting or receiving over WLAN.
WPS	Green	On	WPS connection successful. The LED will stay on for 3 minutes.
		Off	No WPS association process ongoing.
		Slow Blink	WPS connection in progress.
		Fast Blink	WPS connection unsuccessful. The LED will keep blinking for 30 seconds.
ETH 1X-4X	Green	On	An Ethernet Link is established.
		Off	An Ethernet Link is not established.
		Blink	Data transmitting or receiving over Ethernet.
POWER	Green	On	The device is powered up.
	Red	Off	The device is powered down.
POWER	Red	On	POST (Power On Self Test) failure or other malfunction. A malfunction is any error of internal sequence or state that will prevent the device from connecting to the DSLAM or passing customer data.

**Note:**

A malfunction is any error of internal sequence or state that will prevent the device from connecting to the DSLAM or passing customer data. This may be identified at various times such after power on or during operation through the use of self testing or in operations which result in a unit state that is not expected or should not occur.

IP connected (the device has a WAN IP address from IPCP or DHCP and DSL is up or a static IP address is configured, PPP negotiation has successfully complete – if used – and DSL is up ) and no traffic detected. If the IP or PPPoE session is dropped for any other reason, the light is turned off. The light will turn red when it attempts to reconnect and DHCP or PPPoE fails.

## Chapter 3 Web User Interface

This section describes how to access the device via the web user interface (WUI) using an Internet browser such as Internet Explorer (version 5.0 and later).

### 3.1 Default Settings

The factory default settings of this device are summarized below.

- LAN IP address: 192.168.1.1
- LAN subnet mask: 255.255.255.0
- Administrative access (username: **root**, password: **12345**)
- User access (username: **user**, password: **user**)
- Remote (WAN) access (username: **support**, password: **support**)
- WLAN access: **enabled**

#### Technical Note

During power on, the device initializes all settings to default values. It will then read the configuration profile from the permanent storage section of flash memory. The default attributes are overwritten 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. The factory default configuration can be restored either by pushing the reset button for more than ten seconds until the power indicates LED blinking or by clicking the Restore Default Configuration option in the Restore Settings screen.

## 3.2 IP Configuration

### DHCP MODE

When the VR-3053 powers up, the onboard DHCP server will switch on. Basically, the DHCP server issues and reserves IP addresses for LAN devices, such as your PC.

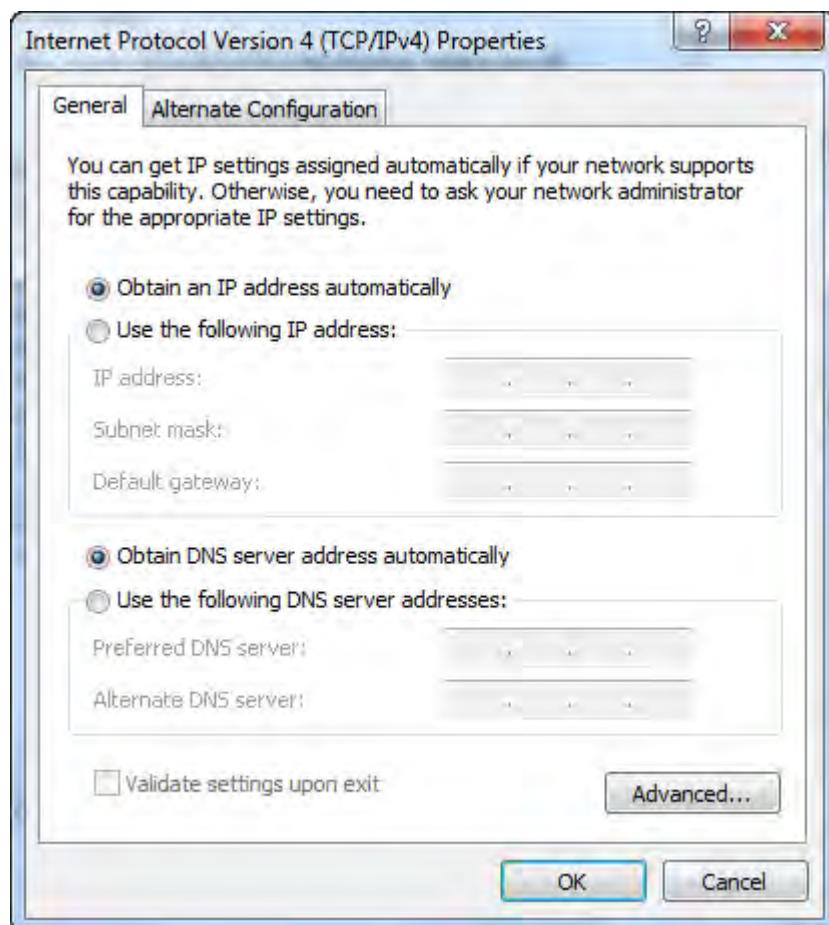
To obtain an IP address from the DHCP server, follow the steps provided below.

**NOTE:** The following procedure assumes you are running Windows. However, the general steps involved are similar for most operating systems (OS). Check your OS support documentation for further details.

**STEP 1:** From the Network Connections window, open Local Area Connection (*You may also access this screen by double-clicking the Local Area Connection icon on your taskbar*). Click the **Properties** button.

**STEP 2:** Select Internet Protocol (TCP/IP) **and click the Properties button.**

**STEP 3:** Select Obtain an IP address automatically as shown below.



**STEP 4:** Click **OK** to submit these settings.

If you experience difficulty with DHCP mode, you can try static IP mode instead.

## STATIC IP MODE

In static IP mode, you assign IP settings to your PC manually.

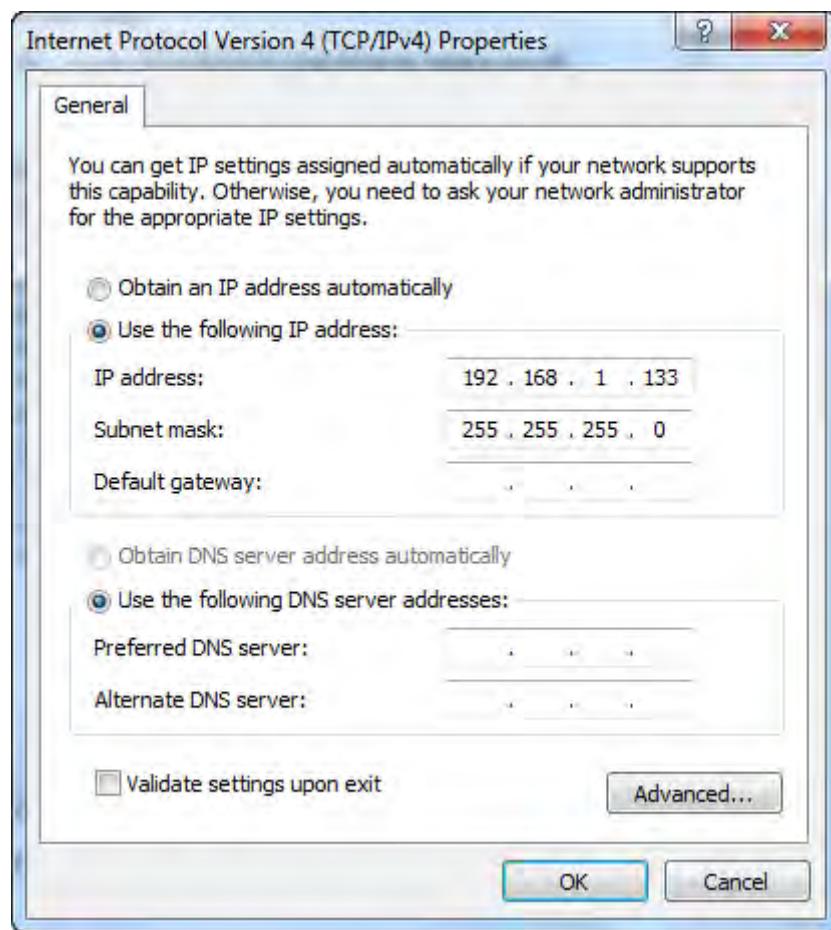
Follow these steps to configure your PC IP address to use subnet 192.168.1.x.

**NOTE:** The following procedure assumes you are running Windows. However, the general steps involved are similar for most operating systems (OS). Check your OS support documentation for further details.

**STEP 1:** From the Network Connections window, open Local Area Connection (*You may also access this screen by double-clicking the Local Area Connection icon on your taskbar*). Click the **Properties** button.

**STEP 2:** Select Internet Protocol (TCP/IP) **and click the Properties button**.

**STEP 3:** Change the IP address to the 192.168.1.x (1<x<255) subnet with subnet mask of 255.255.255.0. The screen should now display as shown below.



**STEP 4:** Click **OK** to submit these settings.

### 3.3 Login Procedure

Perform the following steps to login to the web user interface.

**NOTE:** The default settings can be found in [3.1 Default Settings](#).

**STEP 1:** Start the Internet browser and enter the default IP address for the device in the Web address field. For example, if the default IP address is 192.168.1.1, type <http://192.168.1.1>.

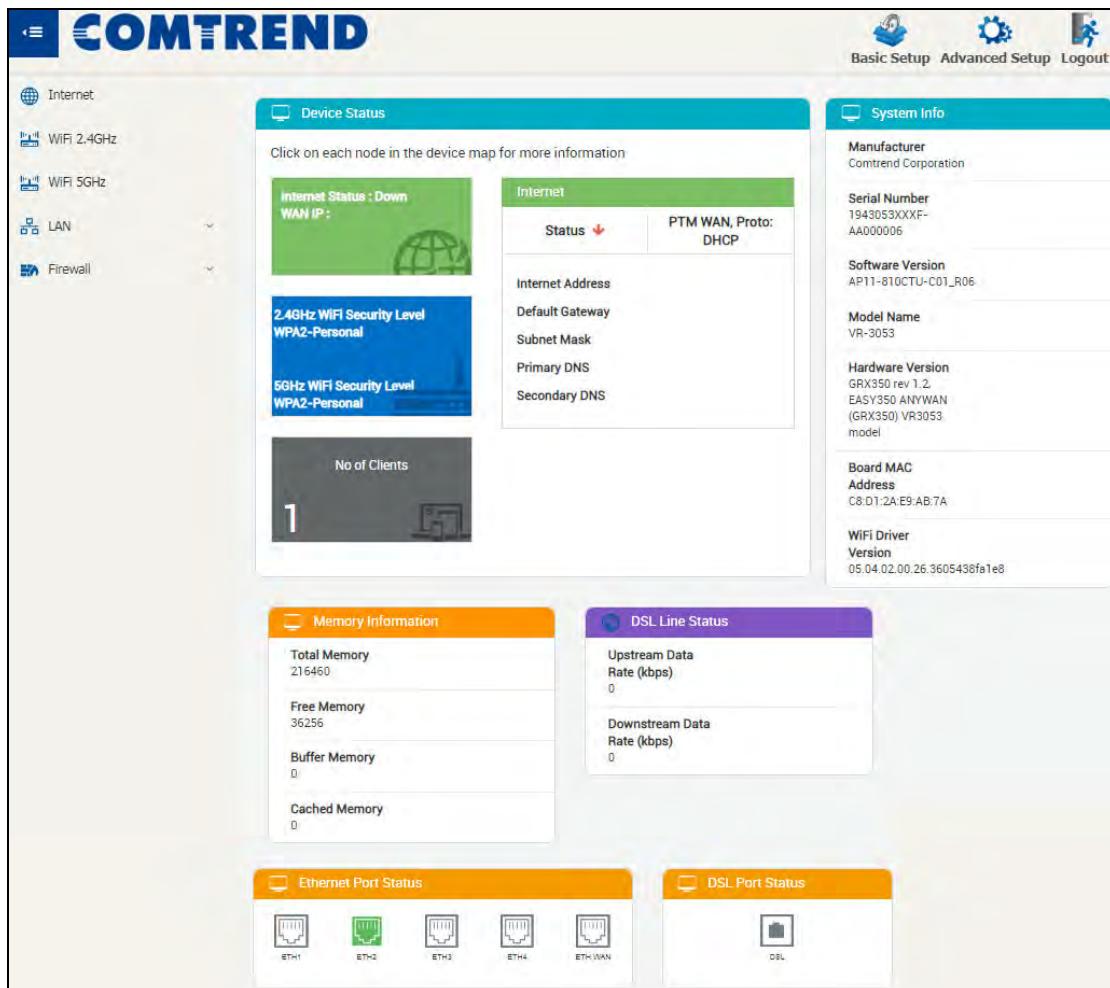
**NOTE:** For local administration (i.e. LAN access), the PC running the browser must be attached to the Ethernet, and not necessarily to the device.

**STEP 2:** A dialog box will appear, such as the one below. Enter the default username and password, as defined in section [3.1 Default Settings](#).



Click **OK** to continue.

**STEP 3:** After successfully logging in for the first time, you will reach this screen.



The screenshot displays the main interface of the COMTREND device. The left sidebar contains navigation links for Internet, WiFi 2.4GHz, WiFi 5GHz, LAN, and Firewall. The main content area is divided into several sections:

- Device Status:** Shows Internet Status as Down, WAN IP, and security levels for 2.4GHz and 5GHz WiFi.
- Internet:** Displays Status (red), PTM WAN, Proto: DHCP, Internet Address, Default Gateway, Subnet Mask, Primary DNS, and Secondary DNS.
- System Info:** Provides manufacturer (Comtrend Corporation), serial number (1943053XXF-AA000006), software version (AP11-810CTU-C01\_R06), model name (VR-3053), hardware version (GRX350 rev 1.2, EASY350 ANYWAN (GRX350) VR3053 model), board MAC address (C8:D1:2A:E9:AB:7A), and WiFi driver version (05.04.02.00.26.3605438fa1e8).
- Memory Information:** Shows Total Memory (216460), Free Memory (36256), Buffer Memory (0), and Cached Memory (0).
- DSL Line Status:** Displays Upstream Data Rate (kbps) and Downstream Data Rate (kbps), both currently at 0.
- Ethernet Port Status:** Shows icons for ETH1, ETH2, ETH3, ETH4, and ETH (RAN).
- DSL Port Status:** Shows an icon for the DSL port.

You can also reach this page by clicking on the following icon located at the top of the screen.



## Chapter 4 Basic Setup

You can reach this page by clicking on the following icon located at the top of the screen.



The web user interface window is divided into two frames, the main menu (at left) and the display screen (on the right). The main menu has several options and selecting each of these options opens a submenu with more selections.

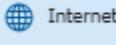
**NOTE:** The menu items shown are based upon the configured connection(s) and user account privileges. For example, if NAT and Firewall are enabled, the main menu will display the NAT and Security submenus. If either is disabled, their corresponding menu(s) will also be disabled.

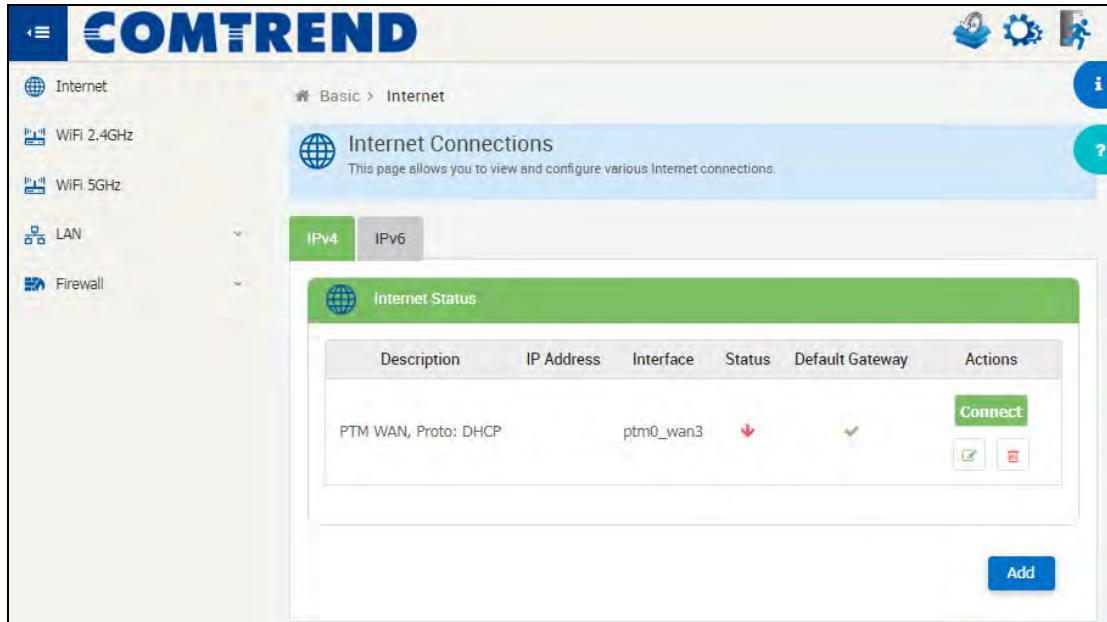
The screenshot displays the COMTREND web interface with the following sections:

- Left Sidebar (Main Menu):**
  - Internet
  - WiFi 2.4GHz
  - WiFi 5GHz
  - LAN
  - Firewall
- Top Right:** Basic Setup, Advanced Setup, Logout
- Device Status:** Internet Status: Down, WAN IP: (green box). Below it are sections for 2.4GHz WiFi Security Level (WPA2-Personal) and 5GHz WiFi Security Level (WPA2-Personal). A summary shows 1 client connected.
- Internet:** Status (red), PTM WAN, Proto: DHCP. Sub-options: Internet Address, Default Gateway, Subnet Mask, Primary DNS, Secondary DNS.
- System Info:** Manufacturer: Comtrend Corporation, Serial Number: 1943053XXF-AA000006, Software Version: AP11-810CTU-C01\_R06, Model Name: VR-3053, Hardware Version: GRX350 rev 1.2, EASY350 ANYWAN (GRX350) VR3053 model, Board MAC Address: C8:01:2A:E9:AB:7A, WiFi Driver Version: 05.04.02.00.26.3605438fa1e8.
- Memory Information:** Total Memory: 216460, Free Memory: 36256, Buffer Memory: 0, Cached Memory: 0.
- DSL Line Status:** Upstream Data Rate (kbps): 0, Downstream Data Rate (kbps): 0.
- Ethernet Port Status:** Icons for ETH1, ETH2, ETH3, ETH4, and ETH WAN.
- DSL Port Status:** Icon for DS1.

This screen shows hardware, software, IP settings and other related information.

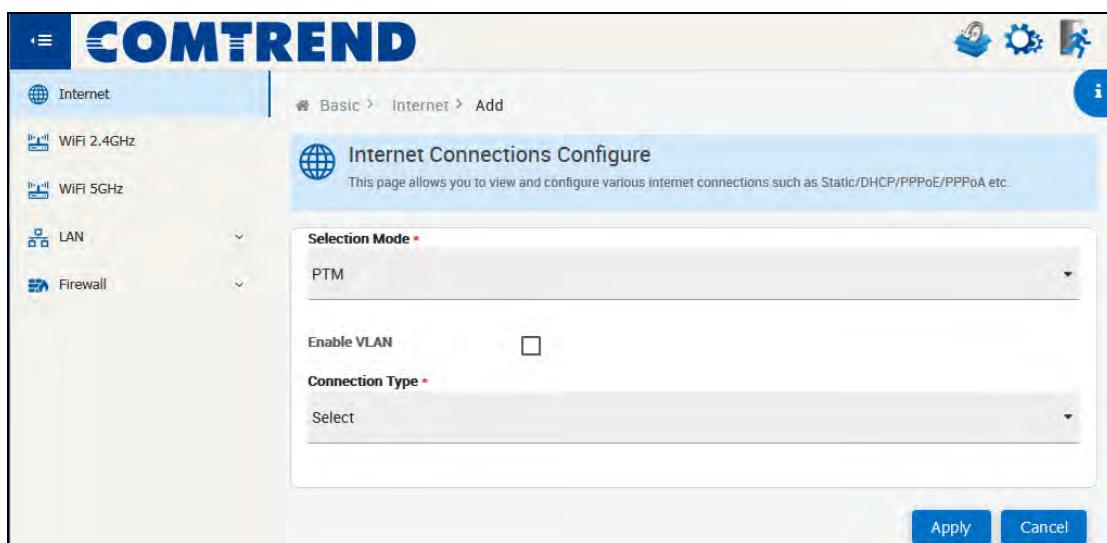
## 4.1 Internet

Click on the internet tab  to display the following.



For a tour of the page, please click the question mark icon  on the upper right-hand side of this screen.

To add a connection, click the  button to display the following.



Click the Information icon  on the upper right-hand side of this screen for information on Internet Connections.

IPv6 for your reference.

Internet Status					
Description	IP Address	Interface	Status	Default Gateway	Actions
					<a href="#">Add</a>

## 4.2 WiFi 2.4GHz

Configure the main wireless LAN interface that operates in the 2.4GHz range. It offers greater coverage and supports legacy devices.

**Basic**

Configure the main wireless LAN interface that operates in the 2.4GHz range. It offers greater coverage and supports legacy devices.

**Settings**

Activate Band **ON**

Auto Channel **ON**

Country **United States**

Operation Mode **bgn**

Channel **3**

Secondary Channel **BelowControlChannel**

Channel Bandwidth **Auto**

Advertise SSID **ON**

AP Isolation **OFF**

SSID **Comtrenda9a5\_2.4GHz**

Security type **WPA2-Personal**

Passphrase **\*\*\*\*\***

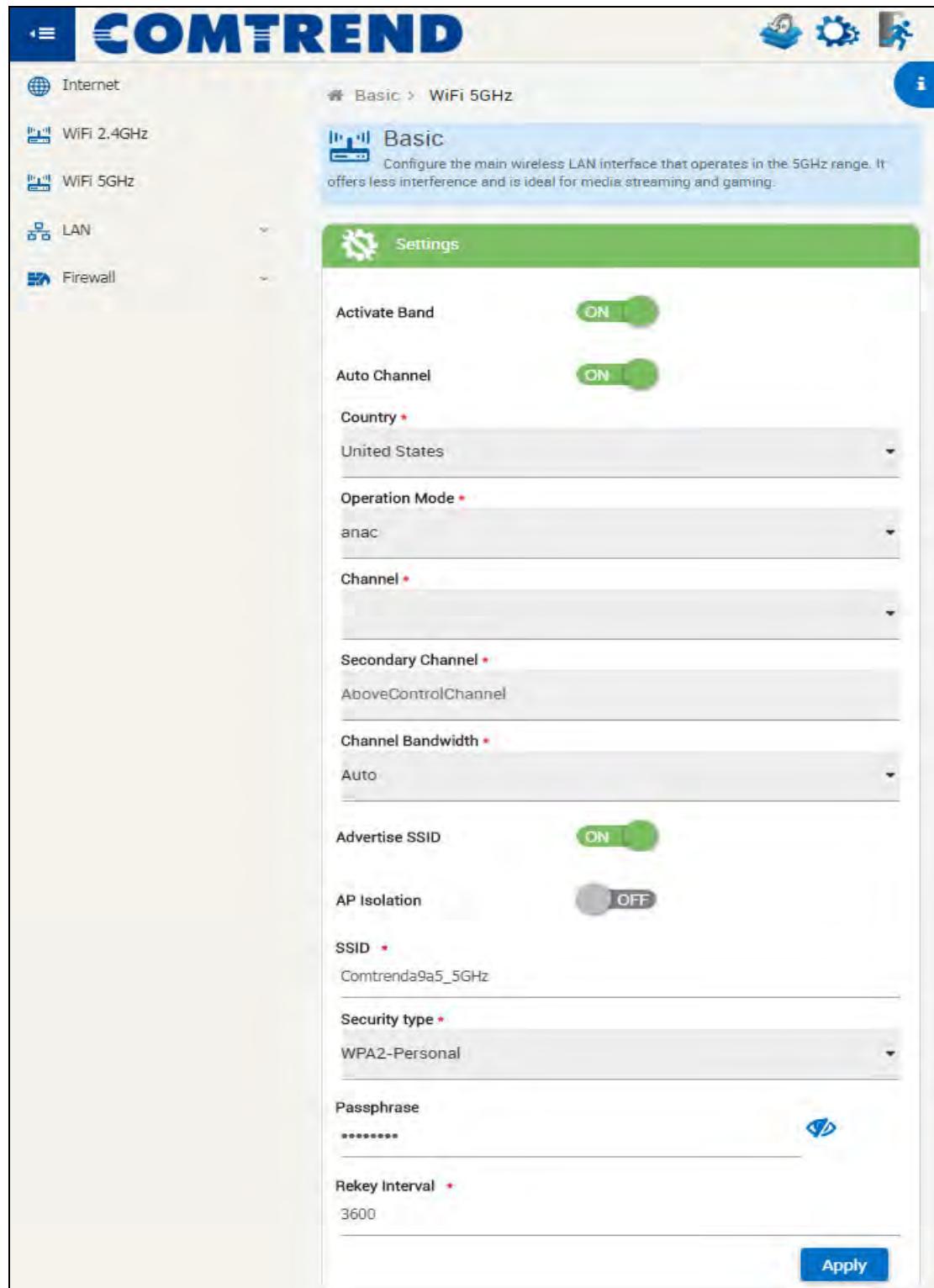
Rekey Interval **3600**

**Apply**

Click the Information icon  on the upper right-hand side of this screen for information on 2.4GHz WiFi Settings.

## 4.3 WiFi 5GHz

Configure the main wireless LAN interface that operates in the 5GHz range. It offers less interference and is ideal for media streaming and gaming.



Basic

Configure the main wireless LAN interface that operates in the 5GHz range. It offers less interference and is ideal for media streaming and gaming.

**Settings**

Activate Band  ON

Auto Channel  ON

Country \*

United States

Operation Mode \*

anac

Channel \*

Secondary Channel \*

AboveControlChannel

Channel Bandwidth \*

Auto

Advertise SSID  ON

AP Isolation  OFF

SSID \*

Comtrenda9a5\_5GHz

Security type \*

WPA2-Personal

Passphrase

\*\*\*\*\* 

Rekey Interval \*

3600

**Apply**

Click the Information icon  on the upper right-hand side of this screen for information on 5GHz WiFi Settings.

## 4.4 LAN

### 4.4.1 Configuration

Configuration support to provide IP address to devices connected on the LAN side of the CPE. Applicable for all wired and wireless devices that requests a dynamic IP address.

Click the Information icon on the upper right-hand side of this screen for information on Local Network Settings.

#### 4.4.2 Devices Connected

This displays the List of Clients Connected on the LAN Side of the CPE.



The screenshot shows the COMTREND web interface. The left sidebar has categories: Internet, WiFi 2.4GHz, WiFi 5GHz, LAN (selected), Configuration, Devices Connected (selected), and Firewall. The main content area shows the 'Devices Connected' page with the sub-header 'List of Clients Connected on the LAN Side of the CPE'. A table displays one client: MAC Address 00:50:ba:24:29:bd, Host Name Unknown, and IP Address 192.168.1.3. A 'Refresh' button is at the bottom right of the table.

MAC Address	Host Name	IP Address
00:50:ba:24:29:bd	Unknown	192.168.1.3

##### MAC Address

MAC address of the device that is connected to the LAN port.

##### Host Name

Host Name of the device that is connected to the LAN port.

##### IP Address

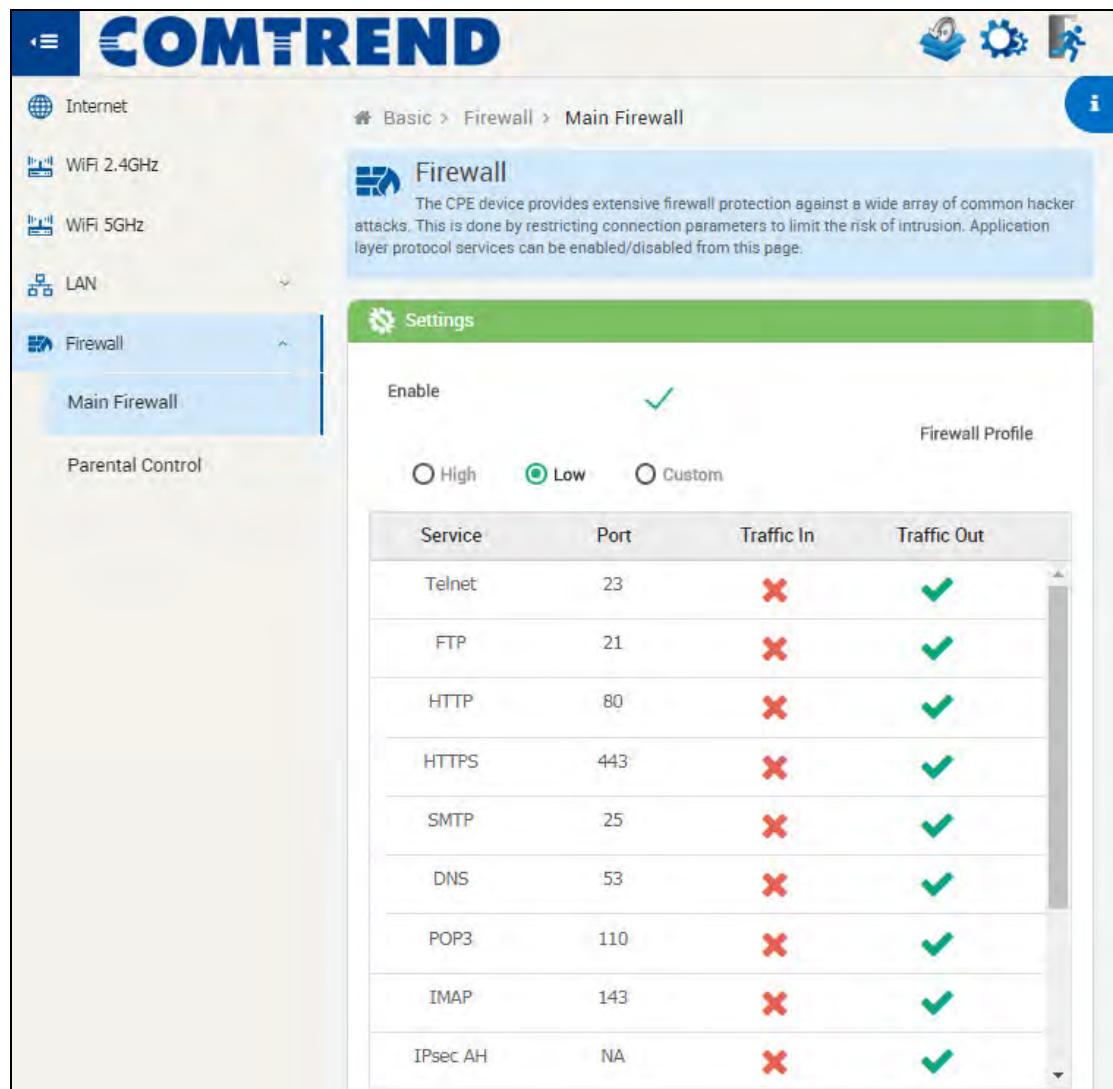
IP Address of the device that is connected to the LAN port.

Click the  button to refresh the screen.

## 4.5 Firewall

### 4.5.1 Main Firewall

The CPE device provides extensive firewall protection against a wide array of common hacker attacks. This is done by restricting connection parameters to limit the risk of intrusion. Application layer protocol services can be enabled/disabled from this page.

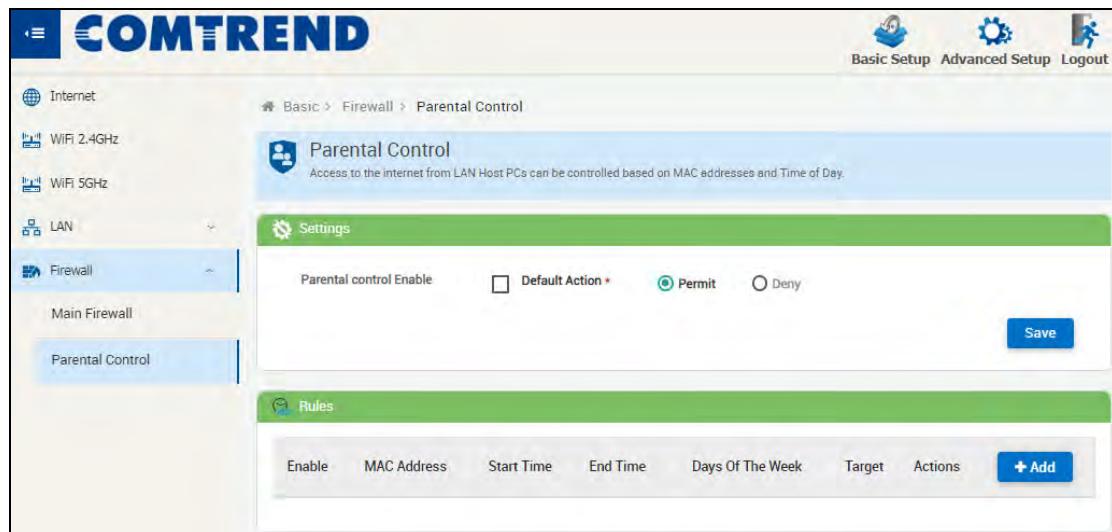


Service	Port	Traffic In	Traffic Out
Telnet	23	✗	✓
FTP	21	✗	✓
HTTP	80	✗	✓
HTTPS	443	✗	✓
SMTP	25	✗	✓
DNS	53	✗	✓
POP3	110	✗	✓
IMAP	143	✗	✓
IPsec AH	NA	✗	✓

Click the Information icon  on the upper right-hand side of this screen for information on Main Firewall Settings.

#### 4.5.2 Parental Control

Access to the internet from LAN Host PCs can be controlled based on MAC addresses and Time of Day.

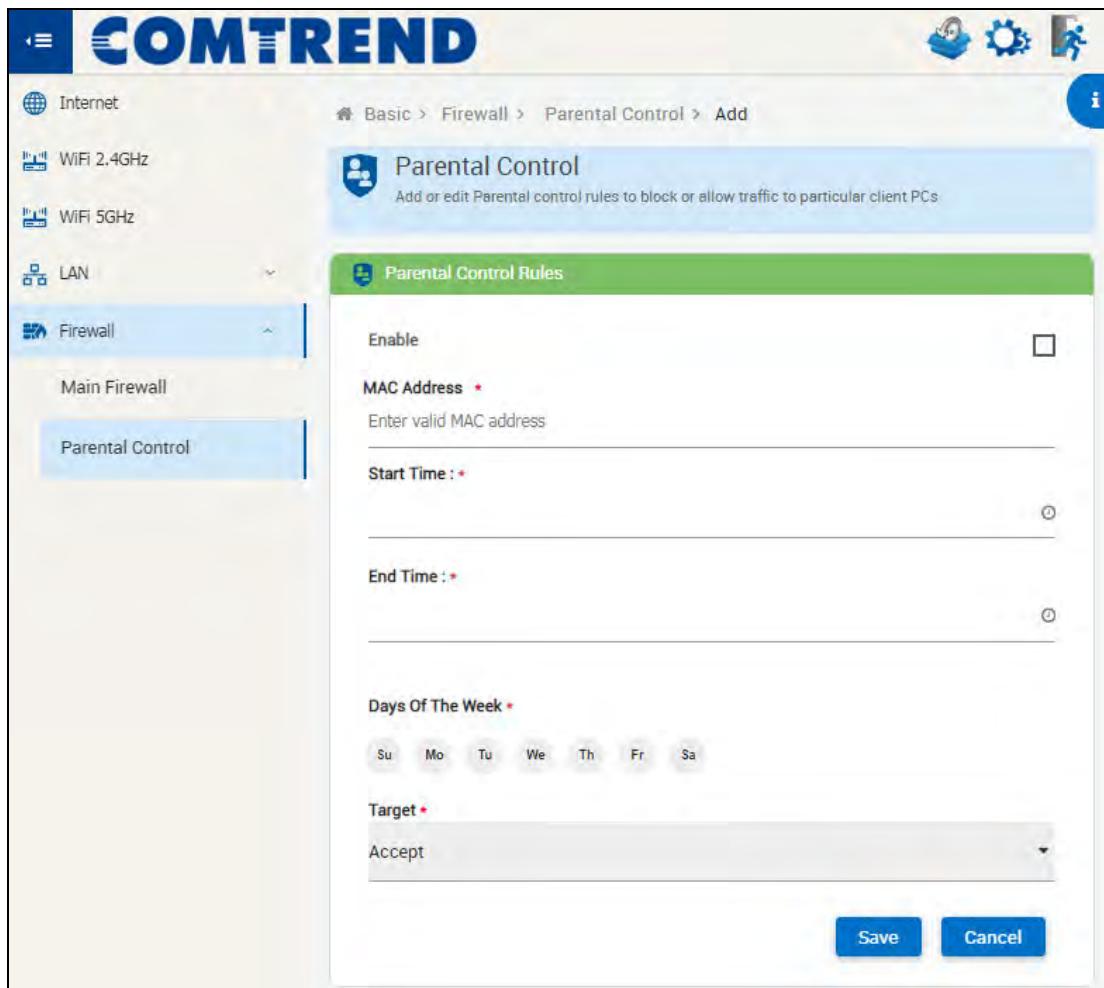


The screenshot shows the COMTREND web interface with the following details:

- Left Sidebar:** Internet, WiFi 2.4GHz, WiFi 5GHz, LAN, Firewall (selected), Main Firewall, Parental Control.
- Header:** Basic Setup, Advanced Setup, Logout.
- Page Title:** Basic > Firewall > Parental Control.
- Section:** Parental Control. Subtitle: Access to the internet from LAN Host PCs can be controlled based on MAC addresses and Time of Day.
- Settings:** Parental control Enable (checkbox), Default Action (radio buttons for Permit or Deny, Permit is selected), Save button.
- Rules:** Table with columns: Enable, MAC Address, Start Time, End Time, Days Of The Week, Target, Actions, + Add button.

Select the default action Permit or Deny and click the **Save** button.

Click the **+ Add** button to display the following.



Internet Basic > Firewall > Parental Control > Add

WIFI 2.4GHz WiFi 5GHz LAN Firewall Main Firewall Parental Control

**Parental Control**  
Add or edit Parental control rules to block or allow traffic to particular client PCs

**Parental Control Rules**

Enable

MAC Address \*  
Enter valid MAC address

Start Time : \*  
End Time : \*

Days Of The Week \*  
Su Mo Tu We Th Fr Sa

Target \*  
Accept

Save Cancel

Click the Information icon  on the upper right-hand side of this screen for information on Parental Control Rules.

Click the  button to save your Parental Control Rules.

## Chapter 5 Advanced Setup

You can reach this page by clicking on the following icon located at the top of the screen.



The web user interface window is divided into two frames, the main menu (at left) and the display screen (on the right). The main menu has several options and selecting each of these options opens a submenu with more selections.

## 5.1 DSL

### 5.1.1 Mode Setting

DSL(Digital Subscriber Line) offers WAN DSL Connectivity on various DSL Modes. Provides configuration for xDSL modes, various annex modes and upstream and downstream attributes.

The screenshot shows the COMTREND web interface with the following details:

- Left Sidebar:** A vertical menu with the following items: DSL (selected), Mode Setting, Status, ATM Channel, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT, Device Management, and Routing.
- Header:** Advanced > DSL > Mode Setting
- Mode Setting Page:**
  - Settings:** Shows the 'DSL' setting is turned **ON**.
  - DSL PHY - TC:** Set to **Auto**.
  - US Retransmission:** Enabled (checkmark).
  - VDSL DS Retransmission:** Enabled (checkmark).
  - ADSL DS Retransmission:** Disabled (unchecked).
  - VDSL US Rate Adaptation:** Enabled (checkmark).
  - VDSL DS Rate Adaptation:** Enabled (checkmark).
  - Vectoring:** Set to **Auto**.
  - Modes:** A list of available modes with checkboxes:
    - G.dmt
    - T1.413
    - G.Lite
    - ADSL
    - ADSL2
- Buttons:** An **Apply** button at the bottom right.

Click the Information icon on the upper right-hand side of this screen for information on Mode Setting.

### 5.1.2 Status

Provides the various status and statistics information.

**Status and Statistics**  
Provides the various status and statistics information

Line Information	
Modem Status	Down
Power Management Mode	L3
Vendor ID	00000000
Upstream Max Attainable Data Rate (Kbps)	0
Downstream Max Attainable Data Rate (Kbps)	0

Channel Information	
Mode Selected	G.993.2_Annex_K_PTM
Latency Type	0
Upstream Data Rate (Kbps)	0
Downstream Data Rate (Kbps)	0
Interleaver Depth	0

More Line Information	
Upstream SNR Margin	0
Downstream SNR Margin	0
Upstream Trellis-Coded Modulation	0
Downstream Trellis-Coded Modulation	0

Statistics	
CRC errors (ATU-R)	0
CRC errors (ATU-C)	0
FEC errors (ATU-R)	0
FEC errors (ATU-C)	0
HEC errors (ATU-R)	0

### 5.1.3 ATM Channel

This page Displays all ATM channels configured, and allows users to delete configured channels. Please avoid deleting ATM channels on which Internet connections are configured.

#### VPI/VCI

The Identifier of the Virtual Path and the Virtual Channel for the ATM.

#### Encapsulation

The encapsulation types are LLC and VCMUX.

#### Link Type

The link type of the ATM.

#### AAL

For Types of service: AAL1, AAL2, AAL3 AAL4 and AAL5.

#### Enable

Displays the status.

#### Actions

Displays details of actions.

## 5.2 Multiple Bridge

### 5.2.1 LAN VLAN

Click the Information icon on the upper right-hand side of this screen for information on the LAN VLAN Settings.

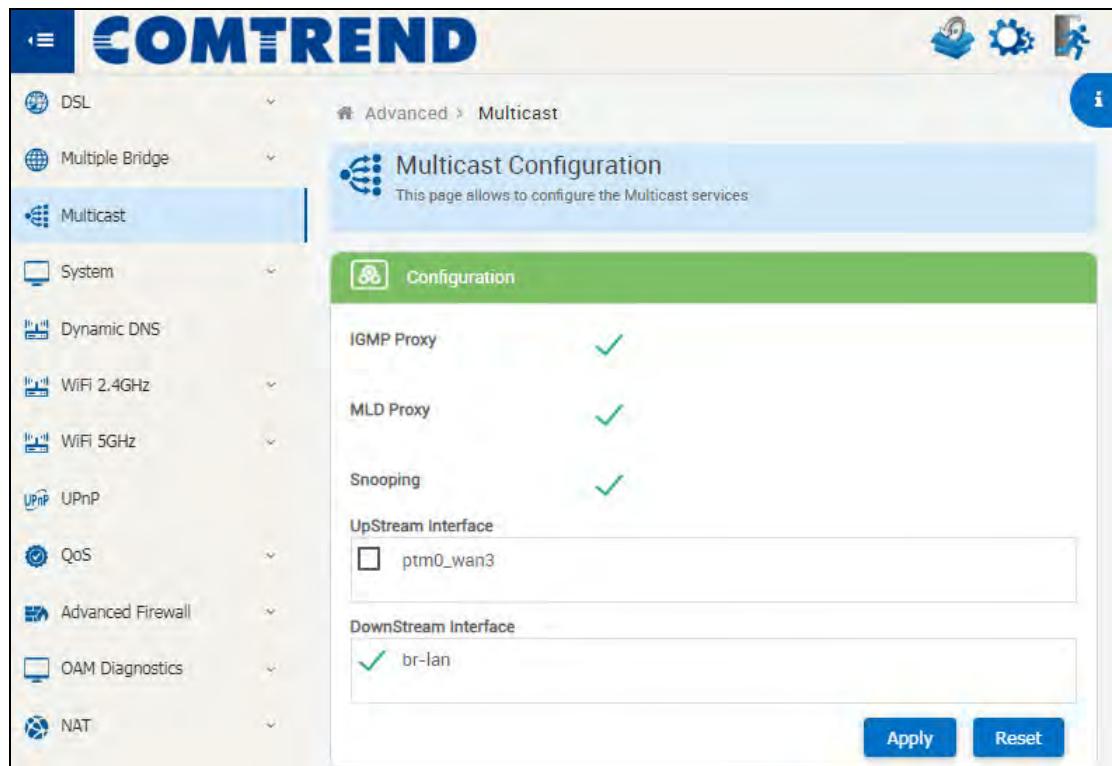
### 5.2.2 Bridges

Displays Bridge Interfaces.

Click the Information icon on the upper right-hand side of this screen for information on Bridges Settings.

## 5.3 Multicast

This page allows you to configure the Multicast services.



**Multicast Configuration**  
This page allows to configure the Multicast services

**Configuration**

IGMP Proxy	✓
MLD Proxy	✓
Snooping	✓

UpStream Interface  
 ptm0\_wan3

DownStream Interface  
 br-lan

**Apply** **Reset**

Click the Information icon  on the upper right-hand side of this screen for information on Multicast Settings.

## 5.4 System

### 5.4.1 Administration

This page allows users to take configuration backup, restore to previous configuration or to factory settings, upgrade firmware and reboot device.

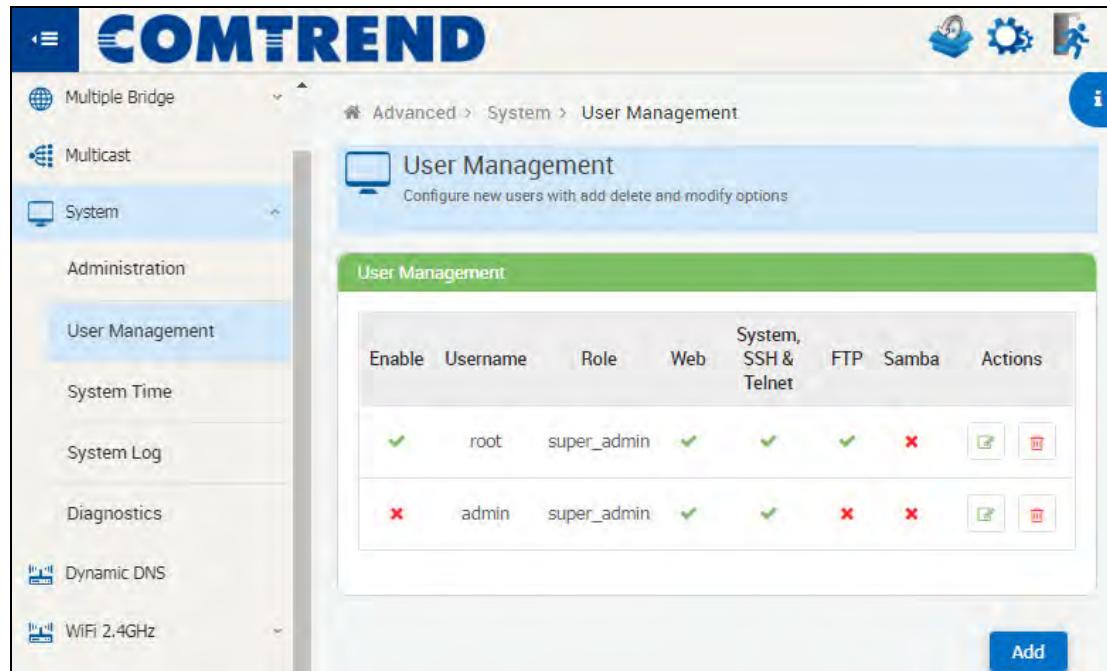
The screenshot shows the COMTREND Administration page. The left sidebar lists various system settings: DSL, Multiple Bridge, Multicast, System (selected), Administration, User Management, System Time, System Log, Diagnostics, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT, Device Management, and Routing. The main content area is titled 'Administration' and contains the following sections:

- Reboot and Factory Reset:** Allows restoring factory configuration and rebooting the device. Buttons: 'Reboot' and 'Factory Reset'.
- Backup:** Allows backing up the current configuration file to a local machine. Button: 'Backup'.
- Restore:** Allows restoring the current configuration file. It includes a 'Drag and Drop files here' area and a 'Choose File' button. Button: 'Restore'.
- Upgrade Firmware:** Shows the current version and last image upgrade. It includes a 'Drag and Drop files here' area and a 'Choose File' button. Button: 'Upgrade Firmware'.

Click the Information icon  on the upper right-hand side of this screen for information on Administration Settings.

## 5.4.2 User Management

Configure new users with add delete and modify options.

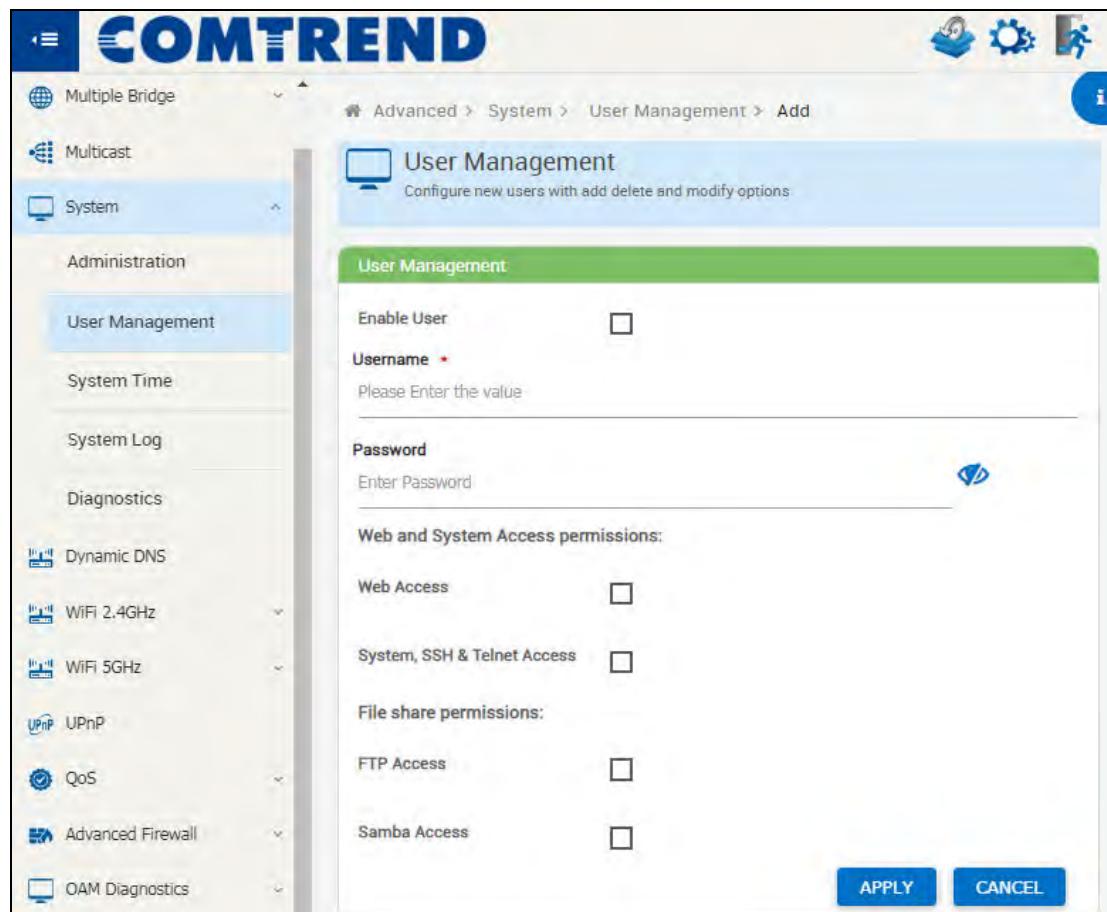


The screenshot shows the User Management page of the COMTREND web interface. The left sidebar is a navigation menu with the following items: Multiple Bridge, Multicast, System (selected), Administration, User Management (selected), System Time, System Log, Diagnostics, Dynamic DNS, and WiFi 2.4GHz. The main content area has a title 'User Management' with the subtitle 'Configure new users with add delete and modify options'. Below this is a table titled 'User Management' with the following columns: Enable, Username, Role, Web, System, SSH & Telnet, FTP, Samba, and Actions. There are two rows in the table:

Enable	Username	Role	Web	System, SSH & Telnet	FTP	Samba	Actions	
<input checked="" type="checkbox"/>	root	super_admin	<input checked="" type="checkbox"/>	<a href="#"></a> <a href="#"></a>				
<input checked="" type="checkbox"/>	admin	super_admin	<input checked="" type="checkbox"/>	<a href="#"></a> <a href="#"></a>				

At the bottom right of the table is a blue 'Add' button.

Click the **Add** button to display the following.



The screenshot shows the 'User Management' add form. The left sidebar is the same as the previous screenshot. The main content area has a title 'User Management' with the subtitle 'Configure new users with add delete and modify options'. The form fields are:

- Enable User:
- Username: **\***  Please Enter the value
- Password:
- Web and System Access permissions:

  - Web Access:
  - System, SSH & Telnet Access:

- File share permissions:

  - FTP Access:
  - Samba Access:

At the bottom right are 'APPLY' and 'CANCEL' buttons.



Click the Information icon on the upper right-hand side of this screen for information on User Management Settings.

### 5.4.3 System Time

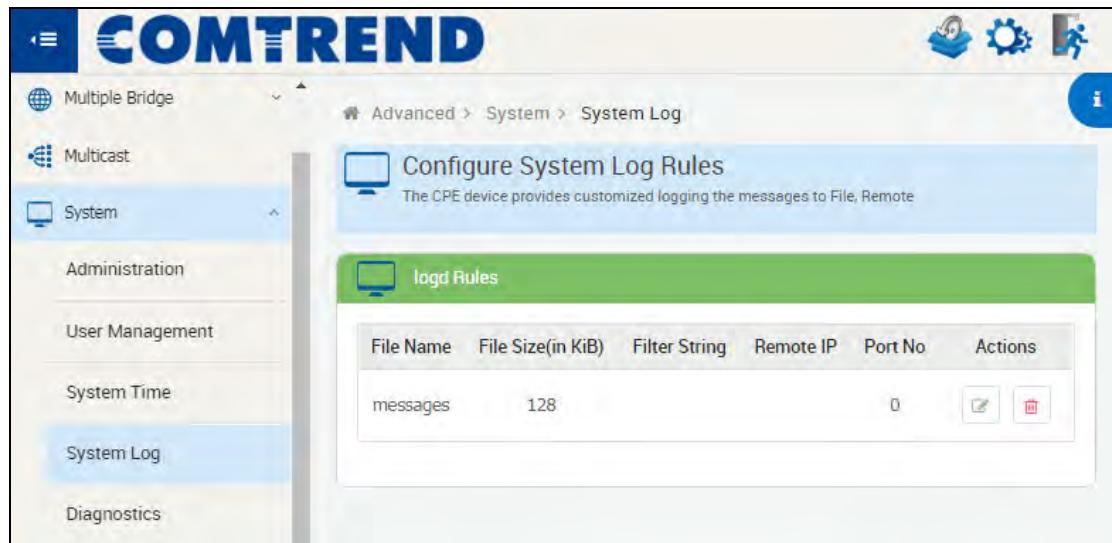
Configuration to enable the device to synchronize the system time with the time servers.



Click the Information icon on the upper right-hand side of this screen for information on System Time Settings.

#### 5.4.4 System Log

The CPE device provides customized logging the messages to File, Remote.



File Name	File Size(in KiB)	Filter String	Remote IP	Port No	Actions
messages	128			0	 

Click the Information icon  on the upper right-hand side of this screen for information on System Log Settings.

## 5.4.5 Diagnostics

Allows diagnosis to be performed on various sub-systems of the CPE.

Click the **Restart** button to restart the diagnostic tests.

Input the IP/Host address and click the **Ping Test** button to start the test. See below for ping test result.

**Ping Test**

192.168.1.1

**Ping Test**

✓ Ping to Host: 192.168.1.1 SUCCESS

**Trace Route**

Input the url and click the **Trace Route** button start the test. See below for trace route result.

**Traceroute Test**

www.google.com

**Trace Route**

1 13.3.3.3 (3.3.3.3) 0  
2 172.16.2.1 (172.16.2.1) 0  
3 10.72.224.162 (10.72.224.162) 0  
4 168.95.228.30 (168.95.228.30) 0  
5 220.128.26.94 (220.128.26.94) 0  
6 220.128.26.77 (220.128.26.77) 0  
7 72.14.218.140 (72.14.218.140) 0  
8 () 0  
9 209.85.245.252 (209.85.245.252) 0  
10 108.170.244.75 (108.170.244.75) 0  
11 108.170.244.129 (108.170.244.129) 0  
12 216.239.48.135 (216.239.48.135) 0  
13 172.217.160.100 (172.217.160.100) 0

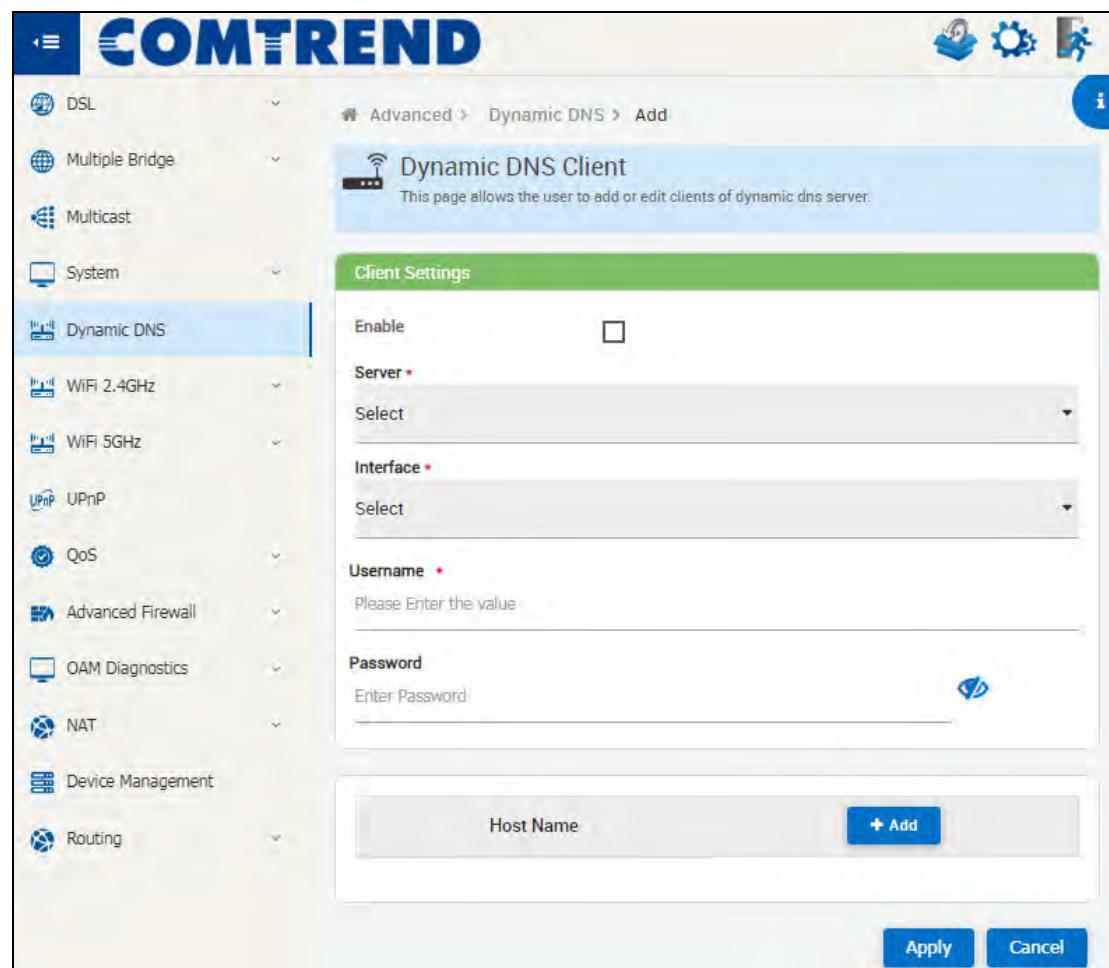
## 5.5 Dynamic DNS

Dynamic DNS allows the user to update wan IP address with one or many dynamic DNS services. So anyone can access services on computer using DNS-like address.

Enable	Name	ServiceName	ServerAddress	Actions
<input checked="" type="checkbox"/>	dhs	dhs	dyn.dhs.org	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	dyndns	dyndns	dyndns.org	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	dyns	dyns	dyns.cx	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

## Client Settings

Click the **Add** button to display the following.



Dynamic DNS Client  
This page allows the user to add or edit clients of dynamic dns server.

**Client Settings**

Enable

Server \*  
Select

Interface \*  
Select

Username \*  
Please Enter the value

Password  
Enter Password

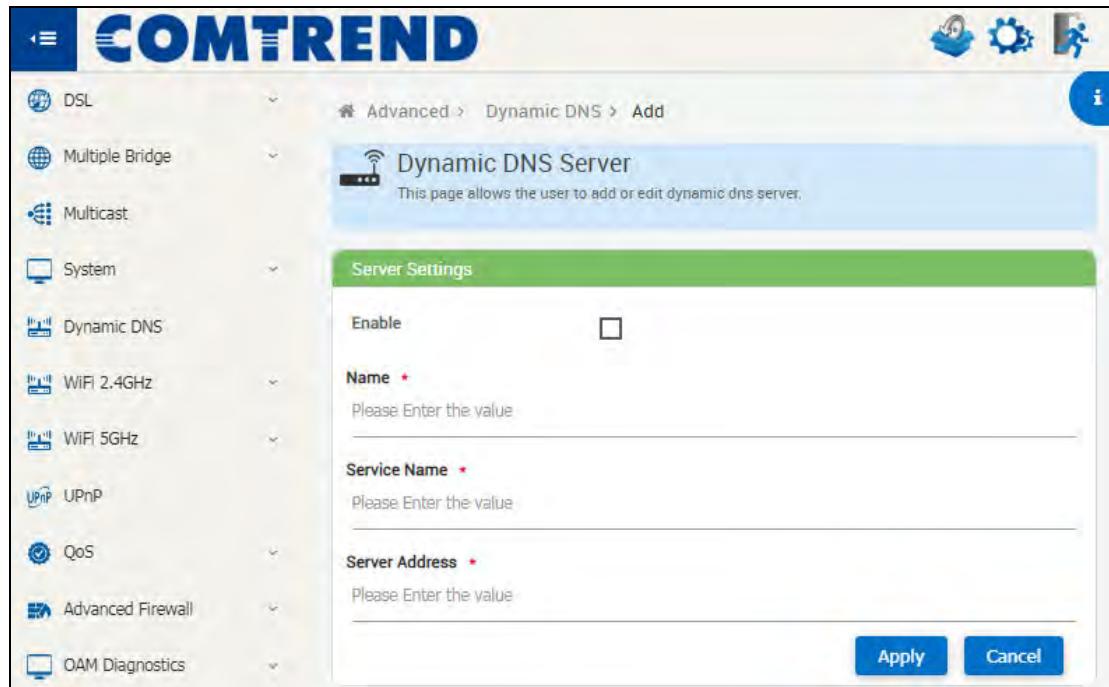
Host Name **+ Add**

Apply Cancel

Click the Information icon  on the upper right-hand side of this screen for information on Client Settings.

### Supported Servers

Click the **Add** button to display the following.



Click the Information icon  on the upper right-hand side of this screen for information on Server Settings.

## 5.6 WiFi 2.4GHz

### 5.6.1 Advanced

Advanced settings for the wireless LAN interfaces that operate in the 2.4GHz range. Typically you shouldn't need to change these settings.

Advanced > WiFi 2.4GHz > Advanced

**Advanced**

Advanced settings for the wireless LAN interfaces that operate in the 2.4GHz range. Typically you shouldn't need to change these settings.

**Vendor Details**

**DTIM** 2

**Beacon Interval** 100

**Power scale** 100

**Explicit Beamforming** ON

**Implicit Beamforming** ON

**LDPC** ON

**STBC** ON

**Number of Antennas** 2

**WMM PS** ON

**Apply**

The settings shown above are described below.

**DTIM**

A value between 1~255.

**Beacon Interval**

100 ms by default.

**Power Scale**

12/25/50/100 and 100 by default.

**Explicit Beamforming**

Turned on by default.

**Implicit Beamforming**

Turned on by default.

**LDPC**

Turned on by default.

**STBC**

Turned on by default.

**Number of Antennas**

Select number of antennas; 1 or 2.

**WMM PS**

Enabled by default.

## 5.6.2 SSIDs

Configure multiple virtual access points. Typical use is to allow guest access to the internet while preventing guests from connecting to your main network.

Click the **+ Add** button to display the following.

The settings shown above are described below.

### SSID

2.4G SSID.

### Security Type

Select the security type from the drop-down menu; WEP, WPA1 or WPA2.

**WPS Enabled**

Tick the box to enable.

Click the **More** button to display the following.

Rekey Interval  
3600

Passphrase  
\*\*\*\*\*

AP Isolation  OFF

Max connected STAs  
128

WMM-PS  ON

Bridge Name \*

br-lan

The settings shown above are described below.

**Rekey Interval**

3600 seconds by default.

**Passphrase**

The password.

**AP Isolation**

Enable/Disable AP isolation.

**Max Connected STAs**

The maximum number of STAs that can be connected.

**WMM-PS**

Enable/disable WMM power save.

**Bridge Name**

WiFi Bridge Interface Name.

### 5.6.3 WPS

Connect a device by pushbutton or PIN, or connect this AP to an existing network through WPS.

Click the **Reset WPS** button to reset WPS to Unconfigured mode.

Click the **WPS Pushbutton** button, then press the WPS pushbutton on the device you want to connect within two minutes.

To connect a new device by PIN (Personal Identification Number), input the Client device PIN and Client device MAC address, then click the **Connect Device** button.

To add this device to a network, enter the PIN in the box on the managing device.

To create a new PIN, Click the  button.

### 5.6.4 MAC Filtering

Configurations to block devices from connecting or allow devices to connect, based on their MAC address.

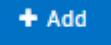
The settings shown above are described below.

#### SSID

2.4G SSID.

#### ACL Mode

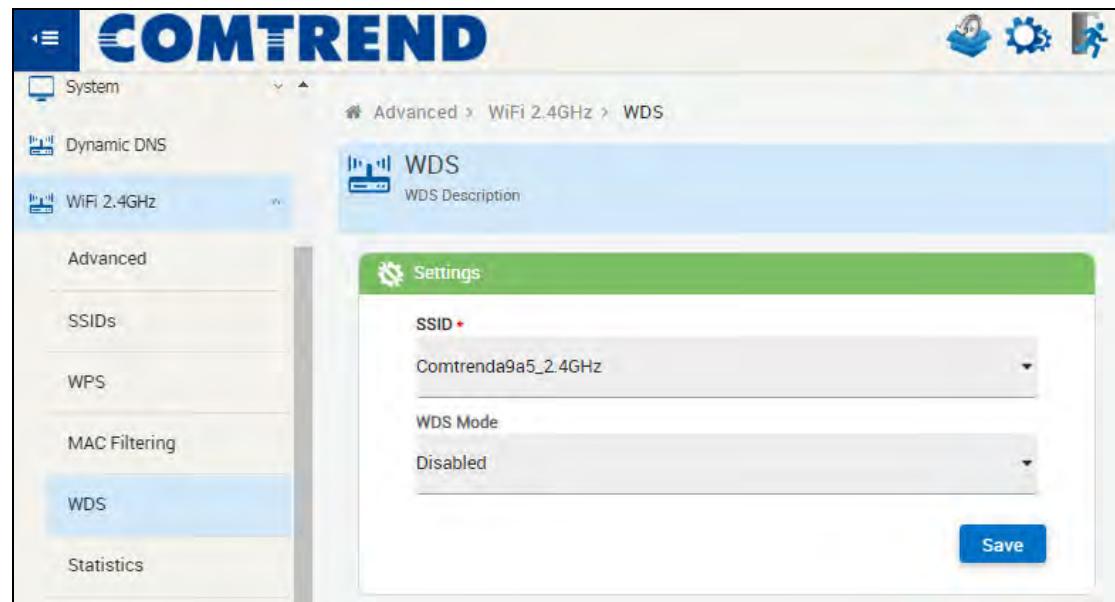
Select the access control list mode from the drop-down menu.

To add a filter, click the  button to display the following.

Input the MAC address and click the  or  box to allow or deny.

## 5.6.5 WDS

Wireless Distribution System.



The settings shown above are described below.

### SSID

2.4G Wi-Fi SSID.

### WDS Mode

WDS mode setting:

Disabled

Legacy (Just support 802.11g with WEP)

Hybrid (Support both AP and WDS functions.)

Click the  button to save the entry.

## 5.6.6 Statistics

Displays WLAN statistics of the access point and connected devices.

MAC Address	IP Address	Last Tx PHY Rate	Last Rx PHY Rate	RSSI (dBm)	RSSI2 (dBm)	RSSI3 (dBm)	RSSI4 (dBm)

SSID Statistics	
ACK Failure Count	659
Aggregated Packet Count	3373
Broadcast Packets Received	0
Broadcast Packets Sent	0
Bytes Received	0
Bytes Sent	0
Discard Packets Received	0

The settings shown above are described below.

### SSID

2.4G Wi-Fi SSID.

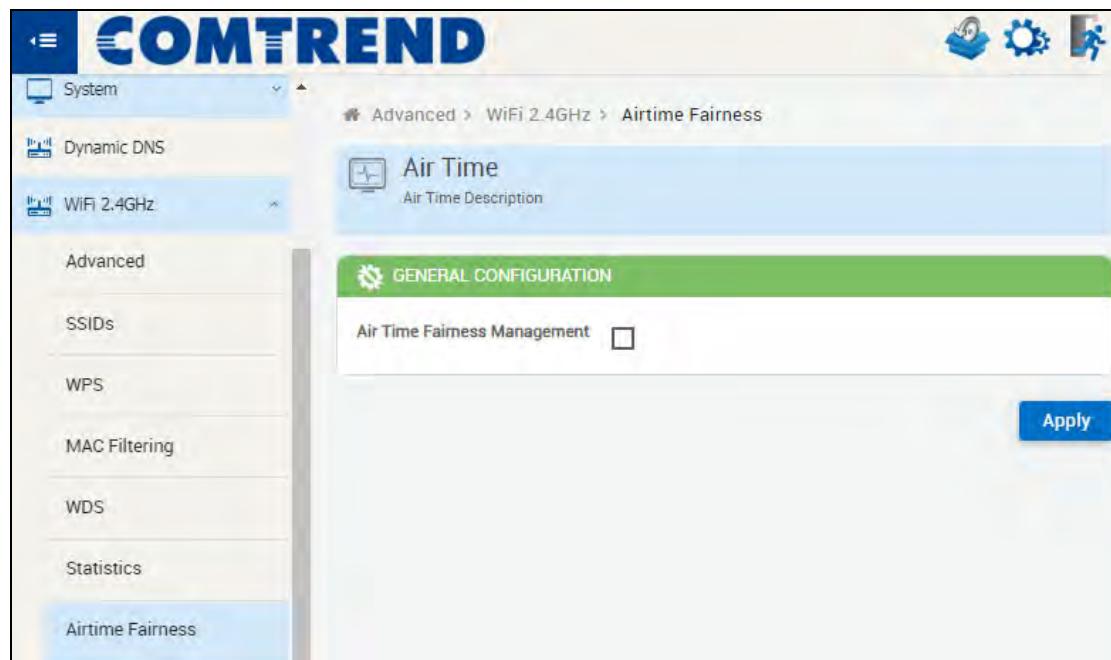
### Associated Devices

<b>Heading</b>	<b>Description</b>
MAC Address	MAC address of the STA
IP Address	IP address of the STA
Last Tx PHY Rate	Tx PHY Rate of the Wi-Fi connection
Last Rx PHY Rate	Rx PHY Rate of the Wi-Fi connection
RSSI (dBm) RSSI2 (dBm) RSSI3 (dBm) RSSI4 (dBm)	Shows RSSI3 and RSSI4 for two antennas

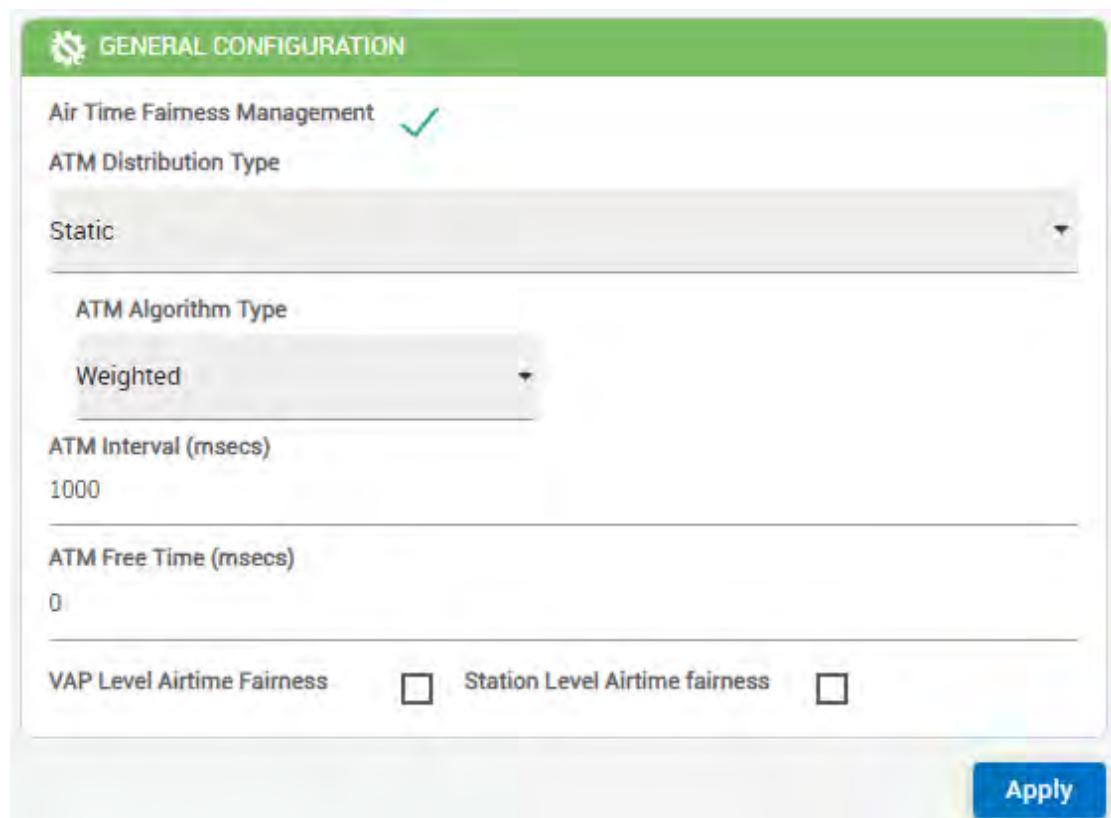
### SSID Statistics

<b>Heading</b>	<b>Description</b>
ACK Failure Count	Number of ACK Failure Count
Aggregated Packet Count	Number of Aggregated Packet Count
Broadcast Packets Received	Number of Broadcast Packets Received
Broadcast Packets Sent	Number of Broadcast Packets Sent
Bytes Received	Number of Bytes Received
Bytes Sent	Number of Bytes Sent
Discard Packets Received	Number of Discard Packets Received
Discard Packets Sent	Number of Discard Packets Sent
Errors Received	Number of Errors Received
Packets not transmitted due to error	Number of Packets not transmitted due to error
Failed Retransmission Count	Number of Failed Retransmission Count
Multicast Packets Received	Number of Multicast Packets Received
Multicast Packets Sent	Number of Multicast Packets Sent
Multiple Retry Count	Number of Multiple Retry Count
Packets Received	Number of Packets Received
Packets Sent	Number of Packets Sent
Retransmitted packets	Number of Retransmitted packets
Retry Count	Number of Retry Count
Unicast Packets Received	Number of Unicast Packets Received
Unicast Packets Sent	Number of Unicast Packets Sent

### 5.6.7 Airtime Fairness



Check the checkbox  to display the following.



Click the **Apply** button to enable airtime fairness for varied wireless clients.

The settings shown above are described below.

#### ATM Distribution Type

- Static: If an STA does not fully use its grant, do not pass it to other STAs.
- Dynamic: If an STA does not fully use its grant, pass the remaining grant to other STAs.

#### ATM Algorithm Type

- Global: The grant(weight) allocated to STAs is equally divided between all STAs.
- Weighted: Each STA or SSID (VAP) has a predefined weight in % of the total airtime. Weights can be:
  - Per AC (Access Category)
  - Per STA
  - Per SSID
  - Per SSID, then per STA

#### ATM Interval (msecs)

This is basic time frame in milliseconds that is used for ATF calculations.

#### ATM Free Time (msecs)

This is basic time frame in milliseconds that is subtracted from the ATM Interval. Default free time interval value is 0ms.

#### VAP Level Airtime Fairness

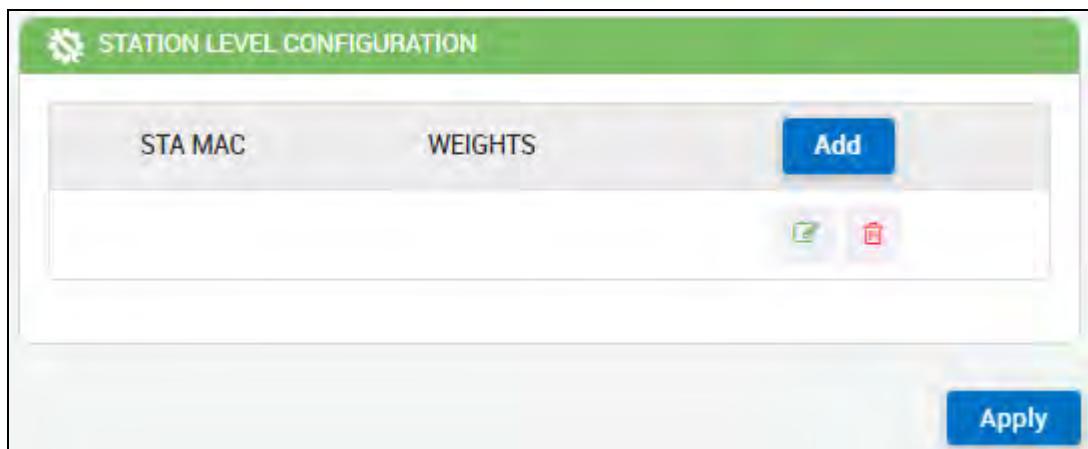
Check the checkbox  to display the following.

SSID	WEIGHTS
Comtrenda9a5_2.4GHz	5

Then click the  icon to edit the entry. Click the **Apply** button to apply your changes.

**Station Level Airtime Fairness**

Check the checkbox  to display the following.



Click the  button to add an entry.

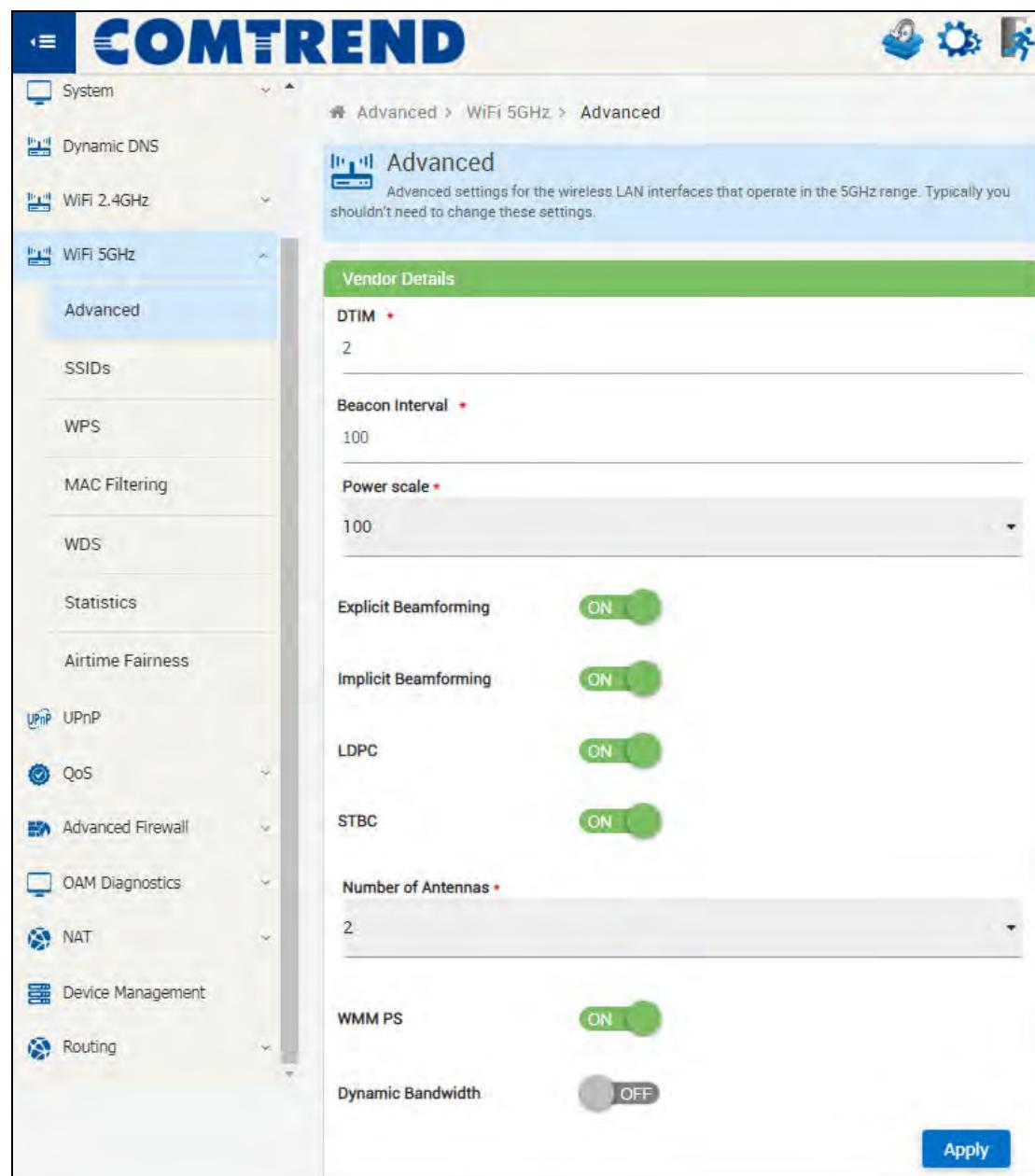
Then click the  icon to edit the entry. Click the  button to apply your changes.

If required, click the  icon to delete an entry.

## 5.7 WiFi 5GHz

### 5.7.1 Advanced

Advanced settings for the wireless LAN interfaces that operate in the 2.4GHz range. Typically you shouldn't need to change these settings.



Advanced settings for the wireless LAN interfaces that operate in the 5GHz range. Typically you shouldn't need to change these settings.

Vendor Details	
DTIM *	2
Beacon Interval *	100
Power scale *	100
Explicit Beamforming	ON
Implicit Beamforming	ON
LDPC	ON
STBC	ON
Number of Antennas *	2
WMM PS	ON
Dynamic Bandwidth	OFF

Apply

The settings shown above are described below.

**DTIM**

A value between 1~255.

**Beacon Interval**

100 ms by default.

**Power Scale**

12/25/50/100 and 100 by default.

**Explicit Beamforming**

Turned on by default.

**Implicit Beamforming**

Turned on by default.

**LDPC**

Turned on by default.

**STBC**

Turned on by default.

**Number of Antennas**

Select number of antennas; 1 or 2.

**WMM PS**

Enabled by default.

## 5.7.2 SSIDs

Configure multiple virtual access points. Typical use case is to allow guest access to the internet while preventing guests from connecting to your main network.

Click the **+ Add** button to display the following.

The settings shown above are described below.

### SSID

2.4G SSID.

### Security Type

Select the security type from the drop-down menu; WEP, WPA1 or WPA2.

### WPS Enabled

Tick the box to enable.

Click the **More** button to display the following.

The screenshot shows a configuration page for a WiFi interface. The settings include:

- Rekey Interval:** 3600
- Passphrase:** (redacted)
- AP Isolation:** OFF (button is grey)
- Max connected STAs:** 128
- WMM-PS:** ON (button is green)
- Bridge Name:** br-lan

The settings shown above are described below.

### **Rekey Interval**

3600 seconds by default.

### **Passphrase**

The password.

### **AP Isolation**

Enable/Disable AP isolation.

### **Max Connected STAs**

The maximum number of STAs that can be connected.

### **WMM-PS**

Enable/disable WMM power save.

### **Bridge Name**

WiFi Bridge Interface Name.

### 5.7.3 WPS

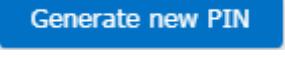
Connect a device by pushbutton or PIN, or connect this AP to an existing network through WPS.

Click the **Reset WPS** button to reset WPS to Unconfigured mode.

Click the **WPS Pushbutton** button, then press the WPS pushbutton on the device you want to connect within two minutes.

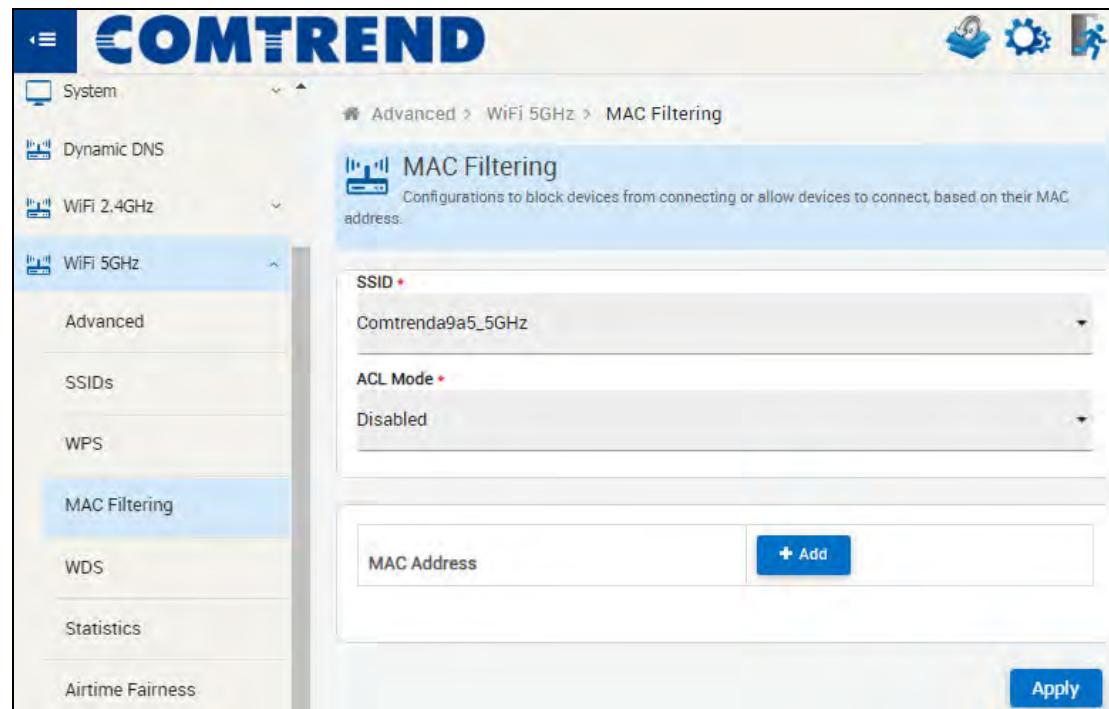
To connect a new device by PIN (Personal Identification Number), input the Client device PIN and Client device MAC address, then click the **Connect Device** button.

To add this device to a network, enter the PIN in the box on the managing device.

To create a new PIN, Click the  button.

### 5.7.4 MAC Filtering

Configurations to block devices from connecting or allow devices to connect, based on their MAC address.



The screenshot shows the COMTREND web interface for configuring MAC Filtering. The left sidebar is a navigation menu with the following items: System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz (selected), Advanced, SSIDs, WPS, MAC Filtering (selected), WDS, Statistics, and Airtime Fairness. The main content area is titled "MAC Filtering" and contains the following configuration details:

- SSID \***: Comtrenda9a5\_5GHz
- ACL Mode \***: Disabled
- MAC Address**: (Input field) + Add

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

The settings shown above are described below.

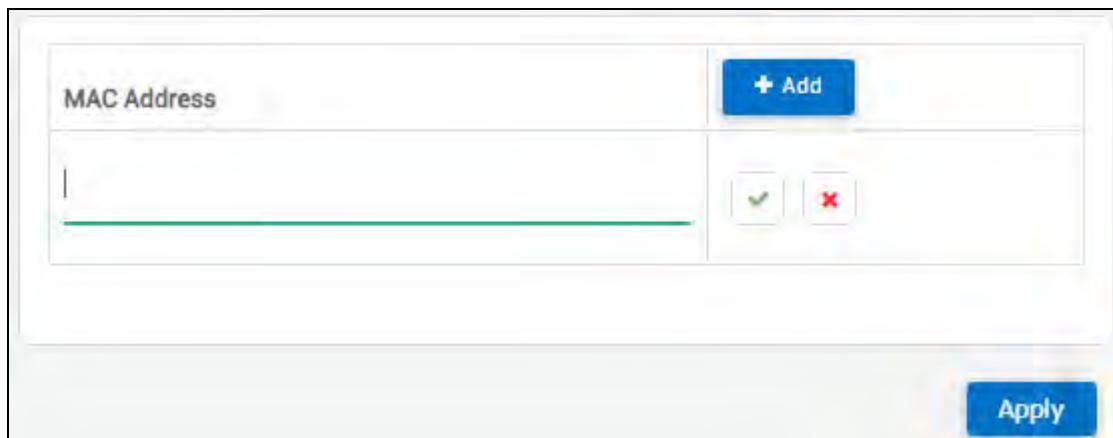
#### SSID

2.4G SSID.

#### ACL Mode

Select the access control list mode from the drop-down menu.

To add a filter, click the  button to display the following.

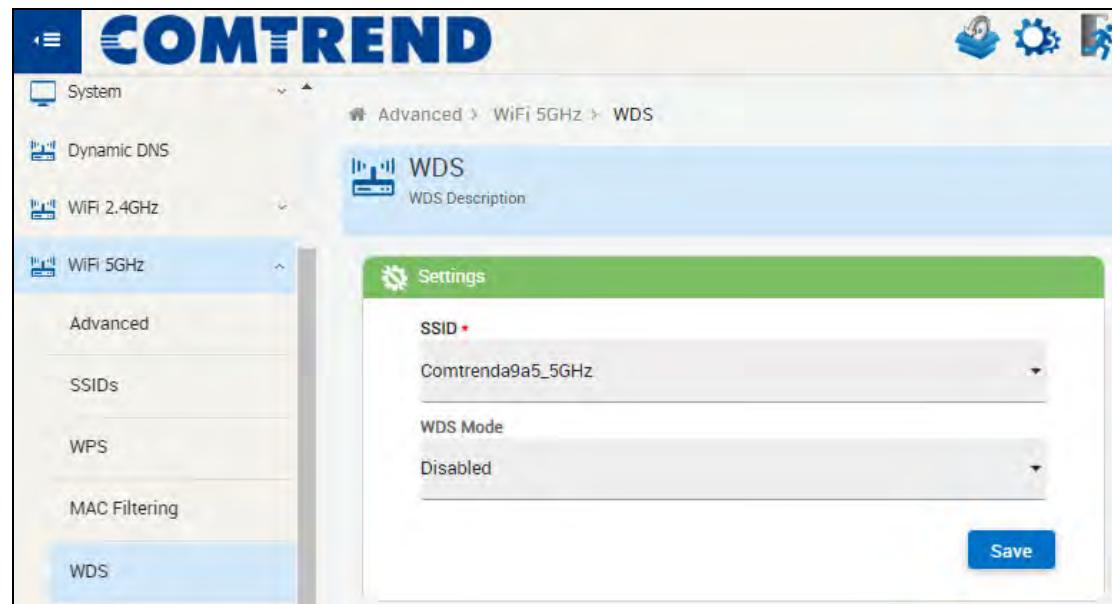


The screenshot shows a user interface for adding a MAC address filter. At the top left is a text input field labeled "MAC Address" with a placeholder "00:00:00:00:00:00". To its right is a blue "Add" button with a white plus sign. Below the input field is a row of two checkboxes: one with a green checkmark and one with a red X. At the bottom right of the interface is a large blue "Apply" button.

Input the MAC address and click the  or  box to allow or deny.

## 5.7.5 WDS

Wireless Distribution System.



The settings shown above are described below.

### SSID

2.4G Wi-Fi SSID.

### WDS Mode

WDS mode setting:

Disabled

Legacy (Just support 802.11g with WEP)

Hybrid (Support both AP and WDS functions.)

Click the **Save** button to save the entry.

## 5.7.6 Statistics

Displays WLAN statistics of the access point and connected devices.

MAC Address	IP Address	Last Tx PHY Rate	Last Rx PHY Rate	RSSI (dBm)	RSSI2 (dBm)	RSSI3 (dBm)	RSSI4 (dBm)

	ACK Failure Count	8636
	Aggregated Packet Count	184020
	Broadcast Packets Received	0
	Broadcast Packets Sent	0
	Bytes Received	0
	Bytes Sent	0
	Discard Packets Received	0
	Discard Packets Sent	0

The settings shown above are described below.

### SSID

5G Wi-Fi SSID.

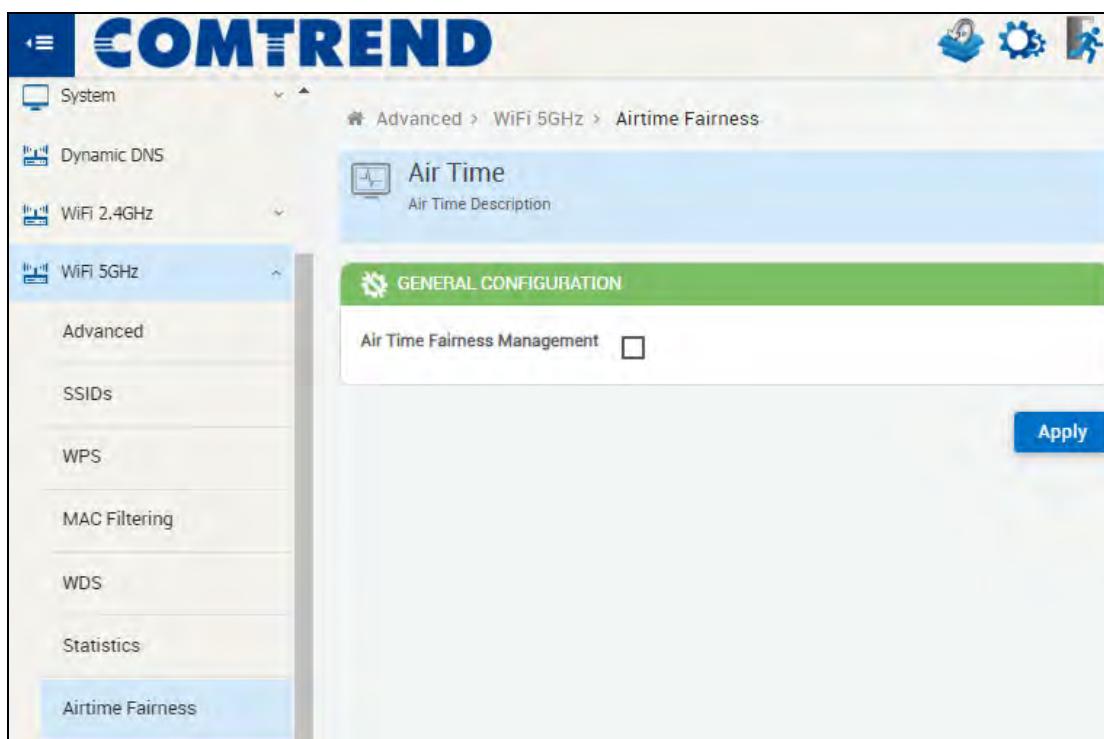
**Associated Devices**

<b>Heading</b>	<b>Description</b>
MAC Address	MAC address of the STA
IP Address	IP address of the STA
Last Tx PHY Rate	Tx PHY Rate of the Wi-Fi connection.
Last Rx PHY Rate	Rx PHY Rate of the Wi-Fi connection.
RSSI (dBm) RSSI2 (dBm) RSSI3 (dBm) RSSI4 (dBm)	Shows RSSI3 and RSSI4 for two antennas.

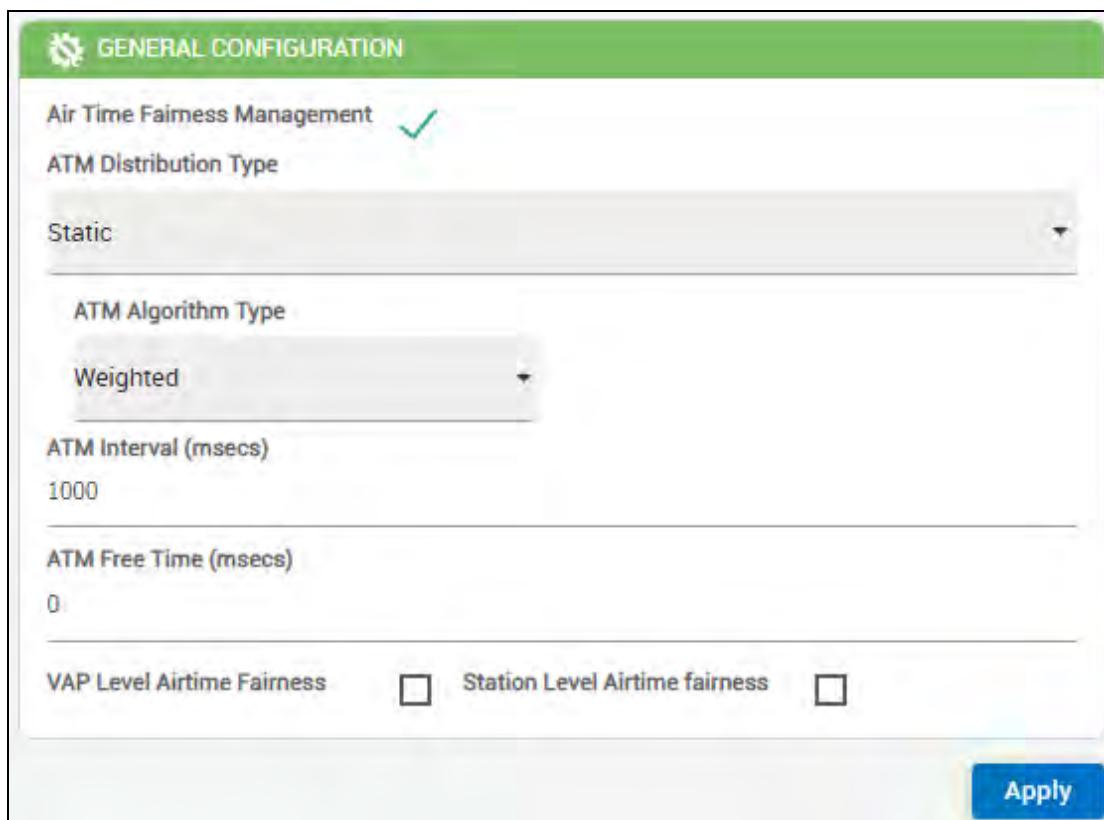
**SSID Statistics**

<b>Heading</b>	<b>Description</b>
ACK Failure Count	Number of ACK Failure Count
Aggregated Packet Count	Number of Aggregated Packet Count
Broadcast Packets Received	Number of Broadcast Packets Received
Broadcast Packets Sent	Number of Broadcast Packets Sent
Bytes Received	Number of Bytes Received
Bytes Sent	Number of Bytes Sent
Discard Packets Received	Number of Discard Packets Received
Discard Packets Sent	Number of Discard Packets Sent
Errors Received	Number of Errors Received
Packets not transmitted due to error	Number of Packets not transmitted due to error
Failed Retransmission Count	Number of Failed Retransmission Count
Multicast Packets Received	Number of Multicast Packets Received
Multicast Packets Sent	Number of Multicast Packets Sent
Multiple Retry Count	Number of Multiple Retry Count
packets Received	Number of Packets Received
packets Sent	Number of Packets Sent
Retransmitted packets	Number of Retransmitted packets
Retry Count	Number of Retry Count
Unicast Packets Received	Number of Unicast Packets Received
Unicast Packets Sent	Number of Unicast Packets Sent

### 5.7.7 Airtime Fairness



Check the checkbox  to display the following.



Click the **Apply** button to enable airtime fairness for varied wireless clients.

The settings shown above are described below.

### **ATM Distribution Type**

- Static: If an STA does not fully use its grant, do not pass it to other STAs.
- Dynamic: If an STA does not fully use its grant, pass the remaining grant to other STAs.

### **ATM Algorithm Type**

- Global: The grant(weight) allocated to STAs is equally divided between all STAs.
- Weighted: Each STA or SSID (VAP) has a predefined weight in % of the total airtime. Weights can be:
  - Per AC (Access Category)
  - Per STA
  - Per SSID
  - Per SSID, then per STA

### **ATM Interval (msecs)**

This is basic time frame in milliseconds that is used for ATF calculations.

### **ATM Free Time (msecs)**

This is basic time frame in milliseconds that is subtracted from the ATM Interval. Default free time interval value is 0ms.

### **VAP Level Airtime Fairness**

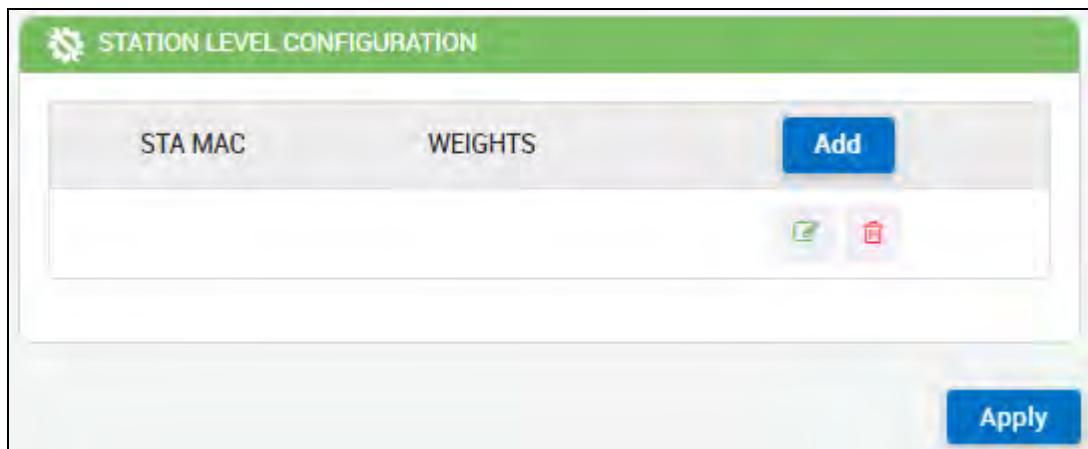
Check the checkbox  to display the following.

SSID	WEIGHTS
Comtrenda9a5_5GHz	5

Then click the  icon to edit the entry. Click the **Apply** button to apply your changes.

**Station Level Airtime Fairness**

Check the checkbox  to display the following.

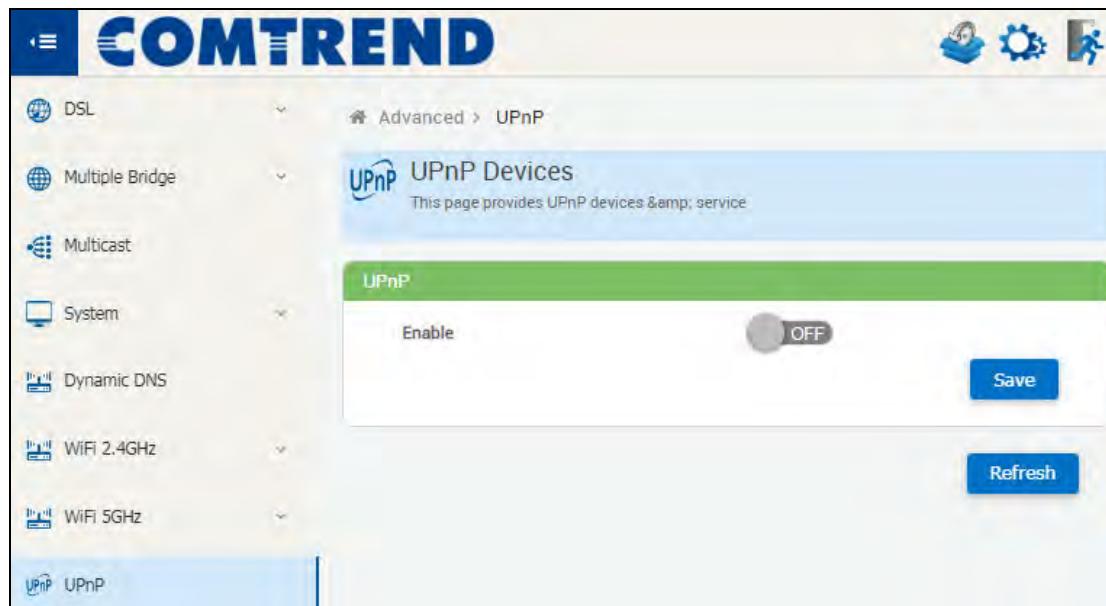


Click the **Add** button to add an entry.

Then click the icon to edit the entry. Click the **Apply** button to apply your changes.

If required, click the icon to delete an entry.

## 5.8 UPnP



Click the radio button to  to enable UPnP protocol and then click the  button to save your choice.

Click the  button to refresh the screen.

## 5.9 Quality of Service

Quality of Service (QoS) settings enables you to manage and optimize the performance of the applications. It shapes the network traffic and prioritizes the devices and services by controlling the bandwidth allocation.

The screenshot shows the COMTREND web interface with the following sections:

- Queue:** Lists four queues: ptmwan\_def\_queue, ptmwan\_mgmt\_q, ethwan\_def\_queue, and ethwan\_mgmt\_q, each with a 'More' button.
- Shaper:** Contains fields for Shaper Enable, Shaping Rate, and Interface, with a '+ Add' button.
- QoS Configuration:** A table with columns: Traffic Class, Default DSCP Mark, Eth Priority Mark, Enable, and Actions. The first row has values: 0, -1, -1, checked, and a edit icon.

### 5.9.1 QoS

(QoS) settings enables] you to manage and optimize the performance of the applications. Select Ingress or Egress from each of the drop-down menus – LAN, WLAN, DSL, WAN and Eth WAN.



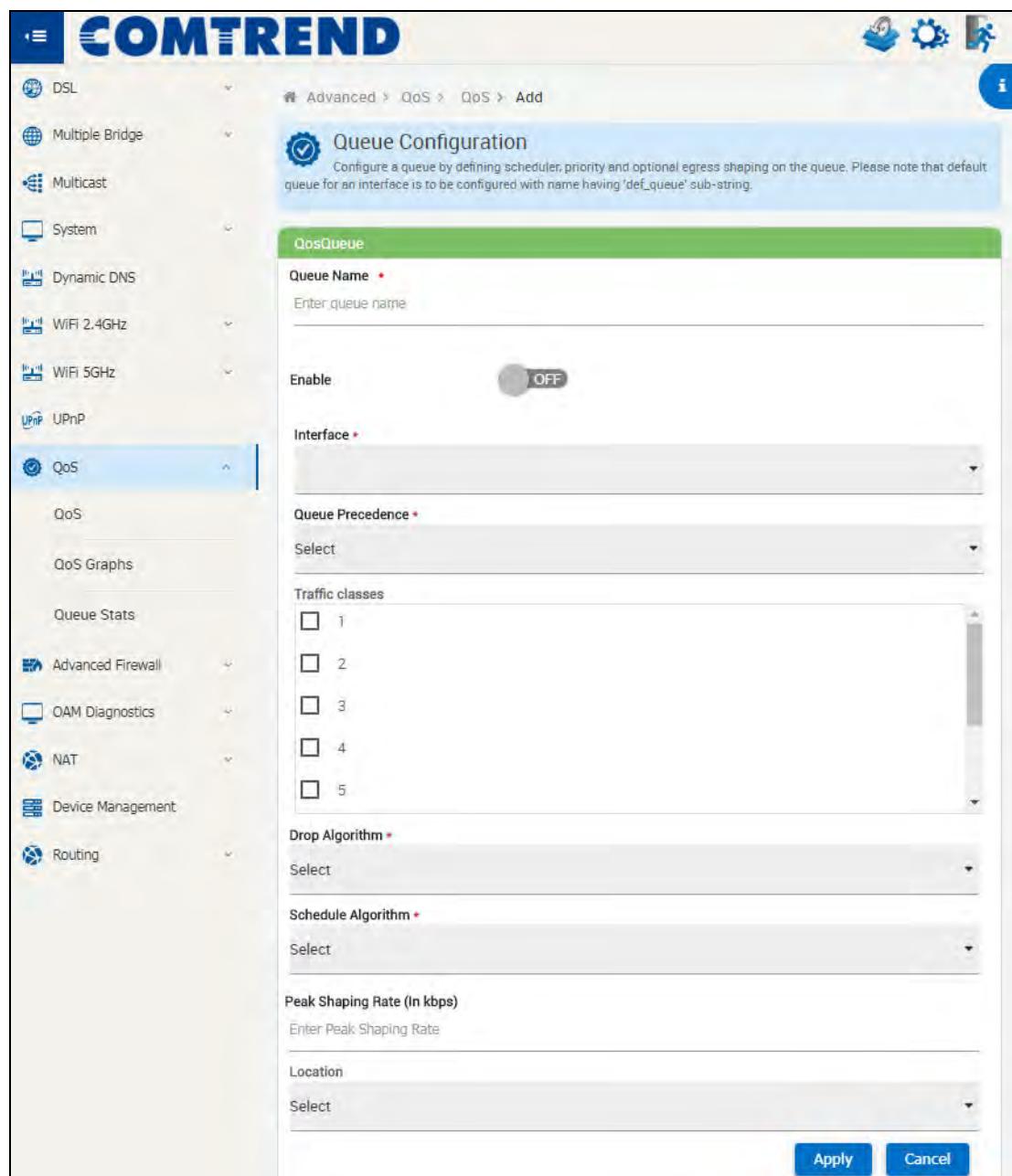
Click the **More** button to see more detail on each entry.

ptmwan_def_queue				
Interface	Precedence	Scheduler Algorithm	Actions	
pppoe-wan0	8	SP		
Classifier Name	Enable	Interface	Order	Actions

Then click the  icon to edit the entry.

If required, click the  icon to delete an entry.

Click the  button to display the following.



Click the Information icon  on the upper right-hand side of this screen for information on Queue Configuration Settings.

Click the **+ Add CL** button to display the following.

**Classifier**  
The QoS flows are identified by classification. The packet header fields can be configured to match QoS rules. Each classifier should be associated with an appropriate queue of precedence

**00sClass**

**Classifier Name \***  
Enter valid classifier name

**Order \***  
Enter Order value

**Classifier Interface \***

**Queuing Interface**

**Enable**  Off

**MPTCP**  Off

**Queue ID \***  
Select

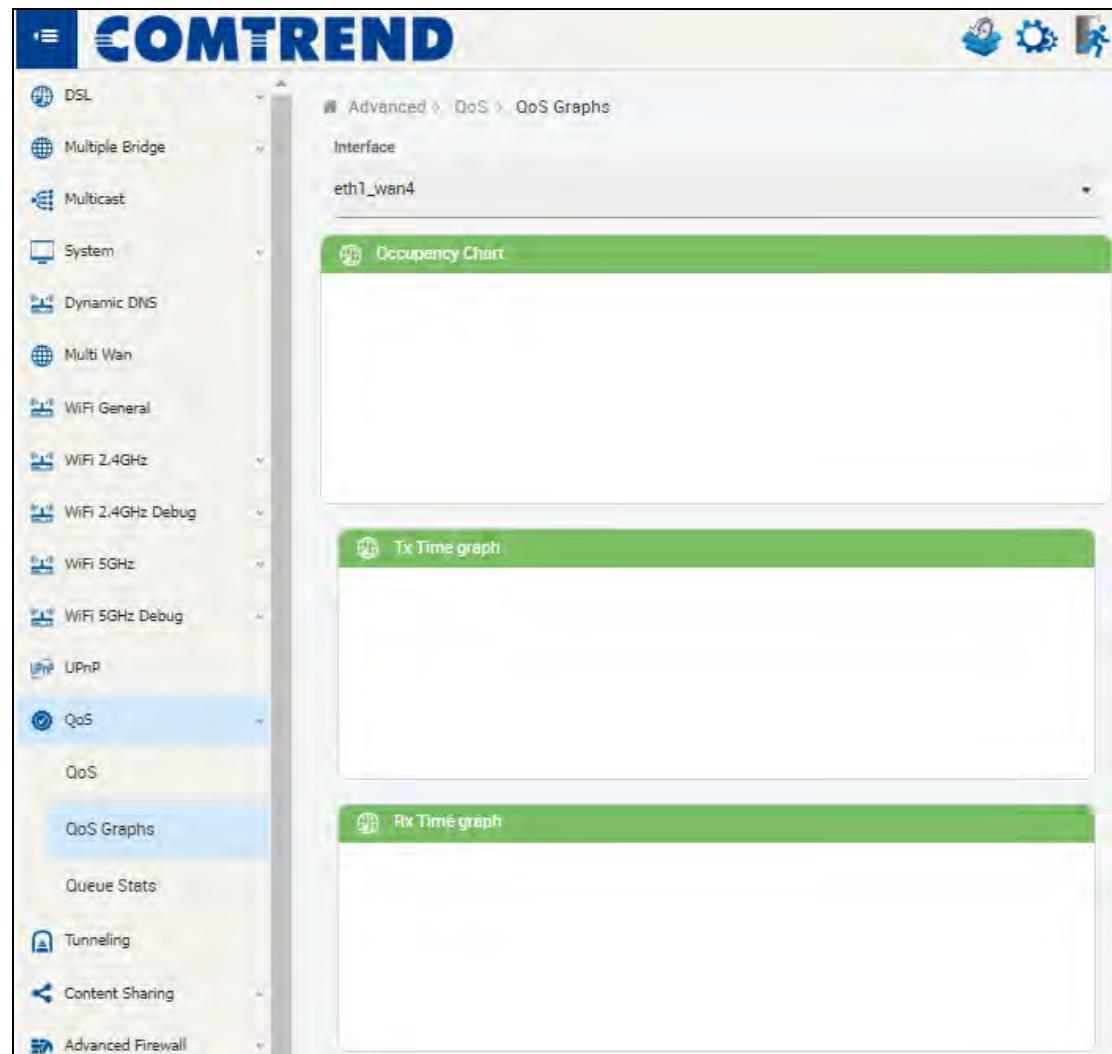
- Layer-2 **More**
- Layer-3 **More**
- Layer-4 **More**
- Layer-7 **More**
- Actions **More**

**Save** **Cancel**

Click the Information icon  on the upper right-hand side of this screen for information on Classifier Settings.

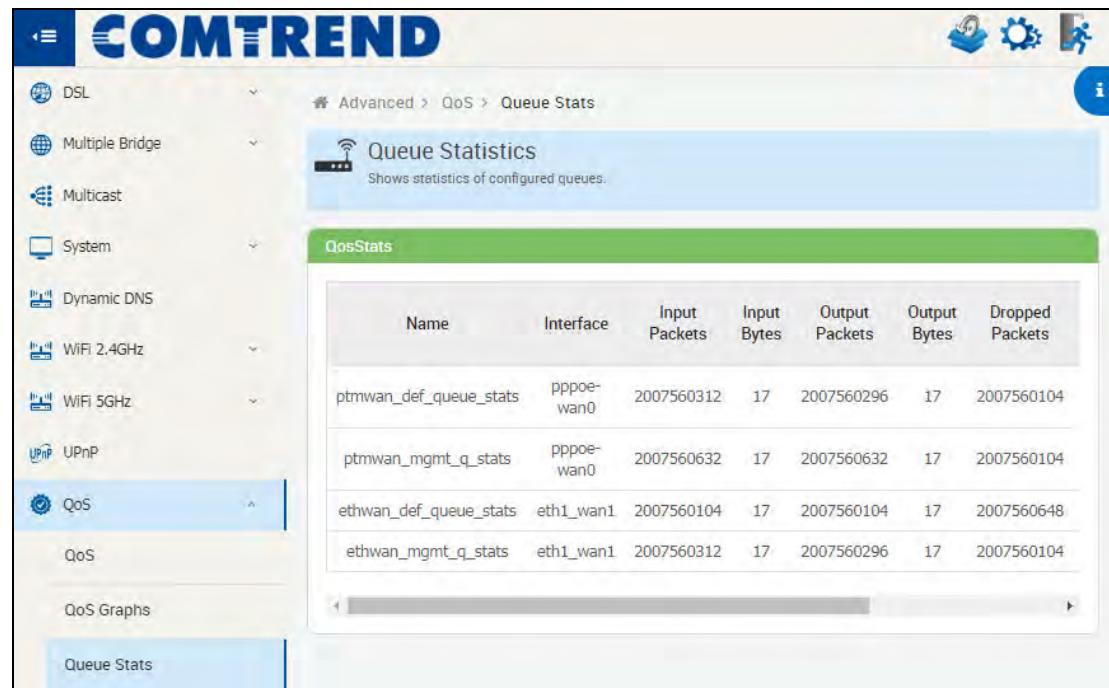
## 5.9.2 QoS Graphs

This function is not supported on this firmware release.



### 5.9.3 Queue Stats

Shows the statistics of configured queues.



The screenshot shows the COMTREND web interface. The left sidebar is a navigation tree with the following structure:

- DSL
- Multiple Bridge
- Multicast
- System
  - Dynamic DNS
  - WiFi 2.4GHz
  - WiFi 5GHz
- UPnP
- QoS** (selected)
- QoS
- QoS Graphs
- Queue Stats** (selected)

The main content area is titled "Queue Statistics" and contains the following text: "Shows statistics of configured queues." Below this is a table titled "QoSStats" with the following data:

Name	Interface	Input Packets	Input Bytes	Output Packets	Output Bytes	Dropped Packets
ptmwan_def_queue_stats	pppoe-wan0	2007560312	17	2007560296	17	2007560104
ptmwan_mgmt_q_stats	pppoe-wan0	2007560632	17	2007560632	17	2007560104
ethwan_def_queue_stats	eth1_wan1	2007560104	17	2007560104	17	2007560648
ethwan_mgmt_q_stats	eth1_wan1	2007560312	17	2007560296	17	2007560104



Click the Information icon  on the upper right-hand side of this screen for information on Queue Statistics info.

## 5.10 Advanced Firewall

This page allows the user to view and configure rules. Please make sure to enable Firewall and Packet filter feature.

**Note:** New rules configured will not be applicable to existing running sessions.

**Warning:** Use this feature judiciously. Incorrect configuration may render device inaccessible.

### 5.10.1 Packet Filter

Rule Order	Protocol	Source IP Address	Source Port	Source Port Range	Destination IP Address	Destination Port	Destination Port Range	Source Interface	Destination Interface	Source MAC	Target	Actions

By enabling Packet filter, traffic can be passed or blocked at a network interface based on source and destination addresses, ports, or protocols.

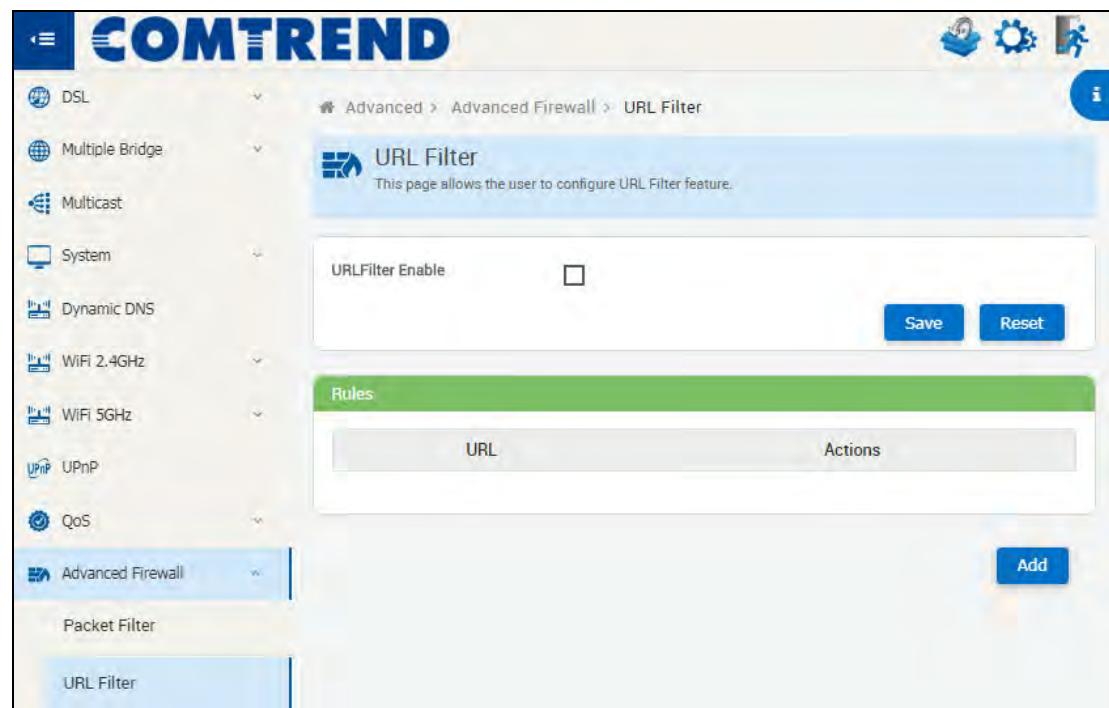
By default packet filter is disabled. To filter the traffic, firewall and packet filter must be enabled and a rule should be added based on source and destination address, ports or protocols.

Click the **Add** button to display the following.

Click the Information icon  on the upper right-hand side of this screen for information on Packet Filter settings.

### 5.10.2 URL Filter

This page allows the user to configure URL Filter feature.



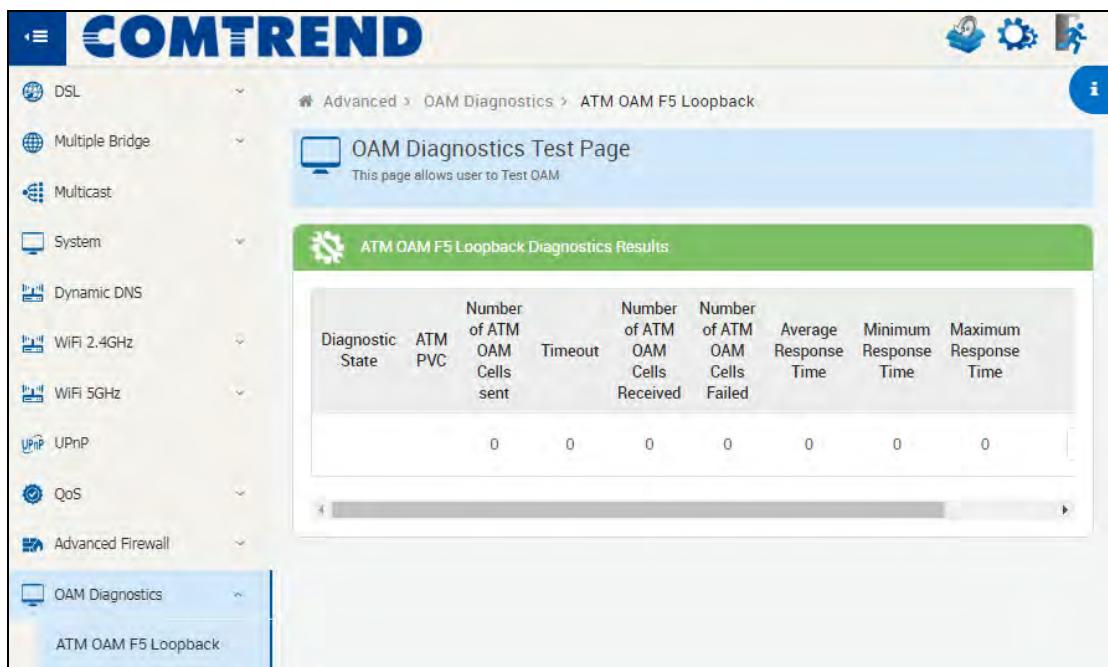
The screenshot shows the COMTREND web interface with the URL Filter configuration page. The URL Filter is enabled. A table titled 'Rules' is empty. Buttons for 'Save' and 'Reset' are visible. An 'Information' icon is located in the top right corner of the page header.

Click the Information icon  on the upper right-hand side of this screen for information on Packet Filter settings.

## 5.11 OAM Diagnostics

This page allows user to Test OAM.

### 5.11.1 ATM OAM F5 Loopback



The screenshot shows the COMTREND web interface. The left sidebar contains links for: DSL, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, and OAM Diagnostics. The OAM Diagnostics link is expanded, showing the 'ATM OAM F5 Loopback' sub-link, which is highlighted in blue. The main content area has a title 'OAM Diagnostics Test Page' with the sub-instruction 'This page allows user to Test OAM'. Below this is a table titled 'ATM OAM F5 Loopback Diagnostics Results' with the following data:

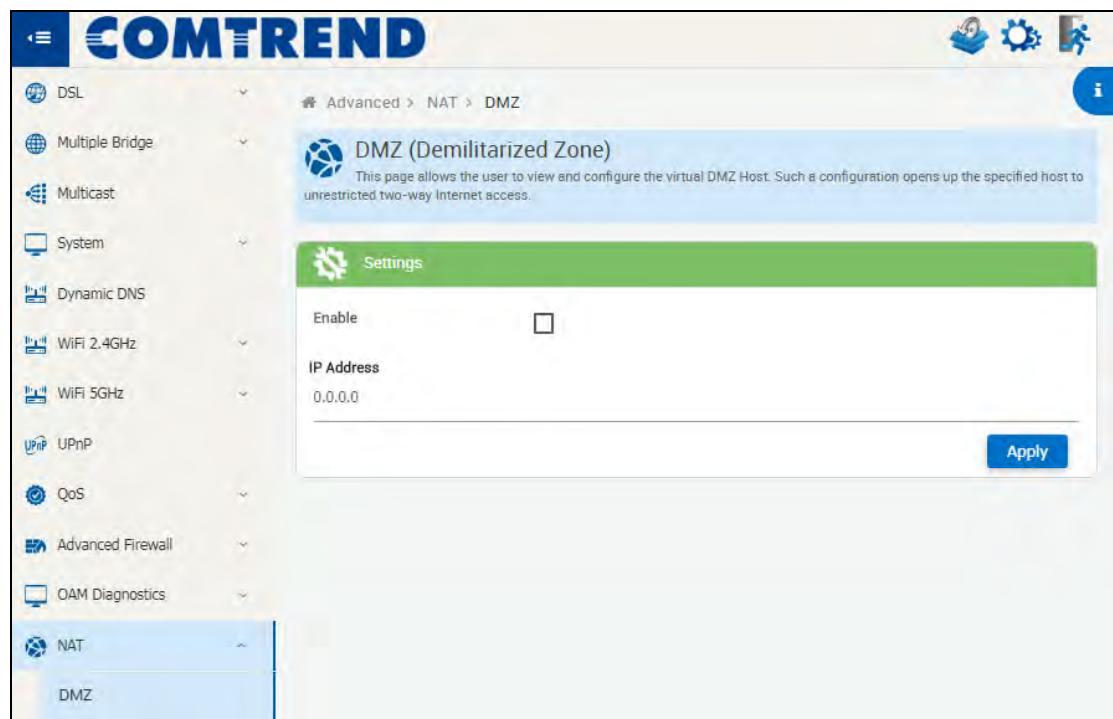
Diagnostic State	ATM PVC	Number of ATM OAM Cells sent	Timeout	Number of ATM OAM Cells Received	Number of ATM OAM Cells Failed	Average Response Time	Minimum Response Time	Maximum Response Time
		0	0	0	0	0	0	0

Click the Information icon  on the upper right-hand side of this screen for information on ATM OAM F5 Loopback Diagnostic results.

## 5.12 NAT

### 5.12.1 DMZ

This page allows the user to view and configure the virtual DMZ Host. Such a configuration opens up the specified host to unrestricted two-way Internet access.



DSL

Multiple Bridge

Multicast

System

Dynamic DNS

WiFi 2.4GHz

WiFi 5GHz

UPnP

QoS

Advanced Firewall

OAM Diagnostics

**NAT**

**DMZ**

Advanced > NAT > DMZ

**DMZ (Demilitarized Zone)**

This page allows the user to view and configure the virtual DMZ Host. Such a configuration opens up the specified host to unrestricted two-way Internet access.

**Settings**

Enable

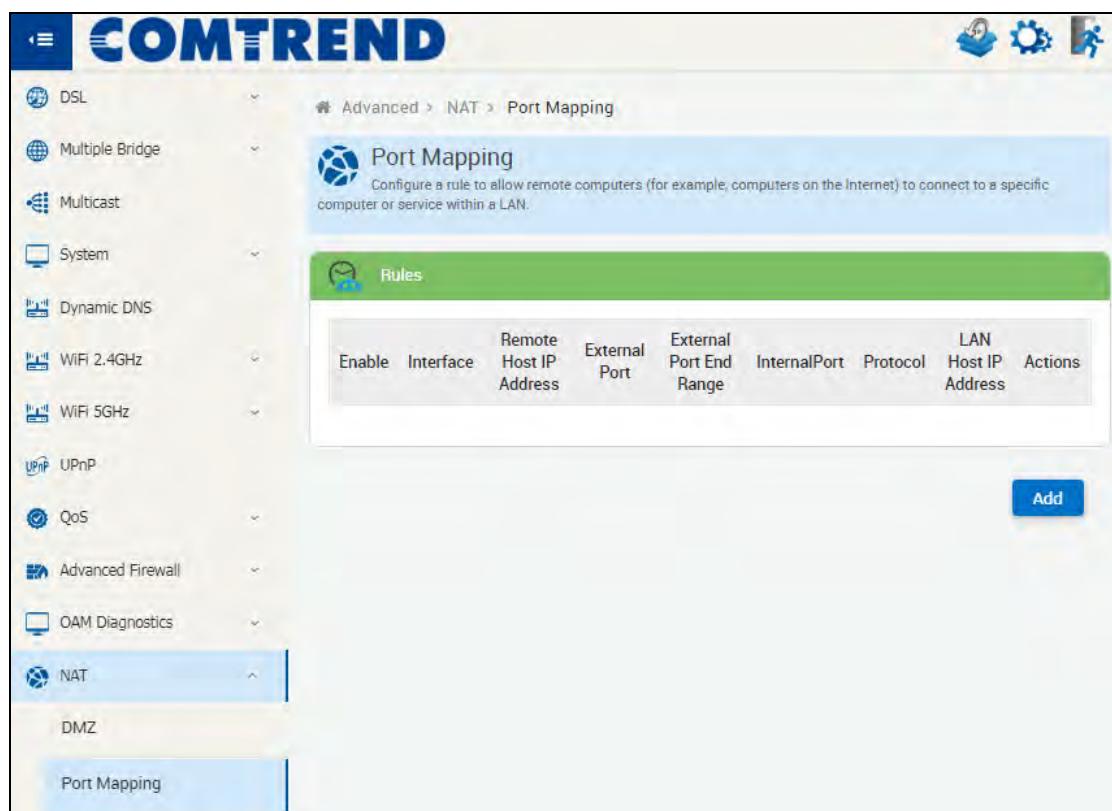
IP Address 0.0.0.0

**Apply**

Click the Information icon  on the upper right-hand side of this screen for information on DMZ settings.

### 5.12.2 Port Mapping

Configure a rule to allow remote computers (for example, computers on the Internet) to connect to a specific computer or service within a LAN.



The screenshot shows the COMTREND web interface. The left sidebar has a tree structure with nodes like DSL, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT (which is selected and highlighted in blue), DMZ, and Port Mapping. The main content area shows the 'Port Mapping' configuration page with a sub-header 'Configure a rule to allow remote computers (for example, computers on the Internet) to connect to a specific computer or service within a LAN.' Below this is a table titled 'Rules' with columns: Enable, Interface, Remote Host IP Address, External Port, External Port End Range, InternalPort, Protocol, LAN Host IP Address, and Actions. A blue 'Add' button is located at the bottom right of the table area.

Click the **Add** button to display the following.

Advanced > NAT > Port Mapping > Add

**Port Mapping**  
Configure a rule to allow remote computers (for example, computers on the Internet) to connect to a specific computer or service within a LAN.

Internet **IPv4 Address**

All Interfaces  Interface

Name of the Rule **Name of the rule**

Enable  Protocol **TCP**

Port Range **0 - 0**

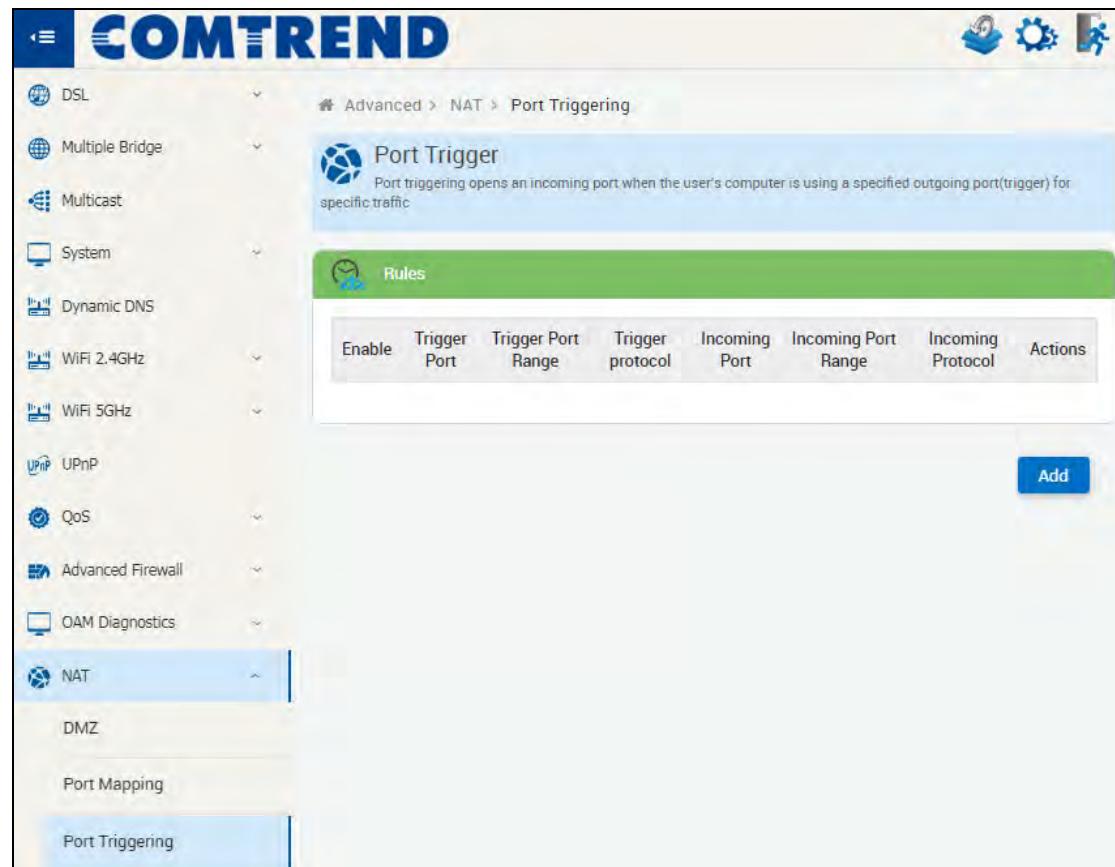
IP Address **261.0**

Save Cancel

Click the Information icon  on the upper right-hand side of this screen for information on Port Mapping settings.

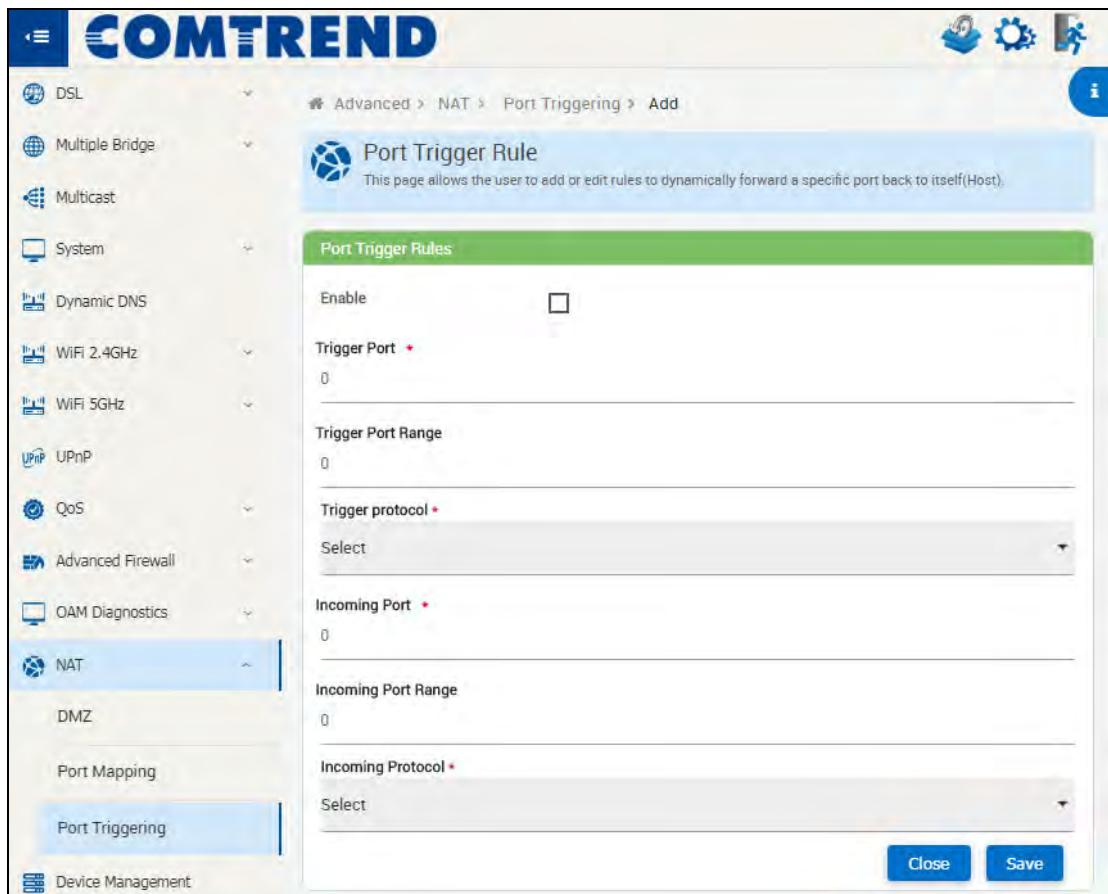
### 5.12.3 Port Triggering

Port triggering opens an incoming port when the user's computer is using a specified outgoing port(trigger) for specific traffic.



Enable	Trigger Port	Trigger Port Range	Trigger protocol	Incoming Port	Incoming Port Range	Incoming Protocol	Actions

Click the **Add** button to display the following.



The screenshot shows the COMTREND web interface with the following navigation path: Advanced > NAT > Port Triggering > Add. The main title is "Port Trigger Rule" with a sub-instruction: "This page allows the user to add or edit rules to dynamically forward a specific port back to itself(Host)." The configuration form is titled "Port Trigger Rules" and includes the following fields:

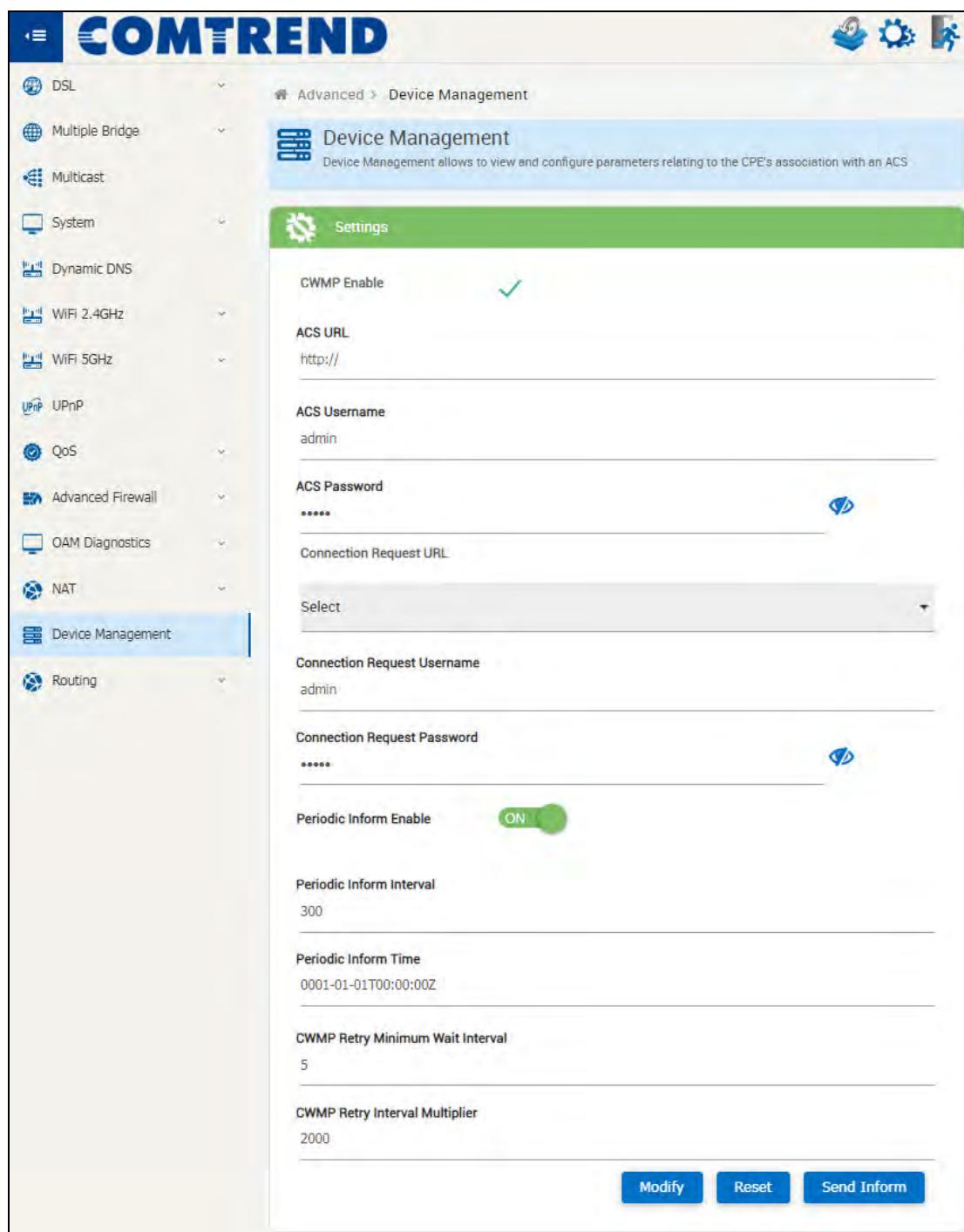
- Enable: A checkbox that is currently unchecked.
- Trigger Port \*: A text input field containing "0".
- Trigger Port Range: A text input field containing "0".
- Trigger protocol \*: A dropdown menu set to "Select".
- Incoming Port \*: A text input field containing "0".
- Incoming Port Range: A text input field containing "0".
- Incoming Protocol \*: A dropdown menu set to "Select".

At the bottom right are "Close" and "Save" buttons.



Click the Information icon on the upper right-hand side of this screen for information on Port Trigger settings.

## 5.13 Device Management



The screenshot shows the COMTREND web interface for Device Management. The left sidebar lists various configuration categories: DSL, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT, Device Management (which is selected and highlighted in blue), and Routing. The main content area is titled 'Device Management' and contains a sub-section titled 'Device Management' with the sub-instruction: 'Device Management allows to view and configure parameters relating to the CPE's association with an ACS'. Below this, a 'Settings' section is shown with the following fields:

- CWMP Enable:** Checked (indicated by a green checkmark)
- ACS URL:** http://
- ACS Username:** admin
- ACS Password:** (redacted)
- Connection Request URL:** Select (a dropdown menu)
- Connection Request Username:** admin
- Connection Request Password:** (redacted)
- Periodic Inform Enable:** ON (a green toggle switch)
- Periodic Inform Interval:** 300
- Periodic Inform Time:** 0001-01-01T00:00:00Z
- CWMP Retry Minimum Wait Interval:** 5
- CWMP Retry Interval Multiplier:** 2000

At the bottom right of the settings section are three buttons: 'Modify', 'Reset', and 'Send Inform'.

The settings shown above are described below.

Heading	Description
CWMP Enable	Shows if enabled or disabled
ACS URL	ACS URL
ACS Username	Admin by default
ACS Password	Admin by default
Connection Request URL	Connection Request URL
Connection Request Username	Admin by default
Connection Request Password	Admin by default
Periodic Inform Enable	Periodic Inform Enable
Periodic Inform Interval	300 seconds by default
Periodic Inform Time	Periodic Inform Time
CWMP Retry Minimum Wait Interval	5 seconds as default
CWMP Retry Interval Multiplier	Max Retry Interval 2000 seconds

If you need to modify the settings, first make the change, and then click the

**Modify**

button.

**Reset**

Click the **Reset** button to refresh to previous settings.

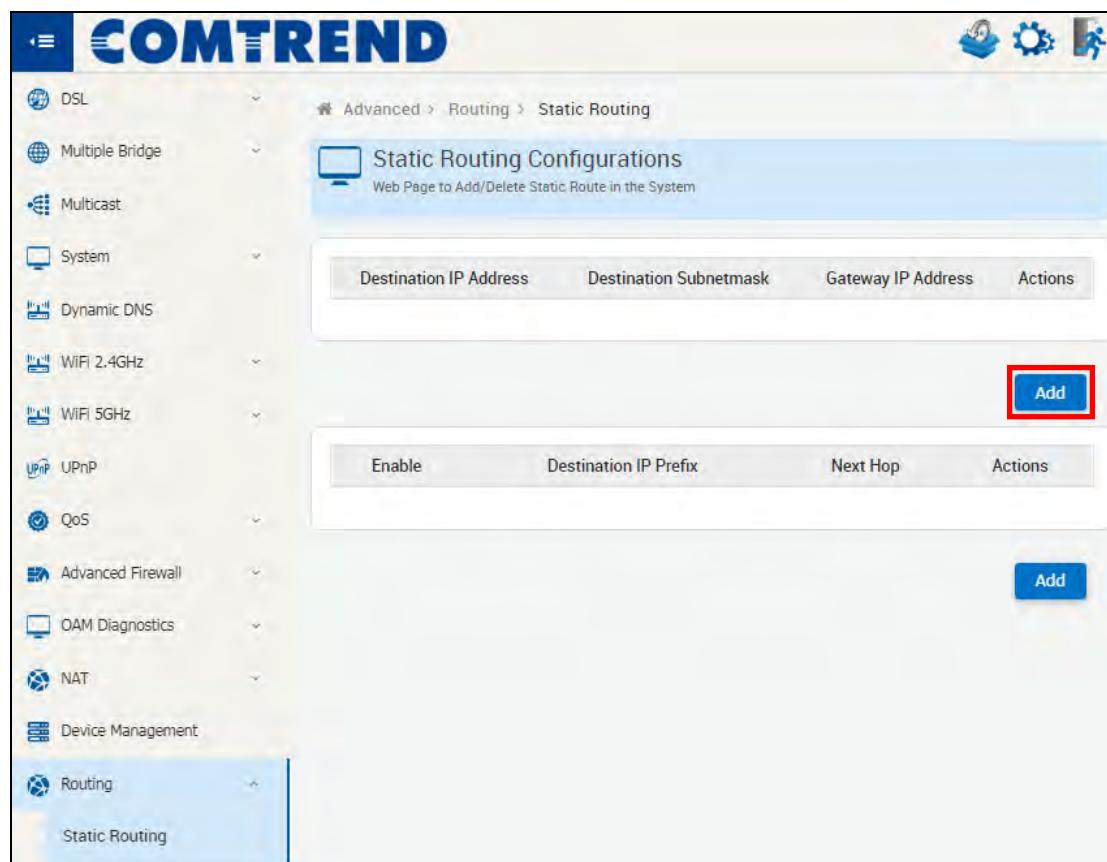
**Send Inform**

Click the **Send Inform** button to send the inform details to the ACS server.

## 5.14 Routing

Web Page to Add/Delete Static Route in the System.

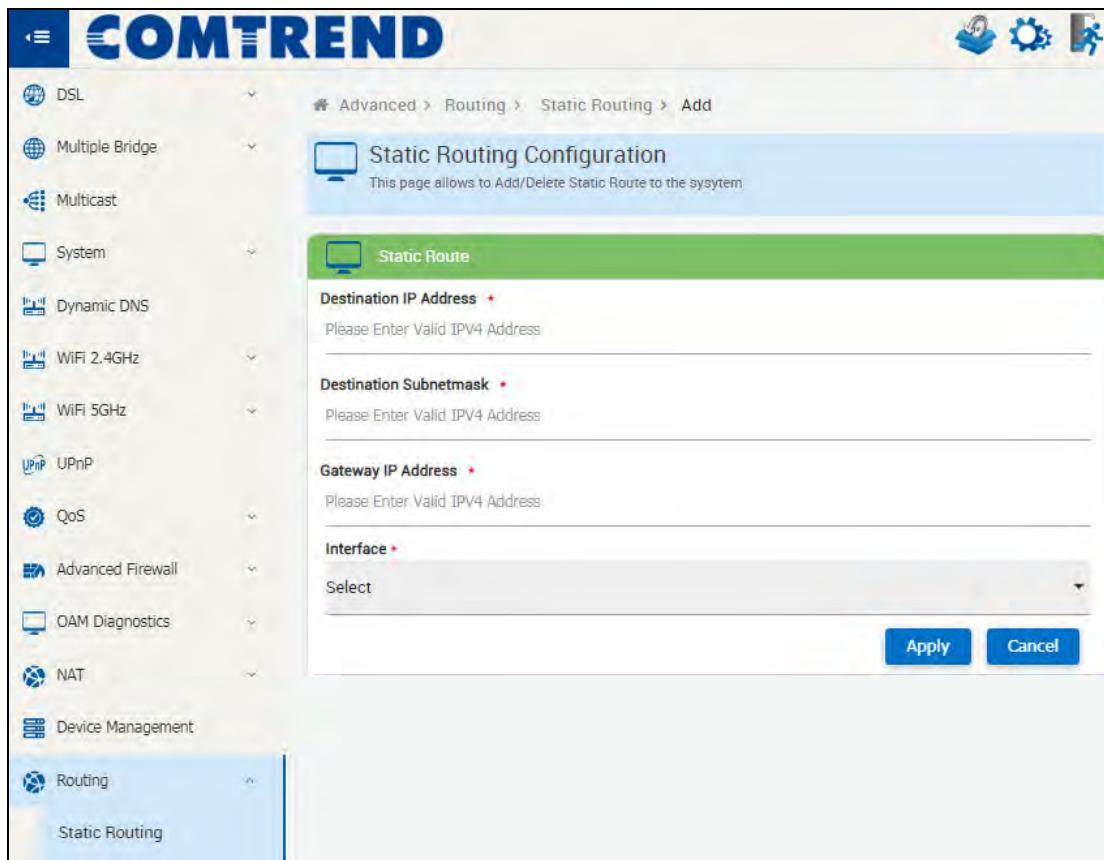
### 5.14.1 Static Routing



The screenshot shows the COMTREND web interface with the following structure:

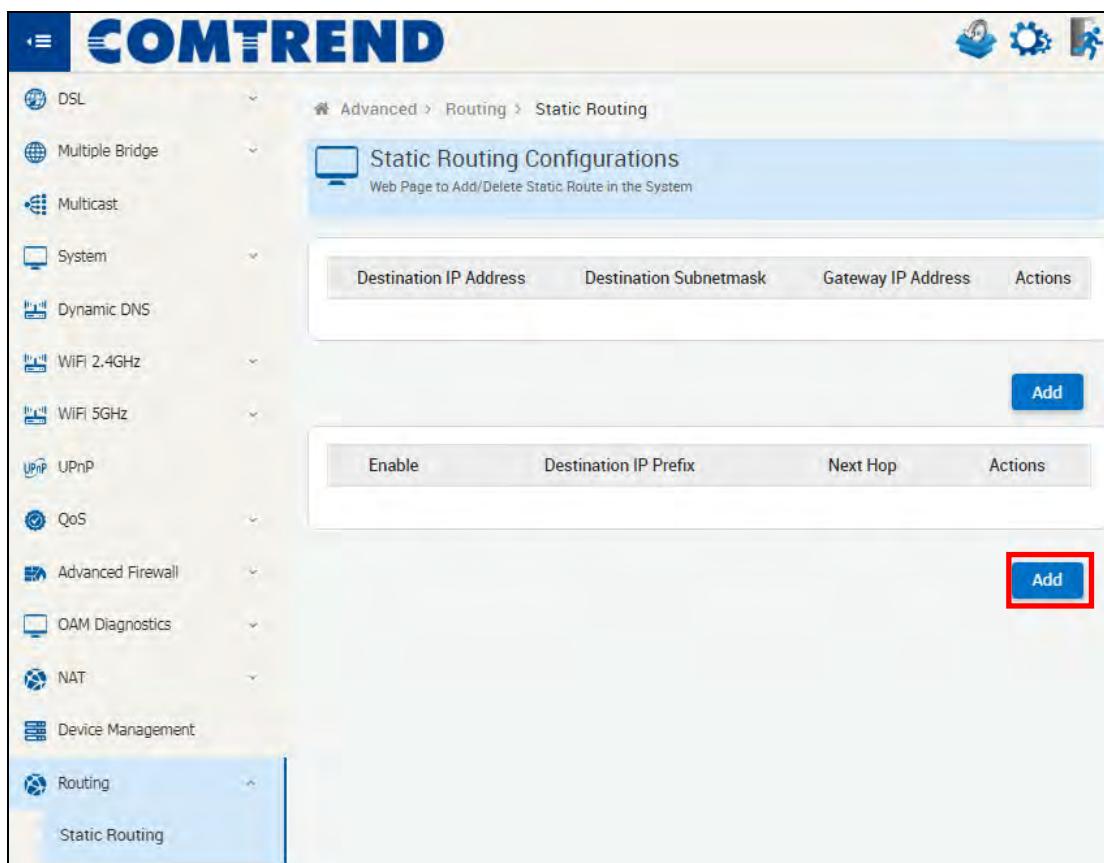
- Left Sidebar:** A vertical menu with icons and labels: DSL, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT, Device Management, Routing (selected), and Static Routing.
- Header:** COMTREND logo, Advanced > Routing > Static Routing.
- Page Title:** Static Routing Configurations (Web Page to Add/Delete Static Route in the System).
- Table 1:** A table with columns: Destination IP Address, Destination Subnetmask, Gateway IP Address, and Actions. An **Add** button is located in the Actions column of the first row.
- Table 2:** A table with columns: Enable, Destination IP Prefix, Next Hop, and Actions. An **Add** button is located in the Actions column of the first row.

Click the first **Add** button to display the following (IPv4 Static Route).



The settings shown above are described below.

Heading	Description
Destination IP Address	Destination Server or Gateway IP
Destination Subnetmask	255.255.x.x
Gateway IP Address	192.168.1.x
Interface	Interface connect to Destination Server or GW (br-lan or ptm)



The screenshot shows the COMTREND web interface with the following navigation path: Advanced > Routing > Static Routing. The main title is "Static Routing Configurations" with the subtitle "Web Page to Add/Delete Static Route in the System". On the left, a sidebar lists various network management options: DSL, Multiple Bridge, Multicast, System, Dynamic DNS, WiFi 2.4GHz, WiFi 5GHz, UPnP, QoS, Advanced Firewall, OAM Diagnostics, NAT, Device Management, Routing, and Static Routing. The "Static Routing" option is selected. The main content area contains two tables. The first table has columns: Destination IP Address, Destination Subnetmask, Gateway IP Address, and Actions. A blue "Add" button is located at the bottom right of this table. The second table has columns: Enable, Destination IP Prefix, Next Hop, and Actions. A red box highlights the blue "Add" button in this table. Both tables have a header row with these column names.

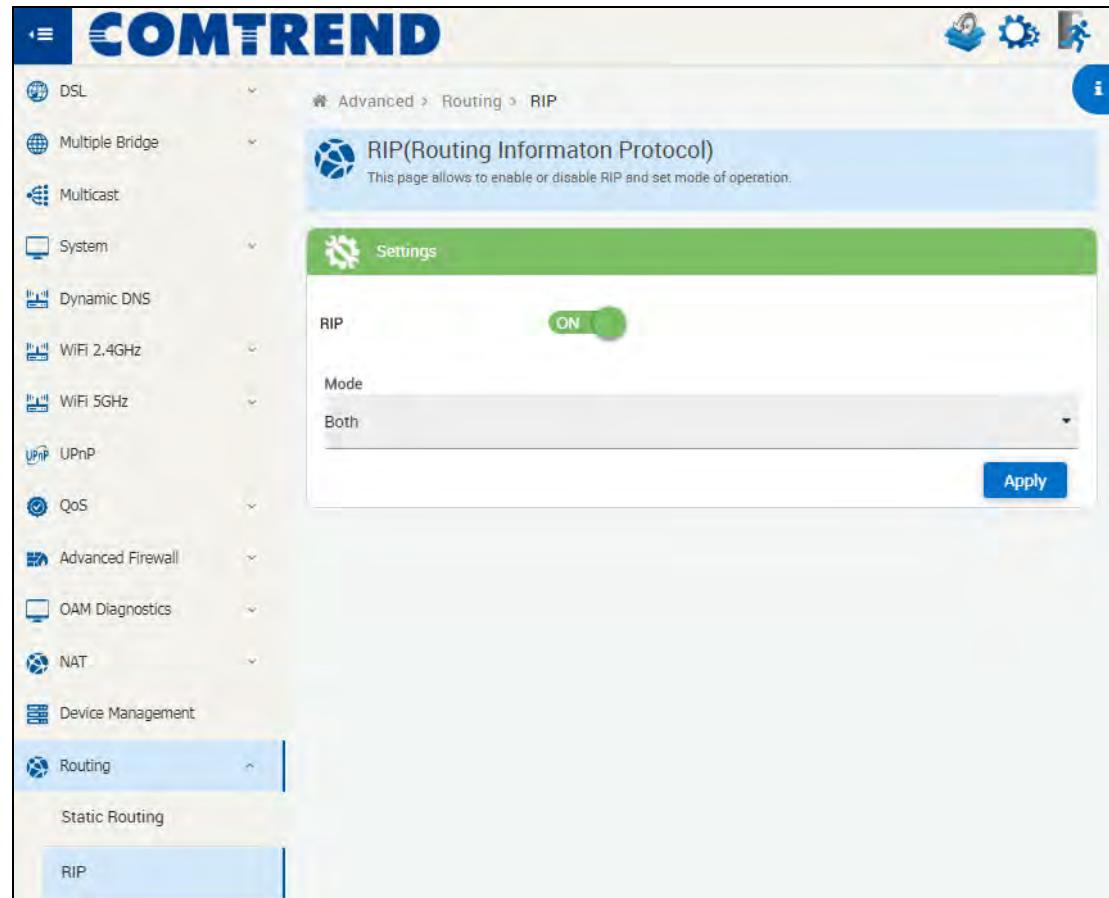
Click the second  button to display the following (IPv6 Static Route).

The settings shown above are described below.

Heading	Description
Destination IP Prefix	EX: 2001:DB8:3000:0/16
NextHop	EX: 2001:DB8:1:1
Interface	EX: Ethernet1/0

### 5.14.2 RIP

This page allows to enable or disable RIP and set mode of operation.



DSL

Multiple Bridge

Multicast

System

Dynamic DNS

WiFi 2.4GHz

WiFi 5GHz

UPnP

QoS

Advanced Firewall

OAM Diagnostics

NAT

Device Management

Routing

Static Routing

RIP

**RIP(Routing Information Protocol)**  
This page allows to enable or disable RIP and set mode of operation.

**Settings**

RIP **ON**

Mode: Both

**Apply**

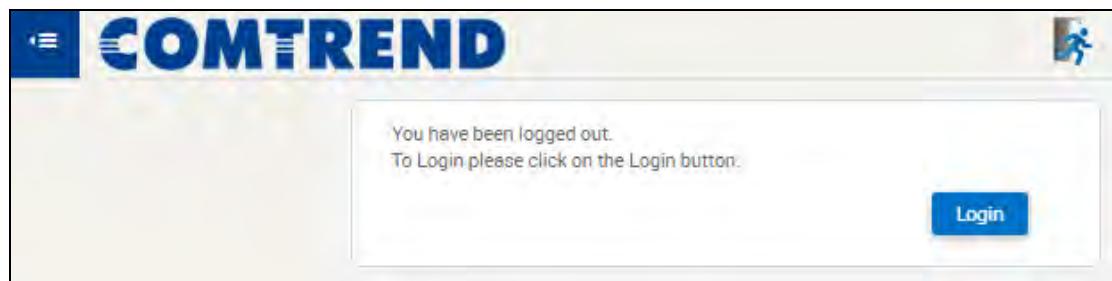
Click the Information icon  on the upper right-hand side of this screen for information on Routing Information Protocol settings.

## Chapter 6 Logout

To log out from the device simply click the following icon located at the top of your screen.



Upon successful exit, the following message will be displayed.



## Appendix A – Specifications

### Hardware

- RJ-11 X1 for VDSL2 (35b)/ADSL2+ (Annex A)
- RJ-45 X 4 for GELAN
- RJ-45 X 1 for GEWAN
- Reset button X 1
- WPS button X 1
- Guest WiFi button X 1
- Internal Antenna X 2
- Power switch X 1

### ADSL

- G.994
- G.992.1 (G.dmt) Annexes A
- G.992.2 (G.lite) Annexes A
- ANSI T1.413
- G.992.3 (ADSL2) Annexes A
- G.992.5 (ADSL2+) Annexes A

### VDSL

- G.993.2(VDSL2) 35b, 30a, 17a, 12a, 12b, 8a, 8b, 8c, 8d
- G.993.5 (G.vector)
- G.998.4 (G.INP)
- SRA (Seamless Rate Adaptation)
- UPBO (Upstream Power Back-off)

### Ethernet

- IEEE 802.3, IEEE 802.3u IEEE 802.3ab
- 10/100 /1000 BASE-T, auto-sense
- Support MDI/MDX

### Networking Protocols

- RFC 2364 (PPPoA), RFC 2684 (RFC 1483) Bridge/Router, RFC 2516 (PPPoE); RFC 1577 (IPoA)
- PPPoE Pass-Through, Multiple PPPoE Sessions on Single WAN Interface
- PPPoE Filtering of Non-PPPoE Packets Between WAN and LAN
- Transparent Bridging Between all LAN and WAN Interfaces
- 802.1p/802.1q VLAN, DSCP
- IGMP Proxy V1/V2/V3, IGMP Snooping V1/V2/V3, Fast leave
- Static route, RIP v1/v2, ARP, RARP, SNTP
- DHCP Server/Client/Relay, DNS Proxy/ Relay, Dynamic DNS, UPnP, DLNA
- IPv6 Dual Stack, IPV6 Rapid Deployment (6RD)

**Management**

- TR-069/TR-098/TR-104/TR-111/TR-181, SNMP, Telnet, Web- Based Management, Configuration Backup and Restoration
- Software Upgrade via HTTP, TFTP Server, or FTP Server

**Firewall/Filtering**

- Stateful Packet Inspection Firewall
- Stateless Packet Filter
- URI/URL Filtering
- TCP/IP/Port/Interface Filtering Rules Support Both Incoming and Outgoing Filtering

**NAT/PAT**

- Port Triggering
- Port Forwarding (Virtual Server)
- Symmetric port-overloading NAT, Full-Cone NAT
- DMZ host
- VPN Pass Through (PPTP, L2TP, IPSec)

**Wireless**

- IEEE 802.11n, 2.4GHz, 2T2R

Backward compatible with 802.11g/b

2412~2462 MHz

- IEEE 802.11ac, 5GHz, 2T2R,

Backward compatible with 802.11n/a

U-NII-1 ( 5150~5250 MHz )

U-NII-3 ( 5725~5825 MHz )

- WPA/WPA-PSK, WPA2/WPA2-PSK with TKIP & AES Security Type

- Multiple SSID

- MAC Address Filtering

**Power Supply**

- External power adapter: 12Vdc/ 2.0A 

**Certification**

- FCC, UL, IC, cUL standard

Note : Specification are subject to change without note.

**Environment**

- Operating Temperature: 0°C ~40°C (32°F ~104°F)

- Operating Humidity: 10%~90% non-condensing

- Storage Temperature: -25°C ~65°C (-23°F ~149°F)

- Storage Humidity: 5%~90% non-condensing

**Kit Contents**

(1\*VR-3053, 1\*RJ11 cable, 1\*RJ45 cable, 1\*power adapter, 1\*CD-ROM)

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

## Appendix B - SSH Client

Unlike Microsoft Windows, Linux OS has a ssh client included. For Windows users, there is a public domain one called “putty” that can be downloaded from here:

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

To access the ssh client you must first enable SSH access for the LAN or WAN from the Management → Access Control → Services menu in the web user interface.

### To access the router using the Linux ssh client

For LAN access, type: ssh -l root 192.168.1.1

For WAN access, type: ssh -l root **WAN IP address**

### To access the router using the Windows “putty” ssh client

For LAN access, type: putty -ssh -l root 192.168.1.1

For WAN access, type: putty -ssh -l root **WAN IP address**

**NOTE:** The **WAN IP address** can be found on the Device Info → WAN screen