NetComm

NF18ACV – USER GUIDE

VDSL/ADSL2+ Dual Band AC1600 Gigabit Gateway with VoIP

Doc No. UG01040

© NetComm Wireless 2021

Important Notice

This device, like any wireless device, operates using radio signals which cannot guarantee the transmission and reception of data in all conditions. While the delay or loss of signal is rare, you should not rely solely on any wireless device for emergency communications or otherwise use the device in situations where the interruption of data connectivity could lead to death, personal injury, property damage, data loss, or other loss. NetComm Wireless accepts no responsibility for any loss or damage resulting from errors or delays in transmission or reception, or the failure of the NetComm NF18ACV to transmit or receive such data.

Copyright

Copyright© 2021 NetComm Wireless Limited. All rights reserved.

The information contained herein is proprietary to NetComm Wireless. No part of this document may be translated, transcribed, reproduced, in any form, or by any means without prior written consent of NetComm Wireless.

Trademarks and registered trademarks are the property of NetComm Wireless Limited or their respective owners. Specifications are subject to change without notice. Images shown may vary slightly from the actual product.

Note – This document is subject to change without notice.

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 contained 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 domestic 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.

Document history

This guide covers the following product:

VDSL/ADSL2+ Dual Band AC1600 Gigabit Gateway with VoIP (NF18ACV)

VER.	DOCUMENT DESCRIPTION	DATE
v1.0	Initial document release	August 2017
v1.1	Additions and changes to Advanced Setup section	June 2018
v1.2	User Guide for new User Interface	December 2018
v1.3	Corrected Access List screenshot	September 2019
v1.4	Includes changes from Release Note R6B017	April 2020
v1.5	Added notes about Block list limitations and SAMBA support	March 2021

Table i. – Document revision history

NetComm

Contents

Overview 5
- Introduction 5
- Target audience 5
- Prerequisites 5
- Notation 5

Welcome 6

Product overview 6

Package contents 6

Product features 6
- Perfect for 6
- Key features 7
- NF18ACV 7
  - nbn and UFB ready 7
  - Triple play services 7
  - Enhanced wireless experience 7
  - Media sharing 7

Interfaces 8
- Front view 8
  - LED indicators 8
- Rear view 10
- Left side view 11
- Pedestal label 11

Safety and product care 11

Transport and handling 12

Physical dimensions and weight 12

Installation and configuration 12
- Placement of your NF18ACV 12
- Avoiding obstacles and interference 12
- Cordless phones 13
- Choose the "quietest" channel for your wireless network 13

Hardware installation 13
- Connect a client via Ethernet cable 13
- Connect a client wirelessly 13
- Connect a client via WPS 14

Initial NF18ACV configuration 15
- Log in 15
- Set up options 16
  - Start the Setup Wizard 16
  - Go to the Main Menu 16

Setup Wizard 17
- INTERNET settings 17
  - ADSL 18
  - VDSL 19
  - Ethernet WAN 20
- WIRELESS settings 21
  - WIRELESS 2.4GHz 21
  - WIRELESS 5GHz 21
- PHONE settings 22
  - Using a phone handset with your router 22
  - PHONE LINE settings 22
- GATEWAY SECURITY settings 23
  - Network Security 23
  - GATEWAY SECURITY settings 23
- TIMEZONE settings 24
- SUMMARY 25

© NetComm Wireless 2021

NF18ACV default settings 26
Restore Factory Default settings 26
SUMMARY 27
Gateway Information 28
Internet Information 28
Wireless 2.4 GHz 29
Wireless 5 GHz 29
USB Devices 30
Phone Details 30
Wired Devices 31
INTERNET 32
Edit a service 33
Create a new connection 33
WIRELESS 34
PHONE 36
PARENTAL CONTROL 39
CONTENT SHARING 41
ADVANCED 42
Diagnostics – Information 43
Diagnostics – Statistics 46
Diagnostics – Troubleshooting 50
Diagnostics – Logs 52
Routing – NAT 54
Routing – Routing 58
Routing – DDNS 60
Management – TR-069 Client 61
Management – SNMP Agent 63
Management – Passwords 64
Management – LED Control 65
LAN 66
Local Area Network – IPv4 66
Local Area Network – IPv6 69
Local Area Network – VLAN 71
Wireless Advanced Settings – Wireless Bridge 72
Wireless Advanced Settings – MAC Filter 73
Wireless Advanced Settings – Advanced 74
Phone – SIP Settings 81
System 83
QoS 86
Security 92

© NetComm Wireless 2021

Overview

Introduction

This manual provides information related to the installation, operation, and use of the NF18ACV.

Target audience

The individual reading this manual is presumed to have a basic understanding of telecommunications terminology and concepts.

Prerequisites

Before continuing with the installation of your NF18ACV, please confirm that you meet the minimum system requirements below.

- An activated ADSL/VDSL or pre-configured WAN connection.
- A computer with a working Ethernet adapter or wireless 802.11a/b/g/n/ac capability and the TCP/IP Protocol installed.
- A current version of a web browser such as Internet Explorer®, Mozilla Firefox® or Google Chrome™.

Notation

The following symbols are used in this manual:

Note – This note contains useful information.

Important – This is important information that may require your attention.

Warning – This is a warning that may require immediate action in order to avoid damage or injury.

© NetComm Wireless 2021

Welcome

Thank you for purchasing a NetComm Wireless NF18ACV. This guide contains all the information you need to configure your device.

Product overview

- Fully featured VDSL2 / ADSL2+ gateway
- 4 x Gigabit Ethernet 10/100/1000 LAN ports
- nbn and UFB ready – ultra-fast connection to nbn and UFB fibre network - 1 x 10/100/1000 Gigabit Ethernet WAN port
- VoIP feature for HD quality voice calls - connect up to 2 telephones
- Next generation WiFi 802.11 AC1600, dual band concurrent, for multiple high-speed wireless connections
- 2 x WPS push buttons for the quick and easy connection of wireless devices on both 2.4GHz and 5GHz bands
- Access and share media and file content across the wireless home network
- Device performance monitoring and management through TR-069

Package contents

The NF18ACV package consists of:

- 1 x NetComm Wireless NF18ACV VDSL2/ADSL2+ Dual Band AC1600 Wireless Gigabit Gateway with VoIP
- 1 x RJ45 Ethernet cable
- 1 x RJ11 Telephone cable
- 1 x WiFi Security card
- 1 x Warranty card
- 1 x Power supply (12V/2A)

If any of these items are missing or damaged, please contact NetComm Wireless Support immediately by visiting the NetComm Wireless Support website at: http://www.netcommwireless.com/contact-forms/support

Product features

Perfect for

- Ultra-fast connection to your fixed line VDSL2/ADSL2+ service
- High-speed connection to nbn or UFB Fibre networks FTTN/FTTB and FTTH/FTTP
- Triple play services offer including Voice over IP
- Creating a powerful wireless home network and media sharing

© NetComm Wireless 2021

Key features

- Fully featured VDSL2 / ADSL2+ gateway
- 4 x Gigabit Ethernet 10/100/1000 LAN ports
- nbn and UFB ready – ultra-fast connection to nbn and UFB fibre network - 1 x 10/100/1000 Gigabit Ethernet WAN port
- VoIP feature for HD quality voice calls - connect up to 2 telephones
- Next generation WiFi 802.11 AC1600, dual band concurrent, for multiple high-speed wireless connections
- 2x WPS push buttons for the quick and easy connection of wireless devices on both 2.4GHz and 5GHz bands
- Access and share media and file content across the wireless home network
- Device performance monitoring and management through TR-069

NF18ACV

The NetComm Wireless NF18ACV smart residential VDSL2/ADSL2+ wireless gateway brings an enhanced and blazing fast broadband experience to the home.

nbn and UFB ready

Featuring VDSL2/ADSL2 technologies as well as a Gigabit WAN port, the NF18ACV is a 3-in-1 gateway that provides access to **ADSL** networks, **VDSL** and all **nbn** and **UFB** fibre network options: **FTTN**, **FTTB**, **FTTH**

Triple play services

The NF18ACV is a triple play services enabler that supports the transmission of high-speed data, multi HD/UHD IPTV and over the top video streaming, VoIP feature for HD quality voice calls with the capacity to connect 2 phones.

Enhanced wireless experience

The NF18ACV gateway embeds the newest generation of WiFi (802.11 ac) for powerful access point and video grade wireless capabilities. It allows both **2.4GHz** and **5GHz** bands to work concurrently, ensuring interoperability with all wireless equipment in the house.

The NF18ACV is equipped with 5GHz 3 x 3 MIMO and 2.4GHz 2 x 2 MIMO internal antennas to provide optimum reception while offering a powerful signal throughout the home. Create an ultra-fast **1600 Mbps[1] WiFi** home network and connect a multitude of wireless devices such as smart TVs, set top boxes, laptops, tablets, computers, NAS, smart phones and gaming consoles with upgraded coverage and performance.

Media sharing

Connect a **USB device** to the NF18ACV gateway, access and share all A/V media and file content with all of the connected devices in the house in real time. The NF18ACV becomes the media hub of the house using **DLNA/UPnP** standard and enhanced wireless capabilities to create a reliable high-speed home network.

[1] Maximum wireless signal rate and coverage values are derived from IEEE Standard 802.11n and 802.11ac specifications. Actual wireless speed and coverage are dependent on network and environmental conditions included but not limited to volume of network traffic, building materials and construction/layout.

© NetComm Wireless 2021

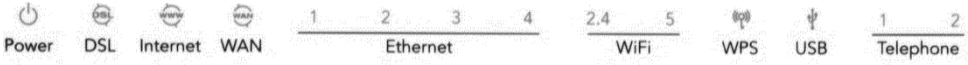
Interfaces

The NF18ACV is designed to be placed on a desktop with the front facing outward.

All of the cables exit from the rear for easy organization and the power ON/OFF and WPS buttons on the side.

Front view

The LED display visible on the front of the NF18ACV provides you with information about network activity and the device status.



LED indicators

The following table contains an explanation of each of the indicator lights on the front of the NF18ACV.

LABEL	ICON	COLOUR	DEFINITION
Power		Red	The NF18ACV is powered on and initialising.
		Green	The NF18ACV is powered on and operating normally.
		Off	The power is off.
DSL		Off	No DSL signal detected.
		Green Blinking	Synching
		Green	DSL synchronized.
Internet		Green	The NF18ACV is connected to an internet service.
		Green Blinking	Data is being transmitted to or from the internet.
		Off	The NF18ACV is not connected to the internet.
WAN		Green	A device is connected to the Ethernet WAN port.
		Green Blinking	Data is being transmitted to or from the WAN.
		Off	No device is connected to the Ethernet WAN port.
Ethernet	1 2 3 4	Green	A device is connected to the Ethernet LAN port.
		Green Blinking	Data is being transmitted to or from the Ethernet LAN port.
		Off	No device is connected to the Ethernet LAN port.
WiFi	2.4	Green	WiFi is enabled.
		Green Blinking	Data is being transmitted to or from the Wireless interface.
		Off	WiFi is disabled.
	5	Green	WiFi is enabled.
		Green Blinking	Data is being transmitted to or from the Wireless interface.
		Off	WiFi is disabled.
WPS		Blue	WPS (WiFi Protected Setup) is enabled.
		Blue Blinking	WPS pairing is triggered.
		Off	WPS is disabled.
USB		Green	A USB device is connected.

© NetComm Wireless 2021

LABEL	ICON	COLOUR	DEFINITION
		Green Blinking	Data is being transmitted through the USB interface.
		Off	No USB device is connected to the USB interface.
Telephone	1 2	Green	A handset is registered.
		Green Blinking	Incoming call or the handset is in use.
		Off	No handset registered

© NetComm Wireless 2021

Rear view

The following interfaces are available on the rear panel of the NF18ACV:

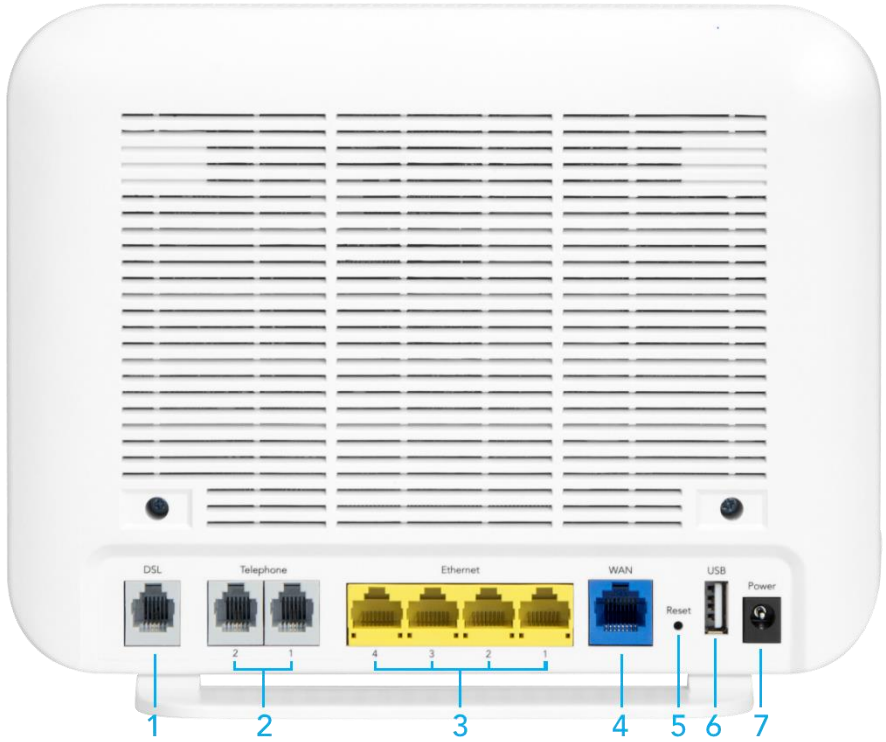


Figure 1 – NF18ACV router rear view

	INTERFACE	DESCRIPTION
1	**DSL**	Use the provided RJ11 cable to connect the router to the telephone line operating your xDSL service.
2	**Telephone 1 and 2**	Connect a regular analogue telephone handset here for use with a VoIP service.
3	**Ethernet 1 - 4**	Gigabit Ethernet LAN ports. Connect your Ethernet based devices to one of these ports for high-speed internet access.
4	**WAN**	Gigabit capable WAN port for connection to a WAN network. Connect to your Network Termination Device (NTD) for high-speed internet access.
5	**Reset button**	Reset unit to Default by holding the Reset button down for 10 seconds when unit is powered on.
6	**USB**	Connect an external USB storage device here to use the Network Attached Storage (NAS) feature of the NF18ACV.
7	**Power supply jack**	Connection point for the included power adapter. Connect the power supply here.

Rear interface table

© NetComm Wireless 2021

Left side view

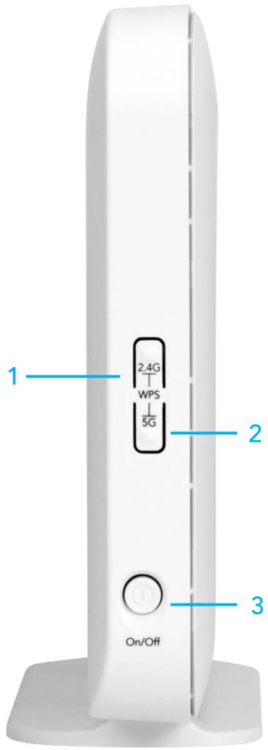


Figure 2 – NF18ACV router side view

NO	INTERFACE	DESCRIPTION
1	**2.4G WPS** button	Press the **2.4G WPS** button to activate the WPS PBC pairing function for the 2.4GHz radio.
2	**5G WPS** button	Press the **5G WPS** button to activate the WPS PBC pairing function for the 5GHz radio.
3	**On/Off** button	Toggles the power on and off.

Side interface table

Pedestal label

The NF18ACV device label on the bottom of the pedestal provides important details for your individual NF18ACV unit such as:

- Product Model Name
- Model number
- MAC ID number
- Serial Number
- Admin IP address
- Gateway Login details
- 2.4GHz WiFi Network name and password
- 5GHz WiFi Network name and password, etc.

Safety and product care

Your router is an electronic device that sends and receives radio signals. Please take the time to read this list of precautions that should be taken when installing and using the router.

- Do not disassemble the router. There are no user-serviceable parts.
- Do not allow the router to come into contact with liquid or moisture at any time. To clean the device, wipe it with a damp cloth.
- Do not restrict airflow around the device. This can lead to the device overheating.
- Do not place the device in direct sunlight or in hot areas.

© NetComm Wireless 2021

Transport and handling

When transporting the NF18ACV, it is recommended to return the product in the original packaging. This ensures that the product will not be damaged.

Attention – In the event the product needs to be returned, ensure it is securely packaged with appropriate padding to prevent damage during courier transport.

Physical dimensions and weight

The table below lists the physical dimensions and weight of the NF18ACV.

DIMENSIONS	
Width	216 mm
Height	173 mm
Depth	61 mm
Weight	420 grams

Physical dimensions and weigh table

Installation and configuration

Placement of your NF18ACV

The wireless connection between your NF18ACV and your WiFi devices will be strong when they are in close proximity and have direct line of sight. As your client device moves further away from the NF18ACV or solid objects block direct line of sight to the router, your wireless connection and performance may degrade. This may or may not be directly noticeable, and is greatly affected by the individual installation environment.

If you have concerns about your network's performance that might be related to range or obstruction factors, try moving the computer to a position between three to five meters from the NF18ACV in order to see if distance is the problem.

Note – While some of the items listed below can affect network performance, they will not prohibit your wireless network from functioning; if you are concerned that your network is not operating at its maximum effectiveness, this check list may help

If you experience difficulties connecting wirelessly between your WiFi Devices and your NF18ACV, please try the following steps:

- In multi-storey homes, place the NF18ACV on a floor that is as close to the centre of the home as possible. This may mean placing the NF18ACV on an upper floor.
- Try not to place the NF18ACV near a cordless telephone that operates at the same radio frequency as the NF18ACV (2.4GHz/5GHz).

Avoiding obstacles and interference

Avoid placing your NF18ACV near devices that may emit radio "noise," such as microwave ovens. Dense objects that can inhibit wireless communication include:

- Refrigerators
- Washers and/or dryers
- Metal cabinets
- Large aquariums

© NetComm Wireless 2021

- Metallic-based, UV-tinted windows
- If your wireless signal seems weak in some spots, make sure that objects such as those listed above are not blocking the signal's path (between your devices and the NF18ACV).

Cordless phones

If the performance of your wireless network is impaired after considering the above issues, and you have a cordless phone:

- Try moving cordless phones away from your NF18ACV and your wireless-enabled computers.
- Unplug and remove the battery from any cordless phone that operates on the 2.4GHz or 5GHz band (check manufacturer's information). If this fixes the problem, your phone may be interfering with the NF18ACV.
- If your phone supports channel selection, change the channel on the phone to the farthest channel from your wireless network. For example, change the phone to channel 1 and move your NF18ACV to channel 11. See your phone's user manual for detailed instructions.
- If necessary, consider switching to a 900MHz or 1800MHz cordless phone.

Choose the "quietest" channel for your wireless network

In locations where homes or offices are close together, such as apartment buildings or office complexes, there may be wireless networks nearby that can conflict with your wireless network. Your wireless adapter may include a utility to assist in scanning for the least congested network, otherwise you may be able to find another piece of software that can be used. These tools display a graphical representation of the wireless networks in range and the channels on which they are operating.

Try to find a channel which is not as busy and does not overlap with another one. Channels 1, 6 and 11 are the only channels on 2.4GHz which do not overlap with one another and you should ideally choose one of these channels.

Experiment with more than one of the available channels, in order to find the clearest connection and avoid interference from neighbouring cordless phones or other wireless devices.

Hardware installation

1. Connect the power adapter to the Power socket on the back of the NF18ACV.
2. Plug the power adapter into the wall socket and switch on the power.
3. Wait approximately 60 seconds for the NF18ACV to power up.

Connect a client via Ethernet cable

1. Connect the yellow Ethernet cable provided to one of the yellow ports marked 'Ethernet' at the back of the NF18ACV.
2. Connect the other end of the yellow Ethernet cable to your computer.
3. Wait approximately 30 seconds for the connection to establish.
4. Open your Web browser, and enter http://192.168.20.1 into the address bar and press enter.
5. Follow the steps to set up your NF18ACV.

Connect a client wirelessly

1. Ensure WiFi is enabled on your device (e.g. computer/laptop/smartphone).
2. Scan for wireless networks in your area and connect to the network name that matches the Wireless network name configured on the NF18ACV.

© NetComm Wireless 2021

Note – Refer to the included Wireless Security Card for the default SSID and wireless security key of your NF18ACV.

3 When prompted for your wireless security settings, enter the Wireless security key configured on the NF18ACV.

4 Wait approximately 30 seconds for the connection to establish.

5 Open your Web browser, and enter http://192.168.20.1 into the address bar and press **Enter**.

6 Follow the steps to set up your NF18ACV.

Connect a client via WPS

The NF18ACV provides three methods to establish a connection with client devices using the WPS (WiFi Protected Setup™) functionality.

Connect a device using the WPS button (default setting)

1 Bring a WPS enabled device within WiFi range and press its WPS (it may be physical or virtual, e.g. on its user interface) button.

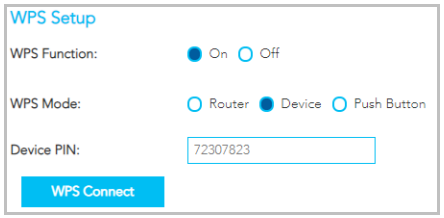
2 Press the WPS button on the left side of the NF18ACV. Its WPS orange icon will blink for up to two minutes.

3 Once the device is connected, the WPS LED will remain illuminated and details of the device will be added to the **Wireless Clients** list.

Connect a device using its WPS PIN

1 Bring a WPS enabled device within WiFi range and generate a WPS PIN.

2 In the NF18ACV's web interface open **WIRELESS > More Settings > WPS Setup**:



a Select **WPW Mode** ● **Device** and click the **Apply** button.

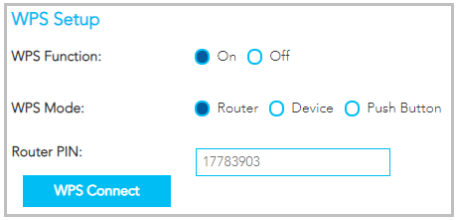
b Enter the device's WPS PIN into the **Device PIN** field and click the **WPS Connect** button.

3 The WPS blue icon will blink while the connection is established.

4 Once the device is connected, the WPS LED will remain illuminated and details of the device will be added to the **Wireless Clients** list.

Connect a device using the NF18ACV's WPS PIN

1 In the NF18ACV's web interface open **WIRELESS > More Settings > WPS Setup**:



a Select **WPW Mode** ● **Router** and click the **Apply** button.

b Copy the **Router PIN** number.

2 Bring a WPS enabled device within WiFi range and enter the **Router PIN** into its WPS setup interface.

3 Return to **WIRELESS > More Settings > WPS Setup** and click the **WPS Connect** button.

4 The WPS blue icon will blink while the connection is established.

5 Once the device is connected, the WPS LED will remain illuminated and details of the device will be added to the **Wireless Clients** list.

© NetComm Wireless 2021

Initial NF18ACV configuration

This section is for users who are connecting the NF18ACV to the internet for the first time after either initial purchase or factory reset of the device.

After establishing a connection between the NF18ACV and your web browser (see previous: Connect a client via Ethernet cable or Connect a client wirelessly) enter http://192.168.20.1 into the address bar and press **Enter**.

Log in

The login screen will appear:

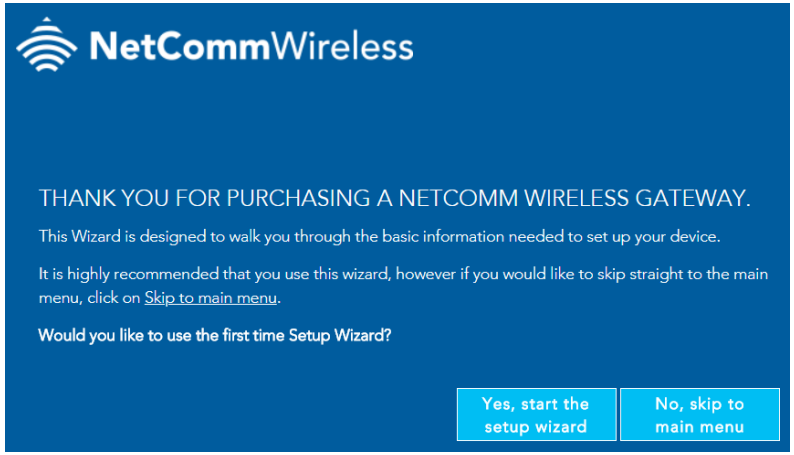
Enter the default **Username** and **Password**: both are "admin" (all letters are lowercase).

It is recommended that after you set up the NF18ACV you choose a more secure username and password. These can be set in: **Main menu >Advanced > Management > Passwords**

© NetComm Wireless 2021

Set up options

If you have not yet set up your device the following screen will appear:



This screen presents two options for setting up the NF18ACV.

Start the Setup Wizard

The Wizard will guide you through a step by step process to set up your device. We recommend that you use this wizard as it covers all the basic settings.

Click the **Yes, start the setup wizard** button to select this option. See next section for a detailed description of the Wizard.

Go to the Main Menu

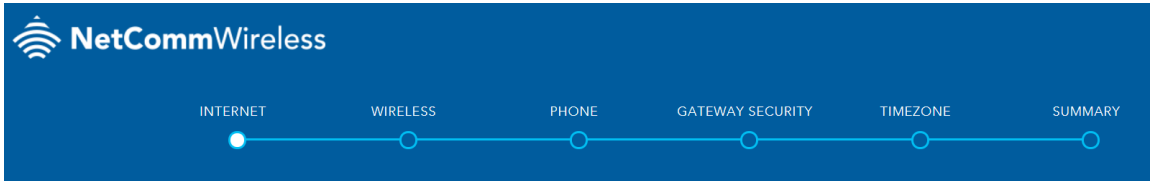
Alternatively you can use the **Advanced** setup features in the NF18ACV's user interface.

Click the **No, skip to main menu** button and then click the **Advanced** button to access all the NF18ACV's settings

© NetComm Wireless 2021

Setup Wizard

The NF18ACV's **Setup Wizard** will open the **INTERNET** connection page. This is indicated on the Wizard's process task line.



INTERNET settings

The **INTERNET** settings prompt you to select the WAN connection type that you will be using and to enter all the parameters required to enable the service.

First select your **INTERNET SERVICE**: **ADSL**, **VDSL** or **Ethernet WAN**

Then select from the available range of **CONNECTION TYPES** for that type of service.

Your ISP (Internet Service Provider) will have advised you which service and connection type you will be using.

ADSL (Asymmetric Digital Subscriber Line) is the most common telephone line internet service for typical consumers. There are a number of variations of ADSL, for example ADSL2 and ADSL2+. For purposes of this manual ADSL refers to all of these related service types.

VDSL (Very-high-bit-rate digital subscriber line) and second-generation VDSL2, are digital subscriber line (DSL) technologies providing data transmission faster than asymmetric digital subscriber line (ADSL). VDSL services may or may not be available from your ISP or in your area. Check with your ISP.

Ethernet WAN services are normally employed when part of the internet connection is cable or fibre optic or other very high speed services.

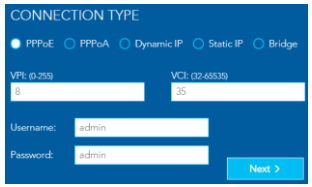
© NetComm Wireless 2021

ADSL

ADSL (Asymmetric Digital Subscriber Line) technology supports five **CONNECTION TYPES:**

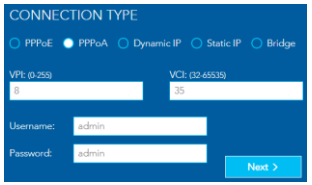
- **PPPoE** – The Point-to-Point Protocol over Ethernet.
- **PPPoA** - Point-to-Point Protocol over ATM. It is available only for ADSL
- **Dynamic IP** – IP addresses are assigned by the ISP.
- **Static IP** – Users define IP addresses for each device.
- **Bridge** – The device relies on the configuration of another gateway on the connection.

PPPoE



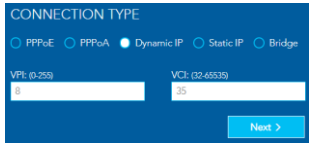
The Point-to-Point Protocol over Ethernet networking protocol encapsulates PPP frames inside Ethernet frames and uses a point to point connection between two Ethernet ports.
Your ISP will advise you of your default PPPoE authentication **Username** and **Password**. Normally you will be given the opportunity to change these to be more secure.
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

PPPoA



Point-to-Point Protocol over ATM (Asynchronous Transfer Mode) employs very small, fixed-length packets, in contrast to PPPoE, which uses relatively large, variable-length packets. PPPoA can be slightly faster than PPPoE.
Your ISP will advise you of your default **Username** and **Password**. Normally you will be given the opportunity to change these to be more secure.
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

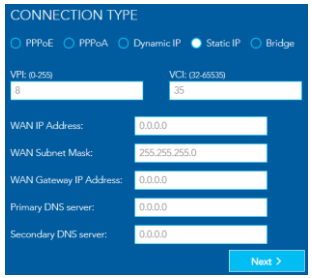
Dynamic IP



When the computer/router connects to the internet your ISP will dynamically assign any available IP to it. Therefore the IP address will change each time a new connection is established.

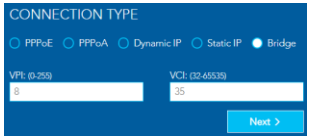
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

Static IP



You must define, or purchase, a set IP address for each device on the network.
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.
Contact your ISP for the WAN and DNS servers details.

Bridge



VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

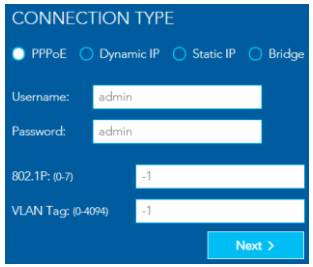
© NetComm Wireless 2021

VDSL

VDSL (Very-high-bit-rate digital subscriber line) technology supports four **CONNECTION TYPES:**

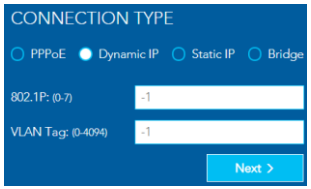
- **PPPoE** – The Point-to-Point Protocol over Ethernet.
- **Dynamic IP** – IP addresses are assigned by the router.
- **Static IP** – Users define IP addresses for each device.
- **Bridge** – The device relies on the configuration of another gateway on the connection.

PPPoE



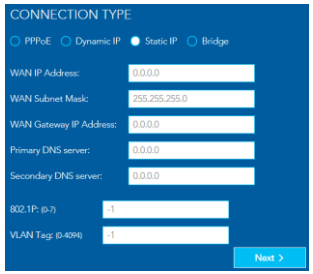
Your ISP will advise you of your default PPPoE authentication **Username** and **Password**. Normally you will be given the opportunity to change these to be more secure.
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

Dynamic IP



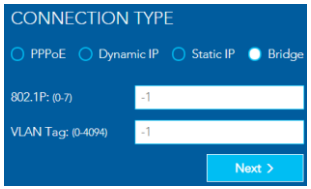
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

Static IP



VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.
Contact your ISP for the WAN and DNS servers details.

Bridge



VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

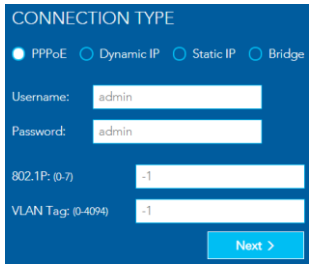
© NetComm Wireless 2021

Ethernet WAN

Ethernet WAN (Wide Area Network) technology supports four **CONNECTION TYPES:**

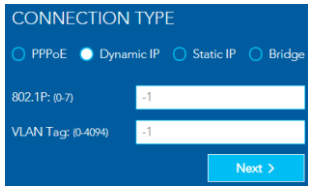
- **PPPoE** – The Point-to-Point Protocol over Ethernet.
- **Dynamic IP** – IP addresses are assigned by the router.
- **Static IP** – Users define IP addresses for each device.
- **Bridge** – The device relies on the configuration of another gateway on the connection.

PPPoE



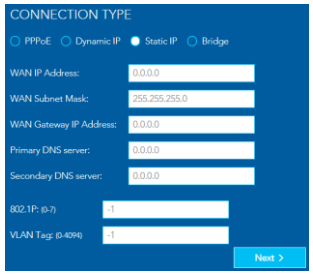
Your ISP will advise you of your default PPPoE authentication **Username** and **Password**. Normally you will be given the opportunity to change these to be more secure.
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

Dynamic IP



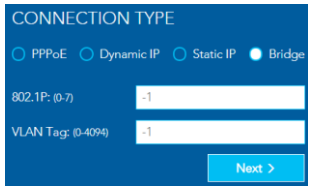
VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

Static IP



VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.
Contact your ISP for the WAN and DNS servers details.

Bridge



VPI (Virtual Path Identifier) and **VCI** (Virtual Channel Identifier) are commonly **8** and **35** respectively.

When you have completed the **INTERNET** settings, click the **Next >** button to proceed to the Wizard's **WIRELESS** settings.

© NetComm Wireless 2021

WIRELESS settings

The NF18ACV can operate on either 2.4GHz or 5GHz frequencies, or on both. Where both are enabled, select either band when you connect your device.

WIRELESS 2.4GHz

The 2.4GHz frequency offers better range, particularly if walls or partitions exist but offers less channels and at slower speeds.

Select ON in order to enable 2.4GHz service either in conjunction with 5GHz or on its own.

Select OFF if want only 5GHz service or if you want to disable WiFi entirely – i.e. both 2.4GHZ and 5GHz are turned OFF.

WIRELESS 5GHz

The 5GHz frequency offers higher speed and offers many more channels than 2.4GHz.

However, the 5GHz signal does not penetrate walls, floors, partitions, etc. as well as 2.4GHZ. The 5GHz service works best with nearby devices.

Select ON in order to enable 5GHz either in conjunction with 2.4GHz or on its own.

Select OFF if want only 2.4GHz service or if you want to disable WiFi entirely (turn 2.4GHz OFF too).

The three settings for each frequency (**Network Name**, **Security Key Type** and **WiFi Password**) function in the same manner, there details are as follows.

Network Name

Initially this will be the same as the Wireless Network Name (SSID) printed on the Wireless Security card included in the box with your NF18ACV. You can change this to a more recognisable name that can be easily identified if multiple WiFi connections are available.

Security Key Type

The default **WPA2-PSK** (**Wi-Fi Protected Access 2 - Pre-Shared Key**) offers high-grade security to home or smaller business networks without the necessity of dedicated security systems and services.

Use the mixed-mode option **WPA-PSK/WPA2-PSK** where you may be connecting devices which are much older than the latest standard, the older devices will access the WiFi network using the older **WPA-PSK** protocol.

We do not suggest selecting **OPEN** as this will leave your network unprotected from intrusion via your WiFi connection, that is anyone within range of your WiFi signal could get into your network.

WiFi Password

Initially this will also be the same as the **Wireless Security Key** also is printed on the Wireless Security card included in the box with your NF18ACV. You can change the password to a more recognisable one either here or later in the Wireless settings page.

© NetComm Wireless 2021

PHONE settings

Using the **VoIP (Voice over Internet Protocol)** telephone functionality with the NF18ACV is optional. For heavy telephone usage VoIP services can offer significant cost saving.

If you do not wish to use this service, feel free to skip this step.

Using a phone handset with your router

You can connect one or two phones via the **TEL1** / **TEL2** sockets located at the back of the router. Each phone lines is separately defined in the device's configuration. Connect a standard or the base station of your cordless phone directly into the RJ11 sockets.

Phone service

Your ISP will generally pre-configure **TEL1** port to work as the primary telephone port so it connects to their phone network. They will also supply you with your phone number.

If the device is not pre-configured then you will have to get the SIP details from your ISP and enter them at this stage in the Basic Setup Wizard.

If the configuration is correctly set up and the router is connected to the internet then the phone should work as soon as its plugged in.

SIP

SIP (Session Initiation Protocol) is a signalling protocol used for initiating, maintaining and terminating real-time voice communication sessions in of Internet telephony.

PHONE LINE settings

Note often ISPs will preconfigure these settings prior to delivery of your NF18ACV gateway.

Otherwise, enter your VoIP service settings (**SIP Username**, **Password**, etc. see table at right) as supplied by your VOIP service provider (VSP).

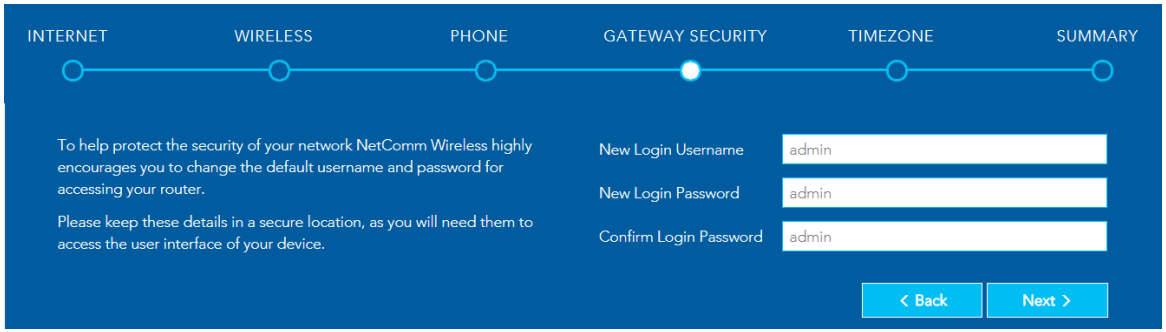
If you are unsure about a specific setting or have not been supplied information for a particular field, please contact your VoIP service provider to verify if this setting is needed or not

ITEM	DESCRIPTION
Phone Number	Enter the telephone number supplied by your VOIP service provider (VSP).
SIP Username	If not preconfigured, enter the Username supplied by your VSP.
SIP Password	If not preconfigured, enter the Password supplied by your VSP.
SIP Proxy Server	If not preconfigured, enter the IP address of the proxy supplied by your VSP.
SIP Registrar Server	If not preconfigured, enter the IP address of the Registrar Server supplied by your VSP.
SIP Outbound Proxy	If this optional field is required, and if not preconfigured, enter the IP address of the outbound proxy supplied by your VSP. Leave blank if this information is not supplied by your VSP.

Click the **Next >** button to continue to the next step of the Basic Setup Wizard.

© NetComm Wireless 2021

GATEWAY SECURITY settings



Network Security

The GATEWAY SECURITY settings prompt you to improve your security by creating your own account access **Username** and **Password** for logging in to your NF18ACV router.

Important – These changes are optional but we highly recommend changing them in order to make your network more secure.
If you forget your new **Username** and/or **Password**, you can reset the gateway to factory defaults and log in using the original details.

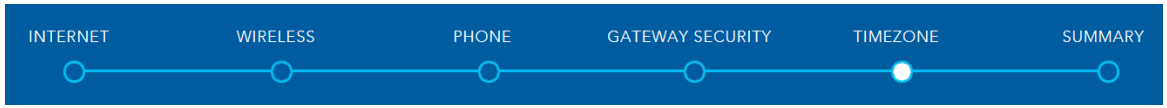
GATEWAY SECURITY settings

ITEM	DESCRIPTION
New Login Username	Usernames can be up to sixteen (16) characters (letters and/or numbers and/or special character), with one single spaces allowed. Usernames are case sensitive.
New Login Password	Passwords can be up to sixteen (16) characters (letters and/or numbers and/or special character), NO spaces allowed. Passwords are case sensitive.
Confirm Login Password	Re-enter the **New Login Password** exactly as entered above.

Click the **Next >** button after making any changes to save and continue.

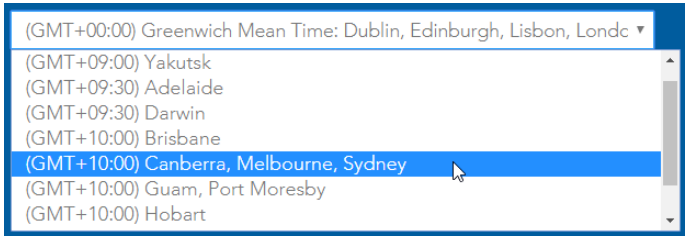
© NetComm Wireless 2021

TIMEZONE settings



Setting the correct timezone selected is necessary for the implementation of **Parental Control** features and any time-based events.

Select the correct timezone for your location from the dropdown menu:



Click the **Next >** button after making any changes to continue.

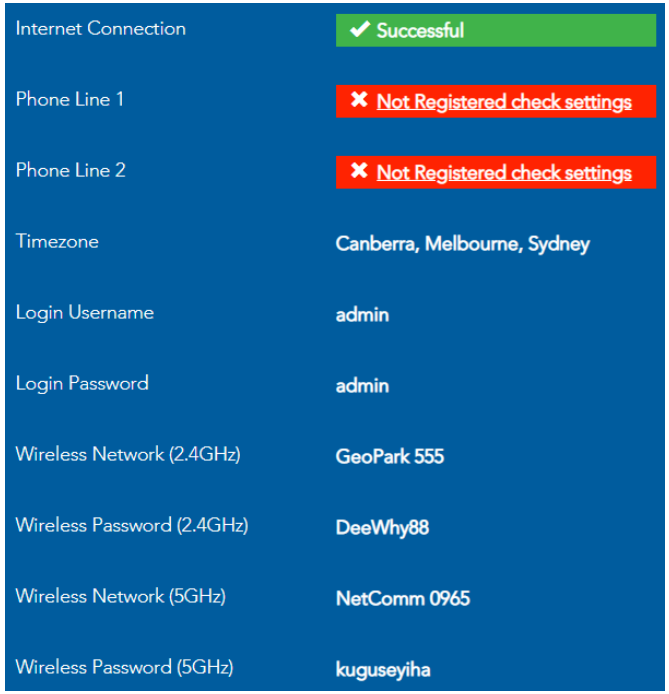
© NetComm Wireless 2021

SUMMARY

Allow the gateway sufficient time (three to four minutes) to establish its connections.

The following status indicators will be populated.

ITEM	DESCRIPTION
Internet Connection	Indicates the status of your chosen **Internet Connection**. If not ✓ Successful, click on the red or yellow message area to jump back to the **INTERNET** section of the Wizard to make the appropriate changes.
Phone Line 1 & 2	Indicates the status of either of your optional VoIP **Phone Line** connections. If not ✓ Successful and you were expecting VoIP service, click on the red or yellow message area to jump back to the **PHONE** section of the Wizard. You may need to contact your VoIP service provider of ISP for additional setup instructions.
Timezone	Indicates the timezone you selected at the **TIMEZONE** stage of this Wizard. Click the **< Back** button twice if you want to change it.
Login Username	The **Username** used or set to be used to access the gateway.
Login Password	The **Password** used or set to be used to access the gateway.
Wireless Network (2.4 GHz)	The name of the 2.4GHz network, either assigned by your ISP or created by you at the **WIRELESS** stage of this Wizard. This will appear in the list of wireless networks that appears when your wireless device scans for available networks. Click the **< Back** button four times if you want to change it or enable the 2.4GHz network.
Wireless Password (2.4 GHz)	The Password either assigned by your ISP or created by you at the **WIRELESS** stage of this Wizard to access the 2.4GHZ network. Click the **< Back** button four times if you want to change it or enable the 2.4GHz network.
Wireless Network (5 GHz)	The same functionality for 5GHZ wireless networks as for 2.4GHz networks described above.
Wireless Password (5 GHz)	The same functionality for 5GHZ wireless networks as for 2.4GHz networks described above.



© NetComm Wireless 2021

NF18ACV default settings

The following tables list the default settings for the NF18ACV.

LAN (MANAGEMENT)	
Static IP Address	192.168.20.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.20.1

Table 1 – LAN (Management) table

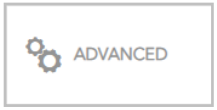
WIRELESS (WIFI)	
SSID	(Refer to the included Wireless Security Card)
Security	WPA2-PSK (AES)
Security Key	(Refer to the included Wireless Security Card)

Wireless (WIFI) table

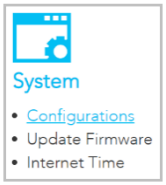
NF18ACV WEB INTERFACE ACCESS	
Username	admin
Password	admin

NF18ACV WEB Interface Access table

Restore Factory Default settings

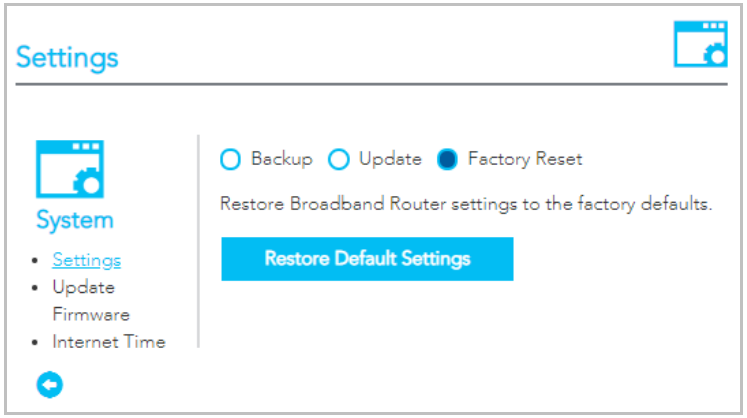


To permanently erase all custom user settings and return to the factory default settings, click the **Advanced** menu button and select Configurations from the **System** group.



The **Settings** page will open.

Select **Factory Reset** and then click the **Restore Default Settings** button.



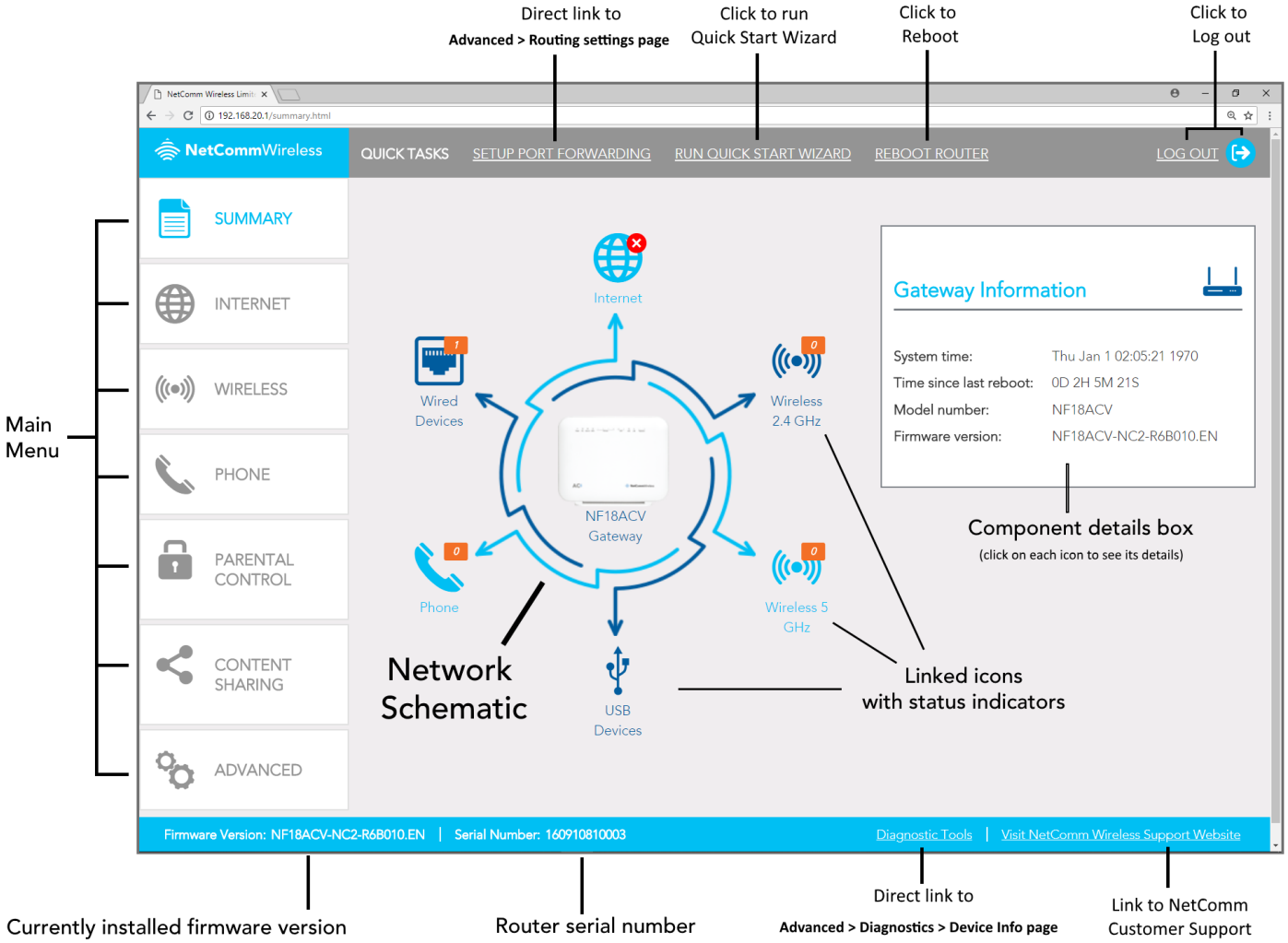
A confirmation message will display. Click **OK** to continue and the NF18ACV will shut down and reboot using the factory default settings.

Close the web user interface and wait for 2 minutes before reopening your web browser.

When you next log in using the default **Username** and **Password** you will be prompted to run the first time **Setup Wizard**.

© NetComm Wireless 2021

SUMMARY



Once the NF18ACV has been setup and network connection established, after log in the **SUMMARY** page is displayed.

The main display window contains an interactive network schematic showing system component icons with their current status in orange.

Click on an icon in the schematic to see its details in the component details box.

The **Main Menu** is on the left margin. Click a menu item to open its contents in the main display window.

The **ADVANCED** button will open a more extensive menu from which all the router's functionality can be accessed.

System information such as device name, firmware version and serial number appear in the lower margin.

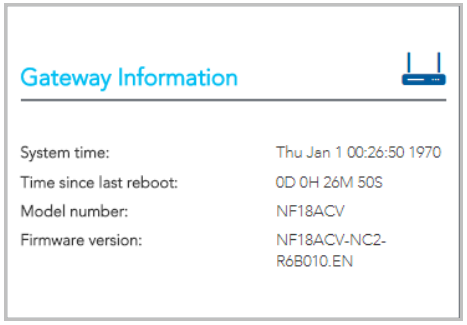
The task bars also include two direct link to frequently accessed settings pages as well as links to the **Quick Start Wizard** and the NetComm customer support website.

The router can be rebooted directly from this page using the button in the top menu bar.

Click either the LOG OUT link or the icon to end your session and close the web interface.

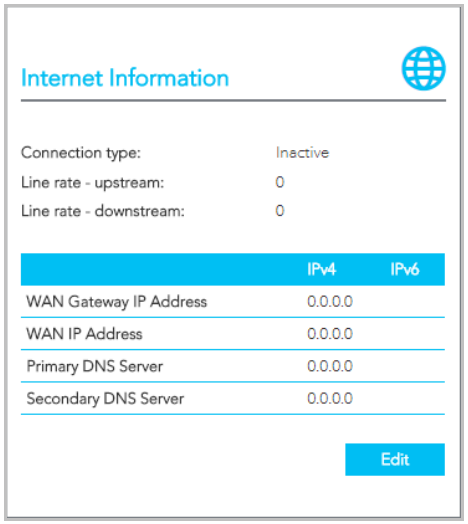
© NetComm Wireless 2021

Gateway Information



ITEM	DESCRIPTION
System time	The time retrieved from the NTP (Network Time Protocol) server when **Automatically synchronize with Internet time servers**. is selected on the **Advanced > System > Internet Time** page. If your area observes daylight savings time, ensure that **Enable Daylight Saving Time** is selected as well.
Time since last reboot	The time that has elapsed since the last time the gateway was 'rebooted', normally meaning when it was last turned off and then on.
Model number	The full model number of the gateway.
Firmware version	The currently installed firmware version number.

Internet Information

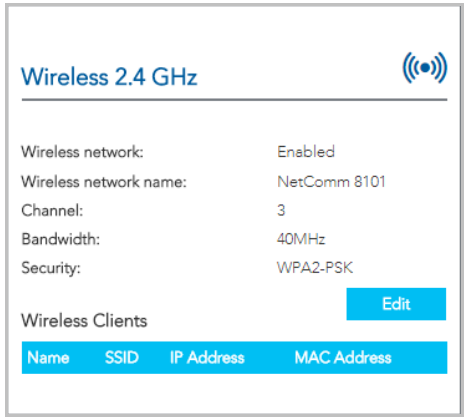


ITEM	DESCRIPTION
Performance	
Connection type	
Line rate - upstream	
Line rate - downstream	
IP Addresses for **IPv4** and **IPv6**	
WAN Gateway IP Address	
WAN IP Address	
Primary DNS Server	
Secondary DNS Server	

For more information on Internet connections, including how to create new ones and edit existing ones, refer to the **INTERNET** section on page 32.

© NetComm Wireless 2021

Wireless 2.4 GHz



ITEM	DESCRIPTION
Wireless network status	**Enabled** or **Disabled**
Wireless network name	Enter a recognisable name in case there are other 2.4 GHz services in the area.
Channel	**1**~**9** or **Auto**
Bandwidth	**20 MHz** or **40 MHz**
Security	Can be **OPEN** (not recommended), **802.1x**, **WPA2**, **WPA2-PSK**, **Mixed WPA / WPA2**, or **Mixed WPA / WPA2-PSK**
Wireless Client details – A list of all devices that are currently accessing this 2.4 GHz WiFi service. For each device four items of information are displayed:	
Name	The device name.
SSID	The WiFi network name identifier, also known as SSID (service set identifier).
IP Address	The current IP address of the device.
MAC Address	The device's unique MAC (Media Access Control) address

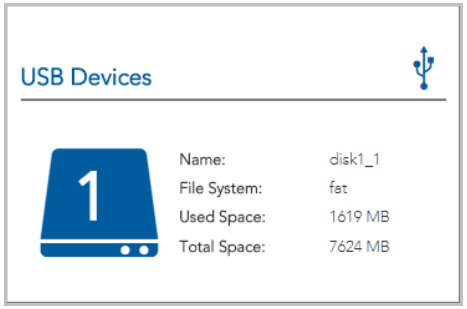
Wireless 5 GHz

ITEM	DESCRIPTION
Wireless network status	**Enabled** or **Disabled**
Wireless network name	Enter a recognisable name in case there are other 5 GHz services in the area.
Channel (Frequency)	
Bandwidth	**20 MHz, 40 MHz** or **80 MHz**
Security	
Wireless Client details – A list of all devices that are currently accessing this 5 GHz WiFi service. For each device four items of information are displayed:	
Name	The device name.
SSID	The WiFi network name identifier, also known as SSID (service set identifier).
IP Address	The current IP address of the device.
MAC Address	The device's unique MAC (Media Access Control) address

For more information on both **2.4 GHz** and **5GHz Wireless** settings refer to the **WIRELESS** section on page 34.

© NetComm Wireless 2021

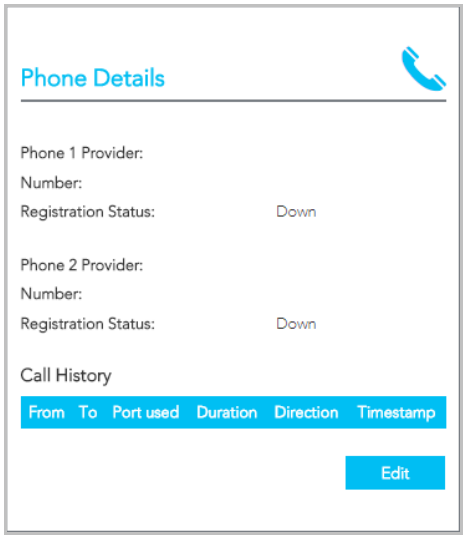
USB Devices



ITEM	DESCRIPTION
Name	The name given to the USB drive (often the manufacturer's default name)
File System	Type of file system. The NF18ACV supports: FAT16, FAT32, NTFS, EXT2 and EXT3 (Linux).
Used Space	Amount of space used.
Total Space	Total amount of space on the USB.

Refer to the **CONTENT SHARING** section on page 41 for more information.

Phone Details

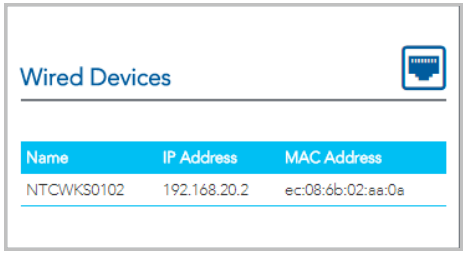


ITEM	DESCRIPTION
Phone Provider	The name of the VoIP service provider.
Number	The number assigned to this phone.
Registration Status	Status of the telephone service.
Call History details	
From	Telephone number of the caller.
To	Telephone number of the answering party.
Port used	The port used by the phone.
Duration	Duration of the call.
Direction	Indicates whether the call was: IN or OUT
Timestamp	Time stamp when call started

Refer to the **Phone** section on page 36 for more information.

© NetComm Wireless 2021

Wired Devices

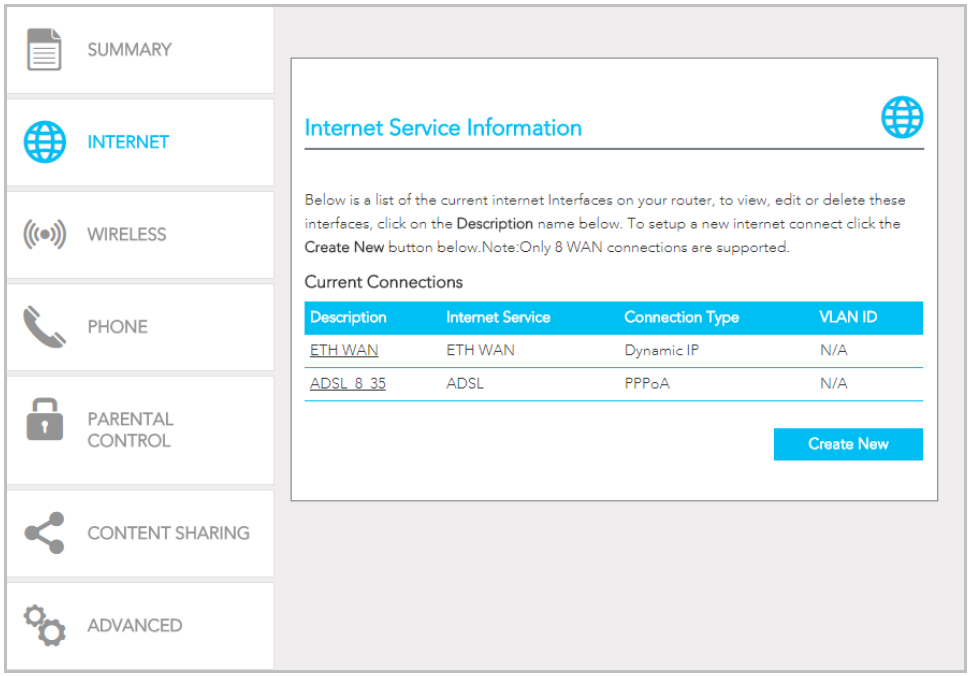


ITEM	DESCRIPTION
Name	Name assigned by the manufacturer or administrator to the device.
IP Address	The IP Address of the device.
MAC Address	The MAC address of the attached device.

© NetComm Wireless 2021

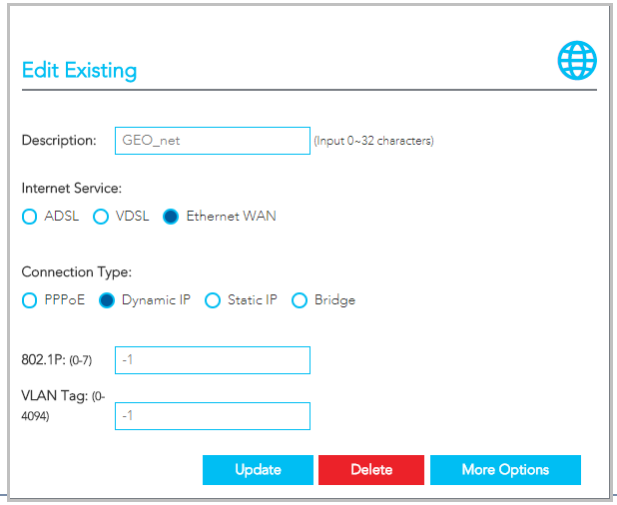
INTERNET

Click on the **INTERNET** button to display details of all **Current Connections** to the internet.



The following information is provided for each connection:

ITEM	DESCRIPTION
Description	Enter a meaningful name of up to 23 characters, numbers and spaces.
Internet Service	The service type: ADSL, VDSL or Ethernet WAN
Connection Type	The connection type differs depending on the service type.
VLAN ID	Applicable only to VLAN services.



© NetComm Wireless 2021

Edit a service

Click on the linked **Description** name to open the **Edit Existing** settings dialog.

Up to eight WAN connections at a time can be deployed.

The available settings are the same when you create a new service, see next.

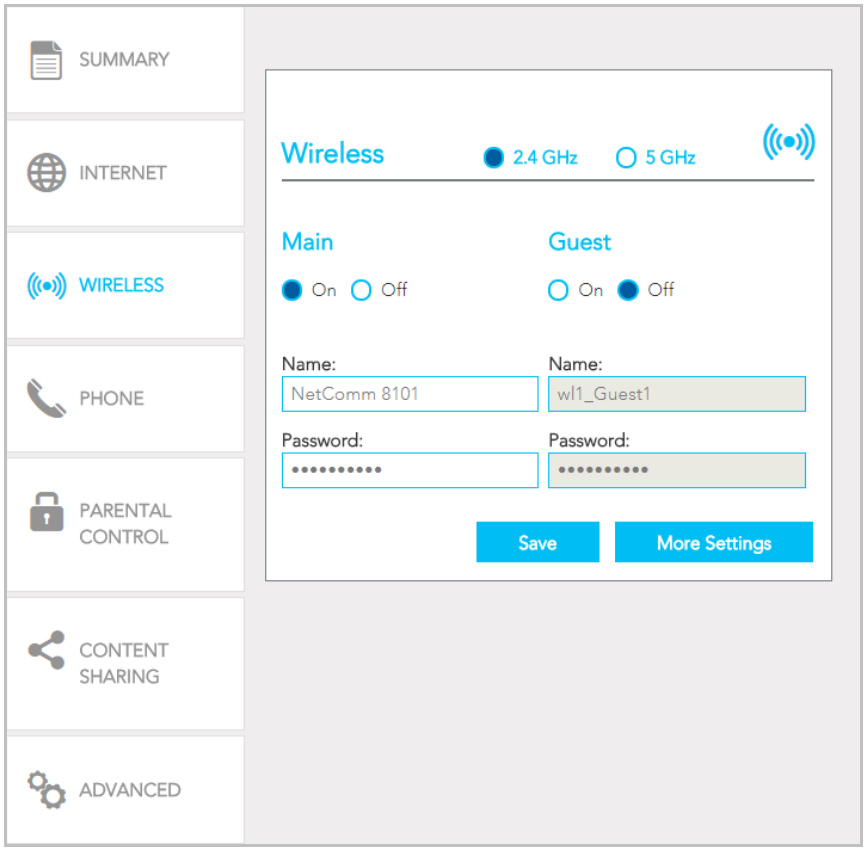
Create a new connection

This requires a complex explanation because there are three different Service types, each of which has up to four different kinds of connection types.

These have already be partially addressed in the Wizard section.

© NetComm Wireless 2021

WIRELESS



The NF18ACV router allows you to maintain separate wireless settings for both 2.4GHz and 5GHz wireless services. Both services can transmit simultaneously and it is up to each client to decide which service to use.

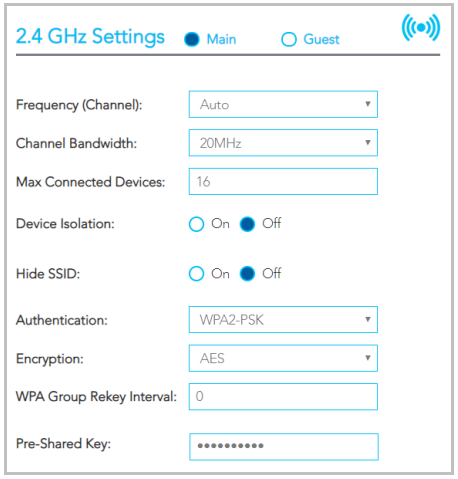
You can also create optional **Guest** accounts for the 2.4GHz and/or 5GHz wireless services.

Turn **On** the service you will use (or both) and enter a recognisable **Name** so that you can identify the service when devices access it.

If the **Authentication** setting is not **Open** or **802.1x** a password is required. We recommend that you change the default password and click **Save** to save the new **Name** and **Password**.

More Settings

Click the **More Settings** button to display all available settings for the selected service.



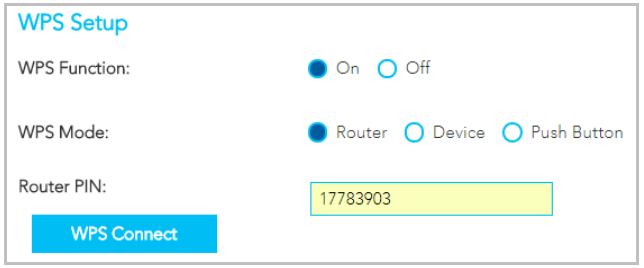
The additional settings available for **2.4 GHz** and **5 GHz** are the same.

© NetComm Wireless 2021

ITEM	DESCRIPTION
Frequency (Channel)	**Auto** is the default settings and is recommended unless you encounter channel overlapping. Select the appropriate channel to correspond with your network settings. All devices in your wireless network must use the same channel in order to work correctly.
Channel Bandwidth	Select the bandwidth for the network: **20MHz**, **40MHz**, or **80MHz** (5GHZ only) In high wireless activity/interference environment, reduce the bandwidth to **20MHz** for greater stability.
Max. Connected Devices	Enter the maximum number of wireless devices able to simultaneously connect to the wireless network. Usually this is 16 (default setting) for consumer devices.
Device Isolation	Select **On** to prevent devices on the wireless network being able to access each other, the wireless devices can only access the Internet. The default **Off** setting allows every device connected to the router (wirelessly or by cable) to be considered part of the same local network and can communicate with each other device (e.g. servers, printers, PCs, wireless devices, etc.) on that network. This may result in security issues.
Hide SSID	By default the NF18ACV broadcasts its service set identifier (SSID), or network name, to nearby computers and other devices. To improve the security of your network, select **Hide SSID** **On** to make it harder to detect.
Authentication	Select the Wireless security type to use with the wireless network. The default is **WPA2-PSK**. The NF18ACV also supports: **WPA**, **WPA-PSK**, **WPA2**, **WPA2-PSK** **Open** and **802.1x** are unsecure (no password required).
Encryption	Select the type of **Encryption** suitable for the **Authentication** type.
Other encryption settings	Depending on the **Authentication** and **Encryption** types selected, a range of other settings will display.

WPS Setup

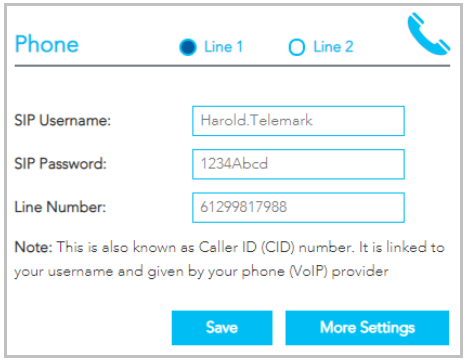
Select **WPS Function** **On** to enable the optional **WiFi Protected Setup (WPS)** functionality.



ITEM	DESCRIPTION
WPS Mode	**Router** to connect a wireless device using the **Router PIN**, see below. **Device** to connect a wireless device using the **Device's PIN**, see below. **Push Button** to connect without a PIN using the physical **WPS** button on the side of the Router.
Router/Device PIN	After selecting either the **Router** or **Device WPS Mode** enter its respective **PIN.**
WPS Connect button	When **Router** or **Device WPS Mode** is selected click this button to establish the connection using the PIN you have previously entered. When **Push Button** is selected you can either use this button or the physical **WPS** button on the side of the Router.

© NetComm Wireless 2021

PHONE

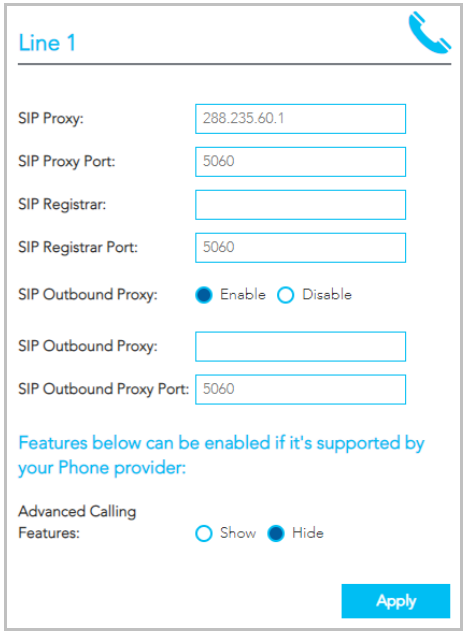


To connect a phone you will need to use the Tel 1 / Tel 2 ports located at the back of the router. You can have up to two phone lines each separately defined in the device's configuration. You can connect a standard or cordless phone directly into the RJ11 ports. Your ISP will generally pre-configure TEL 1 port to work as the primary telephone port so it connects to their phone network. Your ISP will supply you with your phone number. If the device is not pre-configured then you will have to get the SIP details from your ISP and enter them into the form illustrated here.

If the configuration is correctly set up and the router is connected to the internet then the phone should work as soon as its plugged in.

ITEM	DESCRIPTION
SIP Username	The username as defined by your ISP
SIP Password	The password supplied by your ISP
Line Number	The telephone number supplied by your ISP.

© NetComm Wireless 2021

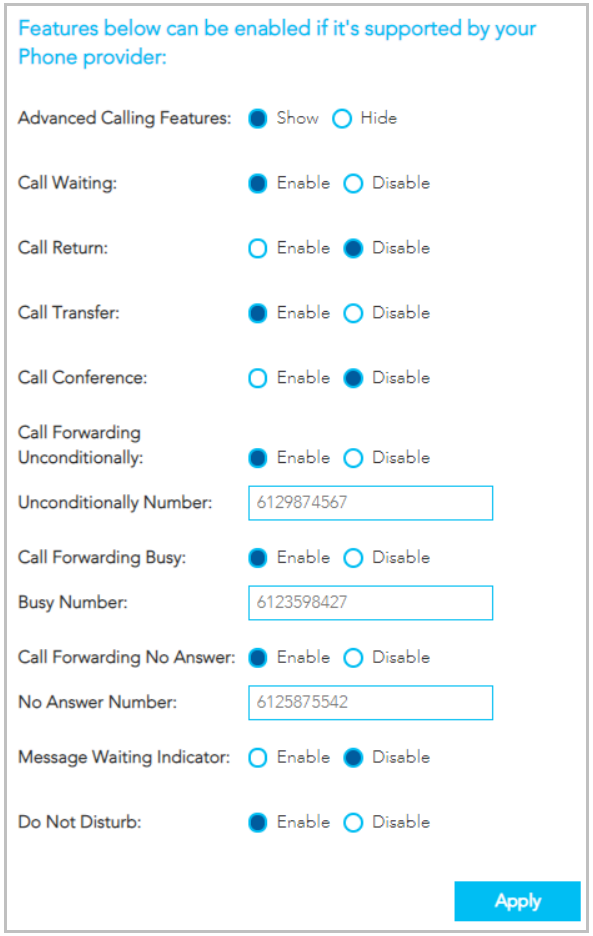


Click the **More Settings** button to show additional settings for the selected line.

ITEM	DESCRIPTION
SIP Proxy	The IP address of the proxy.
SIP Proxy Port	The port that this proxy is listening on. By default, the port value is 5060.
SIP Registrar	Enter the IP address of the SIP registrar.
SIP Registrar Port	The port that SIP registrar is listening on. By default, the port value is 5060.
SIP Outbound Proxy	Click **Enable** if your network service provider requires the use of an outbound proxy. This is an additional proxy, through which all outgoing calls are directed. In some cases, the outbound proxy is placed alongside the firewall and it is the only way to let SIP traffic pass from the internal network to the Internet.
SIP Outbound Proxy	Enter the IP address of the outbound proxy.
SIP Outbound Proxy Port	The port that the outbound proxy is listening on. By default, the port value is 5060.
Show / Hide buttons	For additional **Advanced Calling Features** that may be supported by your ISP, click **Show**. See next section.
Apply button	Click to save and apply any changes.

© NetComm Wireless 2021

Additional Features

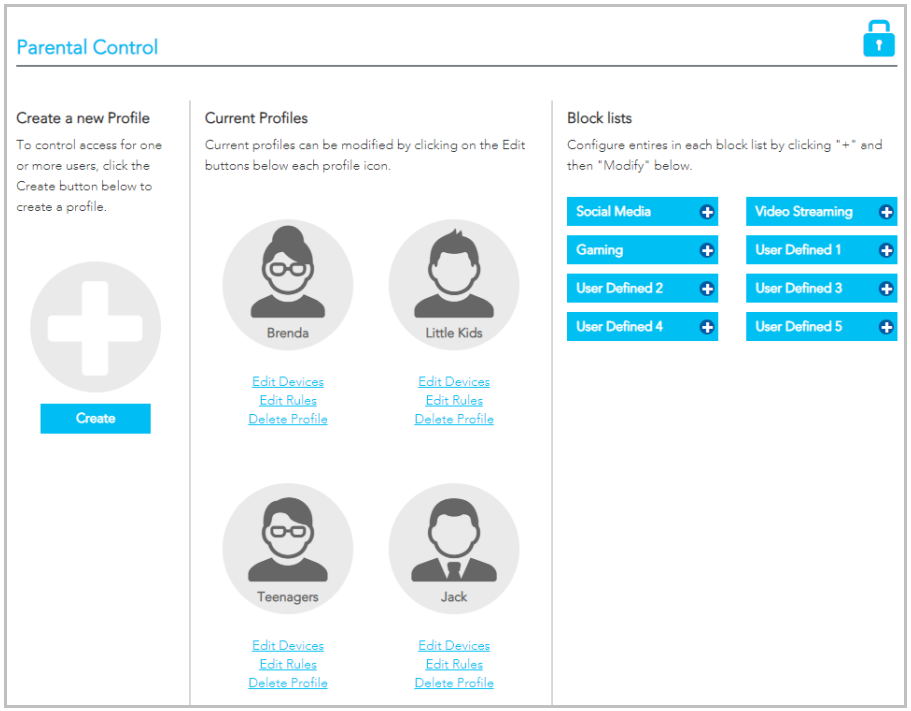


ITEM	DESCRIPTION
Advanced Calling Features	Click **Show** to display the following **Advanced Calling Features** that may be supported by your ISP.
Call Waiting	Click **Enable** if your VoIP Service Provider has enabled **Call Waiting** on your SIP account.
Call Return	Click **Enable** if your VoIP Service Provider has enabled **Call Return** on your SIP account.
Call Transfer	Click **Enable** if your VoIP Service Provider has enabled **Call Transfer** on your SIP account and you wish to use this feature.
Call Conference	Click **Enable** if your VoIP Service Provider has enabled **Call Conferencing** on your SIP account and you wish to use this feature.
Call Forwarding Unconditionally	Click **Enable** if your VoIP Service Provider has enabled **Call Forwarding Unconditionally** (i.e. no wait, no busy signal, immediate forwarding) on your SIP account and you wish to use this feature.
Unconditionally Number	Enter the phone number to forward a call to if the primary telephone number is busy.
Call Forwarding Busy	Click **Enable** if your VoIP Service Provider has enabled **Call Forwarding** on your SIP account and you wish to use this feature.
Busy Number	Enter the phone number to forward a call to if the primary telephone number is busy.
Call Forwarding No Answer	Click **Enable** if your VoIP Service Provider has enabled **Call Forwarding** on your SIP account and you wish to use this feature.
No Answer Number	Enter the phone number to forward a call to if the call is not answered.
Message Waiting indicator	Click **Enable** if your VoIP Service Provider has enabled **MWI** (**Message Waiting Indicator**) on your SIP account and you wish to use this feature.
Do Not Disturb	Click **Enable** if your VoIP Service Provider has enabled **DND** (**Do Not Disturb**) on your SIP account and you wish to use this feature.
Apply button	Click to save and apply the changes you have made to these settings.

© NetComm Wireless 2021

PARENTAL CONTROL

Parental control allows you to create profiles which control access to the internet or specific websites. The profiles can then be assigned to devices connected to the NF18ACV. The access restrictions in the profiles will apply to all users of those devices. The following screen will initially display when **PARENTAL CONTROL** is selected.



Profiles

Profiles define an individual or a group of devices that share the same Internet access requirements. These devices could be used by members of a family or groups within a family, e.g. teenagers, pre-schoolers, etc.

Examples of profiles defined for a workplace may include managers, HR, finance, warehouse, etc. where each type of employee uses their connected device for similar activities.

Each device connected to the NF18ACV can be associated with one profile in the **Current Profile** list.

If you add a new device and want specific access restrictions for it, **Create** a new profile and **Add** the device to that profile.

Alternatively, if a current Profile has all the necessary restrictions, click the Edit Devices link for that profile and **Add** the new device from either the **Wired** or **Wireless Devices** drop down menu.

Block Lists

Block lists are groups of websites that access restrictions can be assigned to and grouped in **Block Lists**.

Users must type in keywords or URLs of sites to be blocked. Click on one of the eight **Block Lists** and then click its **Modify** button.

Social Media, **Video Streaming** and **Gaming** are example **Block List** names.

Those names as well as **User Defined 1**, **2**, **3** etc., can all be changed to something more suitable for your circumstances.

Please note that the Block List function will not work on sites that use the HTTPS protocol.

Access Rules

For each **Current Profile**, click the Edit Rules for that profile to open the Rules definitions page.

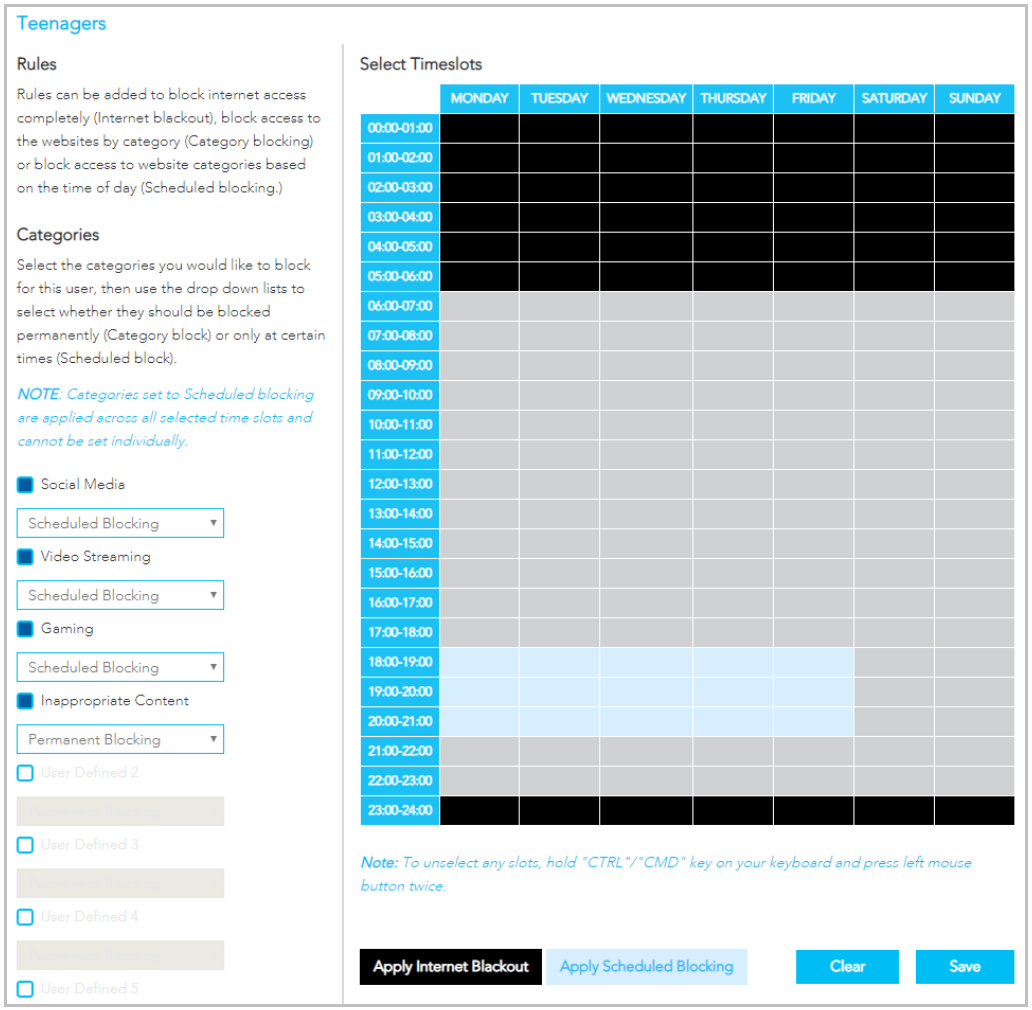
Rules are defined for the device or group of devices included in the Profile, the restrictions available include:

- Times when internet access is shut off completely
- Block lists that are turned off completely
- Designated times when sites in Block lists are not accessible

© NetComm Wireless 2021

Rules

The following example shows hypothetical **Rules** defined for a **Teenagers Profile**.



All of the devices connected to the NF18ACV that are accessed by teenagers in a hypothetical household will be added to the **Profile** named **Teenagers**.

Internet Access Off

To prevent late night internet usage, the Internet access of all devices associated with this profile will be switched off from 11:00pm until 6:00am.

Select the relevant areas of the **Timeslots** table and then click the **Apply Internet Blackout** button.

The selected timeslots will be coloured black.

Scheduled Blocking

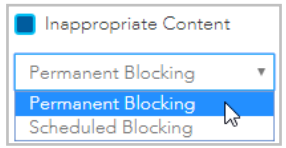
Scheduled blocking relies on the predefined **Block Lists** being populated with either keywords or the URL of all related websites to be restricted.

Select a block list from the column on the left, then select **Scheduled Blocking** from its drop down menu, then select the relevant times in the **Timeslots** table and then click the **Apply Scheduled Blocking** button.

The selected timeslots (7:00pm to 9:00pm in our example) will be coloured light blue and social media, videos and gaming will not be available at those times.

Permanent Blocking

To block all the websites defined in a **Block List** select it from the column on the left, then select **Permanent Blocking** from its drop down menu and click the **Save** button.

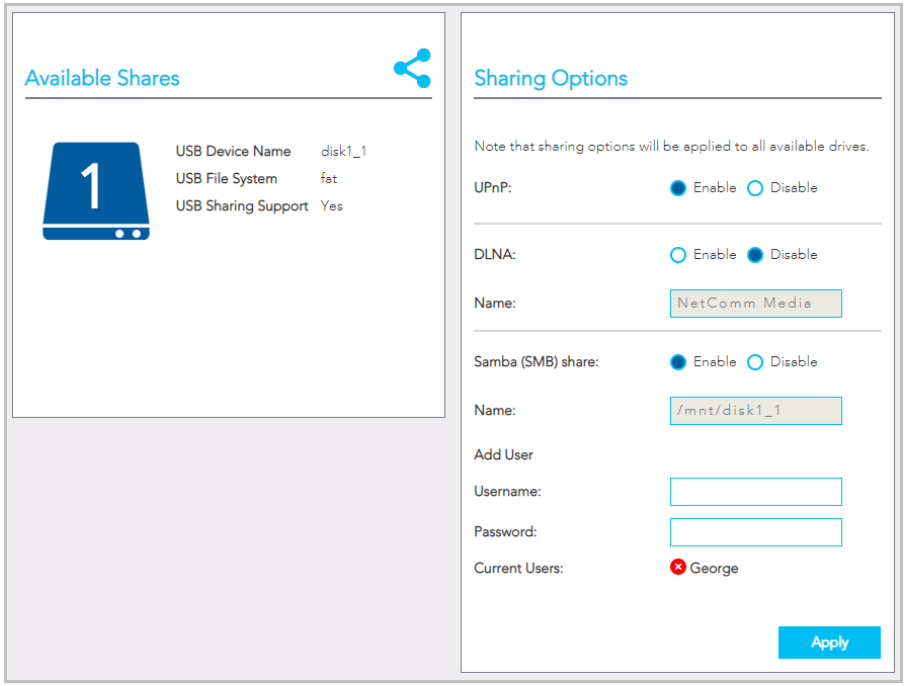


In this example all websites listed in the **Inappropriate Content** block list will be inaccessible at all times.

No visual indicator will appear on the **Select Timeslots** table.

© NetComm Wireless 2021

CONTENT SHARING



Available Shares

The NF18ACV has one USB port located on the back of the router.

Insert a USB and the following details will display:

USB Device Name – The name given to the USB drive.

USB File System – The NF18ACV supports: FAT16, FAT32, NTFS, EXT2 and EXT3 (Linux).

USB Sharing Support – **Yes** means that the USB's contents can be shared with other devices connected to the NF18ACV.

Sharing Options

UPnP

Universal Plug and Play (**UPnP**) is a set of networking protocols that can allow networked devices, such as computers, printers, gaming console, WiFi access points and mobile phones to automatically detect each other's presence on the network and establish functional network services for data sharing, communications, and entertainment.

Enable UPnP to allow automatic port forwarding configuration detection for your UPnP devices.

DLNA

DLNA (Digital Living Network Alliance) setting allows you to **Enable** and configure the digital media server. This allows digital media stored on an external USB hard drive connected to the NF18ACV to be accessible to other devices on your network.

Samba (SMB)

Enable the Samba Server Message Block (SMB) to access the USB content from other connected devices. Samba requires authentication. Enter a **Username** and **Password** and click the **Apply** button, the Username will appear in the **Current Users** list.

Multiple Samba users are supported.

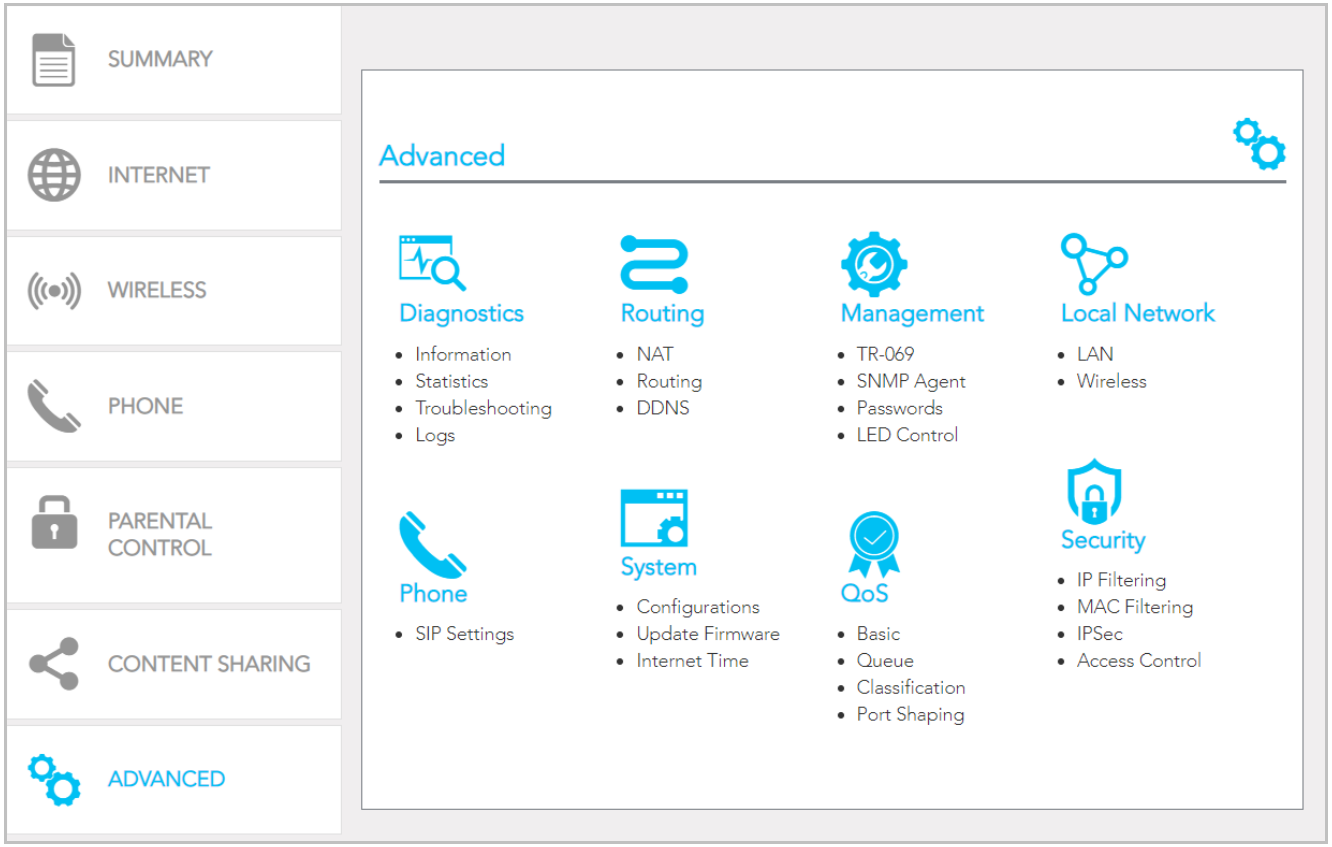
To remove a user, click the button and then click the **OK** button in the confirmation dialog.

Please note that the NF18ACV only supports SAMBA version 1.

© NetComm Wireless 2021

ADVANCED

The **Advanced** page contains eight groups of tools accessing a wide range of specialised settings.



Diagnostics

Monitor the performance of your gateway and troubleshoot its behaviour using a range of tests, real-time statistical analysis and activity logs.

Routing

Configure and control the flow and routing of data in to and out of your gateway.

Management

Enable and configure remote access and control for your gateway in a secure environment and control the LED light display.

Local Network

Access all configuration options for IPv4, IPv6, VLAN and your wireless services.

Phone

View and configure all the advanced features of your VoIP telephones.

System

Keep your system up to date and save your settings.

QoS

Precisely manage packet queues and port access to customise and optimise data flow.

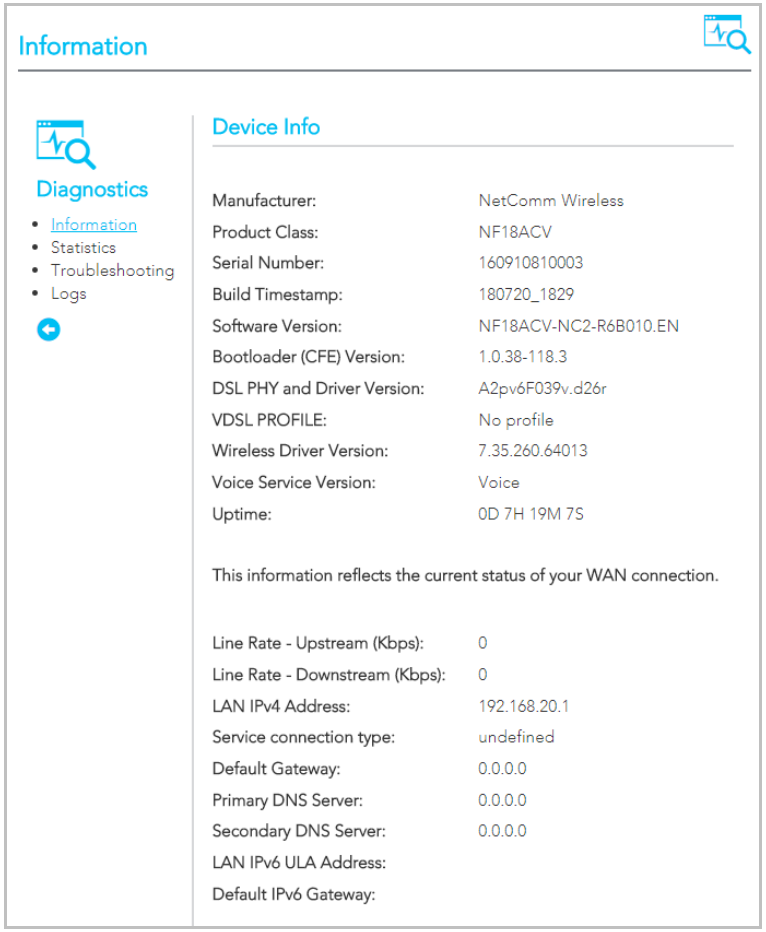
Security

© NetComm Wireless 2021

Control access and set up firewalls to prevent intrusion or define filters to allow specific access.

Diagnostics – Information

The top part of the **Diagnostics – Information** page contains **Device Info** such as hardware and software versions, etc. as well as the current status of the WAN connection. The lower part of the page contains **WAN** connection, **Route** and **ARP** (Address Resolution Protocol) details.



The first group of **Device info** describes the physical device and details of its hardware and software.

ITEM	DEFINITION
Manufacturer	Indicates that NetComm Wireless is the manufacturer of this product.
Product Class	The model of the product.
Serial Number	The unique set of numbers assigned to the routers for identification purposes.
Build Timestamp	The date and time that the software running on the router was published.
Software Version	The current firmware version installed on the router.
Bootloader (CFE) Version	The current boot loader version installed on the router.
DSL PHY and Driver Version	The driver version of the on-board DSL chip.
VDSL PROFILE	The VDSL profile in use. NF18ACV supports 8a, 8b, 12a and 17a VDSL profiles.
DSL PHY and Driver Version	The current line driver installed on the router.
Wireless Driver Version	The current wireless driver installed on the router.
Voice Service Version	"Voice" is the only option currently available.
Uptime	The number of days, hours and minutes that the router has been running.

© NetComm Wireless 2021

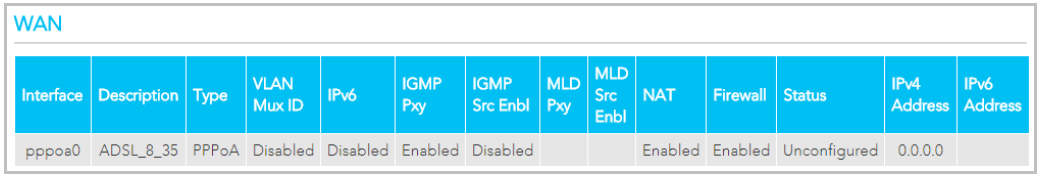
The second group displays details of the current status of your WAN connection.

ITEM	DESCRIPTION
Line Rate – Upstream (Kbps)	The current synchronisation upstream speed of the DSL connection in Kbps (Kilobits per second).
Line Rate – Downstream (Kbps)	The current synchronisation upstream speed of the DSL connection in Kbps (Kilobits per second).
LAN IPv4 Address	The current IPv4 LAN IP address assigned to the router.
Service connection type	Displays whether the WAN connection is ADSL/VDSL or Ethernet WAN.
Default Gateway	The current default gateway address of the WAN interface.
Primary DNS Server	The current primary DNS server in use
Secondary DNS Server	The current secondary DNS server is use.
LAN IPv6 ULA Address	The current IPv6 LAN IP address in use if assigned.
Default IPv6 Gateway	The current IPv6 default gateway if assigned.
Date/Time	The current local date and time set on the router.

WAN *continued*

WAN

Further down on the page the **WAN** table shows more detailed information related to the WAN interface configuration, including the firewall status, IPv4 and IPv6 addresses of the router.



ITEM	DEFINITION
Interface	The Interface of the WAN connection.
Description	The description of the WAN connection.
Type	The type of WAN connection.
VLAN Mux ID	Details the status of VLAN Mux ID, if used.
IPv6	The status of IPv6.
IGMP Pxy	Details the status of IGMP on each WAN connection. IGMP is only used with IP v4 connections. IGMP proxy enables the router to issue IGMP host messages on behalf of hosts that the router discovered through standard IGMP interfaces, allowing NAT transversal of Multicast traffic.
IGMP Source Enable	Details the status of IGMP Src on each WAN connection. IGMP Sources function send a membership report that includes a list of IGMP source addresses.
MLD Pxy	Shows the status of the Multicast Listener Discovery protocol when IPv6 is in use. Multicast Listener Discovery (MLD) proxy enables the router to issue MLD host messages on behalf of hosts that the router discovered through standard MLD interfaces.

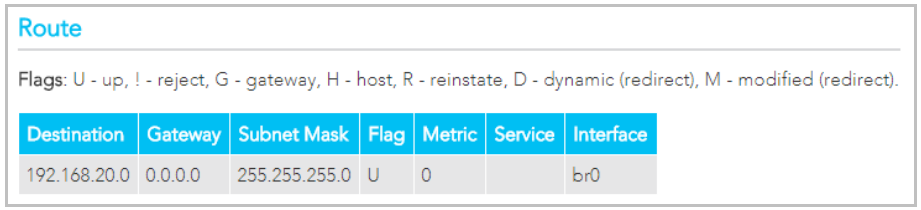
ARP

© NetComm Wireless 2021

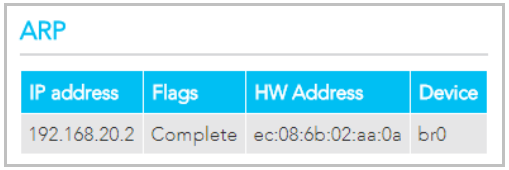
ITEM	DEFINITION
MLD Source Enable	Details the status of MLD Src on each WAN connection. MLD Sources function can send a membership report that includes a list of MLD source addresses.
NAT	The NAT status of the WAN connection.
Firewall	The status of the router firewall across the WAN connection.
Status	The status of the WAN connection.
IPv4 Address	The current IP v4 address of the WAN interface.
IPv6 Address	The current IP v6 address of the WAN interface.

Route

The second table displays details of displays any routes that the router has created.



The **ARP** table displays address resolution protocol information.



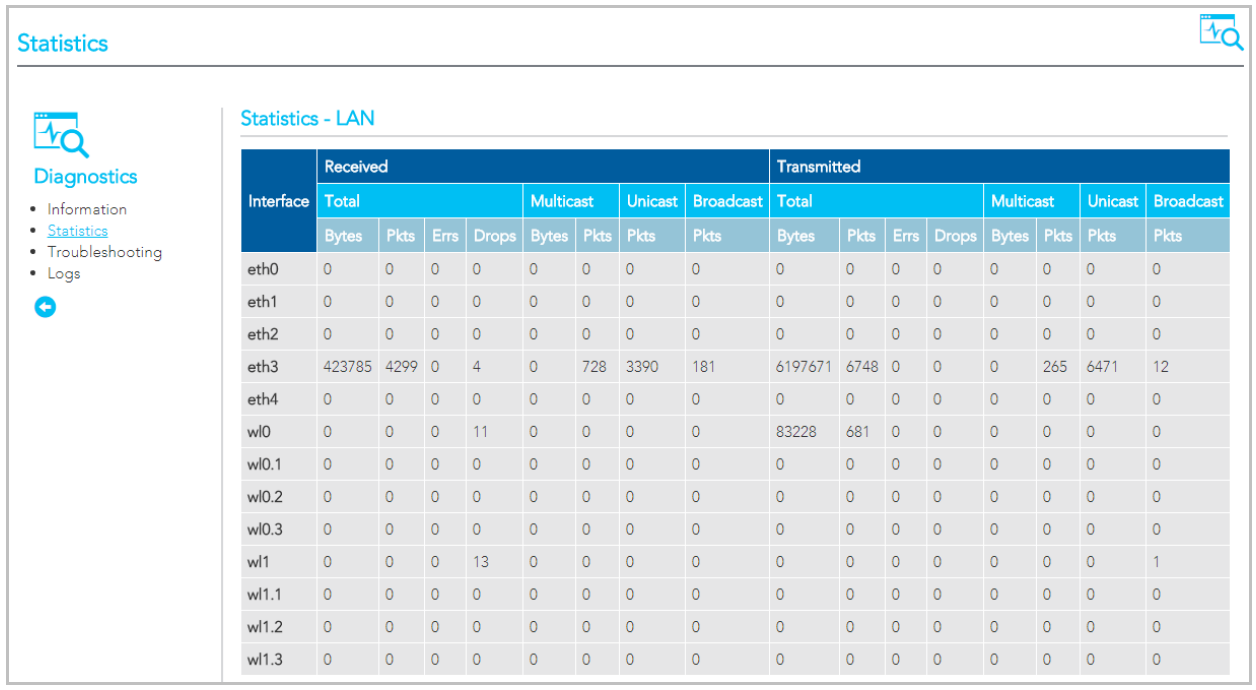
This option can be used to determine which IP address / MAC address is assigned to a particular host.

This can be useful when setting up URL filtering, Time of Day filtering or Static DHCP addressing.

© NetComm Wireless 2021

Diagnostics – Statistics

The **Diagnostics – Statistics** page contains tables and charts displaying details of LAN communications, WAN services, xTM and XDSL interfaces and physical memory usage and the work load of the CPU.



Interface	Received								Transmitted							
	Total				Multicast		Unicast	Broadcast	Total				Multicast		Unicast	Broadcast
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Pkts	Pkts	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Pkts	Pkts
eth0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eth1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eth2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eth3	423785	4299	0	4	0	728	3390	181	6197671	6748	0	0	0	265	6471	12
eth4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl0	0	0	0	11	0	0	0	0	83228	681	0	0	0	0	0	0
wl0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl1	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	1
wl1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wl1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LAN

The **Statistics – LAN** page shows detailed information about the number of bytes, packets, errors and dropped packets on each LAN interface in both directions of communication.

INTERFACE	DESCRIPTION	
Received/ Transmitted	**Bytes**	Rx/Tx (receive/transmit) packets in bytes.
	Packets	Rx/Tx (receive/transmit) packets.
	Errors	Rx/Tx (receive/transmit) packets with errors.
	Drops	Rx/Tx (receive/transmit) packets with drops.

© NetComm Wireless 2021

WAN Service

The **Statistics – WAN Service** page shows detailed information about the number of bytes, packets, errors and dropped packets on the WAN interface in both directions of communication.

Statistics - WAN Service

Interface	Description	Received								Transmitted							
		Total				Multicast		Unicast	Broadcast	Total				Multicast		Unicast	Broadcast
		Bytes	Pkts	Errs	Drops	Bytes	Pkts	Pkts	Pkts	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Pkts	Pkts
pppoa0	ADSL_8_35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERFACE	DESCRIPTION	
Received/Transmitted	**Bytes**	Rx/Tx (receive/transmit) packets in bytes.
	Packets	Rx/Tx (receive/transmit) packets.
	Errors	Rx/Tx (receive/transmit) packets with errors.
	Drops	Rx/Tx (receive/transmit) packets with drops.

xTM interface

The **Statistics – xTM** page shows details related to the xTM (ATM/PTM) interface of the router.

Statistics - xTM

Port Number	In Octets	Out Octets	In Packets	Out Packets	In OAM Cells	Out OAM Cells	In ASM Cells	Out ASM Cells	In Packet Errors	In Cell Errors

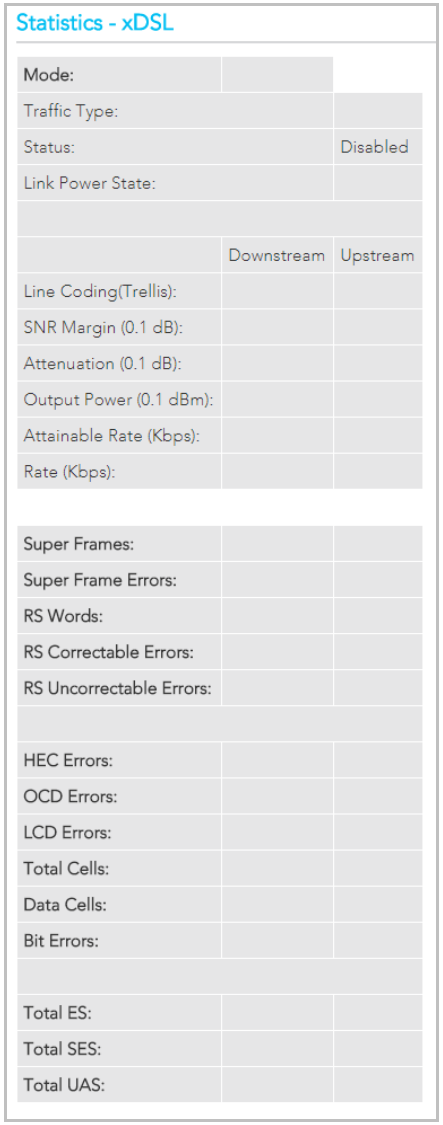
INTERFACE	DESCRIPTION
Port Number	The port number used by the xTM interface.
In Octets	The number of data packets in octets received over the ATM interface.
Out Octets	The number of data packets in octets transmitted over the ATM interface.
In Packets	The number of data packets received over the ATM interface.

© NetComm Wireless 2021

xTM interface, *continued*

INTERFACE	DESCRIPTION
Out Packets	The number of data packets transmitted over the ATM interface.
In OAM Cells	Operation, Administration, and Maintenance (OAM) Cell is the ATM Forum specification for cells used to monitor virtual circuits.
Out OAM Cells	Operation, Administration, and Maintenance (OAM) Cell is the ATM Forum specification for cells used to monitor virtual circuits.
In ASM Cells	The number of Any Source Multicast (ASM) cells received over the interface.
Out ASM Cells	The number of Any Source Multicast (ASM) cells transmitted over the interface.
In Packets Errors	The number of packets with errors detected over the xTM interface.
In Cell Errors	The number of cells with errors detected over the xTM interface.

xDSL interface

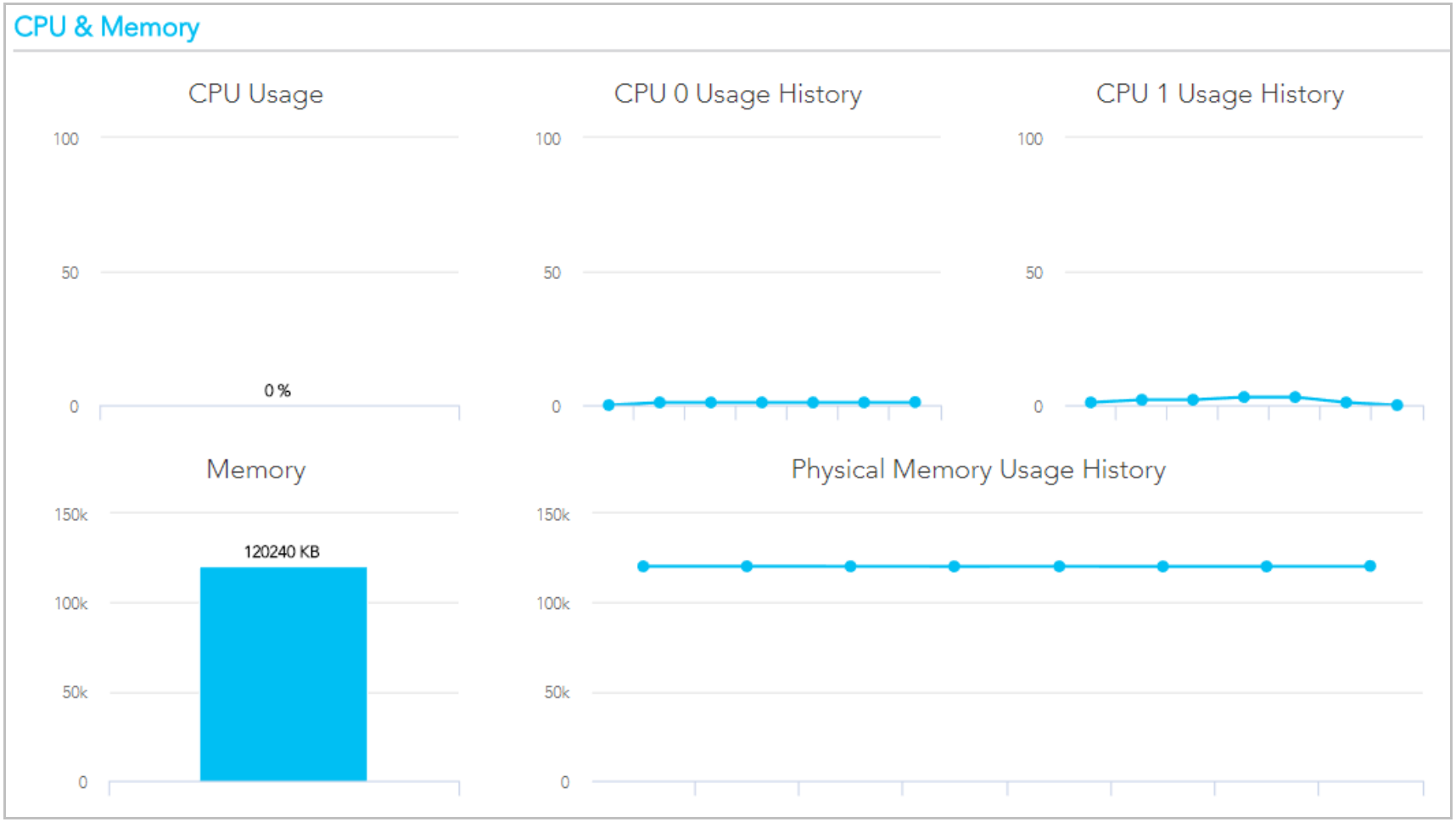


The **Statistics – xDSL** page shows details related to the DSL (Digital Subscriber Line) interface of the router..

© NetComm Wireless 2021

CPU & Memory

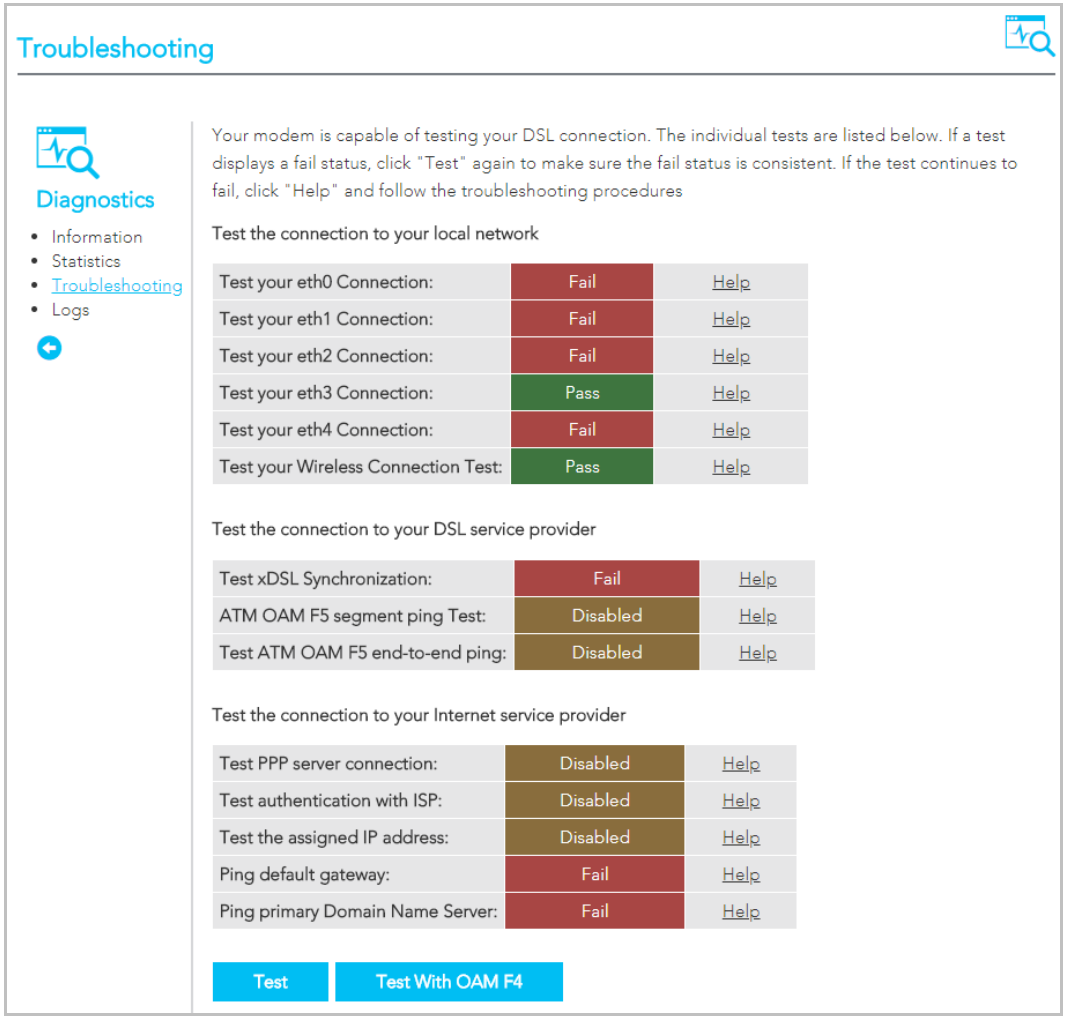
The **Statistics –** CPU & Memory page shows real-time graphs charting the physical memory usage and the workload of the CPU.



© NetComm Wireless 2021

Diagnostics – Troubleshooting

The **Diagnostics – Troubleshooting** page contains a number of predefined tests with test results and other diagnostic settings.



Connection tests

This group contains the results of fourteen tests of various aspects of your connection to your local network, the connection to your DSL service provider, and the connection to your Internet service provider.

Note – Your Internet service provider must support diagnostics features in order for correct DSL diagnostics results.

Diagnose the connection by clicking the **Test** button or click the **Test With OAM F4** button.

The following results indicator buttons will display for each test:

Pass

A Pass icon displays when the connection is operating correctly.

Click Help to see the criteria for success for this test.

Fail

A Fail icon indicates that the test was unsuccessful.

Click Help to see the possible reasons for the failure.

In the Help screen there are also Troubleshooting suggestions specific to that particular type of test which may be able to rectify the problem.

Click the **Rerun Diagnostic Tests** button after the troubleshooting has been completed.

Disabled

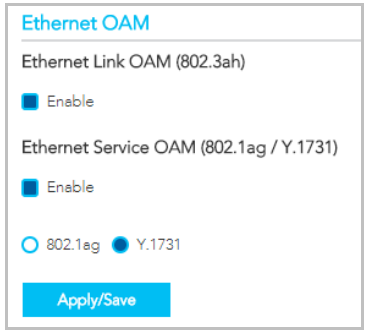
The service is either disabled by a setting in your NF18ACV or that diagnostic functionality is not supported by your ISP.

If after trying all the troubleshooting suggestions you are still experiencing a fail condition, contact your ISP Technical Support.

© NetComm Wireless 2021

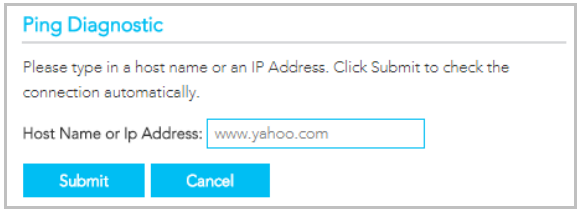
Ethernet OAM

The Ethernet OAM page provides administrators with operation, administration and management features.



Ping Diagnostic

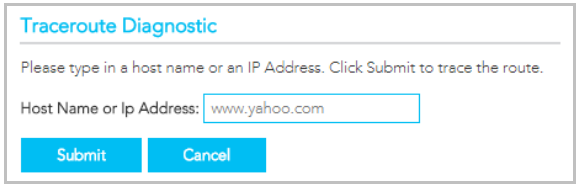
The ping test lets you ping a remote IP address or hostname in order to test the connection.



To ping, type in a **Host Name** or **IP Address** and click the **Submit** button.

Traceroute Diagnostic

Perform a trace route to a remote IP address or host name, to ensure that the correct interface is used for routing.

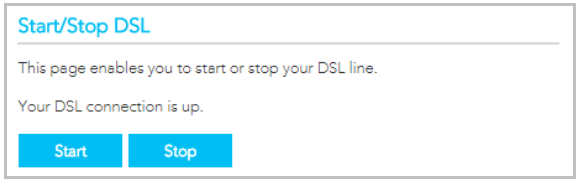


To trace a route, type in a **Host Name** or **IP Address** and click the **Submit** button.

Start/Stop DSL

This tool advises you of your DSL connection status: **Up** or **Down**

If you DSL connection is down, check whether your phone line is connected.

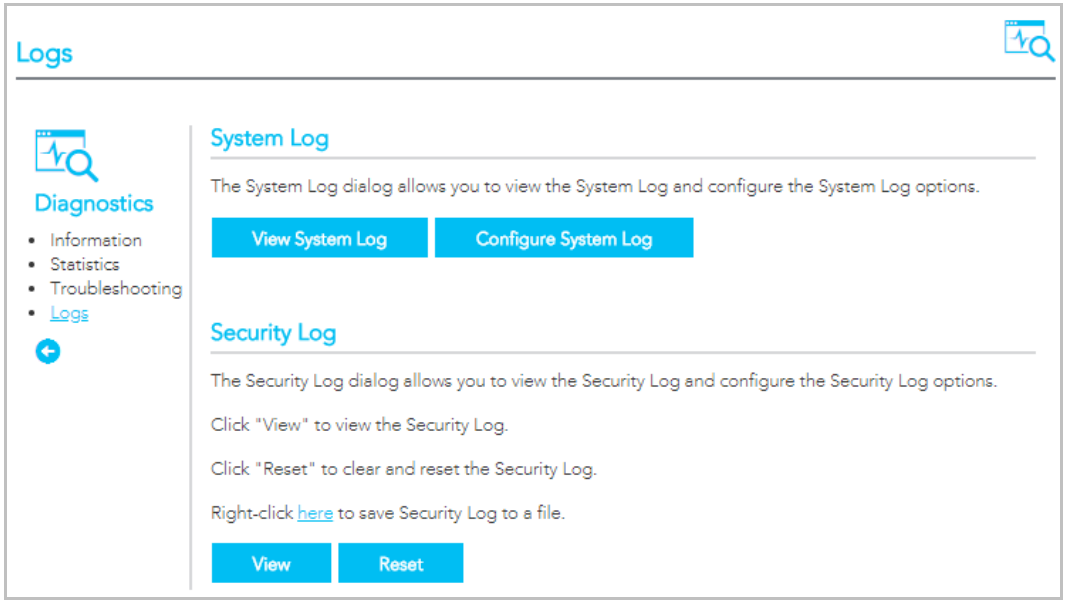


Use the **Stop** or **Start** button to turn on or off the DSL service for troubleshooting purposes.

© NetComm Wireless 2021

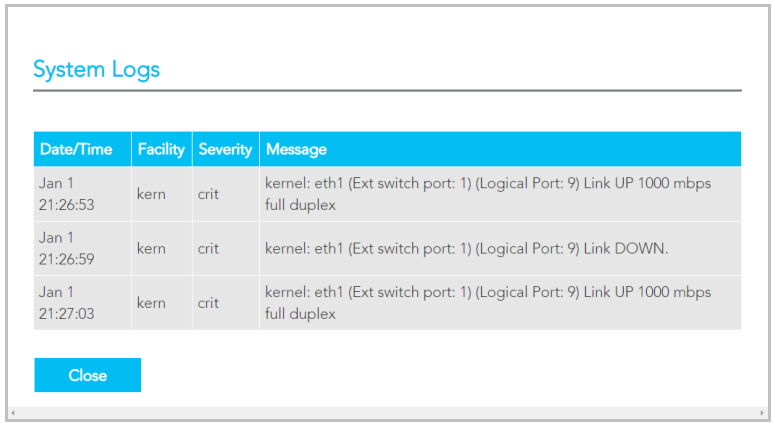
Diagnostics – Logs

The **System Log** page allows you to view the log of the NF18ACV and configure the logging options.



System Log

To view the system log as it is currently configured, click the **View System Log** button.

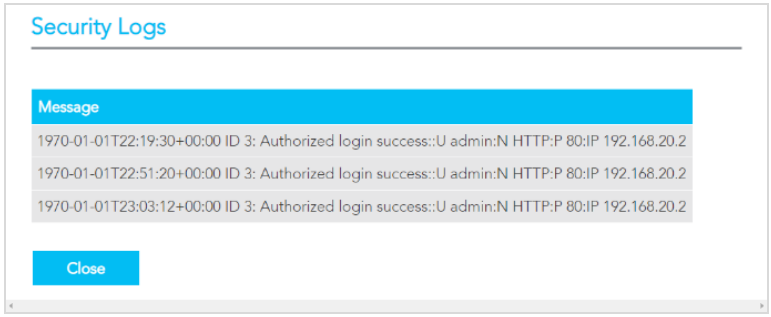


The results are displayed in a table in which each log record contains the following data fields: **Date/Time** stamp, **Facility**, **Severity** and a **Message**
The range of messages displayed can be defined, click the **Configure System Log** button to access the display settings.

Securty Log

Cick the **View** button to display the security log.
It contains details of login attempts to the gateway.

Click the **Reset** button to clear the existing records from the log and reset the **Security Log** to record login attempts from this point forward..



Save Security Log to file

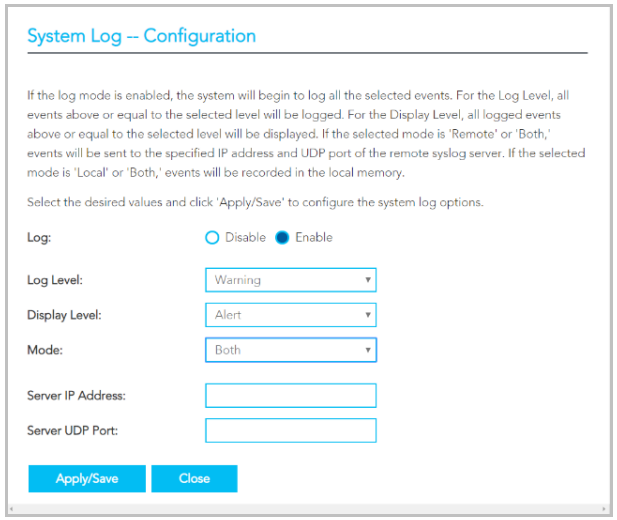
Click the here link to save the current log file to a .txt file.
The file will initially open in a browser page, click to save as a .txt file.

© NetComm Wireless 2021

Configure a System Log

To configure the system log, click the **Configure System Log** button.

When the desired values are selected click **Apply/Save** to configure the system log options.



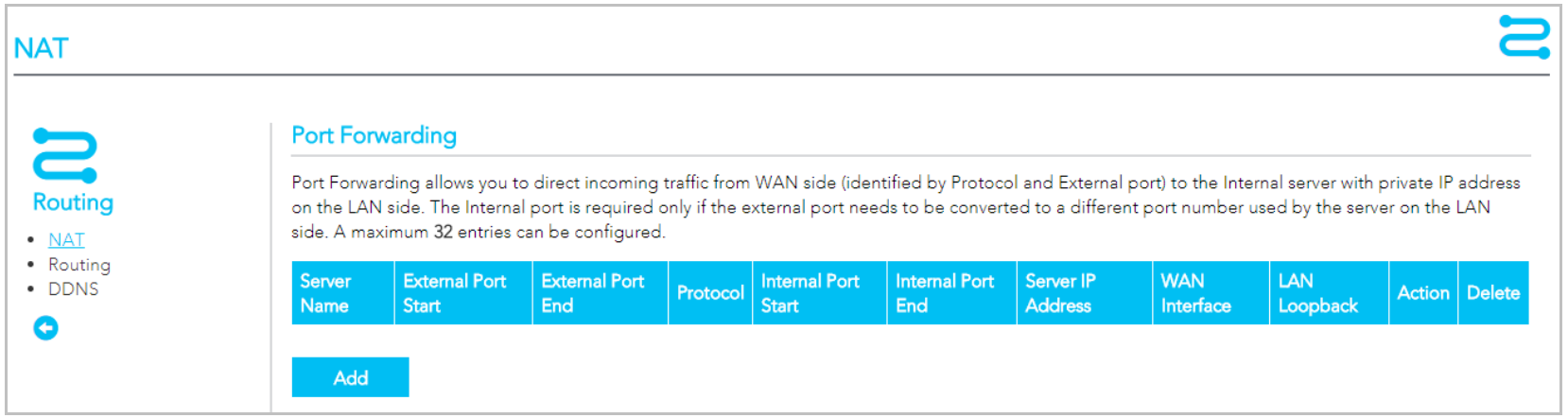
ITEM	DESCRIPTION
Log	When enabled the system will begin to log all the selected events.
Log Level Emergency Alert Critical Error Warning Notices Informational Debugging	The **Log Level** drop down list is arranged from most critical at the top (**Emergency**), the lowest level event at the bottom (**Debugging**). Select a **Log Level** and all events above or equal to the selected level will be logged to a log file. For example: If you select **Error** as your **Log Level**, all **Emergencies**, **Alerts**, **Critical** events and **Error** messages will be included in the log file. **Warnings**, **Notices**, **Informationals** and **Debugging** messages will not be logged.
Display Level	Select a **Display Level** and , all logged events above or equal to the selected level will be displayed on the **System Logs** page. The range displayed is set using the same settings as described for the **Log Level** settings, see previous item. To view the **System Logs** page, click the **View System Log** button on the **Logs** page: View System Log
Mode	The default setting, **Local**, saves the log only to the local memory on the NF18ACV. The **Remote** mode allows you to save the log on a remote server. If the selected mode is **Remote** you must specify the IP address and UDP port of the remote syslog server to which the log will be sent. If **Both** is selected you must specify the IP address and UDP port of the remote syslog server and events will be recorded in the local memory as well as the remote server.
Server IP Address	Specify the IP address of the remote syslog server. (Remote and both only.)
Server UDP Port	Specify the UDP port of the remote syslog server. (Remote and both only.)

© NetComm Wireless 2021

Routing – NAT

The **Routing – NAT** page contains three sections **Port Forwarding**, **DMZ Host** and **ALG**.

Port Forwarding



Port forwarding allows you to direct incoming traffic from the WAN side to the Internal network host with a private IP address on the LAN side.

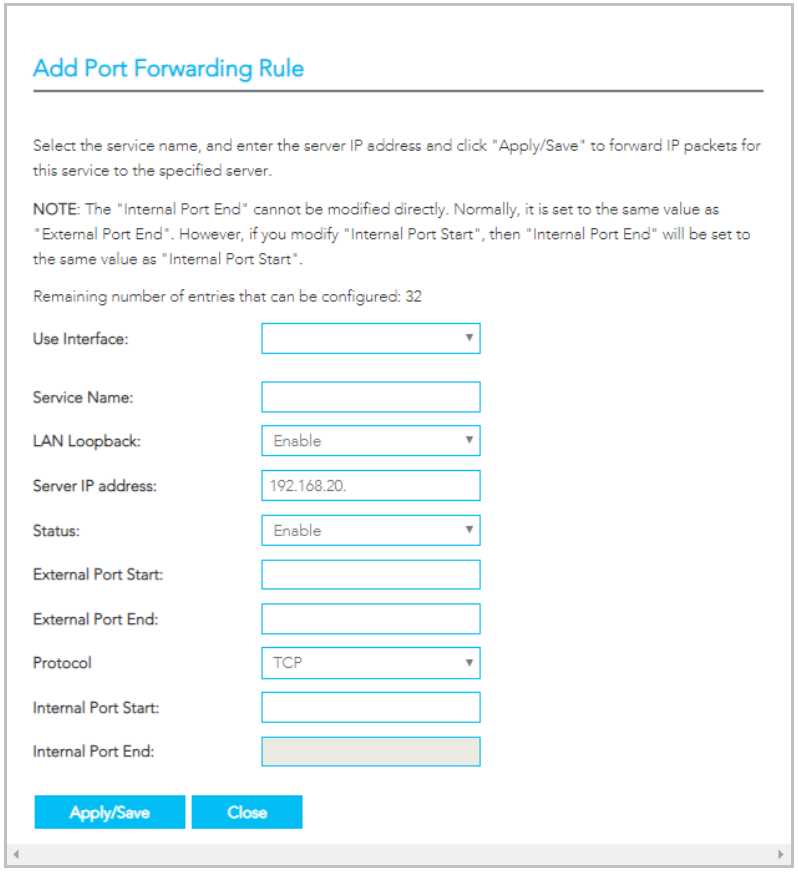
The table on the **Port Forwarding** page contains details of each Port Forwarding rule currently defined. You can define up to 32 rules

ITEM	DEFINITION
External Port Start	The starting external port number (when custom server is selected). When a service is connected this field will be completed automatically.
External Port End	The ending external port number (when custom server is selected). When a service is connected this field will be completed automatically.
Protocol	Options include: **TCP**, **UDP** or **TCP/UDP**
Internal Port Start	The starting internal port number (when custom server is selected). When a service is connected this field will be completed automatically.
Internal Port End	The ending internal port number (when custom server is selected). When a service is connected this field will be completed automatically.

ITEM	DEFINITION
Server IP Address	The IP address of the local server.
WAN Interface	Describes the type of target interface: ETH, WAN, VDSL, custom, etc.
WAN Loopback	Indicates current WAN Loopback status: **Enabled** or **Disabled**
Action buttons	Toggle between: **Enable** and **Disable**
Delete button	Click the **Delete** button to permanently remove a Port Forwarding rule.
Add button	Click **Add** to open the **Add Virtual Servers** page.

Click the **Add** button to create new Port Forwarding rules, see next page.

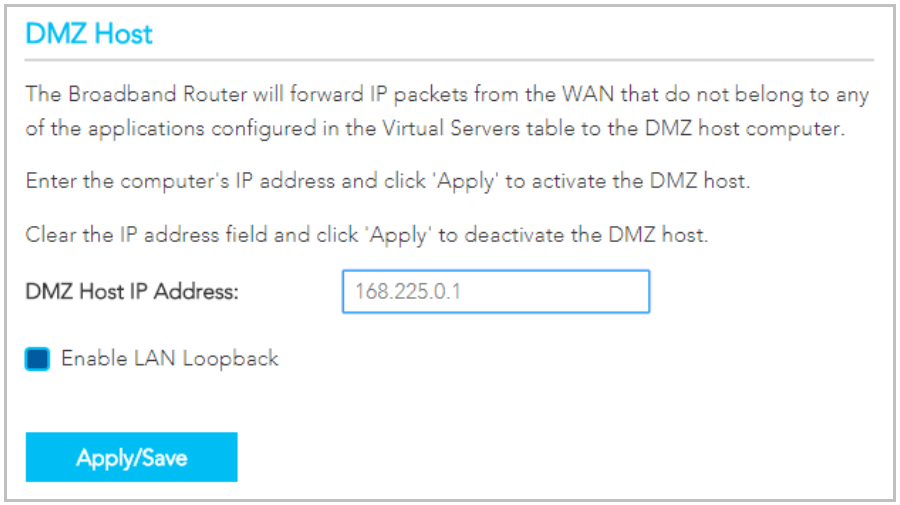
© NetComm Wireless 2021



ITEM	DEFINITION
Use Interface	The interface type to be used by the rule.
Service Name	Enter a descriptive name for the service that the rule will apply to.
LAN Loopback	Select **Enable** to allow the LAN host to access another LAN host/server via the external IP Address of the gateway. When **Disable** is selected you must use the internal IP address of the device when on the LAN side.
Server IP Address	Enter the IP address of the local server/host.
Status	Select **Enable** to allow the rule to be accessible. Select **Disable** to save the rule in an inactive state.
External Port Start	Enter the starting external port number range (when custom server is selected). When a predefined service is selected this field will be completed automatically
External Port End	Enter the ending external port number range (when custom server is selected). When a predefined service is selected this field will be completed automatically.
Protocol	The options are: **TCP**, **UDP** or **TCP/UDP**
Internal Port Start	Enter the starting internal port number range (when custom server is selected). When a predefined service is selected this field will be completed automatically.
Internal Port End	Enter the ending internal port number range (when custom server is selected). When a predefined service is selected this field will be completed automatically.
Apply/Save button	Click to save and enable the rule. Up to 32 rules can be defined.

© NetComm Wireless 2021

DMZ Host



The NF18ACV will forward IP packets from the Wide Area Network (WAN) that do not belong to any of the applications configured in the Virtual Servers table or being used in the Virtual Server table to the DMZ host.

Enter the **DMZ Host IP address** and click **Apply** to activate the DMZ host. To deactivate the DMZ Host function, clear the IP address field and press the **Save/Apply** button.

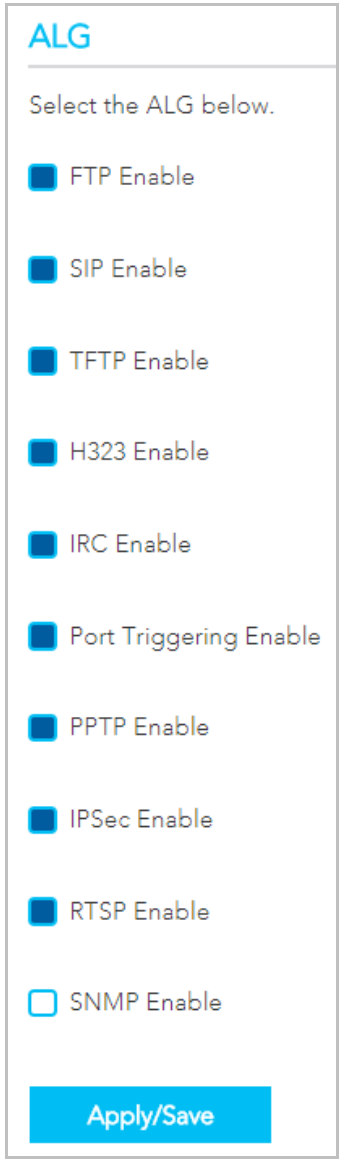
Enable LAN Loopback

Note that **Enable LAN Loopback** can also be selected.

LAN Loopback allows the LAN host to access another LAN host/server via the external IP Address of the router.

Without NAT loopback you must use the internal IP address of the device when on the LAN side.

© NetComm Wireless 2021



The **Application Layer Gateway** (**ALG**) features enables the router to parse application layer packets and support address and port translation for certain protocols.

We recommend that you leave these protocols enabled unless you have a specific reason for disabling them.

ITEM	DEFINITION
FTP Enable	Select to allow **File Transfer Protocol** (**FTP**) services.
SIP Enable	**Session Initiation Protocol** (**SIP**) is a signalling protocol used by communications applications and services between two or more endpoints on IP networks.
TFTP Enable	Select to allow **Trivial File Transfer Protocol** (**TFTP**) services. TFTP provides a simpler file transfer protocol that FTP using UDP, without user authentications, etc..
H323 Enable	**H.323** is a protocol standard for multimedia communications that supports real-time transfer of audio and video data over packet networks like IP.
IRC Enable	**Internet Relay Chat** (**IRC**) is an application layer protocol that facilitates communication in the form of text.
Port Triggering Enable	**Port Triggering** is a configuration option on NAT-enabled routers that provides access to services outside the network or on the Internet.
PPTP Enable	**Point-to-Point Tunnelling Protocol** (**PPTP**) is protocol used to implement virtual private network.
IPSec Enable	**Internet Protocol Security** (**IPsec**) is a secure network protocol suite that authenticates and encrypts the packets of data sent over an IPv4 network.
RTSP Enable	**Real Time Streaming Protocol** (**RTSP**) is a network control protocol designed to establish and control streaming media sessions in entertainment and communications applications.
SNMP Enable	**Simple Network Management Protocol** (**SNMP**) is an application-layer protocol used to manage and monitor network devices and their functions in a local area network (**LAN**) or wide area network (**WAN**).

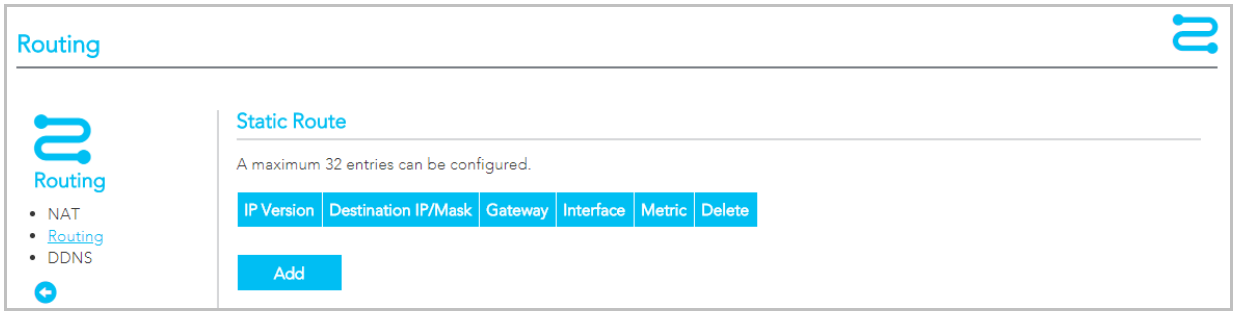
Click the **Apply / Save** button to apply the changes to the settings.

© NetComm Wireless 2021

Routing – Routing

The **Routing – NAT** page contains two sections **Static Route** and **RIP Configuration**

Static Route

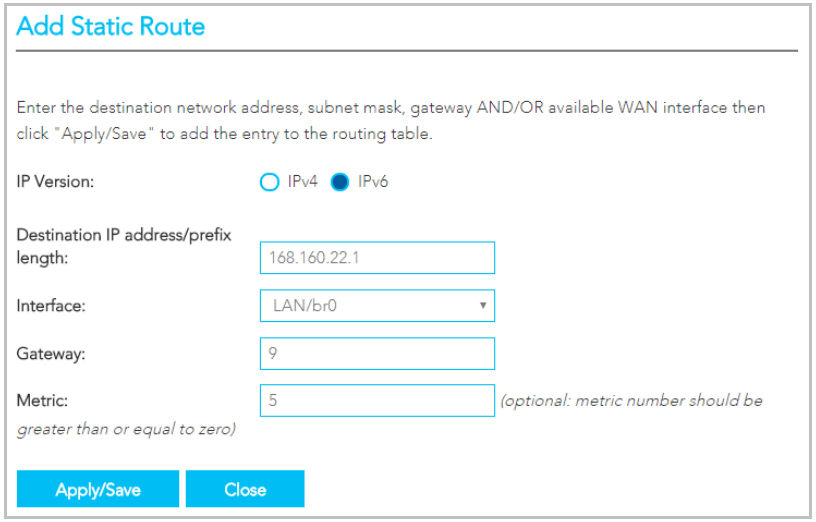


The **Static Route** table displays a list of the configured static routes.

Click the **Add** or **Delete** buttons to add or remove static route definitions.

ITEM	DEFINITION
IP Version	Select **IPv4** or **IPv6**.
Destination IP/Mask	Enter the **Destination Network Address or subnet mask.**
Gateway	Enter the **Gateway IP Address** and/or an available **WAN Interface**.
Interface	
Metric	The **Metric** field is used to set a priority for this route, the lower the number the higher the priority.
Delete	Select a Static Route row in the table and click the **Delete** button to permanently delete that Static Route definition.
Add button	Click the **Add** button to create a new Static Route definition, see the **Add Static Route** screen on right.

Add Static Route



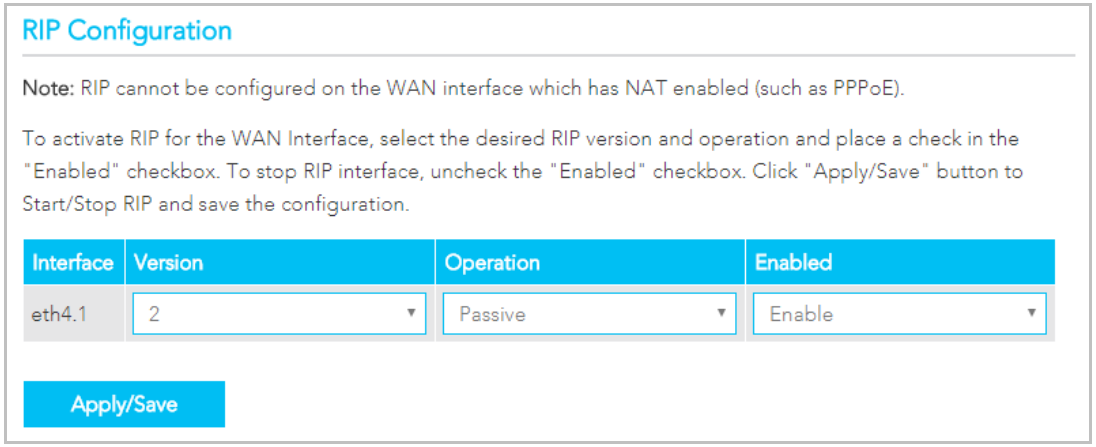
© NetComm Wireless 2021

RIP Configuration

The **Routing Information Protocol** (**RIP**) allows routers to exchange network topology information.

This information allows the automatic creation and updating of routing tables.

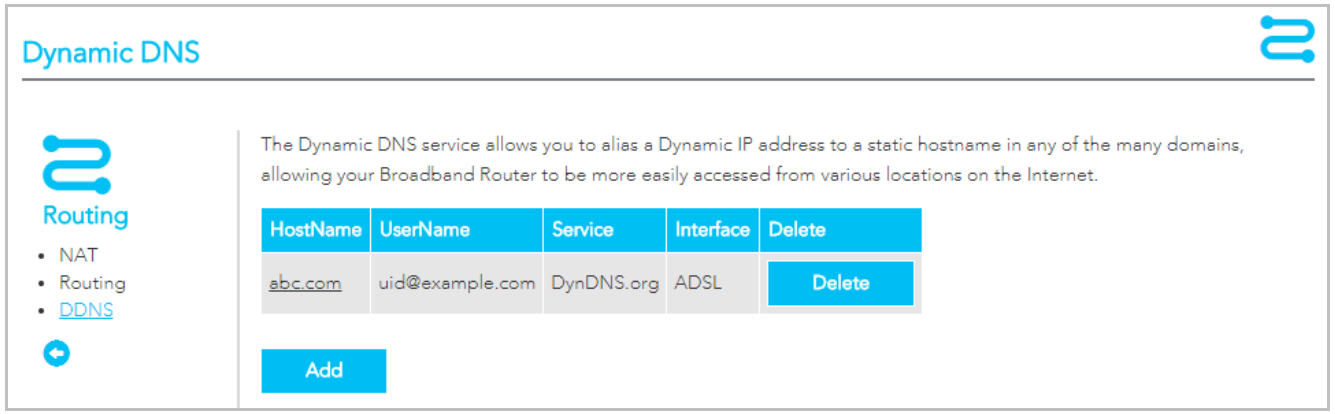
ITEM	DEFINITION
Interface	The network interface that the **RIP** settings apply to.
Version	**1 –** Use RIPv1 to support classful routing. **2 –** Use RIPv2 to support subnet information gathering and Classless Inter-Domain Routing. **Both –** RIP will use both RIPv**1** & RIPv**2**, and will multicast and broadcast to all adjacent routers**.**
Operation	**Passive –** RIP will only respond to "Request Message" queries on the RIP enabled interface. **Active –** RIP will broadcast and respond to "Request Message" queries on the RIP enabled interface.
Enabled	Select **Enable** to activate the RIP routing service on the selected **Interface**.
Apply/Save button	Click the **Apply/Save** button to save the changes and to initiate the change.



Attention – RIP cannot be selected for a WAN interface which is NAT enabled, such as PPPoE.
Go to **Basic Setup** and select **Ethernet WAN**, click **Next** and then select **IP over Ethernet (IPoE)**. The RIP option will now be available.

© NetComm Wireless 2021

Routing – DDNS

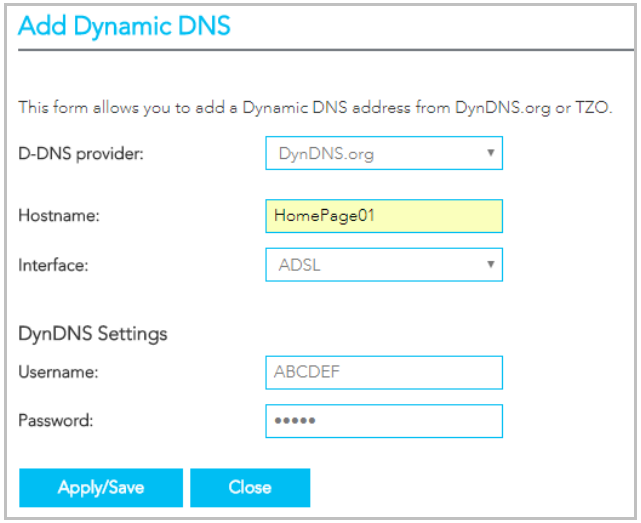


When you have an Internet plan that provides a dynamic IP address (i.e. an IP address which is dynamically assigned and changes each time you connect), an easy way to provide a permanent address is to use a **Dynamic DNS** service.

There are both free and paid DDNS services available.

ITEM	DEFINITION
D-DNS provider	When adding a Dynamic DNS server, see right, select your DDNS service provider from the **D-DNS provider** drop down menu The provider's name will display in the **Service** column in the **Dynamic DNS** services list.
Hostname	Enter the dynamic DNS **Hostname**.
Interface	Select the interface that the service operates on from the **Interface** drop down menu.
Username / Password	Enter the **Username** and **Password** of your dynamic DNS account. The **Username** will display in the **Dynamic DNS** services list.
Delete	Click the **Delete** button to permanently remove the DDNS service from the list.
Add button	Click the **Add** button to create a new DDNS service to include in the list.

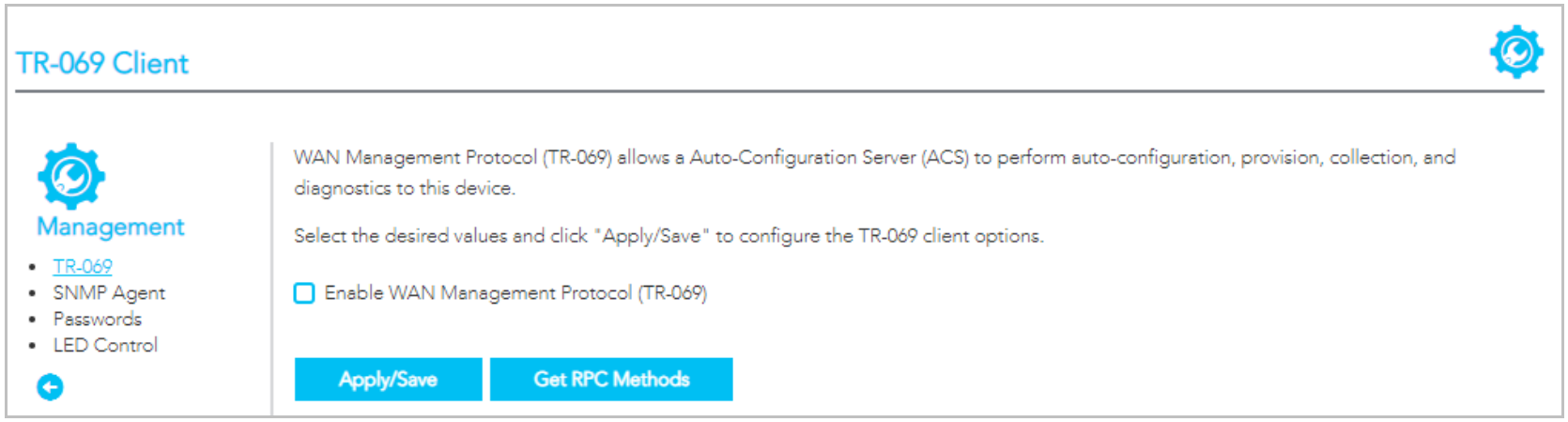
Add Dynamic DNS service



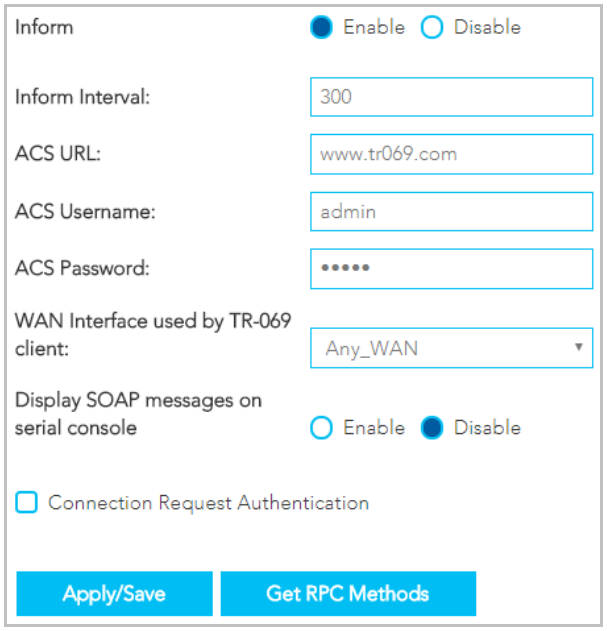
To edit an existing DDNS service, click on its **HostName** from the Dynamic DNS list. The **Edit Dynamic DNS** page appears. Make the changes and click the **Apply/Save** button.

© NetComm Wireless 2021

Management – TR-069 Client



TR-069 enables provisioning, auto-configuration or diagnostics to be automatically performed on your router if supported by your Internet Service Provider (ISP).

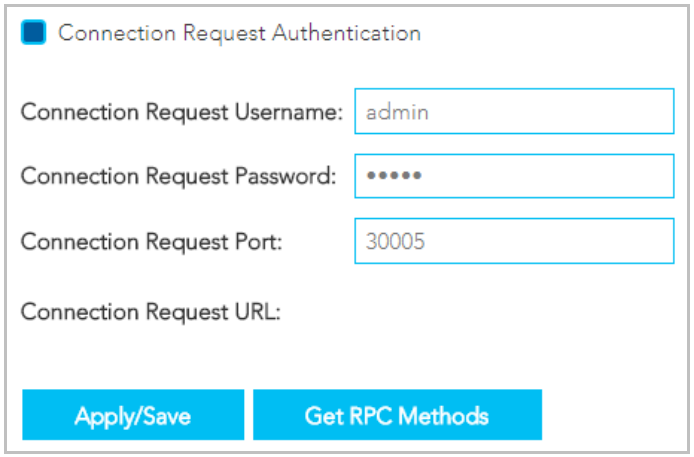


Select **Enable WAN Management Protocol (TR-069)** to display the TR-069 settings.

ITEM	DEFINITION
Inform	Set to enable to TR-069 client inform session initialization.
Inform interval	Time in seconds that inform session data is sent to the Auto-Configuration Server (ACS).
ACS URL	The address where the ACS server is located.
ACS User Name	The user name to access the ACS server.
ACS Password	The password to access the ACS server.
WAN Interface used by TR-069 Client	The interface connection used to send and receive data to the ACS server.
Display SOAP messages on serial console	Select **Enable** to view the SOAP messages on a command prompt screen.
Apply/Save button	Click to save your settings and start the TR-069 services.
Get RPC Methods button	Click to retrieve **Remote Procedure Call (RPC) Methods**.

© NetComm Wireless 2021

Connection Request Authentication



Normally TR-069 sessions are initiated by the NF18ACV, however sometimes there is a need for a remote auto configuration server (ACS) to request that the NF18ACV contact it immediately, effectively initiating the session. To do this, TR-069 defines a Connection Request mechanism in CWMP, which allows the ACS to stimulate the NF18ACV to begin a session.

To ensure appropriate security, this request must be authenticated using a **Username** and **Password**.

Select **Connection Request Authentication** to display the TR-069 security and connection settings.

ITEM	DEFINITION
Connection Request Username	Enter the username to be used by the ACS to initiate the connection for a TR-069 session with the NF18ACV.
Connection Request Password	Enter the password to be used by the ACS to initiate the connection for a TR-069 session with the NF18ACV.
Connection Request Port	Enter the Port number to be used by the ACS when connecting to the NF18ACV for a TR-069 session.
Connection Request URL	Enter the URL address to be used by the ACS for a TR-069 session with the NF18ACV.

© NetComm Wireless 2021

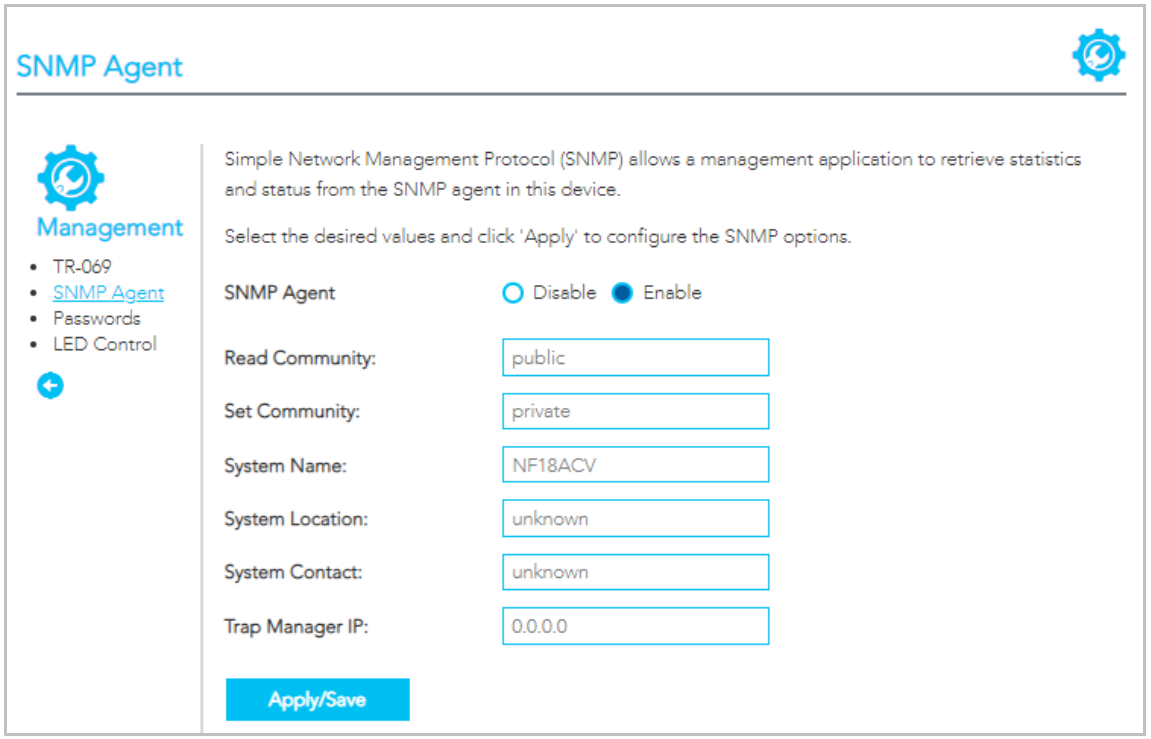
Management – SNMP Agent

The Simple Network Management Protocol (SNMP) allows a network administrator to monitor a network by retrieving settings on remote network devices.

To do this, the administrator typically runs an SNMP management station program such as MIB browser on a local host to obtain information from the SNMP agent, in this case the NF18ACV (if SNMP is enabled).

An SNMP 'community' performs the function of authenticating SNMP traffic.

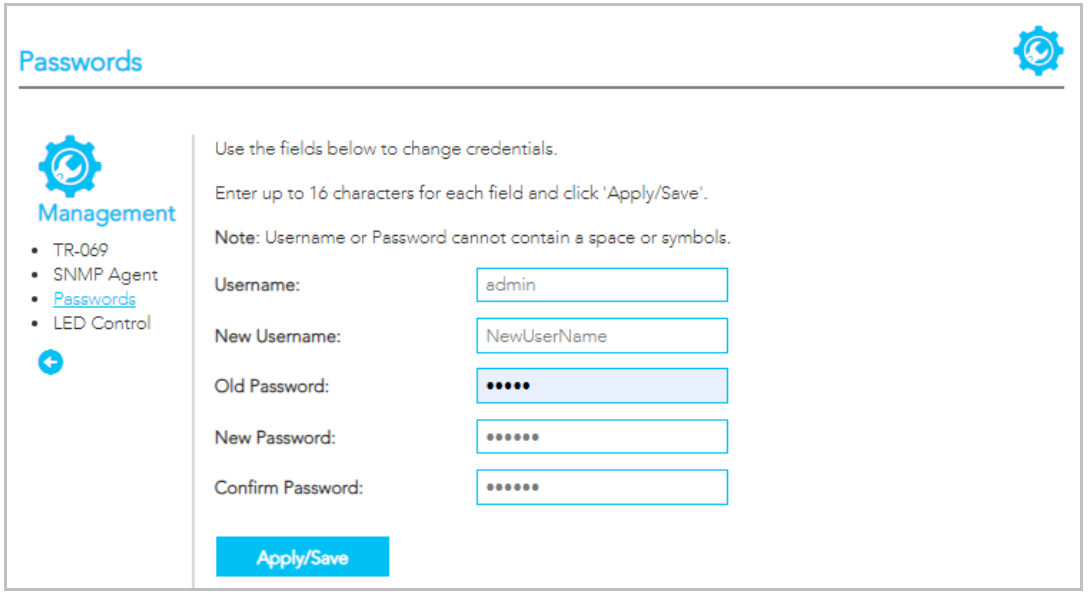
A 'community name' acts as a password that is typically shared among SNMP agents and managers.



ITEM	DEFINITION
SNMP Agent	Select **Enable** to start this service.
Read Community	Enter a read type or accept the default: **public**
Set Community	Enter a community type or accept the default: **private**
System Name	Enter a recognisable system name or accept the default: **NF18ACV**
System Location	Enter a system location or accept the default: **unknown**
System Contact	Enter a system location or accept the default: **unknown**
Trap Manager IP	Enter the IP address of the trap manager.
Save/Apply button	Click to save your settings and start the SNMP service.

© NetComm Wireless 2021

Management – Passwords



ITEM	DEFINITION
Username	Enter the **Username** that you are currently logged in with.
New Username	Enter a new username consistent with the requirements and restrictions, see above.
Old Password	Enter the password that you are currently logged in with.
New Password	Enter a new password consistent with the requirements and restrictions, see above.
Confirm Password	Re-enter the new password exactly as in the previous field.
Save/Apply button	Click to save your settings and start the SNMP services.

Requirements

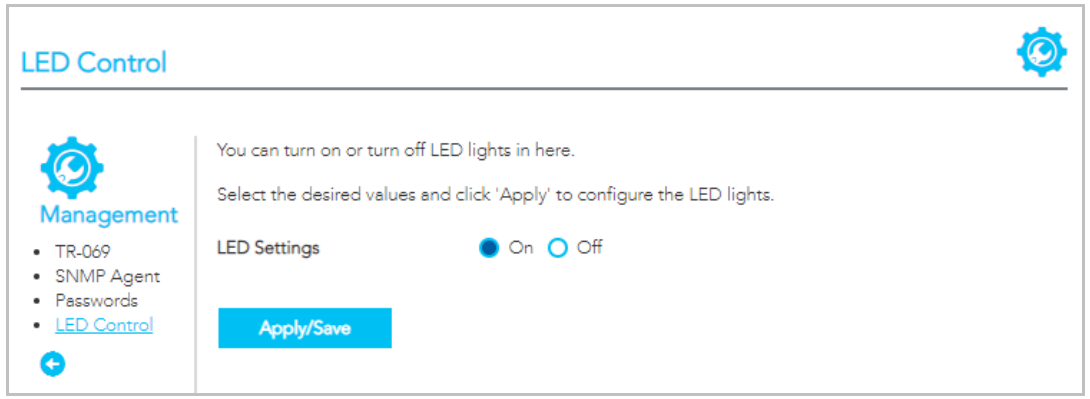
- Both username and password can between 1 to 16 characters.
- Characters can be either letters, numerals and/or special characters.
- Letters are case-sensitive.

Restrictions

- Usernames and passwords cannot exceed 16 characters in length.
- They must not include spaces or punctuation marks.
- Characters cannot be symbols.

© NetComm Wireless 2021

Management – LED Control



In some locations the LED light son the front of the NF18ACV may cause an unwanted distraction.

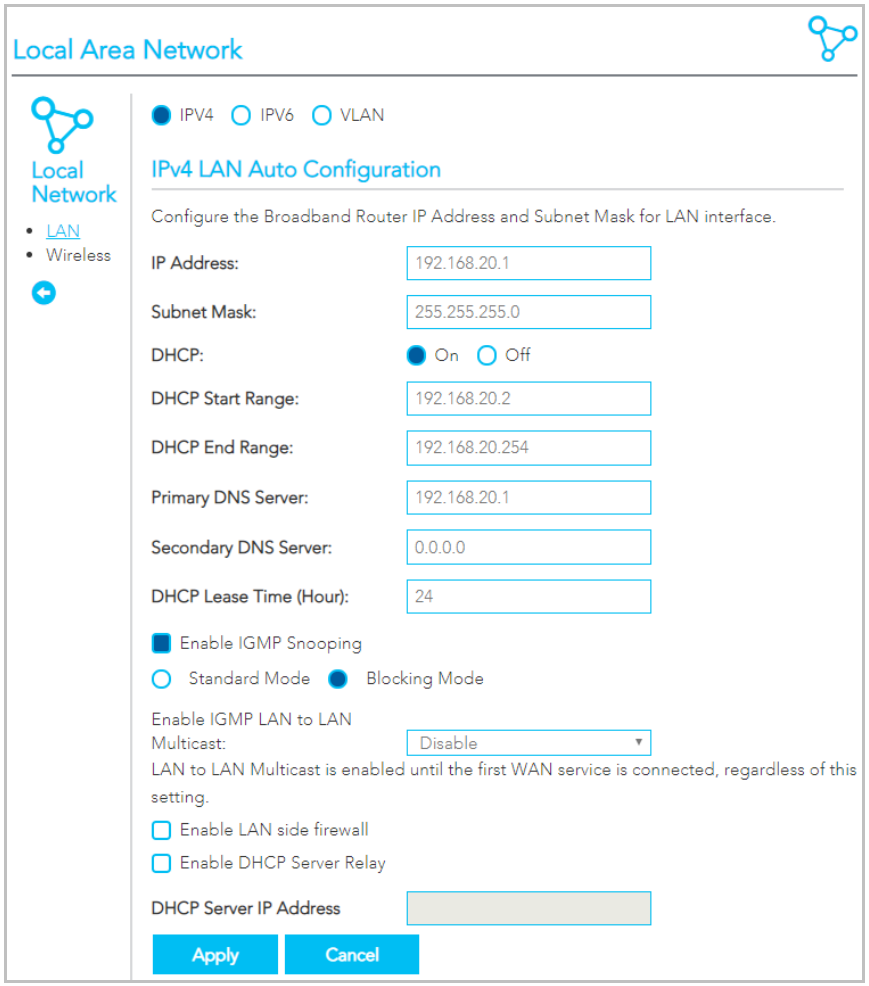
Use the **LED Control** settings to switch the display of the LED lights on or off.

ITEM	DEFINITION
On	Select **On** to enable the display of the LED lights. If the LED lights are currently off, click the **Save/Apply** button for this change to take effect.
Off	Select **Off** to turn off the display of the LED lights. If the LED lights are currently on, click the **Save/Apply** button for this change to take effect.
Save/Apply button	Click to save and apply the settings made above. Note that it will take a few seconds for the change to take effect.

© NetComm Wireless 2021

LAN

Local Area Network – IPv4

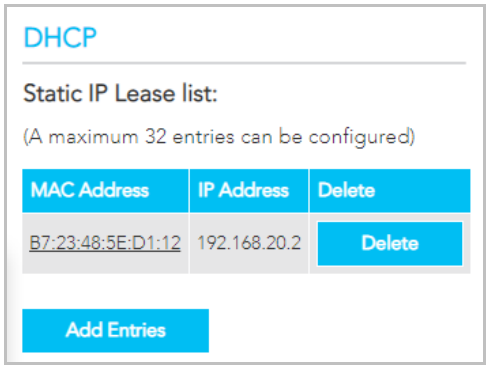


Select **IPv4** to configure this service.

ITEM	DEFINITION
IP Address	Enter the Local IP Address to use for the NF18ACV.
Subnet Mask	Enter the subnet mask to define the subnet of the Local Network.
DHCP	Select **On** to enable the DHCP server.
DHCP Start Range	Enter the start IP address for the DHCP IP Address pool.
DHCP End Range	Enter the end IP address for the DHCP IP Address pool.
Primary DNS Server	Enter the IP address of the primary DNS server.
Secondary DNS Server	Enter the IP address of the secondary DNS server.
DHCP Lease Time (Hour)	Assigned IP addresses will be dropped after this time period and the address may be assigned to a different device on the network. Default is 24 hours.
Enable IGMP Snooping	Enable IGMP (Internet Group Management Protocol) Snooping and select the IGMP Snooping mode to use. **Standard Mode** – Allows all multicast traffic to LAN clients. **Blocking Mode** – Only allows multicast subscribed clients to receive multicast packets.
Enable IGMP LAN to LAN Multicast	Select **Enable** to IGMP snooping to LAN Multicast. Select **Disable** to turn off this feature.
Enable LAN side firewall	Enable the LAN side firewall to restrict traffic between LAN host-LAN hosts and WiFi Clients.
Enable DHCP Server Relay	Disable the DHCP server defined above and relay a request to the external server specified in the **DHCP server IP address** text box.

© NetComm Wireless 2021

DHCP Server IP Address	When you select **Enable DHCP Server Relay** this text box becomes available. Enter the address of the external DHCP server that you want to use instead of the DHCP server specified above. Note that it is no longer available.
Apply button	Click to save your settings and start the SNMP services.

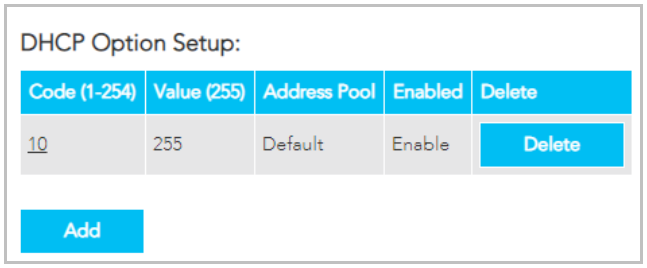


Use the **DHCP Static IP Lease** facility to reserve DHCP Addresses for specific hosts.

Click the **Add Entries** button to open the **DHCP Static IP Lease** dialog.
Enter the **MAC Address** of the chosen host and **Static IP Address** and the click the **Apply/Save** button.

Up to 32 **Static IP Leases** can be created and managed at the same time.

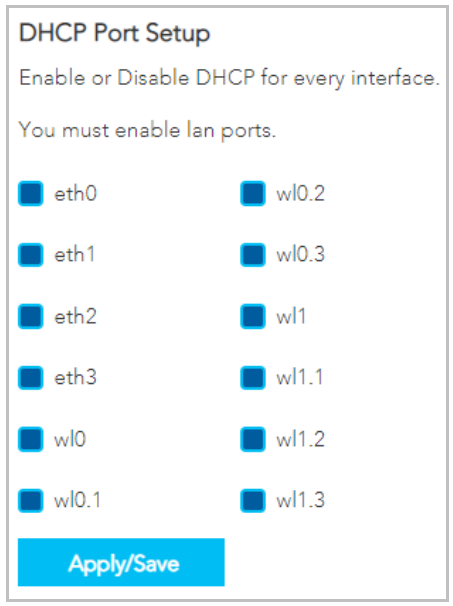
To manage you lease list, click the **Delete** button to permanently remove a lease from the list.



Click the **Add** button to open the **DHCP Option Setup** dialog.
Select the **State** as **Enable** to have the option available for use.
If the **State** as **Disable** the option will remain in the list, but no be active.
Enter a **Code** of 1 to 254.
Enter a **Value**, maximum length is 255.
Click the **Apply/Save** button to apply and save the changes.

To manage you option list, click the **Delete** button to permanently remove an option from the list.

© NetComm Wireless 2021



Dynamic Host Configuration Protocol (**DHCP**) is a protocol for assigning dynamic IP addresses to devices on a network which allows a device to be assigned a different IP address every time it connects to the network.

Dynamic IP Addresses

Globally there are well over a billion IP addresses used by computers and other connected devices and nearly all those IP addresses are dynamic.

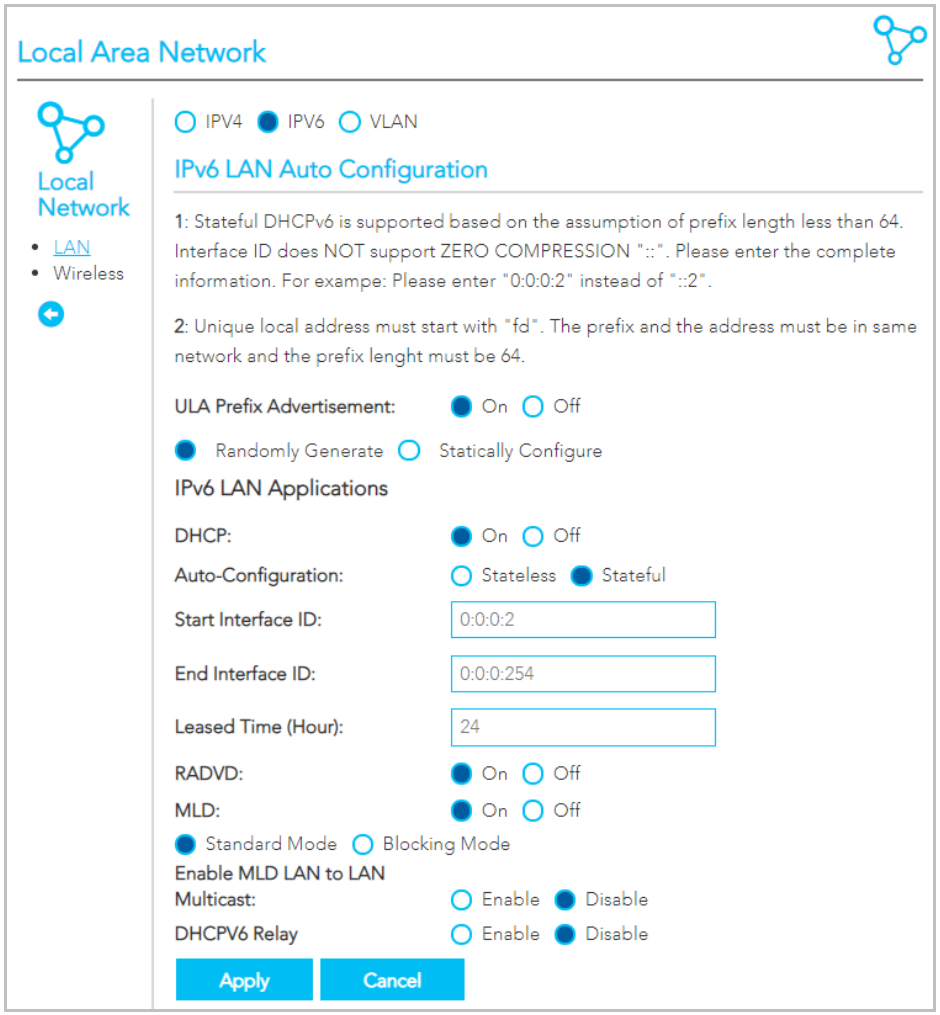
By default, all LAN ports on the NF18ACV have **DHCP** services **Enabled.**

Static IP Addresses

It is possible to set a "static" IP addresses which will never change.
The NF18ACV allows you to

© NetComm Wireless 2021

Local Area Network – IPv6



Select **IPv6** to configure this service.

ITEM	DEFINITION
ULA Prefix Advertisement	Select **On** to enable the use of unique local addresses. The router will advertise the IPv6 /64 prefix to new devices on the network. **Randomly Generate** – Randomly generates the unique local addresses and the prefix. **Statically Configure** – Enter a static IPv6 address for the router if one has been assigned to you by your Internet Service Provider (ISP).
IPv6 LAN Applications	
DHCP	Select **On** to enable a DHCP server
Auto-Configuration	**Stateless** – IPv6 hosts can configure themselves automatically when connected to a routed IPv6 network using Internet Control Message Protocol version 6 (ICMPv6) router discovery messages. This type of configuration is suitable for small organizations and individuals. It allows each host to determine its address from the contents of received user advertisements. It makes use of the IEEE EUI-64 standard to define the network ID portion of the address.. **Stateful** – This configuration requires some human intervention as it makes use of the Dynamic Host Configuration Protocol for IPv6 (DHCPv6) for installation and administration of nodes over a network. The DHCPv6 server maintains a list of nodes and the information about their state to know the availability of each IP address from the range specified by the network administrator.

© NetComm Wireless 2021

LAN IPv6 Auto Configuration – *continued*

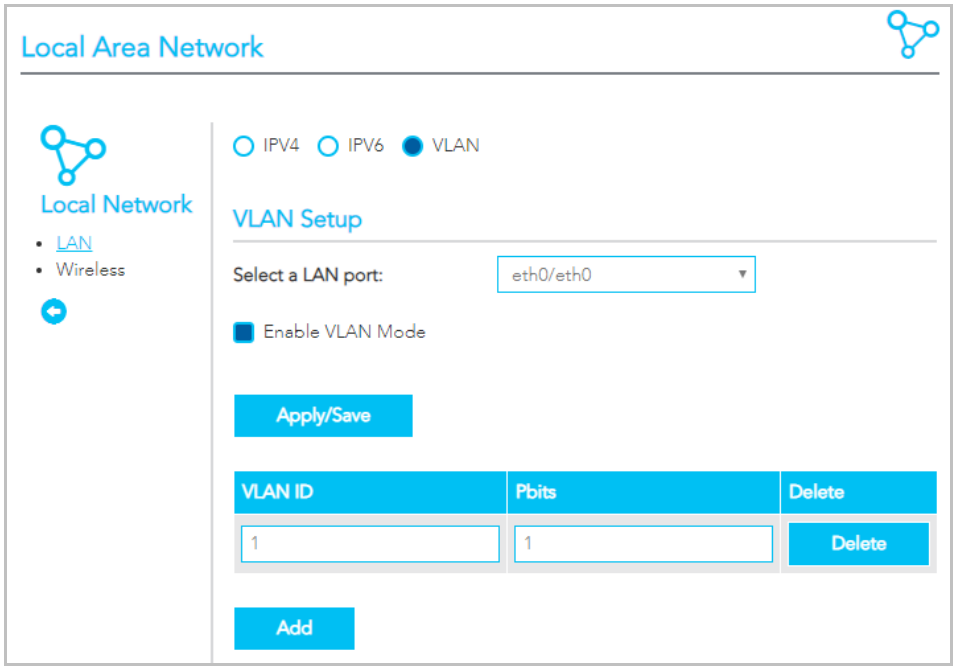
ITEM	DEFINITION
Auto-Configuration *(continued)*	When **Stateful Auto-Configuration** is selected, the following additional settings appear: **Start Interface ID** – Enter the start address for the DHCP IP Address pool. **End Interface ID** – Enter the end address for the DHCP IP Address pool. **Leased Time** (**Hour**) – Assigned IP addresses will be dropped after this time period and the address may be assigned to a different device on the network. The default setting is 24 hours.
RADVD	The **Router Advertisement Daemon** (**RADVD**) is used by system administrators in stateless auto-configuration methods of network hosts on IPV6 networks. The RADVD is an open-source software product that implements link-local advertisements of IPv6 router addresses and IPv6 routing prefixes using the Neighbour Discovery Protocol (NDP) as specified in RFC 2461. The Router Advertisement Daemon is used by system administrators in stateless auto-configuration methods of network hosts on Internet Protocol version 6 networks. When IPv6 hosts configure their network interfaces, they broadcast router solicitation (RS) requests onto the network to discover available routers. The RADVD software answers requests with Router Advertisement (RA) messages. In addition, RADVD periodically broadcasts RA packets to the attached link to update network hosts. The router advertisement messages contain the routing prefix used on the link, the link Maximum Transmission Unit (MTU), and the address of the responsible default router.

LAN IPv6 Auto Configuration – *continued*

ITEM	DEFINITION
DHCP Lease Time (Hour)	Assigned IP addresses will be dropped after this time period and the address may be assigned to a different device on the network. Default is 24 hours.
MLD	Select **On** to enable **MLD** (**Multicast Listener Discovery**) snooping and select the MLD Snooping mode to use. **Standard Mode** – Allows all multicast traffic to LAN clients. **Blocking Mode** – Only allows multicast subscribed clients to receive multicast packets.
Enable MLD LAN to LAN Multicast	Select **Enable** to allow the **Multicast Listener Discovery** (**MLD**) snooping function to constrain the flooding of IPv6 multicast traffic on LANs on the router. Select **Disable** to turn this functionality off.
DHCPv6 Relay	Select **Enable** to relay DHCP messages between DHCPv6 clients and DHCPv6 servers on different IPv6 networks. The following DHCPv6 related settings are required: **DHCPv6 Server IP Address –** Enter the relay destination. **Selected WAN Interface** – Select the type of interface to be used. **Hop limit** – Set the number of hops (each time a data packet passes through a network device on its way from its source to its destination) a packet is allowed before being discarded.
Apply button	Click to save changes to your settings.

© NetComm Wireless 2021

Local Area Network – VLAN

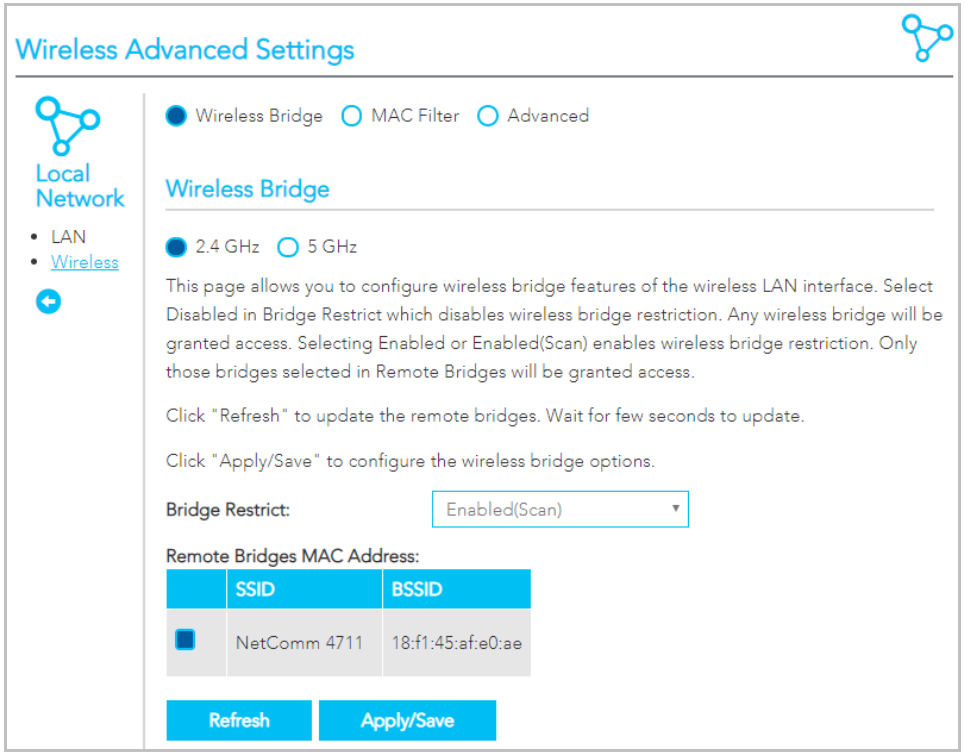


Select VLAN to configure this service.

ITEM	DEFINITION
Select a LAN port	Select the port for use by the LAN.
Enable VLAN Mode	Select if you want to configure VLAN.
VLAN ID	Enter the VLAN ID..
Pbits	Enter a value from 0-7 indicating the priority bits that dictates the priority of the VLAN.
Add button	Click to create an additional VLAN port.
Remove button	Select the ☑ checkbox in the **Remove** column for each of the VLAN setups you want to permanently delete and then click the **Remove** button.
Apply/Save button	Click to save changes to your settings and refresh the current display.

© NetComm Wireless 2021

Wireless Advanced Settings – Wireless Bridge



Wireless Bridge allows you to configure the router's access point as a Wireless Distribution Service (WDS).

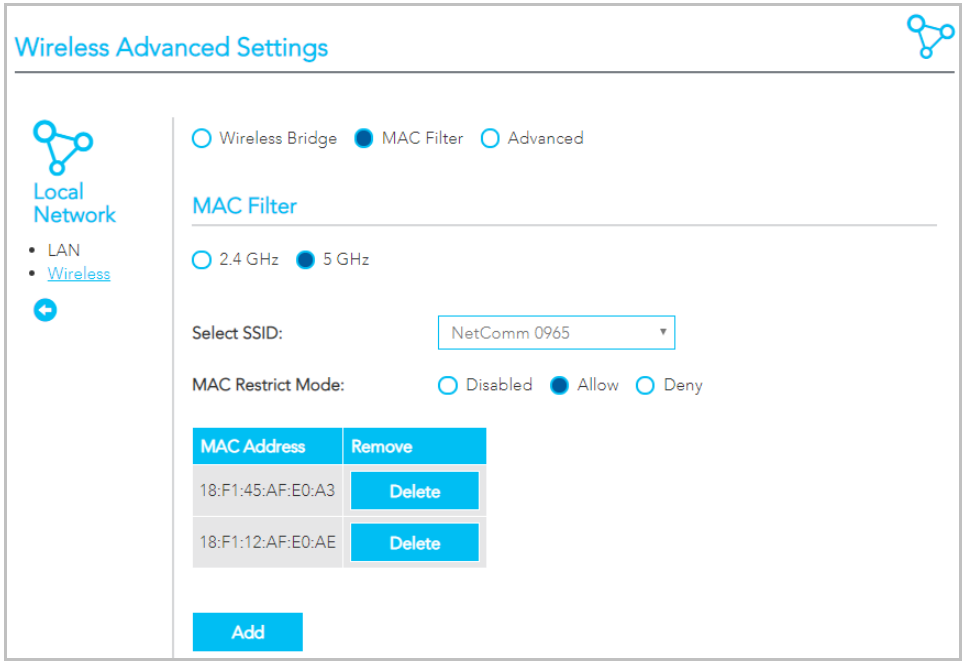
Select **Wireless Bridge** to configure this service.

ITEM	DEFINITION
Select a frequency	Select **2.4GHz** or **5GHz** to separately define the Wireless Bridge settings for each. Note that you must click the **Apply/Save** button before switching frequencies or the changes made to the first will be lost.
Bridge Restrict	Specify which wireless networks will be allowed to connect to the NF18ACV by using the three **Bridge Restrict** options. **Enabled** – Turns on the wireless bridge restriction. Only those bridges entered or selected in **Remote Bridges MAC Addresses** will be granted access. **Enabled (Scan)** – Use this in conjunction with the Refresh button to populate the **Remote Bridges MAC Addresses** with available bridges. **Disabled** – Turns off the wireless bridge functionality.
Remote Bridges MAC Address	If **Bridge Restrict = Enabled** enter the applicable MAC Addresses of the other wireless access points. If **Bridge Restrict = Enabled (scan)** then click the **Refresh** button to scan for available bridges. Select the bridges from the scan results table that you want to turn on.
Refresh button	Works with the **Bridge Restrict = Enabled (scan)** setting, see above. Click to update the remote bridges. Updating takes a few seconds.
Apply/Save button	Click to save changes to your settings and refresh the current display.

Note – WPA/WPA2 encryption may not be compatible with other vendors, when operating in Wireless Bridge (WDS) mode.

© NetComm Wireless 2021

Wireless Advanced Settings – MAC Filter



MAC Filter allows you to add or remove the MAC Address of devices which will be allowed or denied access to the wireless network.

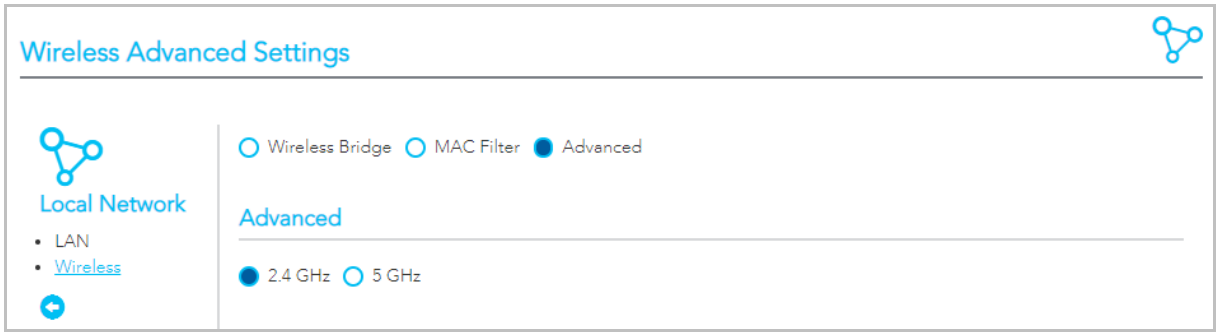
Select **MAC Filter** to configure this service.

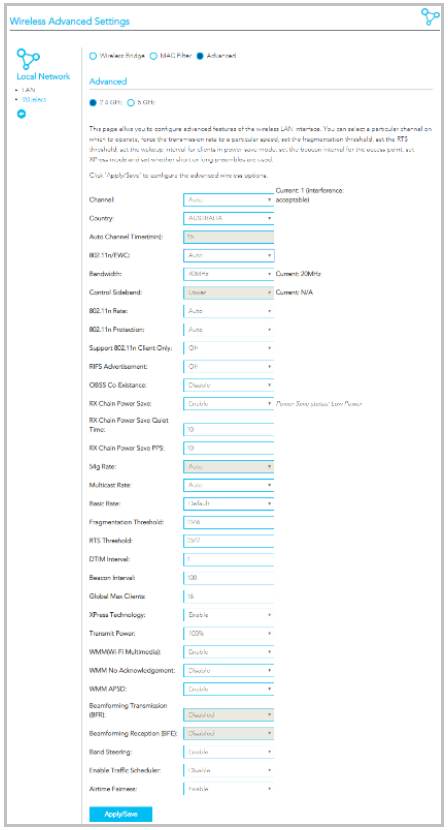
ITEM	DEFINITION
Select a frequency	Select **2.4GHz** or **5GHz** to separately define the MAC Filter settings for each. Note that you must click the **Apply/Save** button before switching frequencies or the changes made to the first will be lost.
Select SSID	Select the wireless network you wish to configure.
MAC Restrict Mode	Specify which wireless networks will be allowed to connect to the NF18ACV by using the three **Bridge Restrict** options. **Disabled** – This will keep the MAC Addresses that you have added, but turn off the MAC Filter functionality. **Allow** – Select to allow the listed MAC Addresses access to the wireless network. **Deny** – Select to prevent the listed MAC Addresses from having access to the wireless network.
MAC Address	Click the **Add** button to include additional MAC Addresses in the list. Enter MAC address in the format of: aa:bb:cc:11:22:33
Delete button	Click permanently remove the MAC Address from the list.
Add button	Click to include additional MAC Addresses in the list.

Note – While giving a wireless network some additional protection, MAC filtering can be circumvented by scanning a valid MAC and then spoofing one's own MAC into a validated one, using MAC Filtering may lead to a false sense of security.

© NetComm Wireless 2021

Wireless Advanced Settings – Advanced





On the **Wireless Advanced Settings** page select **Advanced** to access the especially technical configuration settings of the wireless LAN interface.

Setting for two Channels: 2.4 GHz or 5 GHz

Select **2.4 GHz** or **5 GHz** to separately define the advanced wireless settings for each wireless channel.

Once you have made the required changes and set the appropriate parameters, click the **Apply/Save** button to save the changes for that channel and restart the wireless connection.

Common and Specific Settings

While both channels share 22 common settings, there are other settings which apply to only one channel or the other and there are other settings which apply only when the **802.11n/EWC** setting is **Auto**.

Shared Settings

See the **Common Advanced Wireless Settings** section for details on the settings shared by both channels.

Extra settings when 802.11n/EWC set to 'Auto'

For both channels when **Auto** is selected for the 802.11n/EWC setting ten additional settings will appear on the Advanced settings page, refer to the **802.11n/EWS = Auto** section, below.

Extra setting when 802.11n/EWC set to 'Disabled'

For both channels when **Disabled** is selected for the 802.11n/EWC setting ten additional settings will appear on the Advanced settings page, refer to the **802.11n/EWS = Disabled** section, below.

Extra 2.4 GHz settings when 802.11n/EWC set to 'Disabled'

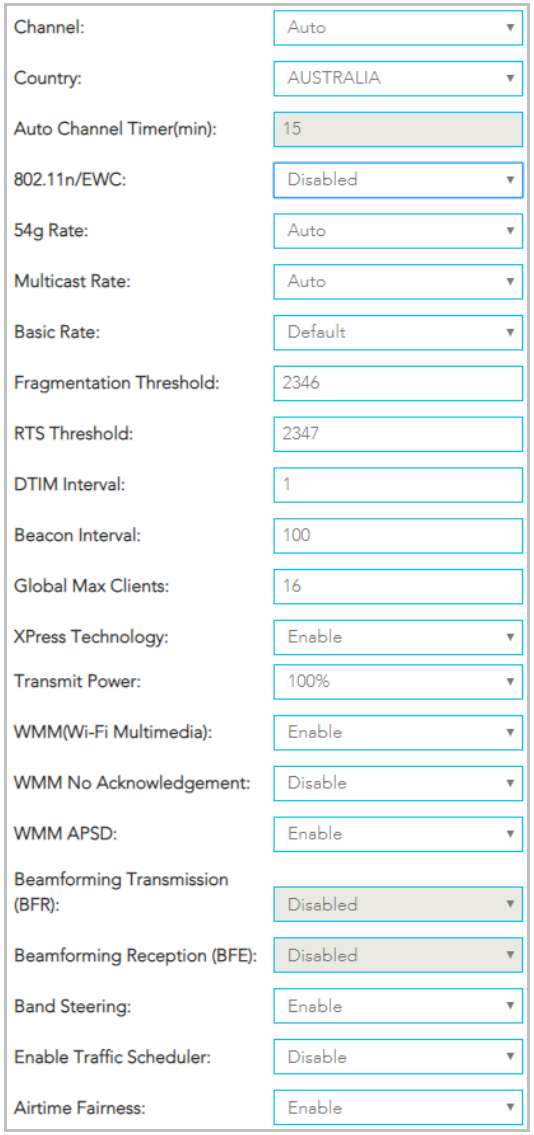
When **Disabled** is selected for the **802.11n/EWC** setting three additional settings become available only for the **2.4 GHz** channel, refer to the **2.4 GHz 802.11n/EWS = Disabled** section, below.

Extra 5 GHz settings

Regardless of the **802.11n/EWC** setting, the **5GHz** channel has six additional settings, refer to **Extra 5 GHz settings**, below.

© NetComm Wireless 2021

Common Advanced Wireless Settings



The following wireless settings are always available regardless of channel and regardless of the **802.11n/EWC** setting.

ITEM	DEFINITION
Channel	Select the appropriate channel to correspond with your network settings. All devices in your wireless network must use the same channel in order to work correctly. This router supports auto channelling functionality (default setting). The **Current:** channel number, together with the current level of detected interference, will be displayed on the right
Country	Select your country from the drop down menu.
802.11n/EWC	Select **802.11n/EWC (Enhanced Wireless Consortium)** functionality to be either: **Disabled** or **Auto** This setting, depending on the channel, can add or remove additional settings, see the next four sections of this manual for more information.
54g Rate	Allows you to specify the maximum bandwidth of the 802.11g network.
Multicast Rate	Select the multicast transmission rate in Mbps for the network. The rate of data transmission should be set depending on the speed of your wireless network. Available settings are: **Auto**, **6**, **9**, **12**, **18**, **24**, **36**, **48**, **54** Select **Auto** to have the Router automatically use the fastest possible data rate and enable the **Auto-Fallback** feature. **Auto-Fallback** will negotiate the best possible connection speed between the Router and a wireless client. The default value is **Auto**.
Basic Rate	Select the basic transmission rate ability for the AP.
Fragmentation Threshold	Packets that are larger than this threshold are fragmented into multiple packets. Increase the fragmentation threshold if you encounter high packet error rates. Do not set the threshold too low, since this can result in reduced networking performance. The default setting is: 2346
RTS Threshold	The RTS Threshold is the minimum size in bytes for which the **Request to Send/Clear to Send** (RTS/CTS) channel contention mechanism is used. The router sends RTS frames to a particular receiving station and negotiates the

© NetComm Wireless 2021

Common Advanced Wireless Settings – *continued*

ITEM	DEFINITION
RTS Threshold *Continued*	sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. The RTS Threshold value should remain at its default setting (which is the maximum value): 2347 In a network with significant radio interference or large number of wireless devices on the same channel, reducing the RTS Threshold might help in reducing frame loss.
DTIM Interval	A DTIM (Delivery Traffic Indication Message) is a countdown informing clients of the next window for listening to broadcast and multicast messages. Enter a value between 1 and 255 seconds for the DTIM interval between messages.
Beacon Interval	A beacon is a packet of information that is sent from a connected device to all other devices where it announces its availability and readiness. A beacon interval is the period of time (sent with the beacon) which will elapse before sending the beacon again. The beacon interval may be adjusted in milliseconds (ms). The default (100 ms) is recommended.
Global Max Clients	Limits total number of simultaneously connected clients.
XPress Technology	Select **Enable** to turn on this is special frame-bursting accelerating technology for IEEE802.11g. The default is **Enable**.
Transmit Power	Select: **20%**, **40%**, **60%**, **80%** or **100%** The Power level sets the strength of the wireless signal that the gateway transmits. If you live in an area where your wireless signal could overlap with other wireless networks

Common Advanced Wireless Settings – *continued*

ITEM	DEFINITION
Transmit Power *Continued*	use a lower setting in order to reduce the amount of interference. The default setting is **100%.**
WMM (WiFi Multimedia)	WMM (WiFi Multimedia) maintains the priority of audio, video and voice, over other applications which are less time critical by ensuring that data from applications that require better throughput and performance are inserted in queues with higher priority. Select whether WMM is: **Auto**, **Disabled** or **Enabled** Before you disable WMM, you should understand that all QoS queues or traffic classes relate to wireless do not take effects.
WMM No Acknowledgement	This setting is only available when **WMM (WiFi Multimedia)** is set to **Auto** or **Enabled.** By default, the 'Ack Policy' for each access category is set to **Disabled**, meaning that an acknowledgement packet is returned for every packet received. This provides a more reliable transmission but increases traffic load, which decreases performance. Select **Enabled** to turn off the acknowledgement request. This can be useful for Voice transmissions where speed of transmission is important and packet loss is tolerable to a certain degree.
WMM APSD	This setting is only available when **WMM (WiFi Multimedia)** is set to **Auto** or **Enabled.** **WMM APSD** (Automatic Power Save Delivery) is an improvement to the 802.11e amendment adding advanced power management functionality to WMM. Select **Enabled** to ensure very low power consumption.

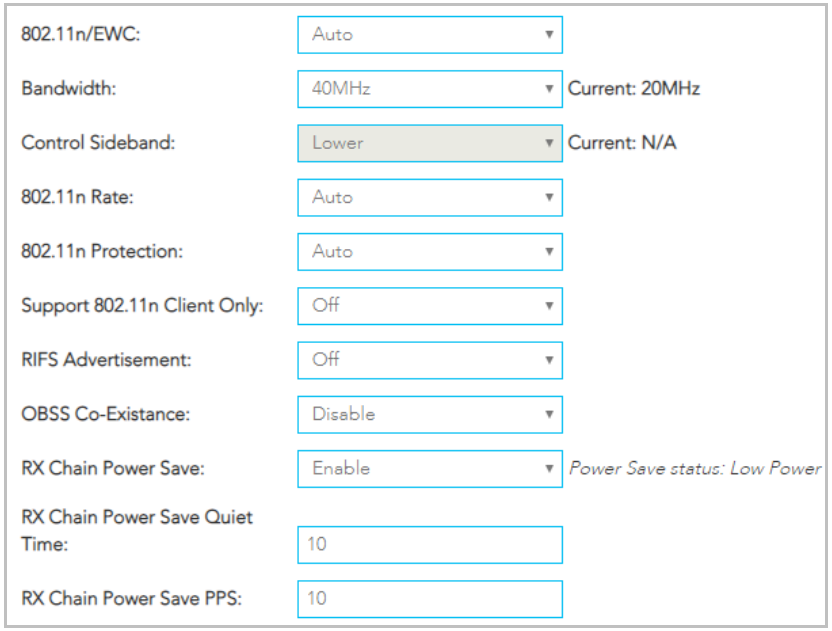
© NetComm Wireless 2021

Common Advanced Wireless Settings – *continued*

ITEM	DEFINITION
Beamforming Transmission (BFR)	Select **SU** (Single-User) **BFR** to concentrate the transmission signal at the gateway location. This results in a better signal and potentially better throughput.
Beamforming Reception (BFE)	Select **SU** (Single-User) **BFE** to concentrate the transmission signal at the gateway location.
Band Steering	Select **Enabled** to detect if the client has the ability to use two bands. When enabled, the less-congested 5GHz network is selected (by blocking the client's 2.4GHz network).
Enable Traffic Scheduler	Select **Enabled** to allow scheduling of traffic to improve efficiency and increase usable bandwidth for some types of packets by delaying other types.
Airtime Fairness	Select **Enabled** to allow the gateway to manage the receiving signal with other devices.

Extra Advanced Wireless Settings when: 802.11n/EWS = Auto

For either the 2.4 GHz or 5GHz channel, if the **802.11n/EWS** setting is set to **Auto** the following ten additional settings will appear on the **Advanced** settings page.



The following wireless settings are always available regardless of channel and regardless of the **802.11n/EWC** setting.

ITEM	DEFINITION
802.11n/EWC	When set to **Auto**, the settings in this table will appear.
Bandwidth	Select the bandwidth for the network: **20MHz**, **40MHz**, or **80MHz** In high wireless activity/interference environment, reduce the bandwidth to **20MHz** for greater stability. The **Current:** bandwidth will be displayed on the right.
Control Sideband	If you select **20MHz** in both bands you cannot select sideband and this drop down menu is disabled. When you select the **40MHz** bandwidth in both bands and manually select a channel, the following options will appear: **Lower** or **Upper** When you select **Lower** as the control sideband, the channel is 1~7. When **Upper**, the channel is 5~11. The **Current** control sideband (upper or lower) will be displayed on the right.

© NetComm Wireless 2021

Advanced Wireless Settings: 802.11n/EWS = Auto – *continued*

ITEM	DEFINITION
802.11n Rate	Select the transmission rate for the network. The rate of data transmission should be set depending on the speed of your wireless network. You can select from a range of transmission speeds in the drop-down menu, or you can select **Auto** to have the Router automatically use the fastest possible data rate and enable the **Auto-Fallback** feature. **Auto-Fallback** will negotiate the best possible connection speed between the router and a wireless client. The default value is **Auto**.
802.11n Protection	The 802.11n standards provide a protection method so 802.11b/g and 802.11n devices can co-exist in the same network without "speaking" at the same time.
Support 802.11n Client Only	When **On** is selected, only stations that are configured in 802.11n mode are supported. **Off** will enable support for clients that are not 802.11n.
RIFS Advertisement	Reduced Interframe Space (RIFS) is a new feature introduced in 802.11n to improve efficiency.
OBSS Co-Existence	**Enable** OBSS (Overlapping BSS) and the router automatically changes the channel width from 40Mhz to 20Mhz to avoid interference with other APs and then back to 40Mhz, if possible
RX Chain Power Save	When the **RX Chain Power Save** feature is enabled one of the receive chains will be turned off to save power. The current **Power Save status:** (**Full Power** or **Low Power**) will be displayed on the right. The default setting is: **Enabled**

Advanced Wireless Settings: 802.11n/EWS = Auto – *continued*

ITEM	DEFINITION
RX Chain Power Save Quiet Time	This is the time interval (seconds) to wait before going into the power save model. To set the quiet time, **802.11n/EWC**, see first item in this section above, must be set to **Auto** and **RX Chain Power Save**, see last setting, must be set to: **Enable** Range in seconds: 0 to 2147483647
RX Chain Power Save PPS	When **RX Chain Power Save** is enabled, set the **RX Chain Power Save PPS** to the maximum number of packets-per-second (PPS) that the WLAN interface should process for during **RX Chain Power Save Quiet Time** before the **RX Chain Power Save** feature activates itself.

Extra Advanced Wireless Settings when: 802.11n/EWS = Disabled

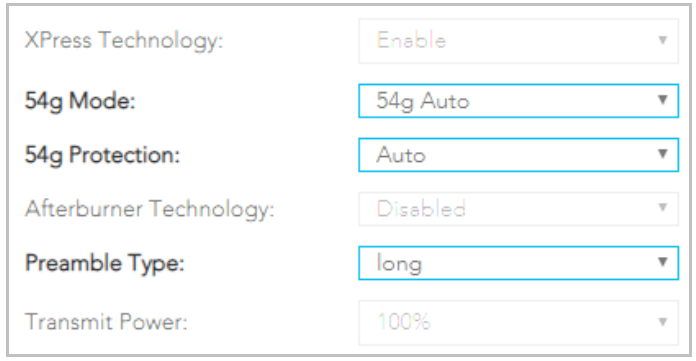
For either the 2.4 GHz or 5GHz channel, if the **802.11n/EWS** setting is set to **Disabled** one additional setting appears on the **Advanced** settings page.

ITEM	DEFINITION
Afterburner Technology	Afterburner is a 125HSM (125 High Speed Mode) speed enhancement technology for 802.11g/b

© NetComm Wireless 2021

Extra Advanced Wireless Settings for 2.4 GHz only when: 802.11n/EWS = Disabled

When **Disabled** is selected for the **802.11n/EWC** setting three additional settings become available only for the **2.4 GHz** channel.

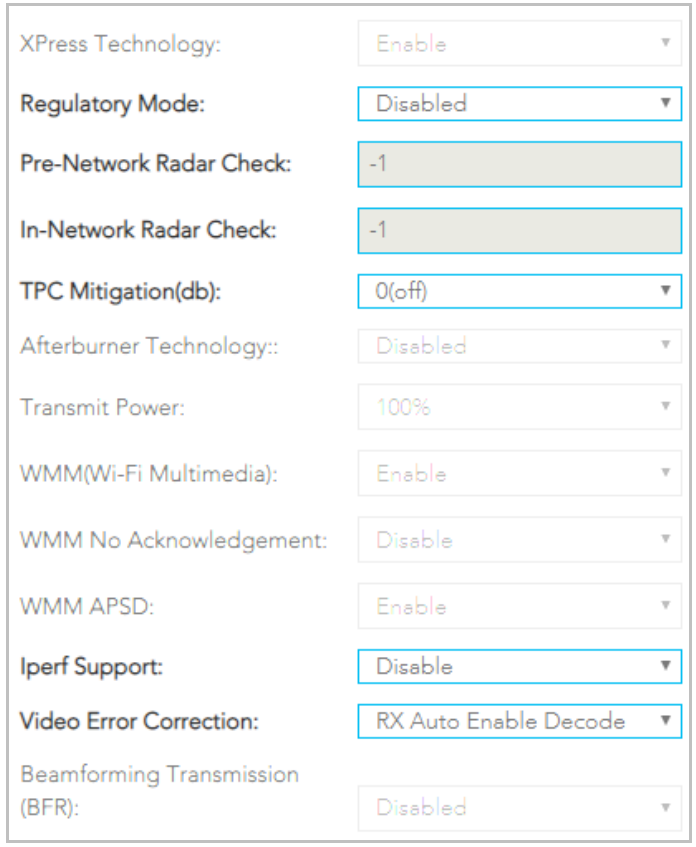


ITEM	DEFINITION
54g Mode	For **54g mode**, you can select **Automatic**, **802.11g Performance**, or **802.11b Only**. This option is only visible when **802.11n mode** is set as **Disabled**.
54g Protection	When set to **Automatic**, the gateway will use RTS/CTS to improve the 802.11g performance in 802.11 mixed environments. When set to **Disabled**, the 802.11g performance will be maximized under most conditions while the other 802.11 modes (802.11b, etc.) will be secondary. This option is only visible when **802.11n mode** is set as **Disabled**.
Preamble Type	If you are not using any 802.11b devices in your network, set the Preamble Type to **Short** for optimum performance. The **Long** Preamble type should be used when both 802.11g and 802.11b devices exist on your network. Preamble Type defines the length of the Cyclic Redundancy Check (CRC) block for communication between the gateway and wireless clients. The preamble consists of the Synchronization and Start Frame Delimiter (SFD) fields. The sync field is used to indicate the delivery of a frame to wireless stations, to measure frequency of the radio signal, to perform corrections if needed. The SFD at the end of the Preamble is used to mark the start of the frame.

© NetComm Wireless 2021

Extra Advanced Wireless Settings for 5 GHz only

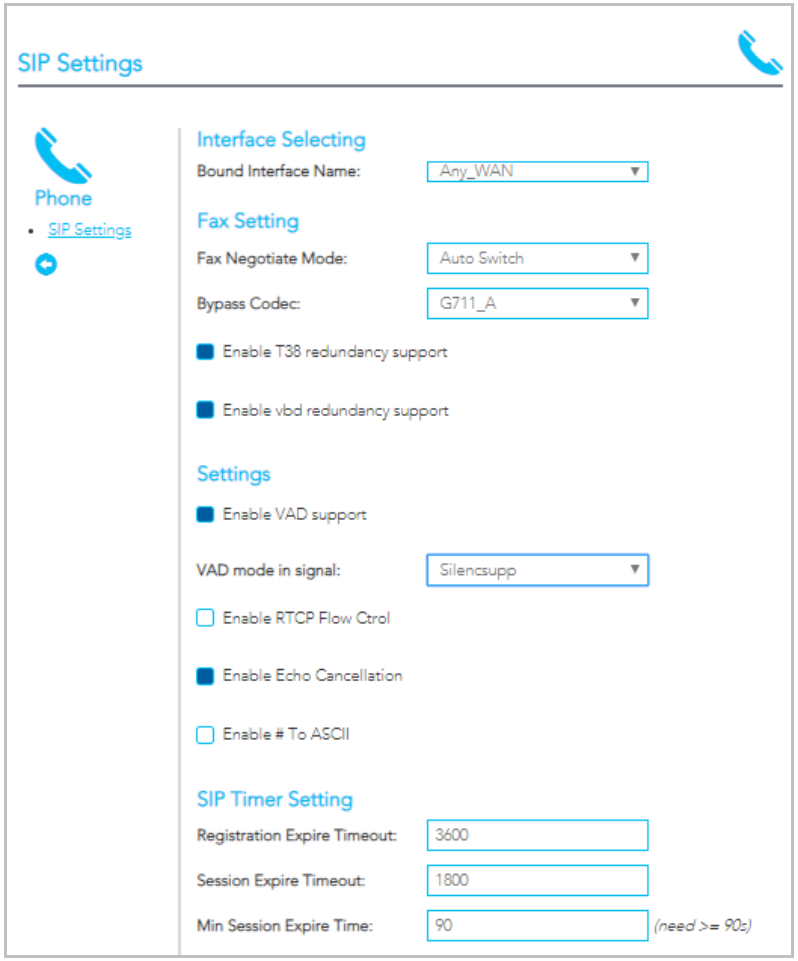
Regardless of the **802.11n/EWC** setting (it can be **Auto** or **Disabled**), the **5GHz** channel has six additional settings.



ITEM	DEFINITION
Regulatory Mode	Select: **Disabled**, **802.11h** or **802.11d** The default is **Disabled**.
Pre-Network Radar check	Checks to avoid channels that contain radar systems. Available only in the 802.11h Regulatory Mode, see last setting. The default is: **-1** Enter the number of seconds to check for radar on a channel before establishing a network. Used for 802.11h only.
In-Network Radar check	Checks to avoid channels that contain radar systems. Enter the number of seconds to check for radar when switching to a new channel after a network has been established. Used for 802.11h only.
TPC Migration (db)	Enter the Transmitter Power Control (TPC) mitigation setting in decibels (db) as : **0(off)**, **2**, **3** or **4** The default is **0(off)**
Iperf Support	Select **Enable** if you want the NF18ACV to run the IPerf server application used by your ISP to measure network speeds. Only enable if instructed to do so by your ISP. Default setting: **Disable**
Video Error Correction	Settings include: RX Auto Enable Decode, RX Disable Decode, TX Enable Sequencer, TX Enable Sequencer (IPTV Mode), TX Enable Encode, TX Enable Encode (IPTV Mode)

© NetComm Wireless 2021

Phone – SIP Settings



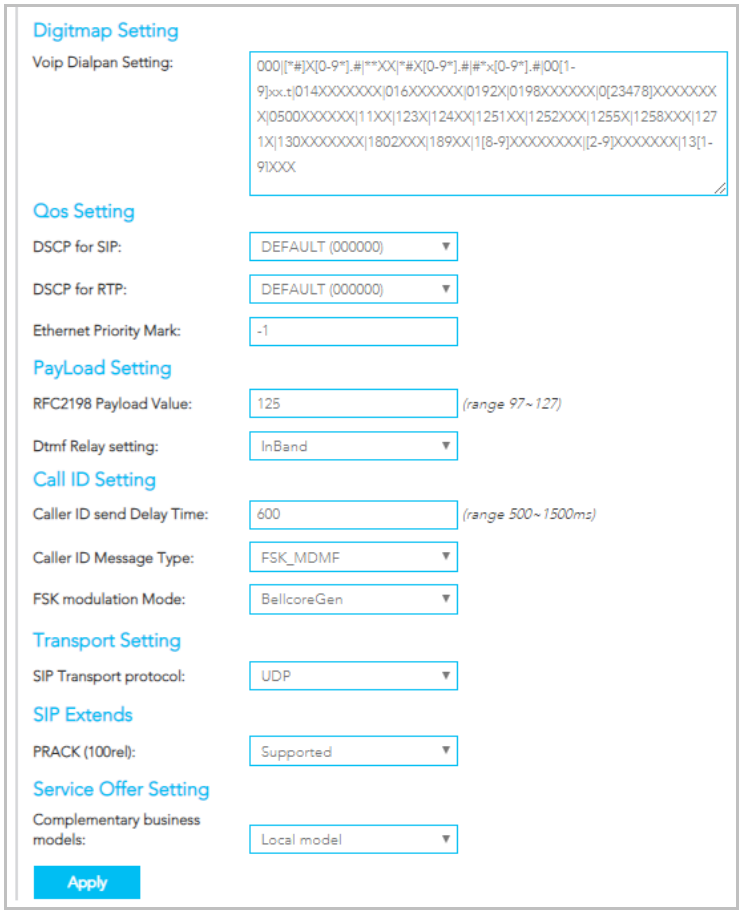
SIP Settings

The **Phone – SIP Settings** page shows detailed information about your VoIP phone configuration.

ITEM	DEFINITION
Interface Selecting	
Bound Interface Name	Select the correct Bound Interface Name from your Internet WAN Service Connection or you can select or **Any_WAN**
Fax Setting	
Fax negotiate mode	Select: **Auto Switch**, **Negotiate** or **V.152**
Bypass Codec	Select: **G711_A**, **G711_MU** or **T.38**
Settings	
Enable T38 Redundancy Support	Select this function if you wish to send or receive faxes via VoIP and have a fax machine capable of using the T38 fax over VoIP protocol.
Enable VAD redundancy support	Enables the Voice Activated Detection (VAD) function of the modem. When enabled, no data is transmitted during periods of silence or low volume, reducing the data usage.
VAD mode in signal	Select: **None**, **Silencsupp** or **Annexa|Annb|VAD**
Enable RTCP Flow Control	RTP Control Protocol (RTCP) provides out-of-band statistics and packet control information for an RTP session.
Enable Echo Cancellation	Enable to improve voice quality and network capacity by preventing echo from being created or removing it after it is already present.
Enable # to ASCII	Select convert phone number to ASCII format.
SIP Timer Setting	
	Set custom Timeout and Expiration times or accept the defaults.

© NetComm Wireless 2021

Phone – SIP Settings – *continued*



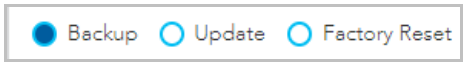
ITEM	DEFINITION
Digitmap Setting	The **VoIP Dialplan** specifies how to interpret digit sequences dialled by the user, and how to convert those sequences into an outbound dial string.
QoS Setting	
DSCP for SIP	Select a specific **Differentiated Services Code Point** (**DSCP**) setting for SIP or accept the default: DEFAULT(00000)
DSCP for RTP	Select a specific **Differentiated Services Code Point** (**DSCP**) setting for RTP or accept the default: DEFAULT(00000)
Ethernet Priority Mark	The default is: –1
Payload Setting	
RFC2198 Payload Value	Enter a value between **97** to **127**, or accept the default of **125**
Dtmf Relay setting	Select an appropriate **Dual-tone Multi-frequency Relay Settings: InBand** (default, used when the other two are not available), **RFC2833** or **SIPInfo**
Call ID Setting	
Caller ID send Delay Time	Enter a value in milliseconds (ms) between **500** to **1500ms**, or accept the default of **600ms**
Caller ID Message Type	Select a **Caller ID Message Type: FSK_SDMF**, **FSK_MDMF** or **DTMF**
FSK modulation Mode	Select the optimal Frequency-shift keying modulation mode: **BellcoreGen**, **V23Gen** or **V23UK**
Transport Setting	Select the appropriate **SIP Transport protocol**: **UDP** or **TCP**
SIP Extends	Select the appropriate **PRACK (100rel)** setting: **Supported** (default), **Disabled** or **Required**
Service Offer Setting	Select your **Complementary business model**: **Local**, **Server**, **IMS** or **undefined**
Apply button	Click to apply the new settings.

© NetComm Wireless 2021

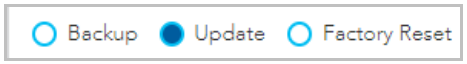
System

The **System** settings relate to your personalised settings on your NF18ACV. Use the tools in **Configurations** to make a back-up copy of your current settings or to retrieve and apply previously backed-up settings. Alternatively you can reset all settings to the factory default settings.

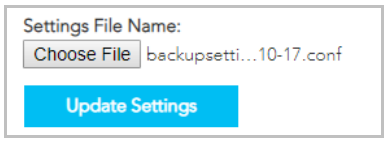
Settings



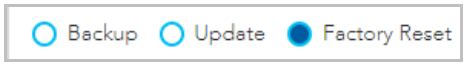
To create a file containing all of your local NF18ACV settings select **Advanced > System > Settings**, then select **Backup** and then click the **Backup Settings** button.
The backup configuration file will be saved to your browser's designated **Downloads** folder.
The backup configuration file will have a **`.conf`** file extension.
The default filename is: **`backupsettings.conf`**
We recommend that you give you backup settings file a meaningful name.



To use a previously saved backup settings file to reinstate those settings on your PC select **Advanced > System > Settings**, then select **Update**.
Click the **Choose File** button and select a previously saved backup settings file (file extension **`.conf`**).



Then click the **Update Settings** button to over-write the current settings with the previously saved ones.



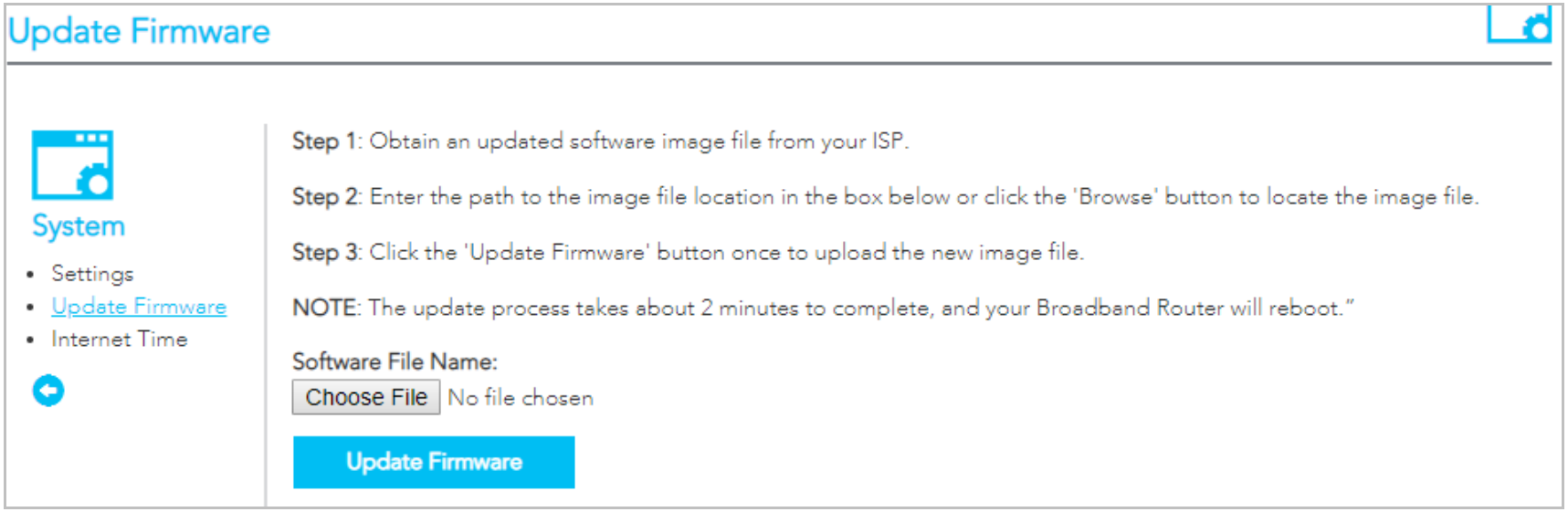
To restore the NF18ACV to its factory default settings, select **Advanced > System > Settings**, then select **Factory Reset**.
Click the **Restore Default Settings** button.
A confirmation dialog will appear, click **OK** to restore the factory settings.

Note – All factory settings will be applied except your **Username** and **Password** which will remain as per any personal setting you have made.

© NetComm Wireless 2021

Update Firmware

From time to time NetComm will release new versions of the firmware to provide additional services or improve existing functionality.



Note – In Step 1 you can also get the software image file from NetComm.

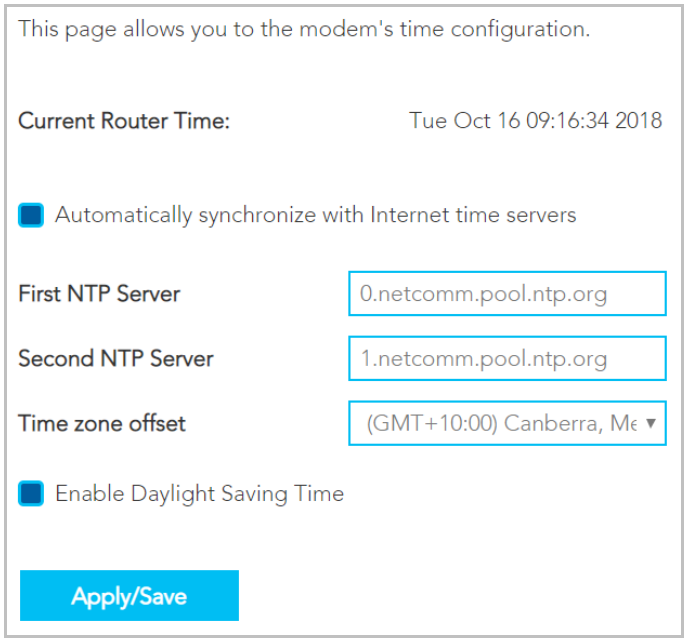
© NetComm Wireless 2021

Internet Time

Select **Advanced > System > Internet Time** to show the **Current Router Time**.

The tools on this page allow you to use the Network Time Protocol (NTP) to configure specific time servers to synchronise time, set local time zones, etc. for the modem.

The time servers are correct to within a few milliseconds of Coordinated Universal Time (UTC), also known as Greenwich Mean Time (GMT).



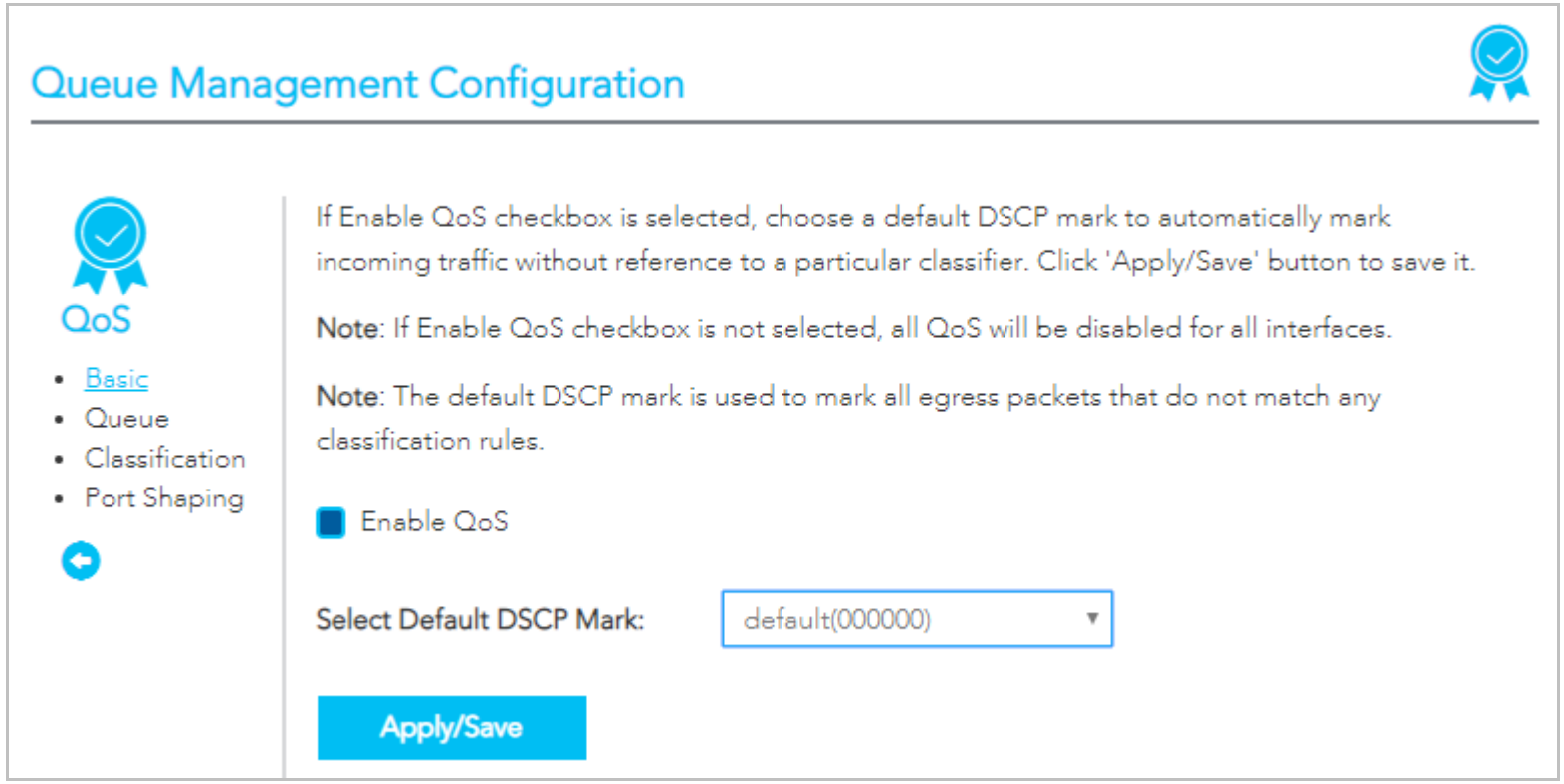
ITEM	DEFINITION
Current Router Time	The current router time as per the settings in this page.
Automatically Synchronize	The router will periodically poll the designated NTP servers and confirm the correct time.
First NTP Server	Enter the address of your primary Network Time Protocol (NTP) server.
Second NTP Server	Enter the address of your secondary Network Time Protocol (NTP) server (optional, but recommended).
Time Zone Offset	Select your preferred time zone. Normally this will be the location of the device.
Enable Daylight Savings Time	Coordinated Universal Time or Universal Time Coordinated (UTC) is not adjusted for daylight saving time. To display the **Current Router Time** in the actual local time where Daylight Savings Time in in effect, select **Enable Daylight Savings Time.**
Apply/Save button	Click to apply any changes.

© NetComm Wireless 2021

QoS

Basic

1 Open the **Advanced** menu and click the Basic link in the **QoS** section.



2 Select the **Enable QoS** option. It is enabled by default.

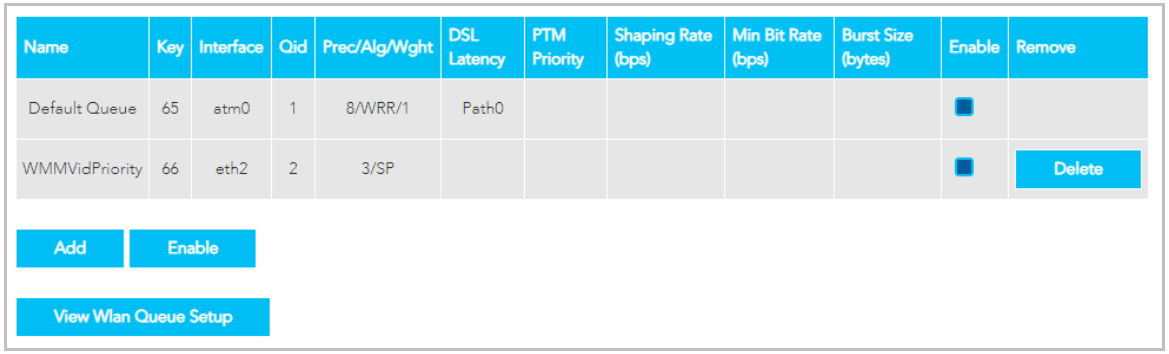
3 Select the **Default DSCP Mark** as **default(000000)**.

4 Click the **Apply/Save** button.

© NetComm Wireless 2021

Queue

Open the **Advanced** menu and click the Queue link in the **QoS** section.



ITEM	DEFINITION
Name	Add a meaningful name so that you can readily identify the queue..
Key	System-generated sequential reference number.
Interface	Select an interface for the queue. Options include: **LAN1~4** or **eth4(wan)**
Qid	Indicates the priority of the queue for the selected interface.
Prec/Alg/Wght	Indicates the Precedence , Algorithm and Weight used for calculating the priority of the queue.
DSL Latency	**Path0**(fast) or **Path1**(interleaved). This is selected while creating Interface,. The default is: **Path0**
PTM Priority	Defines how PTM traffic packets should be handled. During congestion High priority traffic gets priority over Low.
Shaping Rate (bps)	The speed you would limit the queue to in bps (bits per second) after the burst size.
Burst Size (bytes)	Set a maximum size for traffic to be sent in.
Add button	To create a new queue, click the **Add** button and define the queue in the **Add Queue** window, see next page.
Enable button	Unselect ☐ **Enable** to disable the application of a queue rule without deleting it from the list. You can then later ■ **Enable** to the queue rule without needing to redefine it.
Delete Button	To permanently remove a queue rule click the Delete button. You will be not be prompted to confirm this.
View Wlan Queue Setup	Click to open the **View WLAN Queue Setup** page, see next page.

Number of Queues

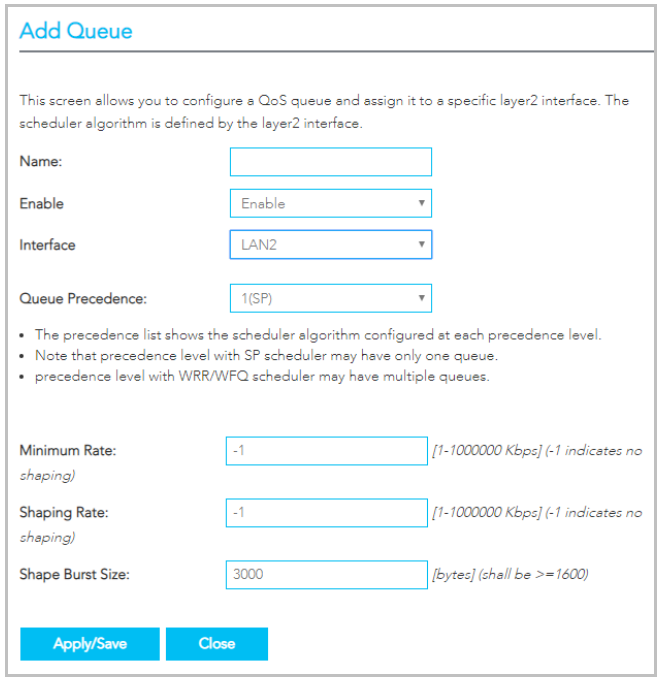
The maximum number of queues that can be defined depends on the type of connection:

- In **ATM mode**, a maximum of 16 queues can be configured.
- In **PTM mode**, a maximum of 8 queues can be configured.
- For each **Ethernet** interface, there is a maximum of 4 queues that can be configured.
- For each **Ethernet WAN** interface, there is a maximum of 8 queues that can be configured.

© NetComm Wireless 2021

Add Queue

To define a new queue, click the **Add** button on the **QoS Queue Setup** page.
Define the queue's settings in the **Add Queue** page.



All of the settings were previously described in the **QoS Queue Setup** page description, see page 84.

Edit Queue

To edit an existing queue, click on its **Name** and a page similar to the **Add Queue** page, see above, will display.
Enter your changes and click the **Apply/Save** button.

View WLAN Queue Setup

To view the WLAN Queue in order of priority, click the **View Wlan Queue Setup** button on the **QoS Queue Setup** page.

Name	55Key	Interface	Qid	Prec/Alg/Wght	Enable
WMM Voice Priority	1	wl0	8	1/SP	Enabled
WMM Voice Priority	2	wl0	7	2/SP	Enabled
WMM Video Priority	3	wl0	6	3/SP	Enabled
WMM Video Priority	4	wl0	5	4/SP	Enabled
WMM Best Effort	5	wl0	4	5/SP	Enabled
WMM Background	6	wl0	3	6/SP	Enabled
WMM Background	7	wl0	2	7/SP	Enabled
WMM Best Effort	8	wl0	1	8/SP	Enabled
WMM Voice Priority	33	wl1	8	1/SP	Enabled
WMM Voice Priority	34	wl1	7	2/SP	Enabled
WMM Video Priority	35	wl1	6	3/SP	Enabled
WMM Video Priority	36	wl1	5	4/SP	Enabled
WMM Best Effort	37	wl1	4	5/SP	Enabled
WMM Background	38	wl1	3	6/SP	Enabled
WMM Background	39	wl1	2	7/SP	Enabled
WMM Best Effort	40	wl1	1	8/SP	Enabled

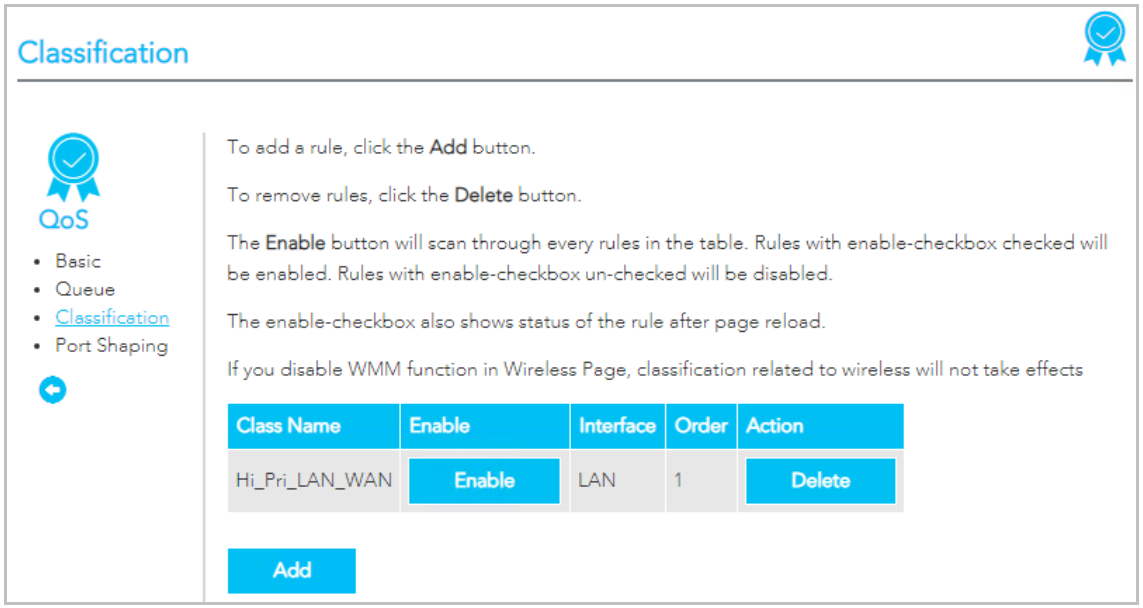
© NetComm Wireless 2021

Classification

The NF18ACV allows you to create traffic class rules to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS (type of service) byte.

A traffic class rule consists of a class name and at least one condition. All of the specified conditions in a classification rule must be satisfied for the rule to take effect.

To view your existing class rules, or to create a new one, open the **Advanced** menu and click the Classification link in the **QoS** section.



Traffic classification rule list

The list is displayed in a table displaying the user defined **Class Name**, whether or not it is enabled, its **Interface** and a system-defined **Order** number.

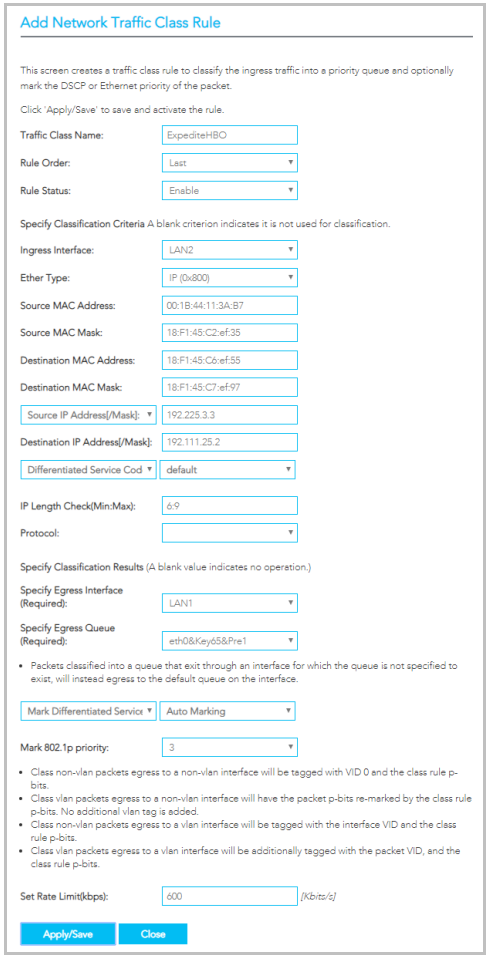
To edit a QoS Classification rule, click on its Class Name. Enter your changes and click the **Apply/Save** button.

To permanently remove a rule, click its **Delete** button.

To create a new rule, click the **Add** button and define the rule in the **Add Network Traffic Class Rule** page, see next section.

© NetComm Wireless 2021

ITEM	DESCRIPTION
Traffic Class Name	Enter a name (max 15 characters) reflecting the priority of the defined rule, for example: **PC1HighPriority**
Rule Order.	Leave as **Last**.
Rule Status	Set to **Enable**.
Class Interface	Set the Class Interface according to how the device connects to the router. Options are: **LAN, Wireless, Local** and **USB**
Ether Type	Set the **Ether Type** to **IP(0x800)**. Other options include **ARP(0x8086), Ipv6(0x86DD), PPPoE_DISC(0x8863), 8865(0x8865), 8866(0x8866), 8021Q(0x8100).**
Source MAC Address	Enter the Source MAC Address of the device, the unique 12 character signature with every 2 characters separated by a colon(:), that you previously entered to reserve the device's IP address.
Source IP Address	Enter the Source IP Address of the device that you previously entered into the Static IP Lease List, in the range of 192.168.1.x
Destination MAC Address	Enter a Destination MAC Address if the connection is to a single device. This is useful for VPN connections. If you wish the destination MAC address to be any address leave the field blank.
Destination IP Address	Enter a Destination IP Address if the connection is to a single device. This is useful for VPN connections. If you wish the destination IP address to be any address leave the field blank.
Destination Subnet Mask	Enter a Destination Subnet Mask if you have entered a Destination MAC address and Destination IP address. This would normally be **255.255.255.0** unless your system administrator advises otherwise. If you have not entered a Destination MAC or IP address leave the field blank.
Differentiated Service Code Point (DSCP)	Set the Differentiated Service Code Point (DSCP) Check to **EF(101110)**.
Protocol	Set the Protocol to **TCP**. Other options include **UDP, ICMP** or **IGMP**.
Assign Classification Queue	Set Priority 1 for the highest priority with priority 3 being the lowest. Priority 2 is in between
Mark Differentiated Service Code Point (DSCP)	Set Mark Differentiated Service Code Point (DSCP) as AF11(001010)
Mark 802.1p Priority	The scale **0~7**, with **6** and **7** are reserved for networking performance. Set **5** as the highest priority, set **0** for lowest priority.



© NetComm Wireless 2021

Apply/Save button	Click to save the new **Network Class Traffic Rule.**

Port Shaping

QoS port shaping supports traffic shaping of Ethernet interface, limiting continuous network speed without affecting burst traffic.

To access the port shaping tools, open the **Advanced** menu and click the Port Shaping link in the **QoS** section.

For example, when your browser loads a web page, this is a type burst traffic as the browser aims to fetch small amounts of data quickly and then leaves the connection idle. Limiting port speed alone will affect the speed at which web pages are loaded, causing users to feel that their overall internet connection speed is slow.

By configuring QoS Port Shaping with a Burst size, web pages are allowed to load using the burst speed, while continuous traffic such as file downloads will be shaped at a lower rate.

Calculation of shaping rate and burst size

To identify the best way to configure shaping rate and burst size, consider the equation below:

```
Time window = Burst size / rate
```

For example. if a 200 Mbps bandwidth limit is configured with a 5 ms burst window, the calculation becomes 200 Mbps x 5 ms = 125 Kbytes, which is approximately eighty-three (83) 1500-byte packets.

If the 200 Mbps bandwidth limit is configured on a Gigabit Ethernet interface, the burst duration is 125000 bytes / 1 Gbps = 1 ms at the Gigabit Ethernet line rate.

Result

After 1ms of burst data at full gigabit speed, the speed is shaped to 200Mbps.

ITEM	DEFINITION
Interface	Identifies the interface type.
Type	Identifies the connection type.
Shaping Rate (Kbps)	The speed you would limit the port to in Kbps (Kilobits per second) after the burst size.
Burst Size (bytes)	Burst size should be more than 10x MTU (>=15000 bytes).
Apply/Save button	Click the **Apply/Save** button to save and apply your changes.

Note – 1 byte = 8 bits

© NetComm Wireless 2021

Security

The NF18ACV supports IP Filtering which allows you to set up rules to control incoming and outgoing Internet traffic.

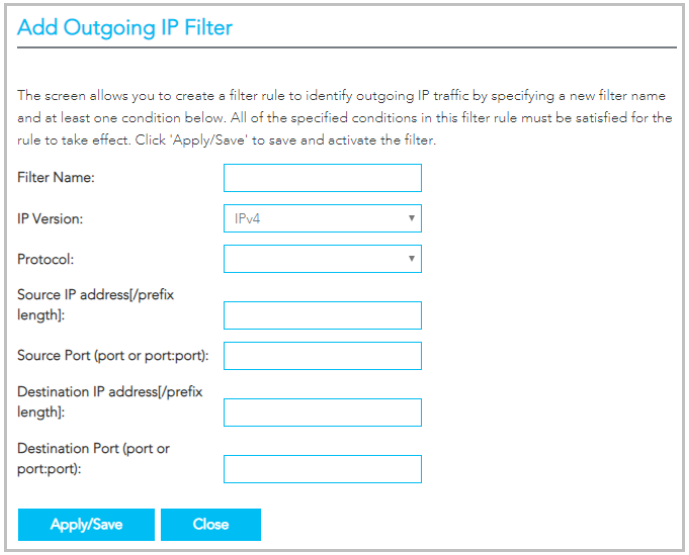
The router provides two types of IP filtering: **Outgoing IP Filtering** and **Incoming IP Filtering**

Outgoing IP Filtering

By default, the router allows all outgoing Internet traffic from the LAN but by setting up Outgoing IP Filtering rules, you can block some users and/or applications from accessing the Internet.

The **Outgoing IP Filtering Setup** page contains a table of all currently defined outgoing IP filters and their details.

To create a new outgoing IP filter, click **Add**. The **Add-Outgoing IP Filter** page will be displayed.



Filters must contain at least one condition.
A rule will only be effective if all the conditions specified in the filter rule are satisfied.

ITEM	DEFINITION
Filter Name	Enter a name to identify the filtering rule. The name can have no spaces or special characters.
IP Version	Select the IP version to apply the filter to: **IPv4** or **IPv6**
Protocol	Select the protocol type to block: **UDP/TCP, UDP**, **TCP** or **ICMP**
Source IP Address(/prefix length)	Enter the IP Address of the host on the LAN to be blocked. Note that you must also enter the prefix length and not the subnet mask.
Source Port (port or port:port)	Enter the port number used by the application to be blocked or a range of ports that the application to be blocked would be using.
Destination IP Address(/prefix length)	Enter the IP Address of the Remote Server/host to which connections should be blocked. Note that you must also enter the prefix length and not the subnet mask.
Destination Port (port or port:port)	Enter the destination port number used by the application to be blocked or a range of ports that the application to be blocked would be using.
Apply/Save button	Click to save and activate the new filter. The new rule will then be displayed in the **Outgoing IP Filtering Setup** table list.

To edit an Outgoing IP Filter rule, click on its Filter Name. Enter your changes and click the **Apply/Save** button.

To delete a rule from the **Outgoing IP Filtering Setup** table click its **Delete** button.

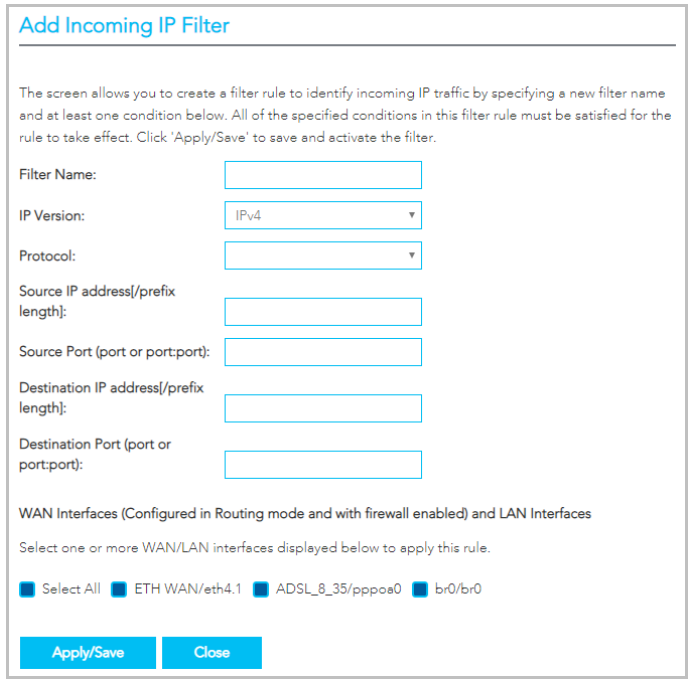
© NetComm Wireless 2021

Incoming IP Filtering

When the firewall is enabled on a WAN or LAN interface, all incoming IP traffic is BLOCKED. However, some IP traffic can be ACCEPTED by setting up 'incoming' filters.

The **Incoming IP Filtering Setup** page contains a table of all currently defined Incoming IP filters and their details.

To create a new Incoming IP filter, click **Add**. The **Add-Incoming IP Filter** page will be displayed.



Filters must contain at least one condition.

A rule will only be effective if all the conditions specified in the filter rule are satisfied.

ITEM	DEFINITION
Filter Name	Enter a name to identify the filtering rule. The name can have no spaces or special characters.
IP Version	Select the IP version to apply the filter to: **IPv4** or **IPv6**
Protocol	Select the protocol type to block: **UDP/TCP**, **UDP**, **TCP** or **ICMP**
Source IP Address(/prefix length)	Enter the IP Address of the Remote Server/Host from which to allow connections. Note that you must also enter the prefix length and not the subnet mask.
Source Port (port or port:port)	Enter the port number used by the application to allow or a range of ports that the application to be allowed would be using.
Destination IP Address(/prefix length)	Enter the IP Address of the Host on the LAN to which connections should be allowed. Note that you must also enter the prefix length and not the subnet mask.
Destination Port (port or port:port)	Enter the destination port number used by the application to allow or a range of ports that the application to be allowed would be using.
WAN/LAN Interfaces (Configured in Routing mode and with firewall enabled)	Select one or more (or **Select All**) WAN/LAN interfaces displayed below to apply this rule: Select All ETH WAN/eth4.1 ADSL_8_35/pppoa0 br0/br0
Apply/Save button	Click to save and activate the new filter. The new rule will then be displayed in the **Incoming IP Filtering Setup** table list.

To edit an Incoming IP Filter rule, click on its Filter Name. Enter your changes and click the **Apply/Save** button.

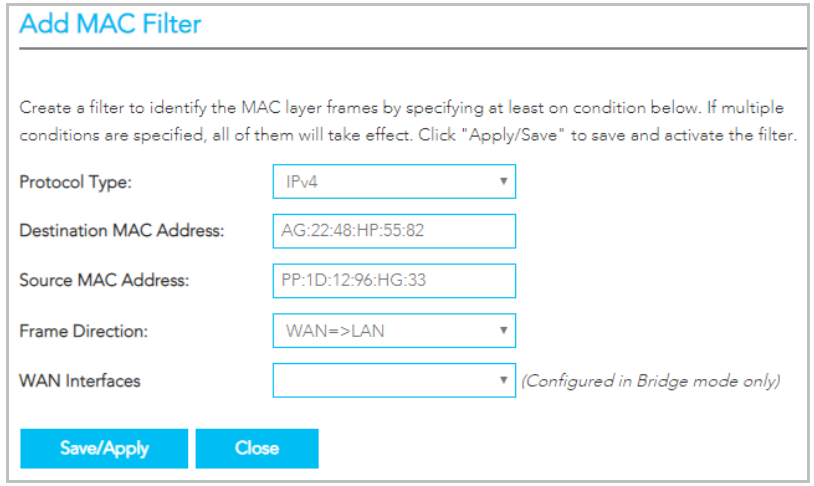
To delete a rule from the **Incoming IP Filtering Setup** table click its **Delete** button.

© NetComm Wireless 2021

MAC Filtering

The NF18ACV offers the ability to use MAC Address filtering on ATM PVCs. You can elect to block or allow connections based on MAC Address criteria. The default policy is to allow all connections.

To create a new Incoming IP filter, click **Add**. The **Add-Incoming IP Filter** page will be displayed.



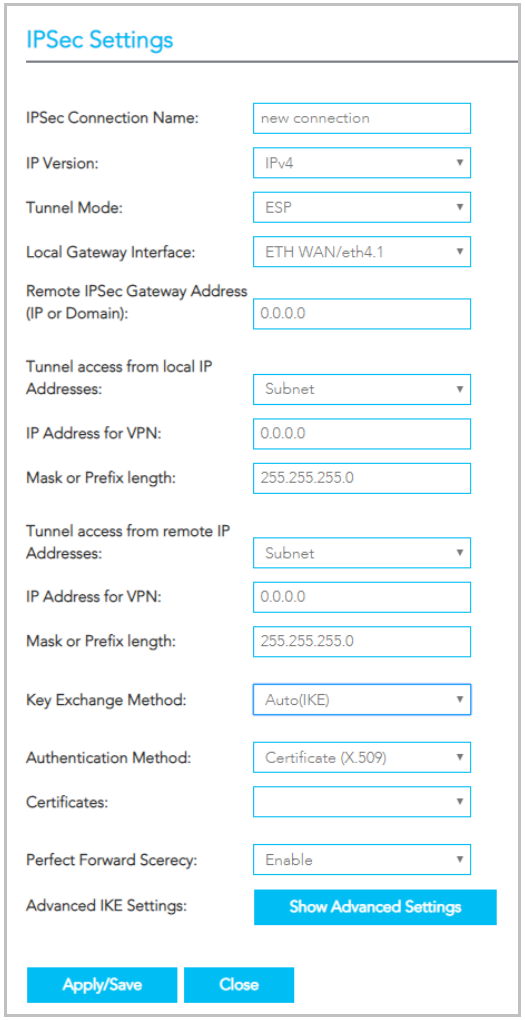
To edit an MAC filter, click the **Interface** name in the MAC filtering rules list. Its **MAC Filter** setting page will open. Make the necessary changes and click the **Apply/Save** button.

ITEM	DEFINITION
Protocol Type	Select the protocol type to which the filter should apply: • **PPoE** (Point-to-Point Protocol over Ethernet) • **IPv4** • **IPv6** • **Apple Talk** • **IPXNetBEUI** (NetBIOS Extended User Interface) • **IGMP** (Internet Group Message Protocol)
Destination MAC Address	Enter the MAC address of the device that the NF18ACV will be blocked from accessing.
Source MAC Address	Enter the MAC address of the device that the NF18ACV will block from external communication.
Frame Direction	Select the direction of communication that will be blocked. Options are: • **LAN<=>WAN** • **WAN=>LAN** • **LAN=>WAN**
WAN Interface	This is configured in Bridge mode only.
Apply/Save button	Click to save and activate the new filter. The new rule will then be displayed in the **Incoming IP Filtering Setup** table list.

© NetComm Wireless 2021

IPSec Settings

To create a new IPsec connection, click the **Add New Connection** button on the **IPSec Tunnel Mode Connections** page. The **IPSec Settings** page will be displayed.



ITEM	DEFINITION
IPSec Connection Name	Enter a meaningful name to identify the IPSec tunnel.
Tunnel Mode	Select the applicable IPSec tunnel mode.
Remote IPSec Gateway	Enter the IP Address of the IPSec server to connect to.
Tunnel access from Local	Select which remote addresses local IPSec connections are able to access .
IP Address from VPN	Enter the IP Address to be used locally for the IPSec tunnel.
Subnet mask for VPN	Enter the subnet mask to be used locally for the IPSec tunnel.
Tunnel Access from Remote	Select which local addresses remote IPSec connections are able to access.
IP Address for VPN	Enter the IP Address to be used on the remote end for the IPSec tunnel.
Subnet mask for VPN	Enter the subnet mask to be used on the remote end for the IPSec tunnel.
Key Exchange Method	Select the type of IPSec exchange is to be used on the IPSec tunnel.
Authentication Method	Select the applicable authentication for the IPSec tunnel.
Pre-Shared Key	Enter the pre-shared key (if applicable) to grant access to the IPSec tunnel.
Perfect Forward Secrecy	Select to use Perfect Forward Secrecy during key exchange for the IPSec tunnel.
Advanced IKE Settings	Configure advanced IKE settings for the IPSec tunnel such as the encryption method or key life time.
Apply/Save button	Click to save and activate the new connection. The new rule will then be displayed in the **IPSec Tunnel Mode Connections** table.

To edit an existing IPsec connection, click the **Connection Name** in the IPSec Tunnel Mode Connection list. Its **IPSec Tunnel Mode Connections** setting page will open. Make the necessary changes and click the **Apply/Save** button.

© NetComm Wireless 2021

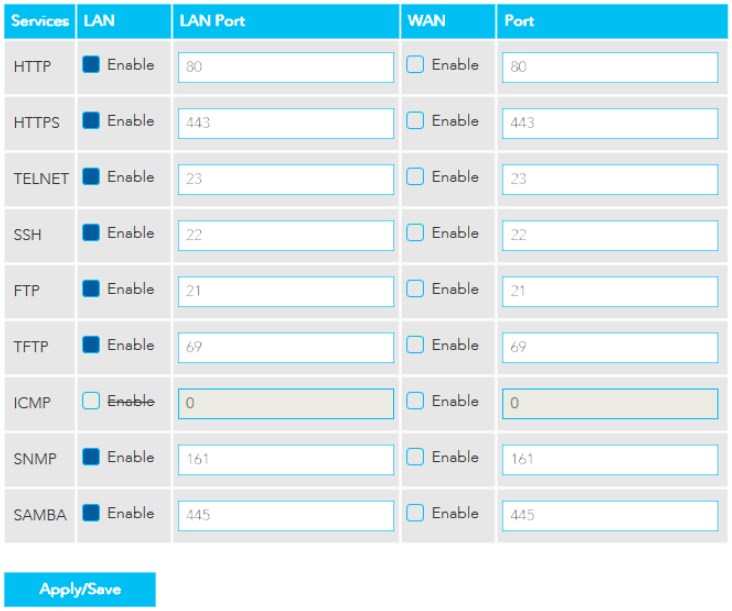
Access Control

Use the **Access Control** functionality to restrict access to your network for specific addresses.

Open the **Advanced** menu and click the Access Control link in the **Security** section.

Services access control list (SCL)

The Service Control List (SCL) allows you to enable or disable your Local Area Network (LAN) or Wide Area Network (WAN) services by selecting **Enable** to the left and specifying the service port assigned to the service.



The following access services are available: **HTTP**, **HTTPS**, **TELNET**, **SSH**, **FTP**, **TFTP**, **ICMP**, **SNMP** and **SAMBA**

Click the **Apply/Save** button after making any changes to continue.

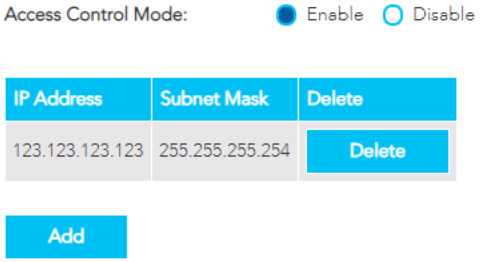
Note – You should change your default password, before enabling a WAN service.

Access List

The **Access List** is located below the **Services access control list** (see left).

When this facility is enabled, only those IP addresses in the list can access local management services on the device.

This is used to restrict management access from the internet to the specified IP address



1. Select **Enable** to activate this access restriction tool.
2. Click the **Add** button to add a specific address to the restricted list.
3. Enter the IP Address to be restricted.
4. Include the Subnet Mask of the address to be restricted.
5. Click **Apply/Save** to apply the restriction to the address.

To permanently remove an address from the list, click the **Delete** button to its right.

© NetComm Wireless 2021