

NETCOMM GATEWAY™ SERIES

NetComm

ADSL2+ Wireless N300 Modem Router

NB304N



USER GUIDE

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

Please be responsible and protect our environment.

This manual covers the following products:

NetComm NB304N

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Overview

Introduction

This manual provides information related to the installation, operation, and utilisation of the NB304N.

Target Users

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 NB304N, please confirm that you comply with the minimum system requirements below.

- An activated ADSL/ADSL2/ADSL2+ broadband service.
- Computer with Windows, Macintosh, or Linux-based operating systems with a working Ethernet adapter with TCP/IP Protocol installed.
- A Web Browser such as Internet Explorer, Netscape Navigator, Mozilla Firefox, Opera, Safari etc.
- Wireless Computer System Requirements:
 - Computer with a working 802.11b, 802.11g or 802.11n wireless adapter.

Notation

The following symbols are utilised in this user manual:



The following note requires attention



The following note provides a warning



The following note provides relevant information

Product Introduction

Product Overview

- Connects you to high-speed ADSL2+ broadband
 - Creates a powerful wireless hotspot supporting multiple Wi-Fi devices
 - Includes 4 Ethernet LAN ports for multiple wired connections
 - Wireless N access point for speeds of up to 300Mbps
 - USB port to connect an external hard drive
 - IPv6 Support
 - Advanced security
 - Simple setup
1. Speeds are dependent on network coverage. See your 3G provider coverage maps for more details. The total number of Wi-Fi users can also affect data speeds. Maximum wireless signal rate and coverage values are derived from IEEE Standard 802.11g and 802.11n 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.

Package Contents

The NB304N package consists of:

- NetComm NB304N – ADSL Wi-Fi Router
- 12VDC~1.5A Power Adapter
- RJ-45 LAN Cable
- RJ-11 Telephone Cable
- Quick Setup Guide
- Warranty Card

If any of these items are missing or damaged, please contact NetComm Support immediately by visiting the NetComm Support website at: <http://www.netcomm.com.au/contact-us/technical-support>

Product Features

The NetComm NB304N ADSL2+ Wireless N300 Modem Router allows you to connect to a broadband Internet service and share the connection with multiple users as well as including a host of other features that exist to make your experience as seamless as possible.

With a built-in Wireless N access point providing speeds of up to 300Mbps, multiple users are able to connect any Internet enabled device to the NB304N without wires and access the Internet from a location convenient to them. On top of this, the NB304N also comes with a built-in 4 port Ethernet switch, allowing for other devices to access the Internet over a wired connection.

The NB304N also offers IPv6 support, the latest generation of Internet addressing. This means the NB304N is future proofed against the upcoming exhaustion of the IPv4 address space.

The NetComm NB304N ADSL2+ Wireless N300 Modem Router has a number of handy features that assist in delivering you the best possible user experience. These include a WPS push button that allows for an easy set-up of your wireless network, a push button to easily turn your wireless signal on and off, advanced security options to ensure your network remains safe and an easy to navigate web interface if you need to change any settings.

Physical Dimensions and Indicators

LED Indicators

The NB304N has been designed to be placed on a desktop. All of the cables exit from the rear for better organization. The display is visible on the front of the NB304N to provide you with information about network activity and the device status. See below for an explanation of each of the indicator lights.



LED INDICATOR	ICON	COLOUR	DEFINITION
Power		Off	Router is not powered on
		Red	Router is starting up
		Green	Router is operating normally
DSL		Off	Router is not connected to an xDSL service
		Green	Router is connected to an xDSL service
		Flashing	Router is connecting to an xDSL service
Internet		Off	Router is not connected to the Internet
		Red	Router is unable to connect to the internet with the current configuration details
		Green	Router is connected to the internet
LAN1-LAN4		Flashing	Data is being transmitted or received via the Internet connection
		Off	No device connected to the LAN port
		Green	Device connected to the LAN port
WLAN		Flashing	Data is being transmitted or received on the LAN port
		Off	Wi-Fi function is disabled
		Green	Wi-Fi function is enabled
WPS		Flashing	Data is being transmitted or received via the Wi-Fi network
		Off	WPS function is disabled
		Green	WPS function is enabled
USB		Flashing	WPS function is attempting to connect to a device
		Off	No USB device is plugged in
		Green	USB device plugged in
		Flashing	Data is being transmitted or received from the attached USB device

Physical Dimensions

The following page lists the physical dimensions of the NB304N.



NB304N	
Length	181 mm
Height	135 mm
Width	26 mm
Weight	245 grams

NB304N Default Settings

The following tables list the default settings for the NB304N.

LAN (MANAGEMENT)	
Static IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.1.1

WIRELESS (WI-FI)	
SSID:	NetComm Wireless
Security:	WPA2-PSK
Security Key:	a1b2c3d4e5

NB304N WEB INTERFACE ACCESS	
Username:	admin
Password:	admin

Integrated Interfaces

The following integrated interfaces are available on the NB304N:



INTERFACE	FUNCTION
Antenna	Wi-Fi Antenna
DSL	Attach a telephone line with an active xDSL service here
WLAN	Press this button to enable or disable the Wi-Fi function of the NB304N
RESET	Hold this button down for 10 seconds or more to reset the NB304N to factory defaults
WPS	Press this button to enable the WPS push-button connect function
LAN1-LAN4	Attach Ethernet based devices
USB	Attach an external USB storage device to share content with connected devices
Power (12V)	Power connector, connects to a DC 12V 1.5A Power Adapter
Power	Turn the NB304N on or off
Antenna	Wi-Fi Antenna

Safety and Product Care

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

- Do not use or install this product near water to avoid fire or shock hazard. For example, near a bathtub, kitchen sink, laundry tub, or near a swimming pool. Also, do not expose the equipment to rain or damp areas (e.g. a wet basement).
- Do not connect the power supply cord on elevated surfaces. Allow it to lie freely. There should be no obstructions in its path and no heavy items should be placed on the cord. In addition, do not walk on, step on or mistreat the cord.
- To safeguard the equipment against overheating, make sure that all openings in the unit that offer exposure to air are unobstructed.



WARNING

Disconnect the power line from the device before servicing.

Transport and Handling

When transporting the NB304N, it is recommended to return the product in the original packaging. This ensures the product will not be damaged.



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

Installation and Configuration of the NB304N

Placement of your NB304N

The wireless connection between your NB304N and your Wi-Fi devices will be stronger the closer your connected devices are to your NB304N. Your wireless connection and performance will degrade as the distance between your NB304N and connected devices increases. 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 NB304N in order to see if distance is the problem.



Please 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 checklist may help.

If you experience difficulties connecting wirelessly between your Wi-Fi Devices and your NB304N, please try the following steps:

- In multi-storey homes, place the NB304N on a floor that is as close to the centre of the home as possible. This may mean placing the NB304N on an upper floor.
- Try not to place the NB304N near a cordless telephone that operates at the same radio frequency as the NB304N (2.4GHz).

Avoid obstacles and interference

Avoid placing your NB304N 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
- 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 NB304N).

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 NB304N and your wireless-enabled computers.
- Unplug and remove the battery from any cordless phone that operates on the 2.4GHz band (check manufacturer's information). If this fixes the problem, your phone may be interfering with the NB304N.
- 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 NB304N to channel 11. See your phone's user manual for detailed instructions.
- If necessary, consider switching to a 900MHz or 5GHz 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. Use the Site Survey capabilities found in the Wireless Utility of your wireless adapter to locate any other wireless networks that are available (see your wireless adapter's user manual), and switch your Router and computers to a channel as far away from other networks as possible.

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 NB304N.
2. Plug the power adapter into the wall socket and switch on the power.
3. Wait approximately 60 seconds for the NB304N to power up.

Connecting via a cable

1. Connect the yellow Ethernet cable provided to one of the ports marked 'LAN' at the back of the NB304N.
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://192.168.1.1> into the address bar and press enter.
5. Follow the steps to set up your NB304N.

Connecting wirelessly

1. Ensure Wi-Fi is enabled on your device (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 NB304N.



Please note: The default Wireless network name is "NetComm Wireless"

3. When prompted for your wireless security settings, enter the Wireless security key configured on the NB304N.



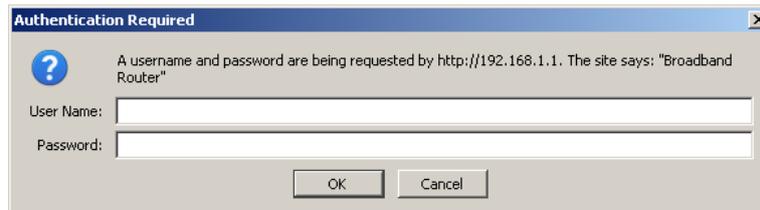
Please note: The default Wireless Security key is "a1b2c3d4e5"

4. Wait approximately 30 seconds for the connection to establish.
5. Open your Web browser, and enter <http://192.168.1.1> into the address bar and press enter.
6. Follow the steps to set up your NB304N.

Management Console Login Procedure

To log in to the management console and view the status or make changes to your NB304N configuration, please follow the steps below:

1. Open your web browser (e.g. Internet Explorer/Firefox/Safari) and navigate to <http://192.168.1.1>
2. Enter the default username and password of “admin” (without the quotes) and click “OK”.



Management Console Menus



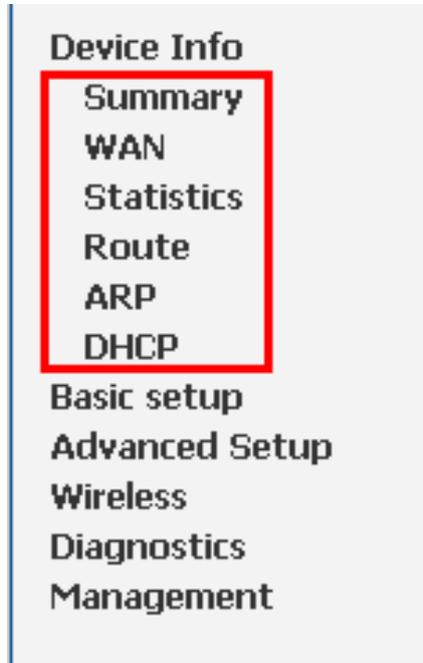
The Management Console offers the following menu items:

- Device Info
- Basic Setup
- Advanced Setup
- Wireless
- Diagnostics
- Management

These functions vary from viewing statistics and information about your NB304N to changing it's configuration. Click on a menu item to access the respective page.

Device Info

The device info menu provides information and statistics about the NB304N and the currently configured network connections and hosts.



Summary

The summary page provides an overview of the current operating parameters used by your NB304N. You can use this check your firmware version or network connection information, such as your current Internet IP address or Internet connection speed as shown below.

Device Info

Board ID:	96328ang
Build Timestamp:	110914_0951
Manufacturer:	NetComm
Product Class:	NB304N
Serial Number:	001fa490cdf0
Software Version:	GAN5.CZ56T-B-NC.AU-R.1B030.EN
Bootloader (CFE) Version:	1.0.37-106.24
DSL PHY and Driver Version:	A2pD030n.d23c
Wireless Driver Version:	5.60.120.11.cpe4.406

This information reflects the current status of your WAN connection.

Line Rate - Upstream (Kbps):	0
Line Rate - Downstream (Kbps):	0
LAN IPv4 Address:	192.168.1.1
Default Gateway:	
Primary DNS Server:	0.0.0.0
Secondary DNS Server:	0.0.0.0
LAN IPv6 Address:	fe80::1
Default IPv6 Gateway:	
Date/Time:	Thu Jan 1 00:00:44 1970

WAN

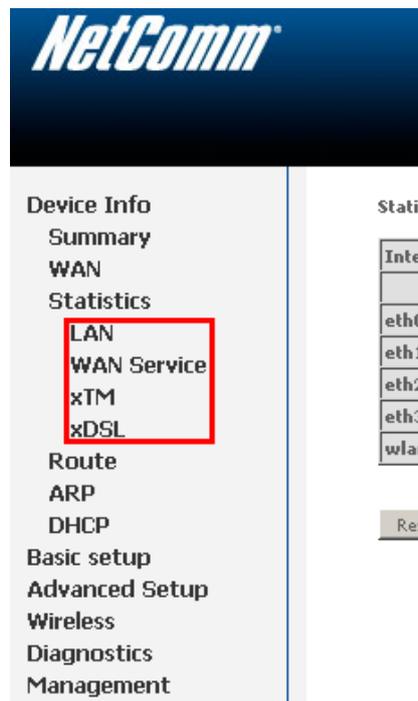
The WAN page displays a summary of the WAN connection settings and your WAN IP address (if applicable).

WAN Info

Interface	Description	Type	VlanMuxId	Igmp	NAT	Firewall	Status	IPv4 Address	IPv6 Address
atm1	IPTV	Bridge	Disabled	Disabled	Disabled	Disabled	Unconfigured	0.0.0.0	
ppp0	pppoe_0_8_35	PPPoE	Disabled	Enabled	Enabled	Enabled	Unconfigured	0.0.0.0	

Statistics

Statistical information is provided and displayed broken down by network connection and type of connection. Please see the following pages for an explanation of each these items.



LAN

The LAN page displays information about computers or devices connected to the NB304N either by an Ethernet cable or via wireless.

Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
eth0	2322	15	0	0	3322	15	0	0
eth1	0	0	0	0	0	0	0	0
eth2	0	0	0	0	0	0	0	0
eth3	0	0	0	0	0	0	0	0
wlan	0	0	0	0	0	0	0	0

Reset Statistics

WAN Service

The WAN page displays information about the WAN connection in use by the NB304N. An entry will be shown for each configured connection.

Statistics -- WAN

Interface	Description	Received				Transmitted			
		Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
atm1	IPTV	0	0	0	0	0	0	0	0
ppp0	pppoe_0_8_35	0	0	0	0	0	0	0	0

Reset Statistics

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xTM

The Asynchronous Transfer Mode (ATM) page shows information about the currently configured ATM interface.

Interface Statistics

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
<input type="button" value="Reset"/>										

xDSL

The xDSL page shows information about the currently configured xDSL connection and connection conditions.

Statistics -- xDSL

Synchronized Time:		
Number of Synchronizations:	0	
Mode:		
Traffic Type:		
Status:	Disabled	
Link Power State:	L3	
	Downstream	Upstream
Line Coding(Trellis):		
SNR Margin (0.1 dB):		
Attenuation (0.1 dB):		
Output Power (0.1 dBm):		
Attainable Rate (Kbps):		
Rate (Kbps):		
Super Frames:		
Super Frame Errors:		
RS Words:		
RS Correctable Errors:		
RS Uncorrectable Errors:		
HEC Errors:		
OCD Errors:		
LCD Errors:		
Total Cells:		
Data Cells:		
Bit Errors:		
Total ES:		
Total SES:		
Total UAS:		

Route

The Route page lists the current routing table entries.

Device Info -- Route

Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate

D - dynamic (redirect), M - modified (redirect).

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

ARP

The Address Resolution Protocol (ARP) page shows the current ARP table entries.

Device Info -- ARP

IP address	Flags	HW Address	Device
192.168.1.100	Complete	00:40:f4:b3:d8:8e	br0

DHCP

The DHCP page lists the current DHCP leases in use on the NB304N.

Device Info -- DHCP Leases

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

Basic Setup

Quick Setup

The Quick Setup page is used to quickly and easily configure your Internet connection.

Quick Setup

In the boxes below, enter the PPP user name and password that your ISP has provided to you.

PPP Username:
 PPP Password:

Apply/Save

1. Enter the username provided by your Internet Service Provider (ISP) in the PPP Username field.
2. Enter the password provided by your ISP in the PPP Password field.
3. Click Apply/Save.
4. Click "Next" and view your connection information. The NB304N will then automatically attempt to connect using the details you entered.

Advanced Setup

The Advanced Setup page provides configuration options for other network and connection based functions of the NB304N. Please see the following pages for an explanation of these functions.

Advanced Setup
Layer 2 Interface
WAN Service
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DNS
DSL
UPnP
DNS Proxy
Packet Acceleration
Storage Service
Interface Grouping
IPSec
Power Management
Wireless
Diagnostics
Management

Layer 2 Interface

The Layer 2 Interface pages allow you to add or remove ATM interfaces and configure the behaviour of the Ethernet ports.

ATM Interface

DSL ATM Interface Configuration

Choose Add, or Remove to configure DSL ATM interfaces.

Interface	VPI	VCI	DSL Latency	Category	Link Type	Connection Mode	IP QoS	Scheduler Alg	Queue Weight	Group Precedence	Remove
atm0	8	35	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	<input type="checkbox"/>
atm1	0	35	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	<input type="checkbox"/>

Add Remove

To remove a currently configured ATM Interface, Click the remove checkbox corresponding to the chosen interface and click Remove.

To Add a new Interface, click the add button and enter the appropriate configuration information as shown below:

ATM PVC Configuration

This screen allows you to configure an ATM PVC identifier (VPI and VCI), select DSL latency, select a service category. Otherwise choose an existing interface by selecting the checkbox to enable it.

VPI: [0-255]

VCI: [32-65535]

Select DSL Latency

Path0

Path1

Select DSL Link Type (EoA is for PPPoE, IPoE, and Bridge.)

EoA

PPPoA

IPoA

Select Connection Mode

Default Mode - Single service over one connection

VLAN MUX Mode - Multiple Vlan service over one connection

Encapsulation Mode:

LLC/SNAP-BRIDGING

Service Category:

UBR Without PCR

Select IP QoS Scheduler Algorithm

Strict Priority

Precedence of the default queue:

8 (lowest)

Weighted Fair Queuing

Weight Value of the default queue: [1-63]

MPAAL Group Precedence:

Back Apply/Save

PARAMETER	DEFINITION
VPI/VCI	Enter the PVC identifier for your service. This will usually be 8/35 for users in Australia.
DSL Latency	Select the DSL latency path you wish to use.
DSL Link Type	Select the type of connection – PPPoE (EoA), PPPoA or IPoA
Connection Mode	Select the type of connection
Encapsulation Mode	Select the type of encapsulation utilised by your service
QoS Settings	Select the appropriate Quality of Service settings to apply to this connection

Click Apply/Save to save the new Interface.

ETH Interface

ETH WAN Interface Configuration

Choose Add, or Remove to configure ETH WAN interfaces.
Allow one ETH as layer 2 wan interface.

Interface/(Name)	Connection Mode	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>		

To remove a currently configured ATM Interface, Click the remove checkbox corresponding to the chosen interface and click Remove.

To Add a new Interface, click the add button and select the appropriate configuration options as shown below:

ETH WAN Configuration

This screen allows you to configure a ETH port .

Select a ETH port:

Select Connection Mode

- Default Mode - Single service over one connection
- VLAN MUX Mode - Multiple Vlan service over one connection

PARAMETER	DEFINITION
ETH Port	Select the Ethernet port to apply the configuration to.
Connection Mode	Select the connection mode. (VLAN MUX is typically used to access services such as IPTV)

Click Apply/Save to save the new Interface.

WAN Service

This screen provides a summary of the current WAN interfaces you have configured. If you have connected the NB304N to an ADSL connection through the ADSL Quick Setup interface, details of the connection will be summarized here. You can also add or remove WAN Services.

Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description	Type	Vlan8021p	VlanMuxId	IGMP	NAT	Firewall	IPv6	Mld	Remove	Edit
atm1	IPTV	Bridge	N/A	N/A	Disabled	Disabled	Disabled	Disabled	Disabled	<input type="checkbox"/>	edit
ppp0	pppoe_0_8_35	PPPoE	N/A	N/A	Enabled	Enabled	Enabled	Disabled	Disabled	<input type="checkbox"/>	edit

[Add](#) [Remove](#)

To remove a currently configured WAN Service, Click the remove checkbox corresponding to the chosen service and click Remove.

To create a new WAN Service connection:

1. Click Add.
2. Select a currently unused ATM interface
3. Select the connection type and enter a description for the WAN Service.
4. Select to enable IPv6 support for the connection (if needed).
5. Enter the connection settings applicable for the connection type.

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In the case of a PPPoE connection, the following options are available:

PPP Username and Password

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method:

MTU Size: (500-1500)

Enable NAT

Enable Fullcone NAT

Dial on demand (with idle timeout timer)

PPP IP extension

Use Static IPv4 Address

Enable IPv6 for this service

Request IPv6 Address

Request Prefix Delegation

Enable PPP Debug Mode

Bridge PPPoE Frames Between WAN and Local Ports

Multicast Proxy

Enable IGMP Multicast Proxy

Enable MLD Multicast Proxy

PARAMETER	DEFINITION
PPP Username and Password	The username and password required to access the service
PPPoE Service Name	A name to identify the configured service
Authentication Method	Select the authentication method in use on the service
MTU	Set the Maximum Transmit Unit (MTU) size for the connection
Enable NAT	Select to enable or disable Network Address Translation (NAT) for this connection
Enable Fullcone NAT	Select to enable Fullcone NAT on the connection.
Dial on Demand	Select to enable dial on demand mode. Enter the idle time to wait before disconnecting the service.
PPP IP Extension	Select to enable PPP IP Extension on the connection
Static IPv4 Address	Enter a static IP Address to utilise with the connection
Enable IPv6	Select to enable IPv6 support for the connection. This enables the NB304N to Request Prefix Delegation and request an IPv6 Address.
Enable IGMP Multicast Proxy	Enable IGMP Proxy mode on the connection. This is commonly used for IPTV.
Enable MLD Multicast Proxy	Enable MLD Proxy mode. This is the IPv6 equivalent of IGMP proxy mode.

Click Next once the connection configuration details have been entered.

- (a) Select the Default Gateway Interface to use for the connection and click Next
- (b) Select the DNS Server Interface to use for the connection and click Next
- (c) Review the configured functions of the connection and click Save/Apply to save the new WAN Service connection.

In the case of an IP over Ethernet connection, the following options are available:

WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.
 Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.
 If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway.

Obtain an IP address automatically

Option 55 Request List : (e.g:1,3,6,12)

Option 58 Renewal Time: (hour)

Option 59 Rebinding Time: (hour)

Option 60 Vendor ID:

Option 61 IAID: (8 hexadecimal digits)

Option 61 DUID: (hexadecimal digit)

Option 125: Disable Enable

Use the following Static IP address:

WAN IP Address:

WAN Subnet Mask:

WAN gateway IP Address:

Primary DNS server:

Secondary DNS server:

Request IPv6 Address

Request Prefix Delegation

[Back](#) [Next](#)

PARAMETER	DEFINITION
Obtain an IP Address automatically	Select to use DHCP for the connection. The DHCP options can then be set.
	Option 55 – Set the DHCP Parameter request List
	Option 58 – Set the length of time between DHCP lease renewals
	Option 59 – Set the length of time between DHCP rebinding
	Option 60 – Set the DHCP VCI
	Option 61 (IAID) – Set the DHCP Identity Association ID
	Option 61 (DUID) – Set the DHCP Unique Identifier
	Option 125 – Set to enable or disable DHCP Vendor-Identifying Vendor Options
Use the following Static IP Address	Select to use a Static IP Address for the connection
WAN IP Address	Enter the Static IP Address to use for the connection
WAN Subnet Mask	Enter the subnet mask to use for the connection
WAN gateway IP Address	Enter the gateway IP address to use for the connection
Primary DNS Server	Enter the Primary DNS server to use for the connection
Secondary DNS Server	Enter the secondary DNS server to use for the connection
Request IPv6 Address	Select to request an IPv6 on the connection
Request Prefix Delegation	Select to request IPv6 Prefix Delegation for the connection

Click Next once the connection configuration details have been entered.

- Select to enable NAT, Fullcone NAT or the builtin Firewall function for the connection
- Select to enable IGMP Multicast mode for the connection and click Next
- Select the Default Gateway Interface to use for the connection and click Next
- Select the DNS Server Interface to use for the connection and click Next
- Review the configured functions of the connection and click Save/Apply to save the new WAN Service connection.

In the case of a bridged connection, click Save/Apply to save the new WAN Service connection.

LAN

The LAN window allows you to modify the settings for your local area network (LAN).

Local Area Network (LAN) Setup

Configure the Broadband Router IP Address and Subnet Mask for LAN interface. GroupName Default ▾

IP Address:
 Subnet Mask:

Enable IGMP Snooping

Standard Mode
 Blocking Mode

Enable LAN side firewall

Disable DHCP Server
 Enable DHCP Server

Start IP Address:
 End IP Address:
 Leased Time (hour):

Static IP Lease List: (A maximum 32 entries can be configured)

MAC Address	IP Address	Remove
<input type="button" value="Add Entries"/>	<input type="button" value="Remove Entries"/>	

Configure the second IP Address and Subnet Mask for LAN interface

The following options are available to configure:

PARAMETER	DEFINITION
IP Address	Enter the IP Address to use for the NB304N
Subnet Mask	Enter the subnet mask
Enable IGMP Snooping	Enable IGMP Snooping and select the IGMP Snooping mode to use
Enable LAN side Firewall	Enable the LAN side firewall to restrict traffic between LAN hosts
Enable DHCP Server	Select to enable or disable the DHCP server and enter the start and end address for the DHCP IP Address pool.
Configure the second IP Address	This option enables you to set a secondary IP Address for the NB304N

You can also reserve DHCP Addresses for specific hosts as shown below:

DHCP Static IP Lease

Enter the Mac address and Static IP address then click **Apply/Save** .

MAC Address:
 IP Address:

To set a DHCP reservation, enter the MAC Address of the chosen host and IP to use and then click **Apply/Save**.

The NB304N enables you to set the DHCP options which are provided to hosts attempting to connect to the DHCP server.

These options should not normally need to be set or changed.

Click **Apply/Save** to save the new LAN configuration settings.

IPv6 Autoconfig

The NB304N offers a stateless IPv6 Autoconfig function for IPv6 enabled devices connected via the LAN.

IPv6 LAN Auto Configuration
 Note: Stateless DHCPv6 is supported based on the assumption of prefix length less than 64. Interface ID does NOT support ZERO COMPRESSION "::". Please enter the complete information. For example: Please enter "0:0:0:2" instead of "::2".

Static LAN IPv6 Address Configuration
 Interface Address (prefix length is required):

IPv6 LAN Applications

Enable DHCPv6 Server

Enable RADVD

Site Prefix Configuration

Delegated Site Prefix from WAN

Static Site Prefix

Site Prefix:

Site Prefix Length:

Enable MLD Snooping

The following auto configuration options are available:

PARAMETER	DEFINITION
Interface Address	Set the IPv6 Address of the NB304N
Enable DHCPv6 Server	Select to enable the stateless DHCPv6 Server
Enable RADVD	Select to enable the Router Advertisement Daemon
Site Prefix Configuration	Select to use either the Site Prefix as supplied by the WAN connection or manually enter the Site Prefix and Site Prefix Length
Enable MLD Snooping	Select to enable MLD Snooping and the MLD Snooping mode to use

Click Save/Apply to save the new IPv6 Autoconfig settings.

NAT

NAT stands for Network Address Translation, a process which converts private IP addresses of a computer on the internal private network to one or more public IP addresses for the Internet. NAT changes the packet headers to the new address and keeps track of each session; when packets come back from the Internet, it performs the reverse conversion to the IP address of the client machine.

Virtual Servers

Virtual Server allows you to direct incoming traffic from the Internet to a specific computer in your local network. A maximum 32 entries can be configured.

Click Add to create a Virtual Server.

As an example, to setup a web server on a computer using 192.168.1.88 as its IP Address, select HTTP as Service and enter 192.168.1.88 as the Server IP Address. Otherwise if the service you want to setup is not available from the Select a Service drop-down list, you can define your own Virtual Server.

NAT -- Virtual Servers

Select the service name, and enter the server IP address and click "Apply/Save" to forward IP packets for this service to the specified server.
NOTE: The "Internal Port End" cannot be modified directly. Normally, it is set to the same value as "External Port End". However, if you modify "Internal Port Start", then "Internal Port End" will be set to the same value as "Internal Port Start".
 Remaining number of entries that can be configured: 32

Use Interface:

Service Name:

Select a Service:

Custom Service:

Server IP Address:

Apply/Save

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

Save/Apply

1. Enter the IP Address to forward the incoming connections to.
2. Enter the External Port range for the incoming connections
3. Select the appropriate protocol
4. Enter the Internal Port Range

Click Save/Apply to save the new Virtual Server configuration settings.

Port Triggering

Some applications require that the specific ports in the router's firewall be opened for access by the remote parties. For instance, an application uses port 25 for requests and port 113 for replies. If a computer on the LAN connects to port 25 on a remote server hosting this application, using Port Triggering on the router, incoming connections to port 113 (from the remote server) could be redirected to the PC which initiated the request. A maximum of 32 entries can be configured.

Click Add to setup Port Triggering.

NAT -- Port Triggering

Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application) and click "Save/Apply" to add it.

Remaining number of entries that can be configured:32

Use Interface:

Application Name:

Select an application:

Custom application:

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

1. Enter the External Port range for the incoming connections
2. Select the appropriate protocol
3. Enter the Internal Port Range

Click Save/Apply to save the new Port Trigger configuration settings.

DMZ Host

If a computer is assigned as a DMZ Host, it will receive all the data from the Internet that does not belong to the list of applications configured as a Virtual Server. Enter the LAN IP address of the PC you wish to set as DMZ Host in the DMZ Host IP Address. If you need to disable the DMZ Host, just clear the DMZ Host IP Address field, and then click Save/Apply.

NAT -- DMZ Host

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

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

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

DMZ Host IP Address:



Please note: The DMZ exposes your computer to the Internet. Ensure appropriate steps are taken to protect it.

ALG

An Application Layer Gateway (ALG) allows two or more simultaneous NAT connections to be made by clients through this router. Select the specific ALG NAT functions to enable and click Save/Apply.

ALG

Select the ALG below.

Gateway Application Algorithms

- Enable H323
- Enable Irc
- Enable RTSP
- Enable PPTP
- Enable IPsec
- Enable SIP

Save/Apply

Multi NAT

Multi NAT enables the NB304N to support a number of different NAT types such as:

- One to One
- One to Many
- Many to One
- Many to Many

NAT -- Multi NAT

Rule Type:

Use interface:

internalAddrStart	internalAddrEnd	externalAddrStart	externAddrEnd

Save/Apply Back

1. Select the type of NAT to use from the Rule Type dropdown menu.
2. Select the interface to apply the NAT rule to
3. Enter the appropriate Internal Address Start and Internal Address End
4. Enter the appropriate External Address Start and External Address End
5. Click Save/Apply to save the new Multi NAT configuration settings.

Security

IP Filtering

The router supports IP Filtering which allows you to easily 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.

To delete the rule, click Remove checkbox next to the selected rule and click Remove.

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

Add IP Filter -- Outgoing

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

Filter Name:

IP Version:

Protocol:

Source IP address[/prefix length]:

Source Port (port or port:port):

Destination IP address[/prefix length]:

Destination Port (port or port:port):

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Filter Name	Enter a name to identify the filtering rule
IP Version	Select the IP version to apply the filter to.
Protocol	Select the protocol type to block
Source IP Address/Subnet Mask	Enter the IP Address of the PC on the LAN to block
Source Port	Enter the port number used by the application to block
Destination IP Address/Subnet Mask	Enter the IP Address of the Remote Server to which connections should be blocked
Destination Port	Enter the destination port number used by the application to block

Click Save/Apply to take effect the settings. The new rule will then be displayed in the Outgoing IP Filtering table list.

Incoming IP Filtering

By default, when NAT is enabled, all incoming IP traffic from WAN is blocked except for responses to requests from the LAN. However, some incoming traffic from the Internet can be accepted by setting up Incoming IP Filtering rules.

To delete the rule, click Remove checkbox next to the selected rule and click Remove.

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

Add IP Filter -- Incoming

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

Filter Name:

IP Version:

Protocol:

Source IP address[/prefix length]:

Source Port (port or port:port):

Destination IP address[/prefix length]:

Destination Port (port or port:port):

WAN Interfaces (Configured in Routing mode and with firewall enabled) and LAN Interfaces
Select one or more WAN/LAN interfaces displayed below to apply this rule.

Select All pppoe_0_8_35/ppp0 br0/br0

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Filter Name	Enter a name to identify the filtering rule
IP Version	Select the IP version to apply the filter to
Protocol	Select the protocol type to allow
Source IP Address/Subnet Mask	Enter the IP Address of the Remote Server from which to allow connections
Source Port	Enter the port number used by the application to allow
Destination IP Address/Subnet Mask	Enter the IP Address of the PC on the LAN to which connections should be allowed
Destination Port	Enter the destination port number used by the application to allow
WAN Interface	Select the WAN Interface to apply the filter to

Click Save/Apply to take effect the settings. The new rule will then be displayed in the Incoming IP Filtering table list.

MAC Filtering

The NB304N offers the ability to utilise 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 connections which match the criteria. Click Add to enter a new MAC Address filter.

Add MAC Filter

Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click 'Apply' to save and activate the filter.

Protocol Type:

Destination MAC Address:

Source MAC Address:

Frame Direction:

WAN Interfaces (Configured in Bridge mode only)

Apply/Save

1. Enter the Protocol type to apply the filter to
2. Enter the Source and Destination MAC Address
3. Enter the direction of the traffic to filter
4. Select the WAN interface to apply to the filter to.

Click Apply/Save to save the new MAC filtering configuration.

Parental Control

Parental Control allows you to apply router access restrictions among LAN devices within specific times in a day. A maximum of 16 restriction rules can be created.

To delete a restriction, click Remove checkbox next to the selected restriction and click Remove.

To add restrictions, click Add. This opens the Time of Day Restriction page. Click Start to enable a restriction or click Stop to disable the rule.

Access Time Restriction

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

User Name

Browser's MAC Address

Other MAC Address

(xx:xx:xx:xx:xx:xx)

Days of the week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Click to select	<input type="checkbox"/>						

Start Blocking Time (hh:mm)

End Blocking Time (hh:mm)

Enter the following parameters:

PARAMETER	DEFINITION
User Name	Enter a name to identify the Parental Control rule
Browser's MAC Address (or Other MAC Address)	Enter the MAC Address of the device restrict.
Days of the Week	Click to select the days of the week on which to apply the restriction.
Start Blocking Time (hh:mm)	Enter the time when the restriction will be enabled (00:00 to 23:59).
End Blocking Time (hh:mm)	Enter the time when the restriction will be disabled (00:00 to 23:59).

Click Apply/Save to save the new Access Time Restriction rule.

URL Filter

The NB304N offers the ability to block or allow specific URLs based on filter rules.

To delete a filter, click the Remove checkbox next to the selected filter and click Remove.

Click Add to add a new URL filter.

Parental Control -- URL Filter Add

Enter the URL address and port number then click 'Apply/Save' to add the entry to the URL filter.

URL Address:

Port Number: (Default 80 will be applied if leave blank.)

1. Enter the URL (and port if needed) to be filtered

Click Apply/Save to save the new MAC filtering configuration.

Quality of Service

Quality of Service allows certain applications to gain priority over other applications in where a continuous flow of data packets is required. For example if someone is talking on a VoIP call and someone else starts downloading a large file the VoIP call traffic will gain priority over the download so they VoIP call will go uninterrupted.

QoS gives you the capability to specify the level of priority to be provided for specific applications. By default, QoS is not enabled.

After enabling QoS, select the appropriate default DSCP mark from the dropdown menu to apply to network traffic.

QoS -- Queue Management Configuration

If Enable QoS checkbox is selected, choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click 'Apply/Save' button to save it.

Note: If Enable QoS checkbox is not selected, all QoS will be disabled for all interfaces.

Note: The default DSCP mark is used to mark all egress packets that do not match any classification rules.

Enable QoS

Select Default DSCP Mark

Apply/Save

Queue Configuration

The QoS Queue Configuration page enables you to define different QoS configuration rules for different types of traffic.

To delete a QoS queue, click the Remove checkbox next to the selected queue and click Remove.

Click Add to create a QoS Queue Configuration.

QoS Queue Configuration

This screen allows you to configure a QoS queue and assign it to a specific layer2 interface. The scheduler algorithm is defined by the layer2 interface.

Note: For SP scheduling, queues assigned to the same layer2 interface shall have unique precedence. Lower precedence value implies higher priority for this queue relative to others

Click 'Apply/Save' to save and activate the queue.

Name:

Enable:

Interface:

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Name	Enter a name for the QoS queue configuration
Enable	Select to enable or disable the entered QoS queue configuration
Interface	Select the interface to apply the QoS queue configuration to.

Click Apply/Save to save the new QoS Queue configuration settings.

QoS Classification

You can add or remove QoS Classification rules.

To delete a QoS classification rule, click the Remove checkbox next to the selected classification rule and click Remove.

Click Add to create a Network Traffic Class Rule.

Add Network Traffic Class Rule

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

Traffic Class Name:

Rule Order:

Rule Status:

Specify Classification Criteria

A blank criterion indicates it is not used for classification.

Class Interface:

Ether Type:

Source MAC Address:

Source MAC Mask:

Destination MAC Address:

Destination MAC Mask:

Frame size range for Bridged interface(FROME:TO):

Specify Classification Results

Must select a classification queue. A blank mark or tag value means no change.

Assign Classification Queue:

Mark 802.1p priority:

Tag VLAN ID [0-4094]:

Apply/Save

Enter the following appropriate parameters for the entered QoS classification:

PARAMETER	DEFINITION
Traffic Class Name	Enter a name to identify the entered QoS classification rule
Rule Order	Select the QoS classification rule order
Rule Status	Select to enable or disable the entered QoS classification rule
Class Interface	Select the interface to apply the entered QoS classification to
Ether Type	Select the type of Ethernet traffic to apply the entered QoS classification to
Source MAC Address	Enter the source MAC address to apply the entered QoS classification to
Destination MAC Address	Enter the destination MAC address to apply the entered QoS classification to
Destination MAC Mask	Enter the destination MAC Mask to apply the entered QoS classification to
Frame size Range for Bridged Interface	Enter the size range for packets to which the entered QoS classification will be applied to
Assign Classification Queue	Select the appropriate interface classification queue to apply the entered QoS classification to
DSCP or TOS Marking options	Select to use DSCP or TOS marking for the entered QoS classification
Mark 802.1p priority	Select the priority the entered QoS classification will have applied to it
Tag VLAN ID	Enter the VLAN tag ID to apply the entered QoS classification to

Click Apply/Save to save the new QoS Classification configuration settings.

Routing

Default Gateway

The router will accept the first received Default Gateway assignment from one of the PPPoA, PPPoE or DHCP enabled PVC(s).

Alternatively, you can manually select which service you would like to use as a default gateway.

Select from the list of configured WAN Services as displayed below.

Routing -- Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

Selected Default Gateway Interfaces

ppp0

->

<-

Available Routed WAN Interfaces

TODO: IPv6 ***** Select a preferred wan interface as the system default IPv6 gateway.

Selected WAN Interface: NO CONFIGURED INTERFACE

After selecting the applicable WAN Service interface, click Apply/Save to save the new default gateway settings.

Static Route

Use this if your LAN consists of multiple subnets and you want to manually define the path to transmit data on.

To delete a static route, click the Remove checkbox next to the selected static route and click Remove.

To create a new Static Route, click Add. The Routing-Static Route Add page will show up.

Routing -- Static Route Add

Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click 'Apply/Save' to add the entry to the routing table.

IP Version: IPv4

Destination IP address/prefix length:

Interface:

Gateway IP Address:

(optional: metric number should be greater than or equal to zero)

Metric:

Enter the following parameters to enter a new Static Route:

PARAMETER	DEFINITION
IP Version	Select the IP Version to apply the static route to.
Destination IP Address/Prefix length	Enter the destination IP Address / IPv6 prefix length to apply the static route to.
Interface	Select the interface to apply the static route to.
Gateway IP Address	If you wish to use a specific gateway to reach the destination network, enter the IP address of the gateway.
Metric	Enter the metric (traffic priority/weighting) to be applied to the static route.

Click Save/Apply to save the new static route entry.

Policy Routing

Policy Routing enables you to specify specific rules under which a route will be utilised.

To delete a route policy, click the Remove checkbox next to the selected policy and click Remove.

To add a new routing policy, click Add.

Policy Routing Setup

Enter the policy name, policies, and WAN interface then click "Apply/Save" to add the entry to the policy routing table.
 Note: If selected "IPoE" as WAN interface, default gateway must be configured.

Policy Name:

Physical LAN Port:

Source IP:

Use Interface:

Default Gateway:

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Policy Name	Enter a name to identify the routing policy
Physical LAN Port	Enter the physical port to apply the routing policy to
Source IP	Enter the source address of traffic to apply the routing policy to
Use Interface	Enter the interface to apply the routing policy to
Default Gateway	Enter the default gateway to use with the routing policy.

Click Save/Apply to save the new routing policy entry.

RIP

The Routing Information Protocol (RIP) is a distance based routing protocol and uses hop counts as a routing metric. RIP can only be used on WAN connections which do not utilise NAT.

Routing -- RIP Configuration

NOTE: RIP CANNOT BE CONFIGURED on the WAN interface which has NAT enabled (such as PPPoE).

To activate RIP for the WAN Interface, select the desired RIP version and operation and place a check in the 'Enabled' checkbox. To stop RIP on the WAN Interface, uncheck the 'Enabled' checkbox. Click the 'Apply/Save' button to star/stop RIP and save the configuration.

Interface	Version	Operation	Enabled
atm1	2	Passive	<input type="checkbox"/>

Apply/Save

Select the RIP version and Operation mode to use with the specified WAN service interface.

Click Apply/Save to save the new RIP configuration settings.

DNS

DNS Server

DNS (Domain Name System) is an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they are easier to remember. However, the Internet is based on IP addresses. Therefore, each time you type a domain name, a DNS service must translate the name into the corresponding IP address.

For example, the domain name `www.example.com` might translate to `198.105.232.4`. The DNS system consists of a network of DNS servers. If one DNS server does not know how to translate a particular domain name, it asks another one and so on until the correct IP address is returned.

If you select the Enable Automatic Assigned DNS checkbox in your WAN service connection, the router will receive and use the DNS Server assigned by your ISP. The DNS Server configuration page enables you to select which configured WAN Service DNS option will be used.

To use your preferred DNS servers instead, enable the 'Use the following Static DNS IP Address' option and enter in the IP address of your Primary DNS server. Adding a Secondary DNS server is optional.

DNS Server Configuration

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.

DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

Select DNS Server Interface from available WAN interfaces:

Selected DNS Server Interfaces Available WAN Interfaces

ppp0

->

<-

Use the following Static DNS IP address:

Primary DNS server:

Secondary DNS server:

Click Apply/Save to save the new DNS Server Configuration settings.

Dynamic DNS

The router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP Address. It is useful when you are hosting your own website, FTP server, or other server behind the router.

Before using this feature, you need to sign up for DDNS service providers. The router supports these popular Dynamic DNS service providers:

- www.dyndns.org
- www.tzo.com

To delete a Dynamic DNS entry, click the Remove checkbox next to the selected Dynamic DNS entry and click Remove.

Click Add to create a Dynamic DNS setting.

Add Dynamic DNS

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

D-DNS provider	<input type="text" value="DynDNS.org"/>
Hostname	<input type="text"/>
Interface	<input type="text" value="pppoe_0_8_35/ppp0"/>
DynDNS Settings	
Username	<input type="text"/>
Password	<input type="text"/>

Enter the following parameters:

PARAMETER	DEFINITION
D-DNS Provider	Select to utilise either the DynDNS.org or TZO dynamic DNS service.
Hostname	Enter your DynDNS hostname.
Interface	Select the interface information to update the DynDNS service with.
DynDNS Settings	Enter the account details of your selected dynamic DNS service.

Click Apply/Save to save the new dynamic DNS service configuration settings.

UPnP

The NB304N supports UPnP on WAN Services with NAT enabled. Select to enable or disable UPnP support and click Apply/Save to save the new UPnP configuration settings.

UPnP Configuration

NOTE: UPnP is activated only when there is a live WAN service with NAT enabled.

Enable UPnP

Apply/Save

DNS Proxy

The DNS Proxy function enables the NB304N to perform as a forwarding DNS server which an associated DNS Host entry and Domain name entry. This means you can utilise the default address 'NB304N' or 'NB304N.home' to access the NB304N management console.

DNS Proxy Configuration

Enable DNS Proxy

Host name of the Broadband Router:

Domain name of the LAN network:

Apply/Save

Enter your selected hostname and domain name for the DNS Proxy function and click Apply/Save to save the new DNS Proxy configuration settings.

Packet Acceleration

Packet acceleration uses a number of methods to try and reduce the latency experienced on some DSL services. These can range from utilising locally terminated TCP connections to Fast Connection Setup.

Packet Acceleration

Enable Packet Flow Accelerator

Apply/Save

Select to enable or disable Packet Acceleration and click Apply/Save to save the new packet acceleration configuration settings.

Storage Service

The Storage Service options enable you to manage attached USB Storage devices and create accounts to access the data stored on the attached USB device.

Storage Device Info

The storage device info page displays information about the attached USB Storage device.

Storage Service

The Storage service allows you to use Storage devices with modem to be more easily accessed

Volumename	PhysicalMedium	FileSystem	Total Space	Used Space
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NETCOMM GATEWAY™ SERIES – NB304N – ADSL2+ Wireless N300 Modem Router

User Accounts

User accounts are used to restrict access to the attached USB Storage device.

To delete a User account entry, click the Remove checkbox next to the selected account entry and click Remove.

Click Add to create a user account.

Storage User Account Setup

In the boxes below, enter the user name, password and volume name on which the home directory is to be created.

Username:	<input type="text"/>
Password:	<input type="password"/>
Confirm Password:	<input type="password"/>
VolumeName:	<input type="text"/>

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Username	Enter the username to use when accessing the USB Storage device.
Password	Enter the password to use when accessing the USB Storage device. Re-enter the password in the Confirm Password field.
VolumeName	Enter the VolumeName on which the home directory is to be created.

Click Apply/Save to save the new user account configuration settings.

Interface Grouping

Port Mapping allows you to create groups composed of the various interfaces available in your router. These groups then act as separate networks.

To delete an Interface group entry, click the Remove checkbox next to the selected group entry and click Remove.

Click Add to create an Interface group.

Interface grouping Configuration

To create a new interface group:

1. Enter the Group name and the group name must be unique and select either 2. (dynamic) or 3. (static) below:

2. If you like to automatically add LAN clients to a WAN Interface in the new group add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.

3. Select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports. **Note that these clients may obtain public IP addresses**

4. Click Apply/Save button to make the changes effective immediately

IMPORTANT If a vendor ID is configured for a specific client device, please REBOOT the client device attached to the modem to allow it to obtain an appropriate IP address.

Group Name:

WAN Interface used in the grouping IPTV/atm1

Grouped LAN Interfaces

>

<

Available LAN Interfaces

eth0
eth1
eth2
eth3
wlan0
w10_Guest1
w10_Guest2
w10_Guest3

Automatically Add Clients
With the following DHCP
Vendor IDs

Apply/Save

Enter the following parameters:

PARAMETER	DEFINITION
Group Name	Enter a name to identify the interface group
WAN Interface used	Select which WAN interface to use for the group
Available Interfaces	Select which LAN interfaces will be used by the group
DHCP Vendor IDs	Enter specific Vendor IDs to identify devices to automatically take part in the group

Click Apply/Save to save the Interface grouping configuration settings.

IPSec

The NB304N offers IPSec VPN tunnel functionality.

To delete an IPSec entry, click the Remove checkbox next to the selected IPSec tunnel entry and click Remove.

Click Add to create a new IPSec tunnel connection.

IPSec Settings

IPSec Connection Name

Tunnel Mode

Remote IPSec Gateway Address (IPv4 address in dotted decimal)

Tunnel access from local IP addresses

IP Address for VPN

IP Subnetmask

Tunnel access from remote IP addresses

IP Address for VPN

IP Subnetmask

Key Exchange Method

Authentication Method

Pre-Shared Key

Perfect Forward Secrecy

Advanced IKE Settings

Enter the following parameters:

PARAMETER	DEFINITION
IPSec Connection Name	Enter a 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

After entering the required IPSec tunnel service settings, click Apply/Save to save the new IPSec Tunnel configuration settings.

Power Management

The power management page enables you to control the green aspects of the NB304N.

You can enable or disable the power management features by selecting or unselecting the different power management functions as necessary and then click Apply to save these settings.

Power Management

This page allows control of Hardware modules to evaluate power consumption. Use the control buttons to select the desired option, click Apply and check the status response.

MIPS CPU Clock divider when Idle

Enable Status: **Enabled**

Wait instruction when Idle

Enable Status: **Enabled**

DRAM Self Refresh

Enable Status: **Enabled**

Ethernet Auto Power Down

Enable Status: **Enabled**

Number of ethernet interfaces in:

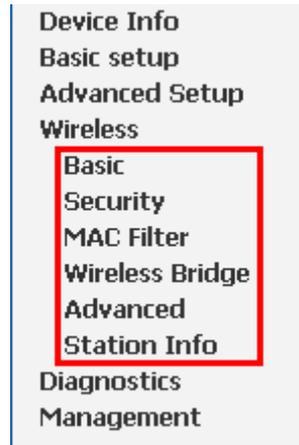
Full power mode:

Low power mode:

Apply

refresh

Wireless



Basic

The Wireless Basic page allows you to enable the wireless network and configure its basic settings.

Wireless -- Basic

This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements. Click 'Apply/Save' to configure the basic wireless options.

- Enable Wireless
- Hide Access Point
- Clients Isolation
- Disable WMM Advertise
- Enable Wireless Multicast Forwarding (WMF)

SSID:

BSSID:

Country:

Max Clients:

Wireless - Guest/Virtual Access Points:

Enabled	SSID	Hidden	Isolate Clients	Disable WMM Advertise	Enable WMF	Max Clients	BSSID
<input type="checkbox"/>	<input type="text" value="NetComm Wireless 2"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="16"/>	N/A
<input type="checkbox"/>	<input type="text" value="NetComm Wireless 3"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="16"/>	N/A
<input type="checkbox"/>	<input type="text" value="NetComm Wireless 4"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="16"/>	N/A

The following parameters are available:

PARAMETER	DEFINITION
Enable Wireless	Select to enable or disable the wireless network function
Hide Access Point	Select to hide or display the wireless network when an SSID scan is performed
Clients Isolation	Select to prevent clients on the wireless network being able to access each other
Disable WMM Advertise	Select to prevent the NB304N advertising its WMM function
Enable Multicast Forwarding (WMF)	Select to enable Wireless Multicast Forwarding. This can reduce latency and improve throughput for wireless clients
Max Clients	Enter the maximum number of wireless clients able to connect to the wireless network
Wireless Guest Network	Select to enable a separate Wireless Guest network, the same options are available for a Guest network as with the main system wireless network.

Click Apply/Save to save the new wireless configuration settings.

Security

The NB304N supports all encryptions within the 802.11 standard. The factory default is WPA2-PSK. The NB304N also supports WPA, WPA-PSK, WPA2, WPA2-PSK. You can also select to enable WPS mode.

Wireless -- Security

This page allows you to configure security features of the wireless LAN interface.
You may setup configuration manually
OR
through WiFi Protected Setup(WPS)

WPS Setup

Enable WPS

Manual Setup AP

You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click 'Apply/Save' when done.

Select SSID:

Network Authentication:

WPA/WAPI passphrase: [Click here to display](#)

WPA Group Rekey Interval:

WPA/WAPI Encryption:

WEP Encryption:

The following parameters are available:

PARAMETER	DEFINITION
Enable WPS	Select to enable or disable the WPS function of the NB304N.
Select SSID	Select the SSID to apply the security settings to.
Network Authentication	Select the Wireless security type to use with the wireless network.
WPA/WAPI passphrase	Enter the security key to use with the wireless network.
WPA Group Rekey Interval	Enter the group rekey interval. This should not need to be changed.
WPA/WAPI Encryption	Select the type of encryption to use on the wireless network.
WEP Encryption	Select to utilise WEP encryption on the wireless network connection.

Click Apply/Save to save the new wireless security configuration 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 to either allow or deny access to the MAC addresses listed.

To delete a MAC filter entry, click the Remove checkbox next to the selected filter entry and click Remove.

Click Add to add a MAC Address Filter.

Wireless -- MAC Filter

Enter the MAC address and click 'Apply/Save' to add the MAC address to the wireless MAC address filters.

MAC Address:

Enter the MAC Address to be filtered and click Apply/Save to save the new MAC Address filter settings.

Wireless Bridge

Wireless Bridge allows you to configure the router's access point as a bridge.

Wireless -- Bridge

This page allows you to configure wireless bridge features of the wireless LAN interface. You can select Wireless Bridge (also known as Wireless Distribution System) to disable access point functionality. Selecting Access Point enables access point functionality. Wireless bridge functionality will still be available and wireless stations will be able to associate to the AP. Select Disabled in Bridge Restrict which disables wireless bridge restriction. Any wireless bridge will be granted access. Selecting Enabled enables wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access. Click "Refresh" to update the remote bridges. Wait for few seconds to update. Click "Apply/Save" to configure the wireless bridge options.

AP Mode:

Bridge Restrict:

Select the mode for the Wireless Access Point built into the NB304N. When selecting 'Wireless Bridge' mode, you can also specify which wireless networks will be allowed to connect to the NB304N by using the 'Bridge Restrict' option and then entering the applicable MAC Addresses of the other wireless access points.

Click Apply/Save to save the new wireless bridge configuration settings.

Advanced

Advanced Wireless allows you to configure detailed wireless network settings such as the band, channel, bandwidth, transmit power and preamble settings.

Wireless -- Advanced

This page allows you to configure advanced features of the wireless LAN interface. You can select a particular channel on which to operate, force the transmission rate to a particular speed, set the fragmentation threshold, set the RTS threshold, set the wakeup interval for clients in power-save mode, set the beacon interval for the access point, set XPress mode and set whether short or long preambles are used. Click 'Apply/Save' to configure the advanced wireless options.

Band:

Channel: Current: 6 (interference: acceptable)

Auto Channel Timer(min):

802.11n/EW/C:

Bandwidth: Current: 40MHz

Control Sideband: Current: Lower

802.11n Rate:

802.11n Protection:

Support 802.11n Client Only:

RIFS Advertisement:

OBSS Co-Existence:

RX Chain Power Save:

RX Chain Power Save Quiet Time:

RX Chain Power Save PPS:

Radio Power Save:

Radio Power Save Quiet Time:

Radio Power Save PPS:

Radio Power Save On Time:

54g Rate:

Multicast Rate:

Basic Rate:

Fragmentation Threshold:

RTS Threshold:

DTIM Interval:

Beacon Interval:

Global Max Clients:

XPress Technology:

Transmit Power:

WMM(Wi-Fi Multimedia):

WMM No Acknowledgement:

WMM APSD:

Click Apply/Save to save any changes to the wireless network settings configuration.

Station Info

This page shows the MAC address of authenticated wireless stations that are connected to the NB340N and their status

Wireless -- Authenticated Stations

This page shows authenticated wireless stations and their status.

MAC	Associated	Authorized	SSID	Interface
-----	------------	------------	------	-----------

Diagnostics

The router has a diagnostic feature to test your DSL connection. You can use the diagnostic menu to perform the following test functions from the router.

- Testing the connection to your local network
- Testing the connection to your DSL service provider.
- Testing the connection to your Internet service provider.

pppoe_0_8_35 Diagnostics

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

Test the connection to your local network

Test your eth0 Connection:	PASS	Help
Test your eth1 Connection:	FAIL	Help
Test your eth2 Connection:	FAIL	Help
Test your eth3 Connection:	FAIL	Help
Test your Wireless Connection:	PASS	Help

Test the connection to your DSL service provider

Test xDSL Synchronization:	PASS	Help
Test ATM OAM F5 segment ping:	PASS	Help
Test ATM OAM F5 end-to-end ping:	PASS	Help

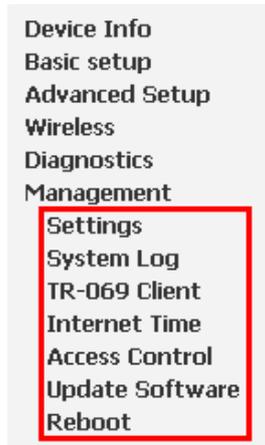
Test the connection to your Internet service provider

Test PPP server connection:	PASS	Help
Test authentication with ISP:	PASS	Help
Test the assigned IP address:	PASS	Help
Ping default gateway:	PASS	Help
Ping primary Domain Name Server:	PASS	Help



Click 'Next Connection' to run diagnostics on the next configured WAN Service connection or click 'Test with OAM F4' to retest the current WAN Service connection.

Management



Settings

You can choose to:

- Backup the settings as a configuration file stored onto your PC
- Update the current settings from a previously saved configuration file
- Erase the current settings and restore the default factory values

Backup

To backup the settings as a configuration file saved on your PC, click Backup Settings.

Settings - Backup

Backup Broadband Router configurations. You may save your router configurations to a file on your PC.

Backup Settings

Select the folder where you want to save the file and key in the file name under which you want to save the settings.

Update

To import a previously saved configuration file from your PC and update the settings of your router, click Browse to locate the binary (.BIN or .IMG) upgrade file.

Tools -- Update Settings

Update Broadband Router settings. You may update your router settings using your saved files.

Settings File Name:

Update Settings

Then click Update Settings.

Restore Default

To restore your router to its factory default settings, click Restore Default Settings. When prompted, click OK. Upon clicking OK, you will be prompted to follow the instruction as shown below.

Broadband Router Restore

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

Close the Broadband Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

System Log

This feature provides you a comprehensive list of log entries reporting events which you have configured for viewing. The amount of information displayed depends on the logging options selected.

System Log

The System Log dialog allows you to view the System Log and configure the System Log options.

Click 'View System Log' to view the System Log.

Click 'Configure System Log' to configure the System Log options.

[View System Log](#)

[Configure System Log](#)

To view the log, click View System Log.

You can click 'Configure System Log' to set the level of logging and whether or not a remote syslog server should be used.

System Log -- Configuration

If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the selected level will be logged. For the Display Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the selected mode is 'Local' or 'Both,' events will be recorded in the local memory.

Select the desired values and click 'Apply/Save' to configure the system log options.

Log: Disable Enable

Log Level:

Display Level:

Mode:

Server IP Address:

Server UDP Port:

[Apply/Save](#)

If a remote system log server is to be used, enter the IP address and port the remote syslog server is running on.

Click Apply/Save to save the new system log configuration settings.

TR-069 Client

As a TR-069 capable router, the Internet service provider can remotely update the settings of the device.

TR-069 client - Configuration

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Select the desired values and click 'Apply/Save' to configure the TR-069 client options.

Inform Disable Enable

Inform Interval:

ACS URL:

ACS User Name:

ACS Password:

WAN Interface used by TR-069 client:

Display SOAP messages on serial console Disable Enable

Connection Request Authentication

Connection Request User Name:

Connection Request Password:

Connection Request Port:

Connection Request URL:

[Apply/Save](#)

[GetRPCMethods](#)

These settings should not be changed unless directed to do so by your Internet Service Provider.

Click Apply/Save to save the new TR-069 configuration settings.

Internet Time

Enable Internet Time to automatically synchronize your time with an Internet based time server. You can use up to 5 NTP servers.

Time settings

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

Automatically synchronize with Internet time servers

First NTP time server:

Second NTP time server:

Third NTP time server:

Fourth NTP time server:

Fifth NTP time server:

Time zone offset:

Apply/Save

Enter your select NTP server to use for time synchronisation, select your time zone and then click Apply/Save to save the new Internet Time settings.

Access Control

This feature enables you manage the user access rights for remote access management based on the Services being used, IP addresses and Passwords.

Passwords

When you configure the router through an Internet browser, the system requires you to enter your user name and password to validate your access permission. By default, the Username is set to "admin" and the Password to "admin". You can change both the user and password is required.

Access Control -- Passwords

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

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

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

The user name "user" can access the DSL Router, view configuration settings and statistics, change Basic Setup, modify Wireless Basic and Wireless Security, as well as update the router's software.

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

Username:

New Username:

Old Password:

New Password:

Confirm Password:

Apply/Save

Click Apply/Save to save the new user account name or password configuration settings.

Services Control

Select which Services to allow, which ports the services are available on and whether to allow this access from the LAN or the WAN side connection.

Access Control -- Services

Services access control list (SCL) enable or disable the running services.

Services	LAN	WAN	Port
HTTP	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="80"/>
TELNET	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="23"/>
SSH	<input type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="22"/>
FTP	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="21"/>
TFTP	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="69"/>
ICMP	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="0"/>
SAMBA	<input checked="" type="checkbox"/> enable	<input type="checkbox"/> enable	<input type="text" value="445"/>

Apply/Save

Click Apply/Save to save the new Services control configuration settings.

IP Restriction

The IP restriction page enables you to set a list of IP Addresses able to access the Management Console.

NETCOMM GATEWAY™ SERIES – NB304N – ADSL2+ Wireless N300 Modem Router

To delete an IP restriction entry, click the Remove checkbox next to the IP restriction entry and click Remove.

Click Add to add a new IP restriction.

Access Control ---- Add IP Address

Enter a range of IP address permitted to access the local management services, and click "Apply". If you want a IP address permitted to access, you can enter the start IP the same as the end IP address.

Start IP Address:
End IP Address:

Apply

Enter the Start and End IP address range and click Apply to save the new IP Restriction configuration settings.

Update Software

The router's software is stored in the FLASH memory and can be upgraded as new software is released.

Tools -- Update Software

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

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

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

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

Software File Name:

Click Browse to locate the software file and then click Update Software.

Reboot

This feature allows the router to enable new network configuration to take effect or to clear problems with the modem router's network connection.

Click the button below to reboot the router.

Technical Data

The following table lists the hardware specifications of the NB304N.

MODEL	NB304N
CPU	BCM63281
DDR SDRAM	64MB DDR2
Serial Flash	4 MB/8 MB/16 MB
Modem Chipset	BCM63281
ADSL Compliance	<ul style="list-style-type: none"> • G.992.1 (T1.413) • G.992.2 (G.dmt), G.lite • G.992.3 (G.bis/ADS L2) • G.992.5 (ADSL2+) • Annex L (reach extended ADSL2)
LED Indicators	Power, DSL, Internet, LAN1 – LAN4, WLAN, WPS, USB
Operating Temperature	0 ~ 40 degrees Celsius (operating temperature)
Power input	12VDC – 1.5A
Dimensions & Weight	181 mm (L) x 137 mm (H) x 34 mm (W) 250 grams
Regulatory Compliancy	A-Tick

Electrical Specifications

It is recommended that the NB304N be powered by the supplied 12VDC/1.5A power supply. A replacement power supply is available from the NetComm Online shop.

Environmental Specifications / Tolerances

The NB304N housing enables it to operate over a wide variety of temperatures from 0°C ~ 40°C.

FAQ

1. I cannot access the Management Console web page

The default IP address of the unit is 192.168.1.1, so first try to open a web browser to this address. Also check that your PC/Device is on the same subnet as the router's Ethernet port.

2. The router was connected but cannot get back online

Verify your DSL service is active and that the telephone line has been connected securely.

3. I cannot connect wirelessly

Verify the Wireless network function is enabled and that you are entering the correct Wireless Security key and are able to see the Wireless network during an SSID scan.

4. The router has a connection but cannot access the internet

Verify your PC or device is on the same subnet as the Router and that DHCP is enabled.

5. I cannot access any attached USB Storage

Verify that you have created an appropriate user account and granted the required access permissions for the volume

Legal & Regulatory Information

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2. Customer Information

The Australian Communications & Media Authority (**ACMA**) requires you to be aware of the following information and warnings:

1. This unit may be connected to the Telecommunication Network through a line cord which meets the requirements of the AS/CA S008-2011 Standard.
2. This equipment has been tested and found to comply with the Standards for C-Tick and or A-Tick as set by the ACMA. These standards are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio noise and, if not installed and used in accordance with the instructions detailed within this manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur with the installation of this product in your home or office. If this equipment does cause some degree of interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage the user to try to correct the interference by one or more of the following measures:
 - Change the direction or relocate the receiving antenna.
 - Increase the separation between this equipment and the receiver.
 - Connect the equipment to an alternate power outlet on a different power circuit from that to which the receiver/TV is connected.
 - Consult an experienced radio/TV technician for help.
3. The power supply that is provided with this unit is only intended for use with this product. Do not use this power supply with any other product or do not use any other power supply that is not approved for use with this product by NetComm. Failure to do so may cause damage to this product, fire or result in personal injury.

3. Consumer Protection Laws

Australian and New Zealand consumer law in certain circumstances implies mandatory guarantees, conditions and warranties which cannot be excluded by NetComm and legislation of another country's Government may have a similar effect (together these are the **Consumer Protection Laws**). Any warranty or representation provided by NetComm is in addition to, and not in replacement of, your rights under such Consumer Protection Laws.

If you purchased our goods in Australia and you are a consumer, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. If you purchased our goods in New Zealand and are a consumer you will also be entitled to similar statutory guarantees.

4. Product Warranty

All NetComm products have a standard one (1) year warranty from date of purchase, however, some products have an extended warranty option (refer to packaging and the warranty card) (each a **Product Warranty**). To be eligible for the extended warranty option you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering online via the NetComm web site at www.netcomm.com.au. For all Product Warranty claims you will require proof of purchase. All Product Warranties are in addition to your rights and remedies under applicable Consumer Protection Laws which cannot be excluded (see Section 3 above).

Subject to your rights and remedies under applicable Consumer Protection Laws which cannot be excluded (see Section 3 above), the Product Warranty is granted on the following conditions:

1. the Product Warranty extends to the original purchaser (you / the customer) and is not transferable;
2. the Product Warranty shall not apply to software programs, batteries, power supplies, cables or other accessories supplied in or with the product;
3. the customer complies with all of the terms of any relevant agreement with NetComm and any other reasonable requirements of NetComm including producing such evidence of purchase as NetComm may require;
4. the cost of transporting product to and from NetComm's nominated premises is your responsibility;
5. NetComm does not have any liability or responsibility under the Product Warranty where any cost, loss, injury or damage of any kind, whether direct, indirect, consequential, incidental or otherwise arises out of events beyond NetComm's reasonable control. This includes but is not limited to: acts of God, war, riot, embargoes, acts of civil or military authorities, fire, floods, electricity outages, lightning, power surges, or shortages of materials or labour; and
6. the customer is responsible for the security of their computer and network at all times. Security features may be disabled within the factory default settings. NetComm recommends that you enable these features to enhance your security.

Subject to your rights and remedies under applicable Consumer Protection Laws which cannot be excluded (see Section 3 above), the Product Warranty is automatically voided if:

1. you, or someone else, use the product, or attempt to use it, other than as specified by NetComm;
2. the fault or defect in your product is the result of a voltage surge subjected to the product either by the way of power supply or communication line, whether caused by thunderstorm activity or any other cause(s);
3. the fault is the result of accidental damage or damage in transit, including but not limited to liquid spillage;
4. your product has been used for any purposes other than that for which it is sold, or in any way other than in strict accordance with the user manual supplied;
5. your product has been repaired or modified or attempted to be repaired or modified, other than by a qualified person at a service centre authorised by NetComm; or
6. the serial number has been defaced or altered in any way or if the serial number plate has been removed.

5. Limitation of Liability

This clause does not apply to New Zealand consumers.

Subject to your rights and remedies under applicable Consumer Protection Laws which cannot be excluded (see Section 3 above), NetComm accepts no liability or responsibility, for consequences arising from the use of this product. NetComm reserves the right to change the specifications and operating details of this product without notice.

If any law implies a guarantee, condition or warranty in respect of goods or services supplied, and NetComm's liability for breach of that condition or warranty may not be excluded but may be limited, then subject to your rights and remedies under any applicable Consumer Protection Laws which cannot be excluded, NetComm's liability for any breach of that guarantee, condition or warranty is limited to: (i) in the case of a supply of goods, NetComm doing any one or more of the following: replacing the goods or supplying equivalent goods; repairing the goods; paying the cost of replacing the goods or of acquiring equivalent goods; or paying the cost of having the goods repaired; or (ii) in the case of a supply of services, NetComm doing either or both of the following: supplying the services again; or paying the cost of having the services supplied again.

To the extent NetComm is unable to limit its liability as set out above, NetComm limits its liability to the extent such liability is lawfully able to be limited.

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