

NetComm[™]
Broadband Solutions

NB4 ➤ ADSL 4-Port Modem Router



ADSL 4-Port Modem Router

- ADSL Broadband Modem Router
- Advanced Security Firewall (SPI/DoS) & VPN Passthrough
- 4-Port 10/100 Switch
- Universal Plug & Play (UPnP) & Port Forwarding
- Easy Setup Wizard & Video Tutorial Guides

NB4 ➤ **User Guide**

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Introduction

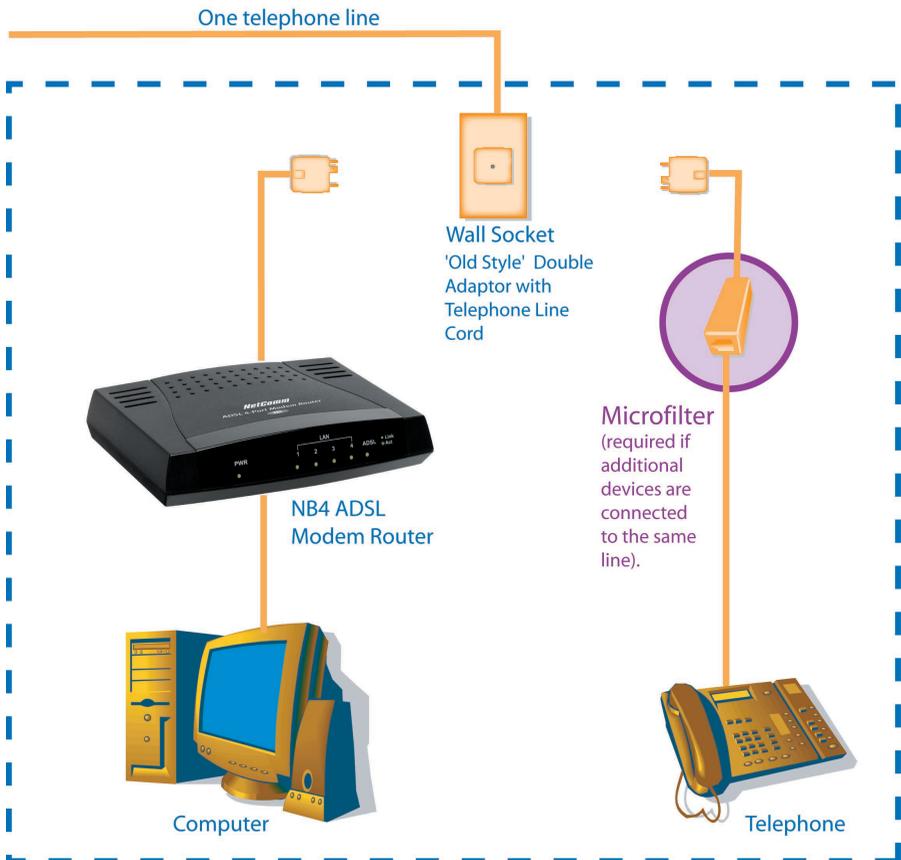
Congratulations on becoming the owner of the NB4 ADSL 4-port Modem Router. Your LAN (local area network) will now be able to access the Internet using your high-speed ADSL connection. This User Guide will show you how to set up the NB4, and how to customize its configuration to get the most out of your new product.

Do I need a Micro filter?

Micro filters are used to prevent common telephone equipment, such as phones, answering machines and fax machines, from interfering with your ADSL service. If your ADSL enabled phone line is being used with any other equipment other than your ADSL Modem then you will need to use one Micro filter for each phone device.

Splitters may be installed when your ADSL line is installed or when your current phone line is upgraded to ADSL. If your telephone line is already split you will not need to use a Microfilter - check with your ADSL service provider if you are unsure.

Each micro filter is connected in-line with your telephone or fax machine so that all signals pass through it. Telephones and/or facsimiles in other rooms that are using the same extension will also require Microfilters. The following diagram gives an example of connecting your ADSL Modem/Router using a Microfilter.



Package Contents

The following items should be contained in your Ethernet/USB ADSL Modem Package:

- NB4 ADSL 4-port Modem Router



- CD-ROM containing Manual



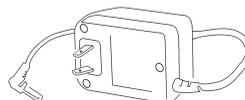
- RJ45 Ethernet Cable (CAT5 UTP Straight-Through)



- RJ11 ADSL Cable (Standard telephone cable)



- Power Adapter



- Quick Installation Guide and Package Contents Note



Check the contents of your package and, if any parts are missing or damaged, please contact your Dealer.

Quick Start

This Quick Start provides basic instructions for connecting the NB4 *ADSL Modem Router* to a computer and to the Internet.

- **Step 1** - describes setting up the hardware.
- **Step 2**- shows you how to configure basic settings on the *NB4 ADSL Modem Router* to get your computer connected to the Internet.
- **Step 3** - describes how to configure Internet properties on your computer(s).

This Quick Start Guide assumes that you have already established an ADSL service with your Internet service provider (ISP). These instructions provide a basic configuration that should be compatible with your home or small office setup. Refer to the Advanced Features section for additional configuration instructions.

NOTE: NetComm Technical Support for this product only covers the basic installation and features outlined in the Quick Start section. For detailed information regarding the advanced features of this product, please refer to the configuring sections.

The NetComm *NB4 ADSL Modem Router* can be connected directly to your computer via an Ethernet interface. If your computer has a network card (NIC) but isn't connected to a network hub or switch, or another computer, then connect the NB4 to the network port of your PC.

Warning: Before you begin, turn the power off for all devices. These include your computer(s) and the NB4 ADSL Modem Router.

Step 1 - Hardware Installation

To connect your modem, follow the step by step instructions below:

1. Connecting the ADSL cable.

Connect one end of the provided phone cable to the port labeled DSL on the Rear Panel of the device. Connect the other end to your wall phone jack.

2. Connecting the Ethernet cable.

Connect one end of the ethernet cable to the network port on your PC and the other end of the cable to the ethernet port of the *NB4 ADSL Modem Router*.

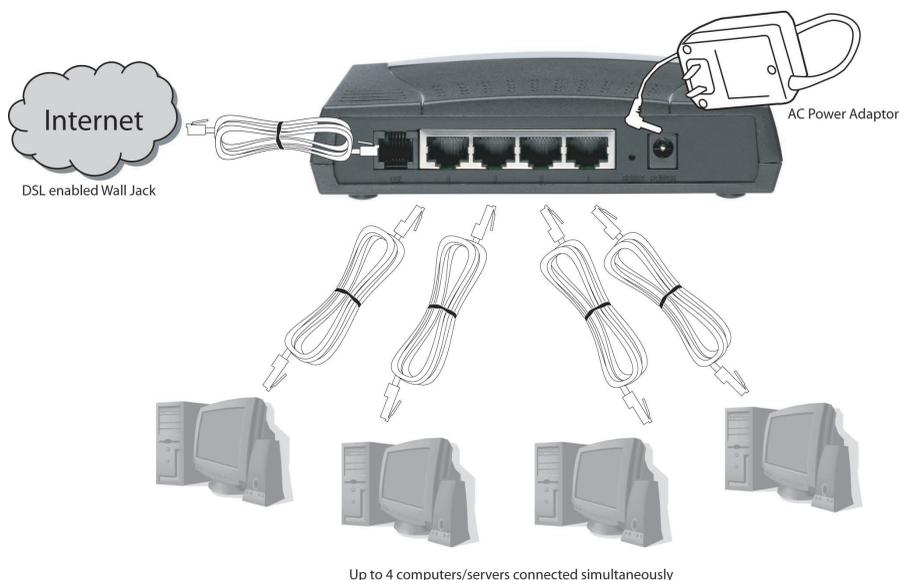
3. Attach the power connector.

Connect the AC power adapter to the Power connector on the back of the device and plug in the adapter to a wall outlet or power strip. Switch the power on to the NB4.

4. Power up your systems.

Turn on and boot up your computer.

After completing the above, refer to the appropriate operating system section to configure your computer.



NOTE: At this stage, if your ADSL line is active the ADSL Light should stay permanently ON - if it is blinking, then an ADSL Service has not been detected.

Step 2 - Modem Configuration

In Step 2, you log directly into the configuration page of the *NB4 ADSL Modem Router* and configure the basic settings for your Internet connection. Your ISP should provide you with the necessary information to complete this step.

The settings that you most likely need to change to access the internet are grouped onto a single Quick Configuration page.

To configure your *NB4 ADSL Modem Router* follow the steps below:

Note: If your computer's Ethernet interface is not set to use DHCP or you have trouble accessing/configuring your NB4, see instructions overleaf "Computer Hardware Configuration".

1. Insert the NetComm NB4 CD into your CD drive. The *NB4 ADSL Modem Router* autorun screen will appear. Click on **Configure NB4**.

(Alternatively, if the CD-Rom is not available, you can open a web browser and type **http://192.168.1.1** in the location bar to access the NB4's setup screen directly.)

2. The logon page will be displayed. Enter the NB4's username and password.

The default username is **admin**.

The default password is **password**.

Click on **OK**.

3. The Quick Start - login settings page will be displayed.

4. Under the User ID heading, enter the Username that your ISP has provided. In the password field, enter the password that your ISP has given you.
5. Leave the Protocol, VPI and VCI settings as default unless advised to change them by your ISP.
6. Click on the Connect button to test the settings.
7. If the test was successful, then click "Save Settings". If it failed, please try again by clicking on the "Connect" button a second time. Also, check your settings to ensure they are correct.
8. You should now be able to access the Internet with a web browser, email client or other Internet application.

Step 3 - Computer Hardware Configuration

Step 3 of the Quick Start provides instructions for configuring the Internet settings on your computer to work with the NB4. These steps are only required if you are having trouble accessing/configuring your NB4.

Windows® XP PCs

1. In the Windows task bar, click the **Start** button, and then click **Control Panel**.
2. Click on **Network & Internet Connections** icon. (Category mode only).
3. Click the **Network Connections** icon.
4. In the LAN or High-Speed Internet window, right-click on the icon corresponding to your network interface card (NIC) and select **Properties**. (Often, this icon is labeled **Local Area Connection**).
5. The Local Area Connection dialog box displays with a list of currently installed network items. Ensure that the check box to the left of the item labeled **Internet Protocol (TCP/IP)** is checked. Select **Internet Protocol TCP/IP** and click on **Properties**.
6. In the Internet Protocol (TCP/IP) Properties dialog box, click the radio button labeled **Obtain an IP address automatically**. Also click the radio button labeled **Obtain DNS server address automatically**.
7. Click **OK** twice to confirm your changes, and close the **Control Panel**.

Windows 2000 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
4. In the **Local Area Connection Properties** dialog box, select Internet Protocol (TCP/IP), and then click Properties
5. In the **Internet Protocol (TCP/IP) Properties** dialog box, click the radio button labeled Obtain an IP address automatically. Also click the radio button labeled Obtain DNS server address automatically.
6. Click **OK** twice to confirm and save your changes, and then close the **Control Panel**.

Windows ME PCs

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Click on **View All Control Panel Options**.
3. Double-click the **Network** icon.
4. The **Network Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 10.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Add...**
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add...**
7. Select Microsoft in the **Manufacturers** box.
8. Select Internet Protocol (TCP/IP) in the **Network Protocols** list, and then click **OK**. You may be prompted to install files from your Windows ME installation CD or other media. Follow the instructions to install the files. If prompted, click **OK** to restart your computer with the new settings.

Next, configure the PC to accept IP information assigned by the *NB4 ADSL Modem Router*:

9. Follow steps 1 – 4 above..
10. In the **Network Properties** dialog box, select TCP/IP, and then click Properties. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
11. In the **TCP/IP Settings** dialog box, click the radio button labeled **Obtain an IP address automatically**.
12. Click **OK** twice to confirm and save your changes, and then close the **Control Panel**.

Windows 95, 98 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network** icon.
3. The **Network** dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 9.
4. If TCP/IP does not display as an installed component, click Add... The **Select Network Component Type** dialog box displays.
5. Select Protocol, and then click Add... The **Select Network Protocol** dialog box displays.
6. Click on Microsoft in the **Manufacturers** list box, and then click TCP/IP in the **Network Protocols** list box.
7. Click **OK** to return to the **Network** dialog box, and then click **OK** again. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
8. Click **OK** to restart the PC and complete the TCP/IP installation.

Next, configure the PCs to accept IP information assigned by the *NB4 ADSL Modem Router*:

9. Follow steps 1 – 3 above.
10. Select the network component labeled **TCP/IP**, and then click **Properties**. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
11. In the **TCP/IP Properties** dialog box, click the **IP Address** tab.
12. Click the radio button labeled **Obtain an IP address automatically**.
13. Click **OK** twice to confirm and save your changes. You will be prompted to restart Windows.
14. Click **Yes**.

Mac OS 9.x

1. Click on the Apple in the toolbar, select **Control Panels**, and then click on **TCP/IP**.
2. Choose **Connect: via Ethernet** and **Configure: Using DHCP Server**.
3. Close the TCP/IP configuration box and save the changes.

Mac OS X

1. On the Dock, click on **System Preferences**.
2. Click on **Network**.
3. Confirm that **Built in Ethernet** is selected. From the TCP/IP tab select **Configure: Using DHCP**. Click on **Apply Now** to save any changes and exit from the System Preferences.

NOTE: For Windows NT 4 Configuration instructions please refer to the NB4 User Guide located on the CD-ROM.

For detailed information regarding the advanced features of this product, please refer to the configuring sections.

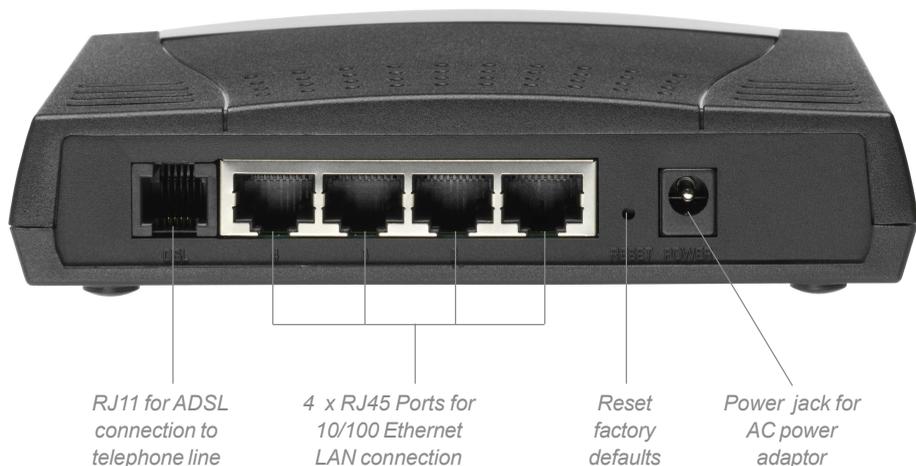
LED Indicators

The LED Indicators are located on the front of the unit, they are green in color. The meanings are as follows:



Label	Meaning	Status	Indicates
PWR	Power	On	Power is on
		Off	Power is off
LAN 1/ LAN 2/ LAN 3/ LAN 4			
LAN Link	Flashing		Flashes when data is being sent or received on the LAN connection.
	On		Indicates a link to your LAN or Network card is active.
	Off		Indicates no link to LAN
ADSL	Link	Link	A valid ADSL connection.
	Active	Act	An active WAN session.

Back Panel Ports



- ADSL** Telephone jack (RJ-11) to connect to your Telephone Wall Socket (ADSL line).
- ETHERNET** 4 x 10/100 Base-T Ethernet jack (RJ-45) to connect to your Ethernet Network card or Ethernet Hub / Switch.
- RESET** To reset your ADSL Router to factory default settings. (All customised settings that you have saved will be lost!)
- Please refer to the section below on how to use the reset function.
- DC** Connect the Power Adapter that comes with your package.

Resetting Factory Defaults

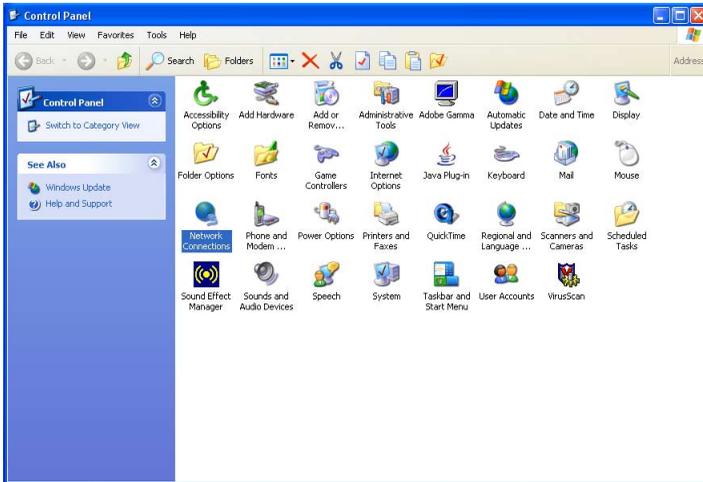
The restore to factory defaults feature will set the ADSL Router to its factory default configuration by resetting the ADSL Router. You may need to place the ADSL Router into its factory defaults; if the configuration has changed, you lose the ability to configure the ADSL Router via the web interface, or following a software upgrade. To reset the ADSL Router:

- Ensure that your ADSL Router is powered on (for at least 10 seconds).
- Use a paper clip or a pencil tip to depress the reset button for five seconds and release. At this point, the reset is in progress. Do not power off the unit at this point.
- When indicator lights return to steady green, reset is complete. The default settings are now restored.

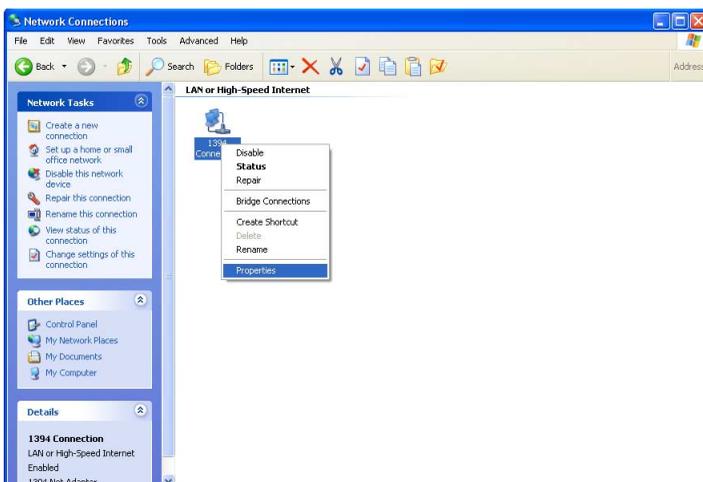
Configuring Your Computer

You can use the RJ-45 cable to connect the ADSL Router.

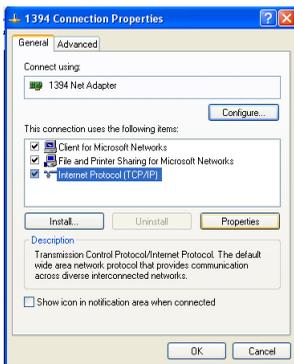
Step 1: Move your cursor as following sequence Start \ Settings \ Control Panel and click Control Panel. Then double-click on the Network Connections



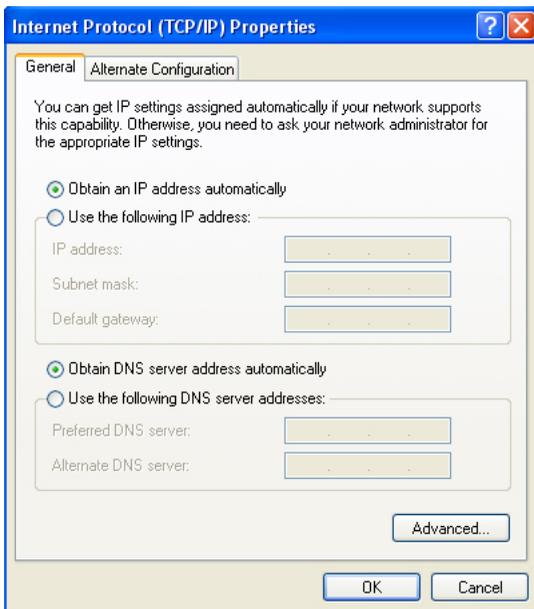
Step 2: In the LAN or High-Speed Internet window, right-click on icon corresponding to your network interface card (NIC) and select Properties. (This icon may be labeled Local Area Connection).



Step 3: In the General Tab of the Local Area Connection Properties menu. Highlight Internet Protocol (TCP/IP) under "This connection uses the following items." by clicking on it once. Click on the Properties button.



Step 4: Select Obtain an IP Address automatically: by clicking once in the circle. Click OK button to confirm and save your changes, and the close the Control Panel.



Configuring Your NB4

- Step 1** Launch your PC web browser and enter the URL: `http://192.168.1.1`
- Step 2:** In the User name/Password prompt, please type in admin/password as default.



Modem Access	
Modem authentication is required. This is different from your ISP username/password.	
Username:	<input type="text" value="admin"/>
Password:	<input type="password"/>
<input type="button" value="Log In"/>	

- Step3:** Please wait for the Home page to appear.

Quick Start Settings

After you have configured your computer and logged directly into the configuration page of the *NB4 ADSL Modem Router* you will need to complete the Quick Start section. The settings that you most likely need to change before using the device are grouped onto a single Quick Start page.

To configure your *NB4 ADSL Modem Router* follow the steps below:

1. Insert the NetComm NB4 CD into your CD drive. The *NB4 ADSL Modem Router* autorun screen will appear. Click on **Configure NB4**.

(Alternatively, if the CD-Rom is not available, you can open a web browser and type <http://192.168.1.1> in the location bar to access the NB4's setup screen directly.)

2. The logon page will be displayed. Enter the NB4's username and password.
The default username is **admin**.
The default password is **password**.
Click on **OK**.
3. The Quick Start - login settings page will be displayed.
4. Under the User ID heading, enter the Username that your ISP has provided. In the password field, enter the password that your ISP has given you.

The screenshot shows the NetComm NB4 web interface. At the top, there is a navigation bar with tabs for 'Quick Start', 'Setup', 'Advanced', 'Tools', 'Status', and 'Help'. The 'Quick Start' tab is selected. On the left side, there is a vertical menu with links for 'Quick Start', 'Login Settings', 'Save Settings', and 'Reboot'. The main content area is titled 'Login Settings' and contains the following fields:

- User ID: A text input field containing 'username'. Below it, an example is provided: 'Example: user@ispname'.
- Password: A text input field containing 'password'. Below it, a note says 'Provided by your ISP.'
- Protocol: A dropdown menu currently set to 'PPPoE'.
- VPI: A text input field containing '8'.
- VCI: A text input field containing '35'.

At the bottom left of the form is a 'Connect' button. To the right of the button, a red note reads: 'Note: After clicking on Connect, please be sure to click on "Save Settings" so that your username/password and other settings will be saved for next modem reboot.'

5. Leave the Protocol, VPI and VCI settings as default unless advised to change them by your ISP.
6. Click on the Connect button to test the settings.



- If the test was successful, then click "Save Settings". If it failed, please try again by clicking on the "Connect" button a second time.



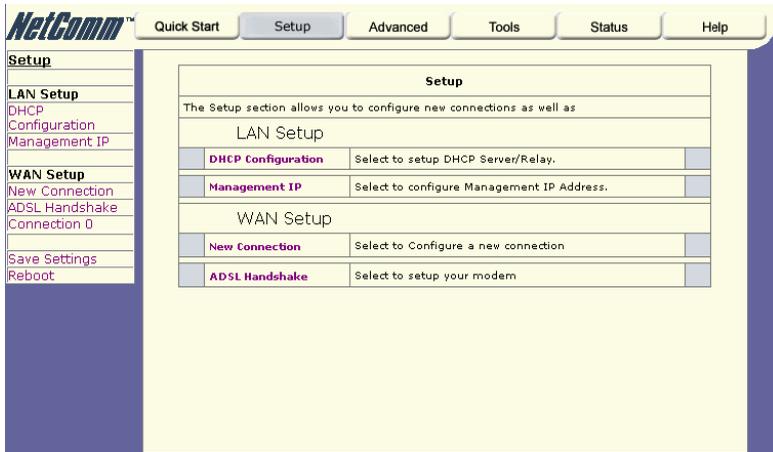
- You should now be able to access the Internet with a web browser, email client or other Internet application.

Note: For detailed information regarding the advanced features of this product, please refer to the Advanced sections in this NB4 User Guide.

Additional Settings

Setup

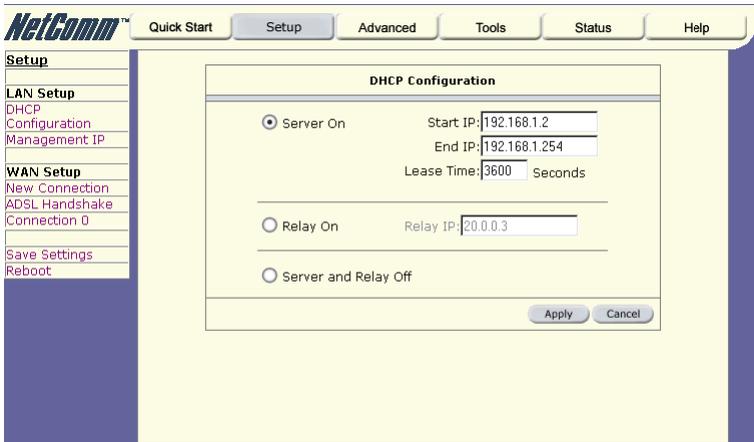
The Setup section allows you to configure new connections as well as setup LAN and WAN configurations.



LAN Setup

DHCP Configuration

DHCP stands for Dynamic Host Configuration Protocol. Your NB4 has its DHCP Server enabled by default this means it will assign valid IP addresses to each computer connected to it and will direct those computers to use the NB4 as the gateway to the internet. Having the DHCP server enabled is the recommended choice.



If you disable the DHCP server in the NB4 you will need to either manually (statically) assign IP address information to each computer or use another device/computer as DHCP server.

Note: It is not recommended that you have more than one DHCP server enabled on your network.

- Server On:** Enables the DHCP server.
- Start IP:** Sets the start IP address of the IP address pool.
- End IP:** Sets the end IP address of the IP address pool.
- Lease time:** The lease time is the amount of time of a network user will be allowed to connect with DHCP server. If all fields are 0, the allocated IP address will be effective forever.
- Relay On:** Allow PCs on LAN to request IP from other DHCP server.
- Relay IP:** Sets the other DHCP server IP address.

Management IP

The Management IP is the IP address of your NB4 on your local network. This IP address is specified on all computers on your network as the Gateway IP address. The Management IP address is also the IP address you type into your browser location bar to configure your NB4.

The screenshot shows the NetComm Management IP configuration interface. The 'Management IP' section is highlighted, and the 'IP Address' field is pre-filled with '192.168.1.1'. The 'Netmask' field is pre-filled with '255.255.255.0'. The other fields are empty. The 'Apply' and 'Cancel' buttons are visible at the bottom right of the form.

The Management IP address is usually 192.168.1.1 but you can change it to another suitable number (e.g. 192.168.0.1 or 10.0.0.1 or 172.16.1.1) to suit any existing network devices you already have installed. The NetMask describes how big your network is, the default 255.255.255.0 will allow for 253 computers and generally does not need to be changed unless to suit existing network requirements.

Note: If you change your Management IP address the DHCP server in your NB4 will automatically change the IP address range (DHCP pool) it hands out accordingly.

- IP Address:** Private IP address for connecting to a local private network (Default: 192.168.1.1).
- Netmask:** Netmask for the local private network (Default: 255.255.255.0).
- Default Gateway:** This field is optional. Enter in the IP address of the router on your network.
- Host Name:** Required by some ISPs. If the ISP does not provide the Host name, please leave it blank.
- Domain Name:** www.dynsns.org will provide you with a Domain Name. Enter this name in the "Domain Name" field.
- Physical Port:** There are five kinds of mode for data transfer (Auto)(10/Half Duplex)(10/Full Duplex)(100/Half Duplex)(100/Full Duplex).
- Apply:** Click Apply to save the changes.

PPPoE Connection Setup

If you click 'New Connection' or 'Connection 0' you will be prompted with the screen shown below.

If you clicked 'New Connection' the screen will have mainly blank options which need to be filled in. This is for manually creating a new connection account that will be used at the same time or in place of the 'Quick Start' account (a.k.a. Connection 0).

If you clicked 'Connection 0' you will be editing the existing settings that were created during the 'Quick Start' process.

The Connection setup page requires you to choose the correct settings to work with your ADSL connection as specified by your ISP. The screen will add or remove non-applicable choices as you change options. There are a few main settings you will need to confirm with your ISP before you can complete this page, these are;

- Type of Connection (e.g. PPPoE, PPPoA, Bridge)
- Username & Password (usually only required for PPPoE or PPPoA types)
- VPI & VCI (usually VPI=8 and VCI=35, Some times this can be 1 & 32)
- Authentication (Usually AUTO will work otherwise check with your ISP)

Most other choices on this screen are personal preference and not critical to getting your connection working.

Note: The Username & Password you need to type in here is for your ISP's account and it will be supplied to you by your ISP.

NAT

Network Address Translation (NAT) is a method of mapping one or more IP addresses and/or IP service ports into different specified values. Firewall is available in addition to the built-in NAT mechanism. When working with wide area connections, the first thing you must do is to have the handle of the connection. Once you have the handle for a Connection you must define the PVC and protocol settings for it.

- NAT Services:** Select Enable to turn on the Firewall/NAT Service.
- Name:** Enter the name of your ISP. This information is for identification purposes only.
- Type:** There six kinds of method (PPPoE/PPPoA/Static/DHCP/Bridge/CLIP).

PPP Settings

- Encapsulation:** Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the Mode field.
- Username:** Enter the username provided by your ISP.
- Password:** Enter the password provided by your ISP.
- Idle Timeout:** Idle timeout means the router will disconnect after being idle for a preset amount of time. The default is 60 seconds. If you set the time to 0, the ISDN connection will remain always connected to the ISP.
- Keep Alive:** If mode is LCP, This is the Keep Alive timer. If a reply to the LCP echo is not received in this amount if time, the connection is dropped. The Default is 10.
- MAX Fail:** Number of times the connection is tried before giving up if it can't be connected. The Default is 10.
- MRU:** Maximum Receive Unit indicates the peer of PPP connection the maximum size of the PPP information field this device can be received. The default value is 1492 and is used in the beginning of the PPP negotiation. In the normal negotiation, the peer will accept this MRU and will not send packet with information field larger than this value.

PVC Settings

- VPI:** If instructed to change this, type in the VPI value for the initial connection (using PVC 0). Default = 0.
- VCI:** If instructed to change this, type in the VCI value for the initial connection (using PVC 0). Default = 0.
- PCR:** Divide the DSL line rate (bps) by 424 (the size of an ATM cell) to find the Peak Cell Rate (PCR). This is the maximum rate at which the sender can send cells.
- SCR:** The Sustain Cell Rate (SCR) sets the average cell rate (long-term) that can be transmitted.
- Apply:** Click Apply to save the changes.

Static Settings

- Encapsulation:** Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the Mode field.
- IP Address:** Private IP address for connecting to a local private network (Default: 192.168.1.1).
- Netmask:** Netmask for the local private network (Default: 255.255.255.0).
- Default Gateway:** This field is optional. Enter in the IP address of the router on your network.
- DNS:** Sets the IP address of the DNS server.
- Mode:** Bridged and Routed

DHCP Settings

- Encapsulation:** Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the Mode field.
- IP Address:** Private IP address for connecting to a local private network (Default: 192.168.1.1).
- Netmask:** Netmask for the local private network (Default: 255.255.255.0).
- Default Gateway:** This field is optional. Enter in the IP address of the router on your network.

Bridge Settings

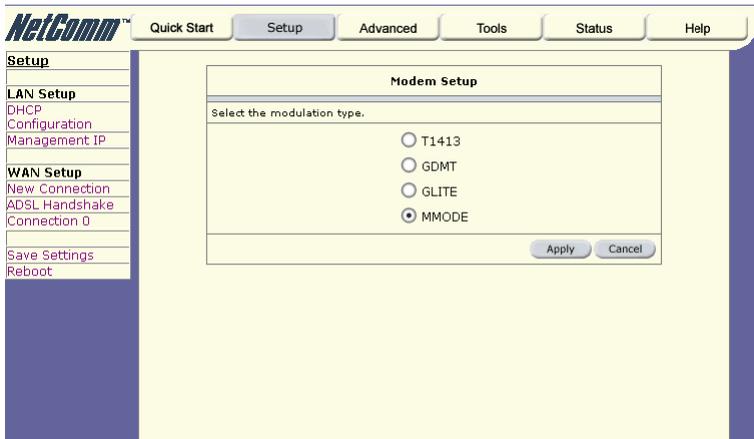
- Encapsulation:** Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the Mode field.

CLIP Settings

- IP Address:** Private IP address for connecting to a local private network (Default: 192.168.1.1).
- Netmask:** Netmask for the local private network (Default: 255.255.255.0).
- ARP Server:** Translating an IP address to an ATM address.
- Default Gateway:** This field is optional. Enter in the IP address of the router on your network.

ADSL Handshake

Here you can choose one of four ADSL handshake types, typically MMode (Multimode) will work on Australian ADSL lines. You should not need to change this setting unless advised by your ISP.



- T1413:** Full-Rate (ANSI T1.413 Issue 2) with line rate support of up to 8 Mbps downstream and 832 Kbps upstream.
- GDMT:** Full-Rate (G.dmt, G992.1) with line rate support of up to 8 Mbps downstream and 832 Kbps upstream.
- GLITE:** G.lite (G.992.2) with line rate support of up to 1.5 Mbps downstream and 512 Kbps upstream.
- MMODE:** Support Multi-Mode standard (ANSI T1.413 Issue 2; G.dmt(G.992.1); G.lite(G.992.2)).
- Apply:** Click Apply to save the changes.

Advanced

The Advanced section is divided into Advanced features and Firewall features, and lets you configure advanced features like UPnP, SNMP, Bridge Filters, and LAN clients.

NetComm™ Quick Start Setup **Advanced** Tools Status Help

Advanced

UPnP
SNMP
LAN Clients
MAC Filters
Multicast
Static Routing
Dynamic Routing

Firewall
Port Forwarding
Access Control
IP Filters
DMZ
Save Settings
Reboot

Advanced

The Advanced section lets you configure advanced features like RIP, Firewall, NAT, UPnP, IGMP, MAC Filters, and LAN clients.

Advanced Features

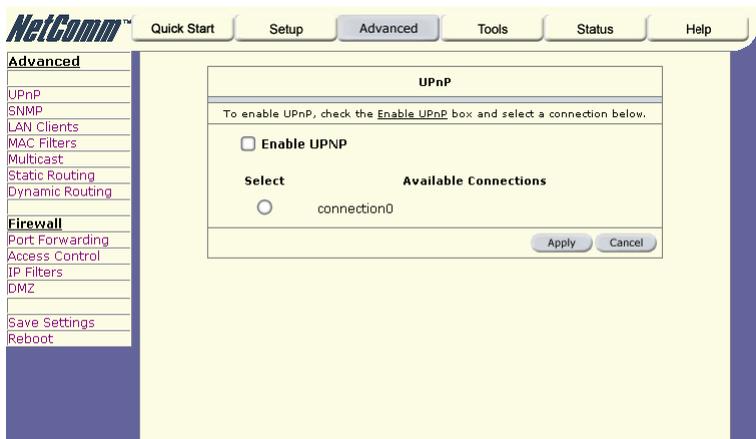
UPnP	Select to configure UPnP for different connections.	<input type="checkbox"/>
SNMP Management	Select to configure snmp management	<input type="checkbox"/>
LAN Clients	Select to configure LAN Clients.	<input type="checkbox"/>
MAC Filters	Select to setup MAC Filters.	<input type="checkbox"/>
Multicast	Select to configure Multicast pass-through for different connections.	<input type="checkbox"/>
Static Routing	Select to configure Static routes.	<input type="checkbox"/>
Dynamic Routing	Select to configure RIP.	<input type="checkbox"/>
Firewall		
Port Forwarding	Select to configure Firewall and NAT pass-through to your hosted applications.	<input type="checkbox"/>
Access Control	Select to configure access control list.	<input type="checkbox"/>
IP Filters	Select to configure Firewall to block your LAN PCs from accessing the Internet.	<input type="checkbox"/>
DMZ	Select to open the access to the DMZ computer from the Internet.	<input type="checkbox"/>

Advanced Features

UPnP

Your NB4 is Universal Plug 'n Play Capable, for security this feature is disabled by default. UPnP is a method of allowing devices and computer software on your Network to be able to configure 'unblocked' ports through your NB4 (and through the NB4 firewall). This makes it easier to run Network games and Programs like Microsoft Messenger etc.

To Enable UPnP click the ENABLE box and choose the connection (usually 'Connection 0') then click Apply and Save Settings.



Enable UPnP: Enable the UPnP.

Apply: Click Apply to save the changes.

SNMP

The Simple Network Management Protocol(SNMP) let a network administrator monitor on a network by retrieving settings on remote network devices. Network administrator typically runs an SNMP management station program such as MIB browser on a local host to obtain information from an SNMP agent such as the router you use now.

The screenshot shows the NetComm web interface for SNMP Management. The left sidebar contains a menu with items like 'Advanced', 'Firewall', 'Port Forwarding', 'Access Control', 'IP Filters', 'DMZ', 'Save Settings', and 'Reboot'. The main panel is titled 'SNMP Management' and includes the following fields:

- Vendor OID: 1.3.6.1.4.1.294
- Name: NB4
- Location: [Empty]
- Contact: [Empty]
- Idle time out: 40 secs

Below these fields is a 'Community' section with a table:

Name	Access Right
public	ReadOnly
[Empty]	[Empty]
[Empty]	[Empty]

At the bottom right of the main panel are 'Apply' and 'Cancel' buttons.

- Vendor OID:** The enterprise OID to which the system belongs to.
- Name:** Enter information about the system name in the system contact field.
- Location:** Enter information about the system contact person in the system contact field.
- Contact:** Enter information about the system contact person in the system contact field.
- Idle time out:** The period of time which allows SNMP to be idle before exit.
- Name:** Community name.
- Access Right:** Select ReadOnly or ReadWrite.
- Apply:** Click Apply to save the changes.

LAN Clients

LAN Client names are a way of applying specific Port-forwarding and Access Control rules to individual computers on the LAN. If DHCP is used, all DHCP clients are automatically assigned and are designated as a LAN client.

To add a LAN client, click Advanced>Advanced Features>LAN Clients.

The screenshot shows the NetComm web interface. The top navigation bar includes 'Quick Start', 'Setup', 'Advanced', 'Tools', 'Status', and 'Help'. The left sidebar has a tree view with 'Advanced' selected, containing sub-items like UPnP, SNMP, LAN Clients, MAC Filters, Multicast, Static Routing, and Dynamic Routing. Under 'Firewall', there are items like Port Forwarding, Access Control, IP Filters, DMZ, Save Settings, and Reboot. The main content area is titled 'LAN Clients' and contains the following configuration options:

LAN Clients

New IP Address:

Hostname:

Static Addresses

Delete	IP Address	Hostname	Type

Dynamic Addresses

Reserve	IP Address	Hostname	Type
<input type="checkbox"/>	192.168.1.2	shiw-nb	Dynamic
<input type="checkbox"/>	192.168.1.3	IBMtest	Dynamic

Buttons:

New IP Address: Enter the IP Address.

Hostname: Enter the Hostname.

Apply: Click Apply to save the changes.

MacFilters

MAC filtering enables rules to be defined which allow or deny data to pass through the Router based on the source and destination MAC address and data type of each data frame.

To access MAC Filters Control, click on Advanced>Advanced Features>MAC Filters .

The screenshot shows the NetComm router's configuration interface. The top navigation bar includes 'Quick Start', 'Setup', 'Advanced', 'Tools', 'Status', and 'Help'. The 'Advanced' tab is selected. On the left, a sidebar menu lists various configuration options: 'Advanced', 'UPnP', 'SNMP', 'LAN Clients', 'MAC Filters', 'Multicast', 'Static Routing', 'Dynamic Routing', 'Firewall', 'Port Forwarding', 'Access Control', 'IP Filters', 'DMZ', 'Save Settings', and 'Reboot'. The main content area is titled 'Bridge Filters' and features a checkbox labeled 'Enable Bridge Filters'. Below the checkbox is a table with the following structure:

Source MAC	Destination MAC	Protocol	Mode
00-00-00-00-00-00	00-00-00-00-00-00	Any	Deny

Below the table, there are 'Add', 'Apply', and 'Cancel' buttons. At the bottom of the table area, there are 'Edit', 'Source MAC', 'Destination MAC', 'Protocol', 'Mode', and 'Delete' headers, along with 'Apply' and 'Cancel' buttons.

Usage examples of MAC Filter Rules are: to specify which computers on a network are allowed Internet access; or to determine which particular computers are allowed to access services provided by the Router (the last point is particularly relevant for routers serving Wireless Networks as it can be used to prevent unauthorised people from attaching themselves to a wireless LAN).

Enable/Disable MAC Filtering

To enable MAC filtering, navigate to the MAC Filter Control Screen and select the Enable MAC Filters check box.

If the check box is selected, MAC filtering is enabled according to the list of MAC Filter Rules that has been created.

If the box is de-selected, MAC Filtering will not be enabled, even if MAC Filter Rules have been created.

Create MAC Filter Rules

Enter the Source MAC and Destination MAC details. Entering zeros or blanks into the Source or Destination fields enters a null value.

'Protocol' provides the choice of protocol type for the rule.

'Mode' provides the choice of Allow or Deny for the rule.

When all selections are made, click on Add to add the rule to the list of rules. A maximum of 20 MAC Filter Rules can be defined and saved.

To save changes, click on Save Settings on the left-hand menu.

Edit or Delete MAC Filter Rules

To edit an existing MAC Filter Rule, click the radio button adjacent to the Filter Rule name. The Rule will then appear in the top half of the MAC Filter control screen where it can be edited. When editing is complete, click 'Add' to return the Rule to the list of existing rules.

To delete MAC Filter Rules, click on the 'Delete' tick box; multiple deletions can be made by shift-clicking Delete tick boxes; Select All will select every rule. When the desired selections are made, effect deletion by clicking on Apply.

To save changes, click on Save Settings on the left-hand menu.

Hidden MAC Filter Rules

The MAC filter table contains three hidden rules. These rules are built into the Router to ensure the user does not become locked out by entering a rule which prevents further access to the router.

The first rule allows any and all ARP frames through the system.

The second rule allows all IPv4 frames with the destination MAC address of the bridge to go through.

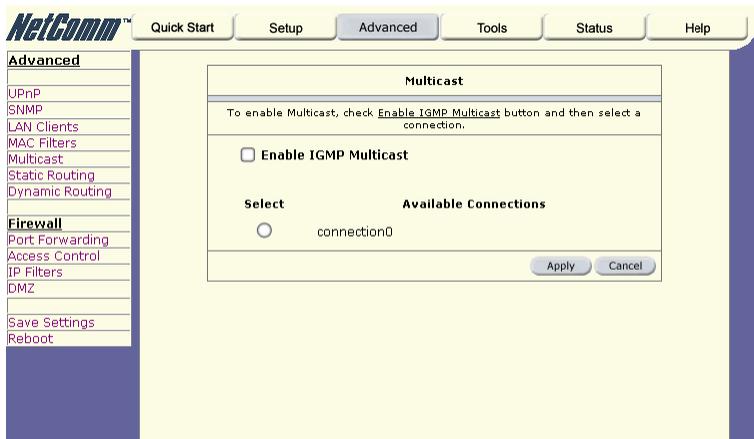
The third rule allows all IPv4 frames with the source MAC address of the bridge to go through.

TIP: To find the MAC address of a Windows-based computer, at the DOS prompt type:
ipconfig /all.

Multicast

IGMP [=Internet Group Management Protocol] Multicast enables communication between a single sender and multiple receivers on a network. It is used when data needs to be sent from one to many devices. Typical uses might include the updating of mobile personnel from a home office or the periodic publishing of an online newsletter. Multicasting provides efficiencies which enable it to use less network bandwidth than the sending of the same data by other means [e.g. SMTP].

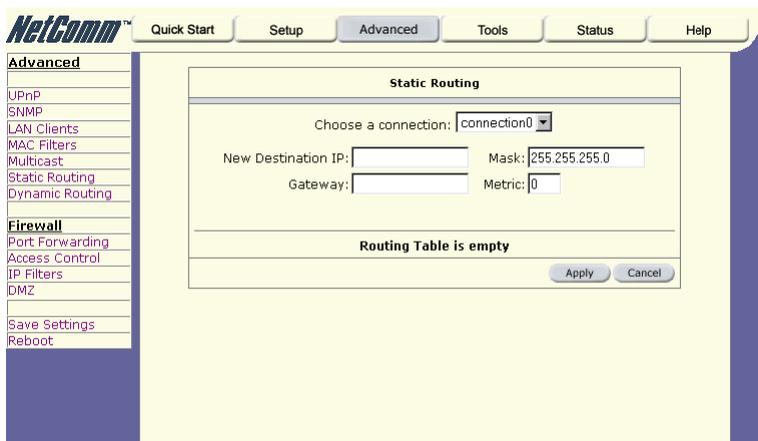
To access Multicasting, click on Advanced>Advanced Features>Multicast.



To enable Multicast, open the multicast screen and select the Enable IGMP Multicast.

Static Routing

If the Router is required to serve more than one network, you will need to set up a Static Route between the networks. Static routing can be used to allow users from one IP domain to access



the Internet through the Router in another domain. A Static Route provides the defined pathway that network information must travel to reach the specific host or network which is providing Internet access .

To access the Static Routing controls, click on Advanced>Advanced Features> Static Routing.

Configuring Static Routing:

Choose a Connection: presents list of Saved Connections. Select appropriate connection from list.

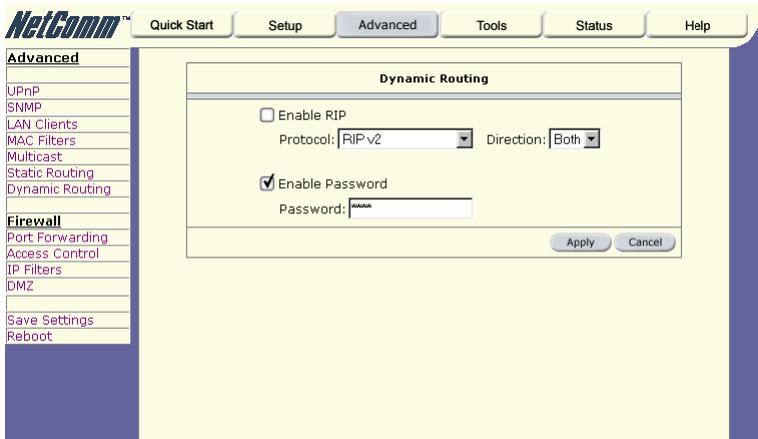
The New Destination IP is the address of the remote LAN network or host to which you want to assign a static route. Enter the IP address of the host for which you wish to create a static route here. For a standard Class C IP domain, the network address is the first three fields of the New Destination IP, while the last field should be 0. The Subnet Mask identifies which portion of an IP address is the network portion, and which portion is the host portion. For a full Class C Subnet, the Subnet Mask is 255.255.255.0. The Gateway IP address should be the IP address of the gateway device that allows for contact between the Gateway and the remote network or host.

Gateway: IP address refers to the IP address of the near device that is to connect with the remote network or host. If the NB4 is fulfilling this function then its IP address will be entered in this field.

To save changes, click on Apply, then click on Save Settings.

Dynamic Routing

Dynamic Routing makes use of the RIP Protocol to allow the ADSL Router to automatically adjust to physical changes in the network. The NB4, using the RIP protocol, will determine the network packet route based on the fewest number of hops between the Source and the Destination. The RIP protocol regularly broadcasts routing information to other Routers on the network and is part of the IP Suite.



To access Dynamic Routing click Advanced>Advanced Features>Dynamic Routing.

Enable RIP: if this box is checked, Dynamic Routing is enabled.

Protocol: choice is dependent upon the network environment. Most networks support Rip v1. If RIP v1 is selected, routing data will be sent in RIP v1 format. If Rip V2 is selected, routing data will be sent in RIP v2 format using Subnet Broadcasting. If Rip V1 Compatible is selected, routing data will be sent in RIP v2 format using Multicasting.

Direction: determines the direction that RIP routes will be updated.

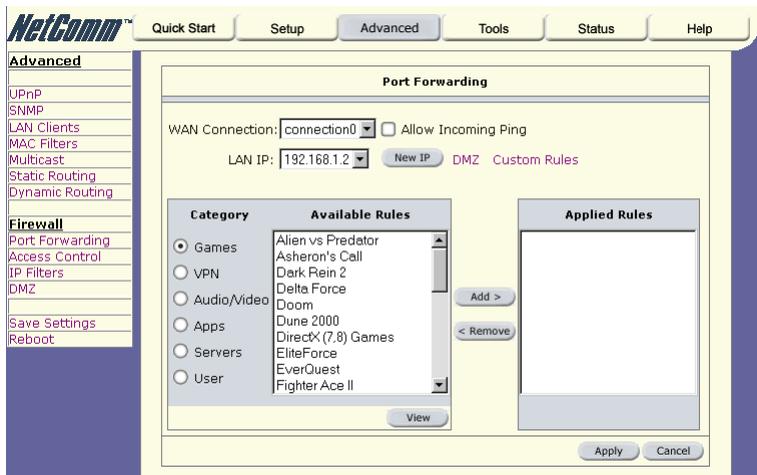
Select 'In': the Router will only incorporate received RIP information.

Select 'Out': the ADSL Router will only send out RIP information.

Select 'Both': the ADSL Router will both incorporate received RIP information and send out updated RIP information.

Port Forwarding

Port Forwarding is necessary because NAT [=Network Address Translation] only forwards traffic from the Internet to the LAN if a specific port mapping exists in the NAT translation table. Because of this, the NAT provides a level of protection for computers that are connected to your LAN. However, this also creates a connectivity problem when you want to make LAN resources available to Internet clients, which you may want to do to play network games or host network applications.



Thus Port Forwarding is necessary to run certain games, chat clients, video-conferencing and other kinds of application. You might also need to configure port-forwarding if you intend to host a web server or mail server that is to be visible outside your LAN.

TIP: In situations where you are hosting a Web Site or, for example, setting up a regular NetMeeting link, it is advisable to consider implementing a Fixed IP address, otherwise the dynamic IP address allocated by DHCP will need to be communicated prior to every user session.

To access Port Forwarding, click on Advanced>Firewall>Port Forwarding

Easy Port Forwarding: Applying Pre-Defined Rules

WAN Connection: refers to the active Connection Profile.

LAN IP: refers to the local Router IP address; the NB4 Default IP is shown in this example.

New IP: If you wish to manually add a LAN client so that you can apply rules to it, click on the New IP Button and enter Host Name and IP Address.

Available pre-defined rules are categorised according to the application type. Click the Radio Button adjacent to the appropriate Category, and then select the required application name. Click on the Add button to move the application into the Applied Rules box. In the example shown on the previous page, 'Delta Force' has been selected from the list of Available Rules and is about to be copied to Applied Rules. In the example, this will configure the NB4 ports to use with 'Delta Force'.

To remove a rule from the Applied Rules box, select the Rule and click on the Remove Button.

To save changes, click on Apply, then click on Save Settings.

Advanced Port Forwarding: Creating Custom Rules

If there is no pre-defined Port Forwarding Rule for a particular application, a User Rule can be created which defines the required Port(s), Protocol(s) and Internal Port forwarding rules.

Note than in this section, 'inside port' is indicated by the port map field and corresponds to the port number on the LAN Client. 'Outside ports' refer to the WAN port numbers and are designated by the 'port start' and 'port end' fields.

To create a custom rule you will need to know the specific port number(s) and port type [UDP or TCP] that the application requires. These will be the outside port numbers. Some applications specify a range of ports in which case you will need to know both the starting and ending port numbers in the range, which are mapped by the start port and end port fields.

The Port Map field specifies the internal port that the data will be directed to on the LAN Client. When dealing with port ranges, the Internal Port (designated by the Port Map field) will be the same as the first port in the range. When you simply want to forward a single port from outside (i.e. WAN side) to inside (i.e. LAN side), then all three fields (Port Start, Port End and Port Map) will have the same port number.

To create a New Port Forward Rule:



On the Port Forwarding page shown in the figure above, click on the User radio button, then on the New Button.

Rule Name: enter a name that identifies the rule; for the sake of clarity this will usually be the name of the application. The name must be unique, must not contain spaces and cannot begin with a number.

Protocol: can be either TCP or UDP, or both.

Port start...port end: These will be the same if you are forwarding only a single port. If there is a range, then port start is the first number in the range, and port end will be the last number.

Port Map: this is the port number that the data should be forwarded to on the specified LAN IP (i.e. the inside port). This is usually the same as the port start figure.

TIP: It is possible to map outside port numbers, or ranges [i.e. port start...port end] to a different inside port numbers [port map] for reasons of security or convenience.

Click 'Apply'

The Port Rule settings defined by this process will then be displayed in a table at the bottom of the Rule Management panel.

If you wish to add more ports to this rule, leave the text name in the Rule Name field and enter the new port settings. Click 'Apply' and the new settings will be added to the list.

Adding Custom Rules to Applied Rules List

When you have assigned all necessary ports to the Rule and they appear in the table, click on the Port Forwarding menu item to return to the main Port Forwarding screen.

User-created rules will be shown in the Available Rules list when the User Category radio button is selected. You can now apply the rule(s) by selecting it and clicking Add. This will add the rule to list of applied rules.

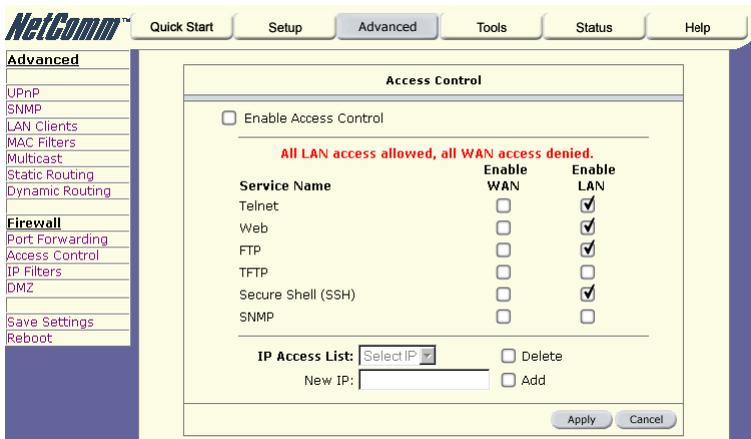
Click on Save Settings on the left-hand menu to make changes permanent.

Access Control

Use Access Control to configure advanced security functions by customising the NB4 Firewall. The default 'Firewall On' setting blocks all anonymous Internet traffic. Access control enables the user to selectively direct such traffic, for example to a Web Host in the DMZ or to specific ports opened for such applications as Web, Telnet or FTP.



CAUTION: This dialog box indicates that you should not disable LAN Web Access or else you might not be able to connect to the device. If you become locked out of the device perform a Factory Default Reset as detailed on page 16 of this manual.



To configure Access Control, click on Advanced>Firewall>Access Control

This will reveal the Enable Access Control screen.

The default configuration enables Telnet, Web, FTP and SSH access FROM the LAN TO the WAN. Access FROM the WAN to the LAN is not available in the default configuration.

Enable Access Control: check this box to enable selective access from the WAN to your LAN for applications of the class indicated by the relevant check boxes. If Access Control is not enabled, the individual check boxes cannot be checked.

If Access Control is enabled, and an Enable WAN checkbox is selected, then WAN access to the matching service is enabled. In other words, for example, if you were to enable Telnet access on the WAN you could then manage and configure your NB4 from anywhere on the Internet via Telnet.

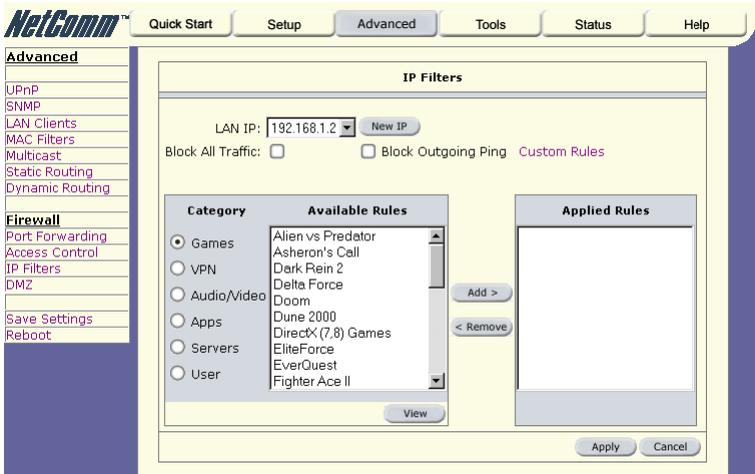
Caution: Enabling WAN access to the NB4 reduces security...

IP Access List: This enables you to specify which LAN/WAN IP addresses are allowed access to the NB4 configuration services specified.

IP Filters

The IP filters page allows you to specify Normal Port Forwards, Block ALL traffic to specific LAN Clients or specify Custom IP filters that will control the flow of data across the router.

Custom IP filters (Often also referred to as 'Access Control Lists') allow you to specify individual rules that will deny traffic by defining the following;



- Source IP address or IP Subnet
- Destination IP address or Subnet
- Port or Port range
- Protocol

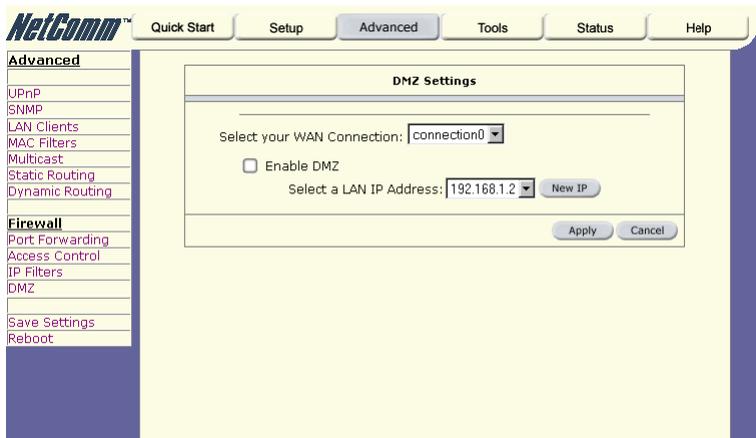
Customer IP filter are different from Port forwards, or Block All traffic because they allow greater scopes of IP addresses to be included in the block.

To access IP Filters, click on Advanced>Firewall>IP Filters.

NOTE: You must have at least one LAN Client in your LAN clients table before IP filters can be created. To create a LAN Client, see the section above on LAN Clients under the Advanced Menu.

DMZ Settings

A DMZ (demilitarized zone) is a computer host or small network inserted as 'neutral territory' between a private LAN and the Internet. It prevents outside users from getting direct access to LAN computers while still being able to access services hosted on the designated DMZ Computer. When using NAPT to share your internet connection, LAN computers will still be able to access the Internet when the DMZ host is enabled. Any direct communication to the WAN port of the NB4 that is not a reply to the original NAPT request is forwarded to the DMZ host.



Select Advanced>Firewall>DMZ. Check box 'Enable DMZ'.

New IP: Click on New IP to add a LAN Client which can be specified as DMZ Host; for more info on adding LAN Clients see 'Adding LAN Clients' above.

Tools

The Tools section allows you to save the configuration, restart the gateway, update the gateway firmware, setup user and remote log information and run Ping and Modem tests.

NetComm™ Quick Start Setup Advanced **Tools** Status Help

Tools

System Commands
 User Management
 Update Firmware
 Ping Test
 Modem Test
 Save Settings
 Reboot

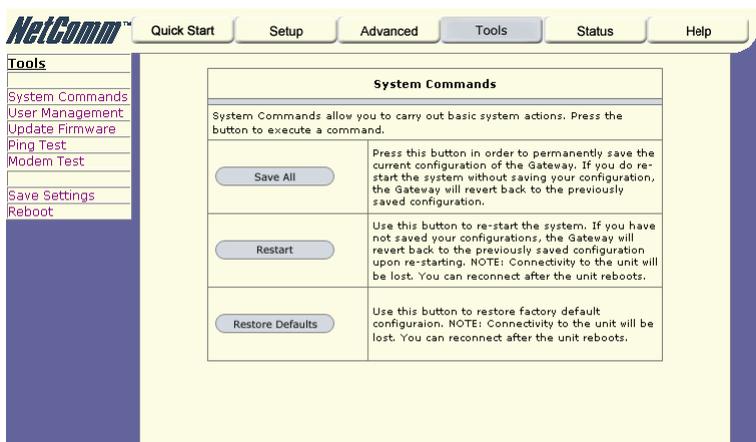
Tools

The Tools section allows you to save the configuration, restart the gateway, update the gateway firmware, setup user and remote log information and run Ping and Modem tests.

System Commands	Select to Save the current configuration, Restart the gateway and Restore to factory defaults.	<input type="checkbox"/>
User Management	Select to configure User Name and password.	<input type="checkbox"/>
Update Firmware	Select to upgrade the Gateway Firmware.	<input type="checkbox"/>
Ping Test	Select to run a Ping Test.	<input type="checkbox"/>
Modem Test	Select to Check whether the Modem with a specific Connection is properly connected to the Network.	<input type="checkbox"/>

System Commands

System commands allow you to carry out basic system actions. Press the button to execute a command. Here you will find the following functions:



- Save All (same as Save Settings on side menu)
- Restart (Same as Reboot on side menu)
- Restore Defaults (same as pressing and holding the button on the back to clear and reset to factory default.

Note: If you Restore Defaults you will need to reconfigure your internet connection settings, ISP Username & Password etc.

User Management

User Management is used to change your NB4's User Name or Password.

The screenshot shows the NetComm web interface with the 'Tools' tab selected. The 'User Management' section is active, displaying a form for changing the user name and password. The form includes fields for 'User Name' (containing 'admin'), 'Password', 'Confirmed Password', and 'Idle Timeout' (set to 30 minutes). 'Apply' and 'Cancel' buttons are at the bottom right of the form. A left-hand menu lists various tools, and a top navigation bar includes 'Quick Start', 'Setup', 'Advanced', 'Tools', 'Status', and 'Help'.

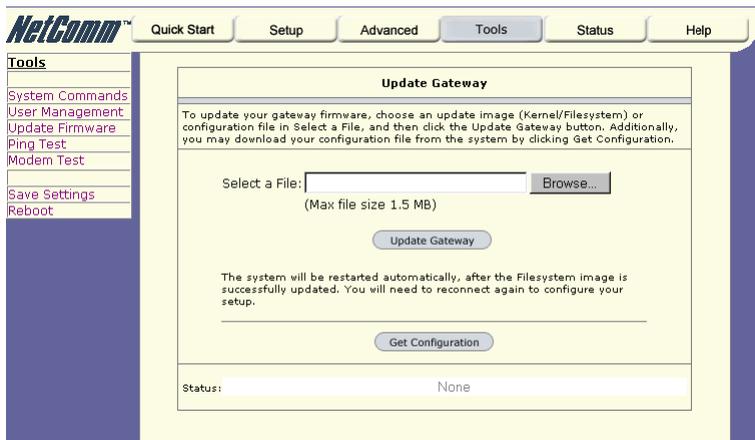
User Name: Default is 'admin'.

Password: Default is 'password'.

Apply: Click Apply to save the changes.

Update Firmware

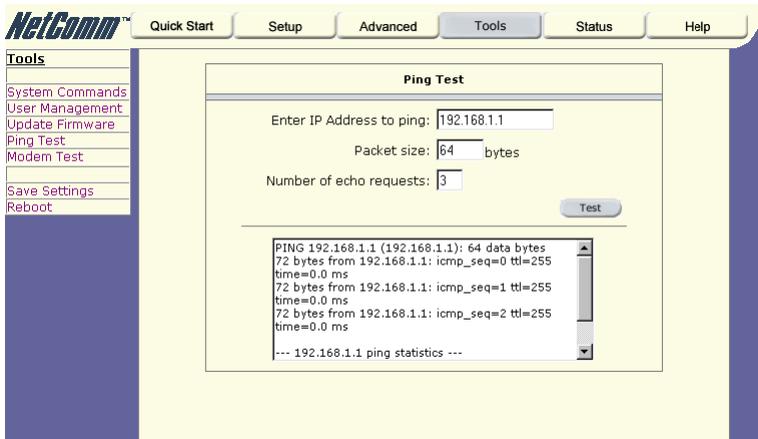
To update your NB4 firmware, browse an update image file or configuration file and then click the Update Gateway button.



Additionally, you may download your configuration file from the system by clicking “Get Configuration” so that you can store a backup of your configuration to restore it at a later date.

Ping Test

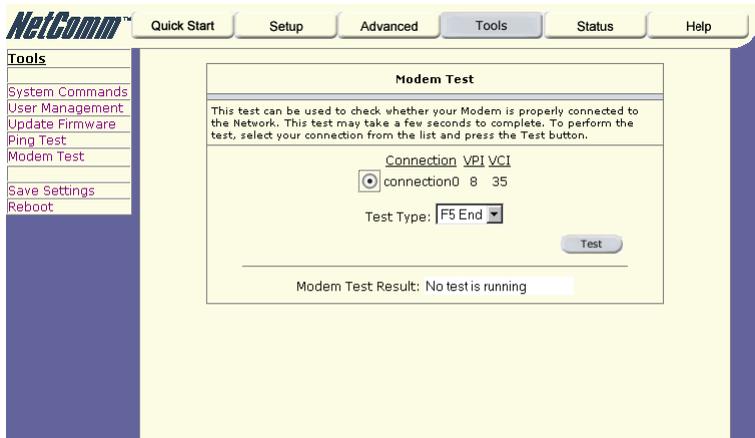
The Ping test allows you to ping local and remote IP addresses to check for connectivity directly from the router to the Internet or to a computer on your Network. You must make certain that the IP address that you ping will actually respond to a ping before interpreting the results of the ping.



Note: Computers and Network devices can be configured to communicate even though they do not respond to a ping, this can sometimes be done for security.

Modem Test

This test can be used to check whether your Modem is properly connected to the Network. This test may take a few seconds to complete. To perform the test, select your connection from the list and press the Test button.



Note: Errors or failures on this test do not specifically mean your connection is faulty, only your ISP can tell you if these tests should pass or fail.

Status

The Status section allows you to view the Status/Statistics of different connections and interfaces.

The screenshot shows the NetComm web interface with the 'Status' tab selected. The interface includes a navigation menu on the left and a main content area. The main content area is titled 'Status' and contains a table with the following items:

Status	
The Status section allows you to view the Status/Statistics of different connections and interfaces	
Network Statistics	Select to view the Statistics of different interfaces - Ethernet/DSL.
Connection Status	Select to view the Status of different connections.
DHCP Clients	Select to view the list of DHCP clients.
Modem Status	Select to view the Status and Statistics of your broadband (DSL) connection.
Product Information	Select to view the Product Information and Software Versions.
System Log	Select to view the Log messages.

The left navigation menu includes the following items: Status, Network Statistics, Connection Status, DHCP Clients, Modem Status, Product Information, System Log, Save Settings, and Reboot.

Network Statistics

You can view data statistics for your Ethernet ports combined or for your ADSL port in these pages.

NetComm™ Quick Start Setup Advanced Tools **Status** Help

Status

- Network Statistics
- Connection Status
- DHCP Clients
- Modem Status
- Product Information
- System Log
- Save Settings
- Reboot

USB Network Statistics

Choose an interface to view your network statistics:

Ethernet DSL

Transmit	
Good Tx Frames	2734
Good Tx Broadcast Frames	1
Good Tx Multicast Frames	0
Tx Total Bytes	1429288
Collisions	0
Error Frames	0
Carrier Sense Errors	0

Receive	
Good Rx Frames	2372
Good Rx Broadcast Frames	2
Good Rx Multicast Frames	1
Rx Total Bytes	221807
CRC Errors	0
Undersized Frames	0
Overruns	0

Refresh

Note: The statistics will be reset on loss of power or Reboot/Reset.

Connection Status

Here you can view the connection status of your Internet connection (usually 'Connection 0'). You can also see the Public IP address that has been assigned to your NB4 as well as other information about the connection.

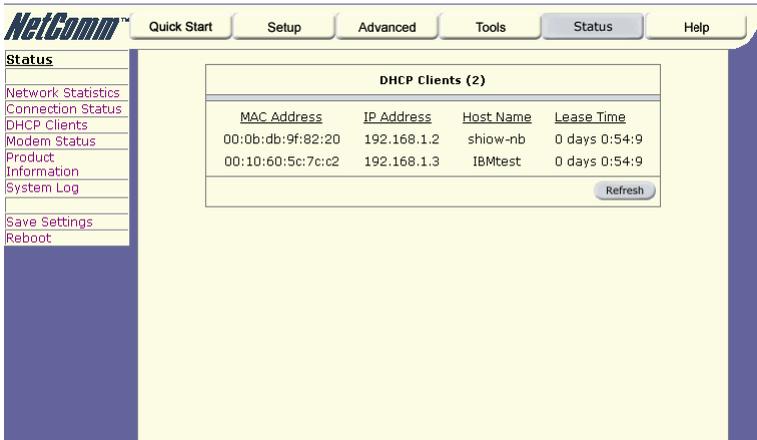
The screenshot shows the NetComm web interface. At the top, there are navigation tabs: Quick Start, Setup, Advanced, Tools, Status (selected), and Help. On the left, a sidebar menu lists various status options: Status, Network Statistics, Connection Status, DHCP Clients, Modem Status, Product Information, System Log, Save Settings, and Reboot. The main content area is titled 'Connections (1)' and contains a table with the following data:

Description	Type	IP	State	Online	Disconnect Reason
connection0	pppoe	220.253.73.96	Connected	0hr 5min 24sec	N/A

A 'Refresh' button is located at the bottom right of the table.

DHCP Clients

The DHCP Clients page shows the MAC address, IP Address, Host Name and Lease Time assigned to other computers in your network by the NB4.



The screenshot shows the NetComm web interface. At the top, there is a navigation bar with tabs for "Quick Start", "Setup", "Advanced", "Tools", "Status", and "Help". The "Status" tab is selected. On the left side, there is a "Status" menu with the following items: "Network Statistics", "Connection Status", "DHCP Clients", "Modem Status", "Product Information", "System Log", "Save Settings", and "Reboot". The "DHCP Clients" item is highlighted. The main content area displays a table titled "DHCP Clients (2)".

MAC Address	IP Address	Host Name	Lease Time
00:0b:db:9f:82:20	192.168.1.2	shiw-nb	0 days 0:54:9
00:10:60:5c:7c:c2	192.168.1.3	IBMtest	0 days 0:54:9

Below the table, there is a "Refresh" button.

Modem Status

The Modem Status page shows the modem status and DSL statistics.

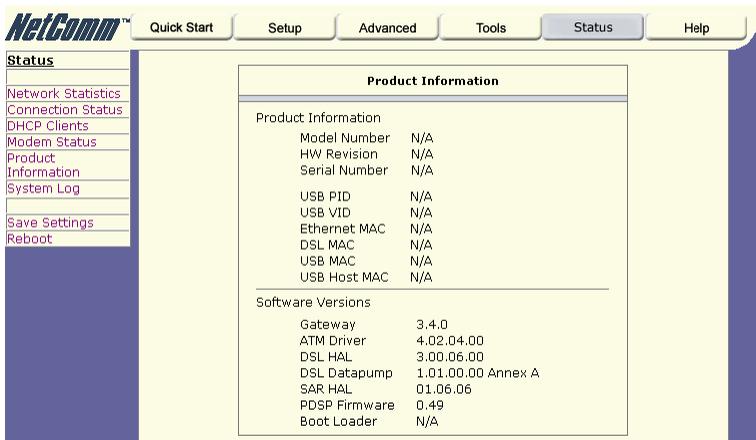
The screenshot shows the NetComm web interface. At the top, there is a navigation bar with tabs for 'Quick Start', 'Setup', 'Advanced', 'Tools', 'Status', and 'Help'. The 'Status' tab is currently selected. On the left side, there is a sidebar menu with the following items: 'Status', 'Network Statistics', 'Connection Status', 'DHCP Clients', 'Modem Status', 'Product Information', 'System Log', 'Save Settings', and 'Reboot'. The main content area displays the 'Modem Status' page. It features a central box with the following information:

Modem Status	
Modem Status	
Connection Status	Connected
Us Rate (Kbps)	128
Ds Rate (Kbps)	1536
US Margin	28
DS Margin	21
Modulation	MMODEM
LOS Errors	0
DS Line Attenuation	42
US Line Attenuation	58
Path Mode	Fast Path
DSL Statistics	
Near End F4 Loop Back Count	0
Near End F5 Loop Back Count	0

At the bottom right of the central box, there is a 'Refresh' button.

Product Information

The Product Information page shows the product information and software versions.



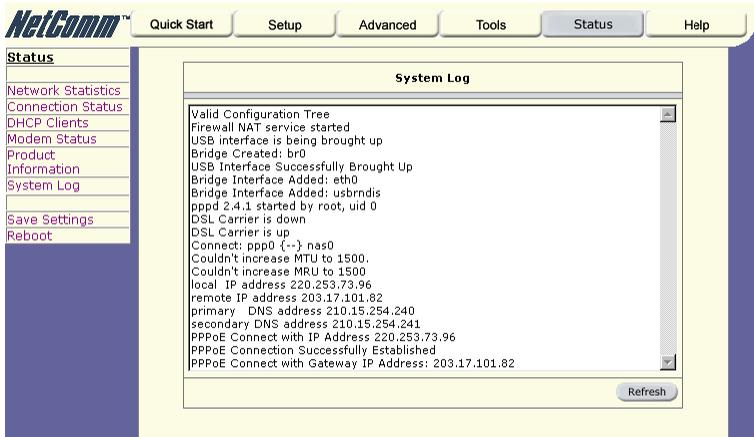
The screenshot shows the NetComm web interface. The top navigation bar includes tabs for Quick Start, Setup, Advanced, Tools, Status, and Help. The Status tab is selected. On the left, there is a sidebar menu with options: Status, Network Statistics, Connection Status, DHCP Clients, Modem Status, Product Information, System Log, Save Settings, and Reboot. The main content area displays the Product Information page, which is divided into two sections: Product Information and Software Versions.

Product Information	
Product Information	
Model Number	N/A
HW Revision	N/A
Serial Number	N/A
USB PID	N/A
USB VID	N/A
Ethernet MAC	N/A
DSL MAC	N/A
USB MAC	N/A
USB Host MAC	N/A

Software Versions	
Gateway	3.4.0
ATM Driver	4.02.04.00
DSL HAL	3.00.06.00
DSL Datapump	1.01.00.00 Annex A
SAR HAL	01.06.06
PDSP Firmware	0.49
Boot Loader	N/A

System Log

The System Log page shows the events triggered by the system.



The screenshot displays the NetComm web interface. At the top, there are navigation tabs: Quick Start, Setup, Advanced, Tools, Status (selected), and Help. On the left side, there is a vertical menu with the following items: Status (bolded), Network Statistics, Connection Status, DHCP Clients, Modem Status, Product, Information, System Log, Save Settings, and Reboot. The main content area is titled "System Log" and contains a scrollable text box with the following log entries:

```
Valid Configuration Tree
Firewall NAT service started
USB interface is being brought up
Bridge Created: br0
USB Interface Successfully Brought Up
Bridge Interface Added: eth0
Bridge Interface Added: usbrndis
pppd 2.4.1 started by root, uid 0
DSL Carrier is down
DSL Carrier is up
Connect: ppp0 {-} nas0
Couldn't increase MTU to 1500.
Couldn't increase MRU to 1500
local IP address 220.253.73.96
remote IP address 203.17.101.82
primary DNS address 210.15.254.240
secondary DNS address 210.15.254.241
PPPoE Connect with IP Address 220.253.73.96
PPPoE Connection Successfully Established
PPPoE Connect with Gateway IP Address: 203.17.101.82
```

At the bottom right of the log area, there is a "Refresh" button.

At this window you can access the help screens for the topic listed.



Firewall

Help section for Port Forwarding, Access Control, and Advanced Security.

Firewall

NAT and Firewall service
 The DSL Router uses Network Address Translation (NAT) and Stateful Packet Inspection (SPI) Firewall to protect your home network. The NAT and Firewall Service can be globally (for LAN and all WAN connections) disabled/enabled from the Setup Firewall/NAT Service page. If disabled no NAT functionality nor firewall protection can be provided. For each WAN connection (e.g. the Internet connection) NAT and Firewall (SPI) can be enabled/disabled. With Firewall (SPI) enabled on a WAN connection all incoming packets are examined by the Stateful Packet Inspection engine and traffic is dropped if it is not matching an existing connection opened from LAN side or a port forwarding rule. Connections from LAN side to the Internet are trusted and allowed to pass thru the router unless explicit IP Filter rules are used to block the LAN traffic. This Asymmetric Permissive Firewall setup (drop from WAN, allow from LAN) provides easy to use Internet access while protecting the home network.

Port Forwarding
 Using the Port Forwarding page, you can provide local services (for example web hosting) for people on the Internet or play Internet games. To configure a service, game or other application select the external connection (for example the Internet connection), select the computer hosting the service and add the corresponding firewall rule. If you want to add a custom application, select the User category, click New and fill in the port, protocols and description for your application. You can also add/edit/delete rules without using the pre-defined Firewall Policy Database (games, services, etc.). Click on "Custom Rules" to access this type of interface. In the presence of the firewall, anonymous Internet traffic is blocked.

IP Filters
 This firewall feature allows you to block network access based on a user's computer IP address. You can use this page to block specific traffic (for example block web access) or any traffic from a computer on your local network. To configure an IP Filter rule select the computers' IP address and add the corresponding firewall traffic definition from the Firewall Policy Database. If the traffic type is set to "Any" all network traffic from that computer will be blocked. You can also add/edit/delete IP Filter rules without using the pre-defined Firewall Policy Database (games, services, etc.). Click on "Custom Rules" to access this type of interface.

Access Control
 Open the access from the Internet (WAN) or LAN to the router's management ports (web, telnet, ssh, ftp, tftp, snmp). There are security risks associated with this action. For this reason remote management is restricted to computers on the network specified in the IP Access Control List that can hold up to 16 IP addresses. The Access Control List provides a global enable/disable that will enable or disable the ACL. If the ACL is disabled, the default behaviour (i.e. DENY on the WAN, Accept on the LAN is

Bridge Filters

Help section for Bridge Filters.

LAN Clients

Help section for LAN Clients.

PPP Connection

Help section for PPP Connection.

UPnP

Help section for UPnP.

Appendix A: Specification

Model Name	NB4
Line Connection	RJ-11(2 wires) , RJ-45 (4 port)
ADSL Features	DMT modulation and demodulation Tone detection for low power mode ITU 992.1 (G.dmt) Annex A, B, C ITU 992.2 (G.lite) ITU 992.3 ADSL2 (G.dmt.bis) ITU 992.4 ADSL2 (G.lite.bis) ITU 992.5 ADSL2+ ANSI T1.413 Issue 2
Full-rate adaptive modem	Maximum downstream rate of 8 Mbps ,12Mbps(ADSL2) Maximum upstream rate of 1 Mbps
G.lite adaptive modem	Maximum downstream rate of 1.5 Mbps Maximum upstream rate of 512 Kbps
WAN Mode Support	PPP over ATM (RFC 2364) PPP over Ethernet (RFC 2516)
LAN Mode Support	Bridged/routed Ethernet over ATM (RFC 2684/1483) Classical IP over ATM (RFC 1577) and PPP over Ethernet (RFC 2516)
Bridge Mode Support	Ethernet to ADSL self-learning Transparent Bridging (IEEE 802.1D) Supports up to 128 MAC learning addresses
Router Mode Support	IP routing-RIPv2 (backward compatible with RIPv1) Static routing DHCP (Dynamic Host Configuration Protocol) Server and Client NAPT (Network Address and Port Translation) NAT (Network Address Translation) ICMP (Internet Control Message Protocol) Simultaneous USB and Ethernet operation IGMP (Internet Group Management Protocol)
Ethernet Features	ONE RJ-45 connectors for 10/100 Mbps Ethernet LAN connection, DMZ function can be set up between them Complies with IEEE 802.3u specification Supports IEEE 802.3x Flow control in Full Duplex mode
PTT and Safety	A-Tick N367
OS	Win-98SE, Win-2000, Win-Me, Win-XP, Mac, Linux.
System Requirement	PII-266 + 32M RAM

Power

External AC Power
Input : 240Volts AC, 50Hz.
Output : 7.5VDC/1.5A

LED Indication

Power, LAN1, LAN2, LAN3, LAN4, ADSL Link/Act

SIZE

142mm x 112mm

Software Upgrade

Upgrade by Ethernet Port

Appendix B: Cable Connections

This cable information is provided for your reference only. Please ensure you only connect the appropriate cable into the correct socket on either this product or your computer.

If you are unsure about which cable to use or which socket to connect it to, please refer to the hardware installation section in this manual. If you are still not sure about cable connections, please contact a professional computer technician or NetComm for further advice.

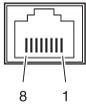
RJ-45 Network Ports

RJ-45 Network Ports can connect any networking devices that use a standard LAN interface, such as a Hub/Switch Hub or Router. Use unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable to connect the networking device to the RJ-45 Ethernet port. Depending on the type of connection, 10Mbps or 100Mbps, use the following Ethernet cable, as prescribed.

10Mbps: Use EIA/TIA-568-100-Category 3, 4 or 5 cable.

100Mbps: Use EIA/TIA-568-100-Category 5 cable.

Note: To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 metres.



RJ-45 Connector Pin Assignment	Normal Assignment
1	Input Receive Data +
2	Input Receive Data -
3	Output Transmit Data +
6	Output Transmit Data -
4,5,7,8	Not used

Figure 1

Twisted pair cables

Figures 1 and 2 illustrate the use of straight-through and crossover twisted pair cables along with the connector.



Figure 2

Straight and crossover cable configuration

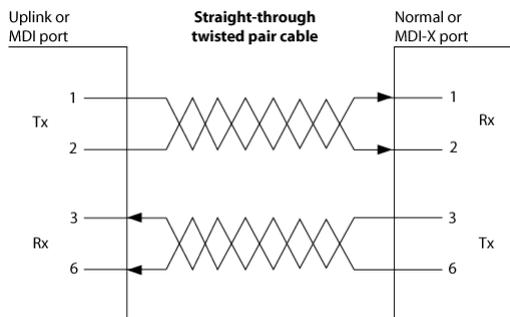


Figure 3

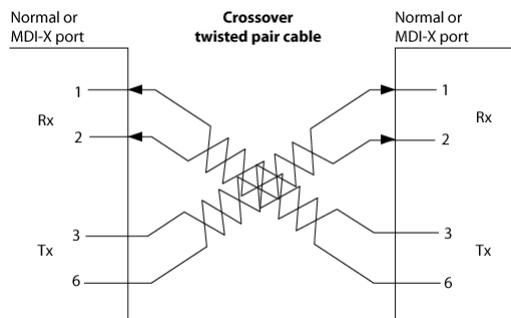
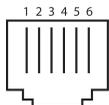


Figure 4

RJ11 connector and cable

An RJ-11 connector is the small, modular plug used for most analog telephones. It has six pin slots in the head, but usually only two or four of them are used.

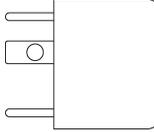


RJ-11 Connector Pin Assignment	Normal Assignment
1	Not Connected
2	Not connected
3	Line
4	Line
5	Not Connected
6	Not Connected

Figure 5

605 to RJ-11 adapter

The 605 to RJ-11 adaptor is provided to comply with the older 610 Telstra wall socket. The 605 to RJ-11 adapter may be used to convert the supplied RJ-11 cable, if the older connection is required.



Appendix C: Glossary

10BASE-T	A designation for the type of wiring used by Ethernet networks with a data rate of 10 Mbps. Also known as Category 3 (CAT 3) wiring. See also data rate, Ethernet.
100BASE-T	A designation for the type of wiring used by Ethernet networks with a data rate of 100 Mbps. Also known as Category 5 (CAT 5) wiring. See also data rate, Ethernet.
ADSL	Asymmetric Digital Subscriber Line. The most commonly deployed flavor of DSL for home users. The term asymmetrical refers to its unequal data rates for downloading and uploading (the download rate is higher than the upload rate). The asymmetrical rates benefit home users because they typically download much more data from the Internet than they upload.
analog	Of data, having a form is analogous to the data's original waveform. The voice component in DSL is an analog signal. See also digital.
ATM	Asynchronous Transfer Mode A standard for high-speed transmission of data, text, voice, and video, widely used within the Internet. ATM data rates range from 45 Mbps to 2.5 Gbps. See also data rate.
authenticate	To verify a user's identity, such as by prompting for a password.
binary	The "base two" system of numbers, that uses only two digits, 0 and 1, to represent all numbers. In binary, the number 1 is written as 1, 2 as 10, 3 as 11, 4 as 100, etc. Although expressed as decimal numbers for convenience, IP addresses in actual use are binary numbers; e.g., the IP address 209.191.4.240 is 11010001.10111111.00000100.11110000 in binary. See also bit, IP address, network mask.
bit	Short for "binary digit," a bit is a number that can have two values, 0 or 1. See also binary.
bps	bits per second
bridging	Passing data from your network to your ISP and vice versa using the hardware addresses of the devices at each location. Bridging contrasts with routing, which can add more intelligence to data transfers by using network addresses instead. The My ADSL Modem can perform both routing and bridging. Typically, when both functions are enabled, the device routes IP data and bridges all other types of data. See also routing.
broadband	A telecommunications technology that can send different types of data over the same medium. DSL is a broadband technology.

Broadcast	To send data to all computers on a network.
CO	Central Office A circuit switch that terminates all the local access lines in a particular geographic serving area; a physical building where the local switching equipment is found. xDSL lines running from a subscriber's home connect at their serving central office.
DHCP	Dynamic Host Configuration Protocol DHCP automates address assignment and management. When a computer connects to the LAN, DHCP assigns it an IP address from a shared pool of IP addresses; after a specified time limit, DHCP returns the address to the pool.
DHCP relay	Dynamic Host Configuration Protocol relay. A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the My ADSL Modem's interfaces can be configured as a DHCP relay. See DHCP.
DHCP server	Dynamic Host Configuration Protocol server. A DHCP server is a computer that is responsible for assigning IP addresses to the computers on a LAN. See DHCP.
digital	Of data, having a form based on discrete values expressed as binary numbers (0's and 1's). The data component in DSL is a digital signal. See also analog.
DNS	Domain Name System. The DNS maps domain names into IP addresses. DNS information is distributed hierarchically throughout the Internet among computers called DNS servers. When you start to access a web site, a DNS server looks up the requested domain name to find its corresponding IP address. If the DNS server cannot find the IP address, it communicates with higher-level DNS servers to determine the IP address. See also domain name.
domain name	A domain name is a user-friendly name used in place of its associated IP address. For example, www.globespan.net is the domain name associated with IP address 209.191.4.240. Domain names must be unique; their assignment is controlled by the Internet Corporation for Assigned Names and Numbers (ICANN). Domain names are a key element of URLs, which identify a specific file at a web site, e.g., http://www.globespan.net/index.html . See also DNS.
download	To transfer data in the downstream direction, i.e., from the Internet to the user.
DSL	Digital Subscriber Line A technology that allows both digital data and analog voice signals to travel over existing copper telephone lines.

Ethernet	The most commonly installed computer network technology, usually using twisted pair wiring. Ethernet data rates are 10 Mbps and 100 Mbps. See also BASE-T, 100BASE-T, twisted pair.
Filtering	To screen out selected types of data, based on filtering rules. Filtering can be applied in one direction (upstream or downstream), or in both directions.
filtering rule	A rule that specifies what kinds of data a routing device will accept and/or reject. Filtering rules are defined to operate on an interface (or multiple interfaces) and in a particular direction (upstream, downstream, or both).
Firewall	Any method of protecting a computer or LAN connected to the Internet from intrusion or attack from the outside. Some firewall protection can be provided by packet filtering and Network Address Translation services.
FTP	File Transfer Protocol - A program used to transfer files between computers connected to the Internet. Common uses include uploading new or updated files to a web server, and downloading files from a web server.
GGP	Gateway to Gateway Protocol. An Internet protocol that specifies how gateway routers communicate with each other.
Gbps	Abbreviation for Gigabits (GIG-uh-bits) per second, or one billion bits per second. Internet data rates are often expressed in Gbps.
GRE	Generic Routing Encapsulation. TCP/IP protocol suite, transport layer encapsulation protocol.
hop	When you send data through the Internet, it is sent first from your computer to a router, and then from one router to another until it finally reaches a router that is directly connected to the recipient. Each individual “leg” of the data’s journey is called a hop.
hop count	The number of hops that data has taken on its route to its destination. Alternatively, the maximum number of hops that a packet is allowed to take before being discarded, See also TTL.
host	A device (usually a computer) connected to a network.
HTTP	Hyper-Text Transfer Protocol HTTP is the main protocol used to transfer data from web sites so that it can be displayed by web browsers. See also web browser
ICMP	Internet Control Message Protocol An Internet protocol used to report errors and other network-related information. The ping command makes use of ICMP.

IGMP	Internet Group Management Protocol An Internet protocol that enables a computer to share information about its membership in multicast groups with adjacent routers. A multicast group of computers is one whose members have designated as interested in receiving specific content from the others. Multicasting to an IGMP group can be used to simultaneously update the address books of a group of mobile computer users or to send company newsletters to a distribution list.
in-line filter	See Microfilter
Internet	The global collection of interconnected networks used for both private and business communications.
intranet	A private, company-internal network that looks like part of the Internet (users access information using web browsers), but is accessible only by employees.
IP	See TCP/IP.
IP address	Internet Protocol address The address of a host (computer) on the Internet, consisting of four numbers, each from 0 to 255, separated by periods, e.g., 209.191.4.240. An IP address consists of a network ID that identifies the particular network the host belongs to, and a host ID uniquely identifying the host itself on that network. A network mask is used to define the network ID and the host ID. Because IP addresses are difficult to remember, they usually have an associated domain name that can be specified instead. See also domain name, network mask.
ISP	Internet Service Provider A company that provides Internet access to its customers, usually for a fee.
LAN	Local Area Network A network limited to a small geographic area, such as a home, office, or small building.
LED	Light Emitting Diode An electronic light-emitting device. The indicator lights on the front of the My ADSL Modem are LEDs.
MAC address	Media Access Control address The permanent hardware address of a device, assigned by its manufacturer. MAC addresses are expressed as six pairs of characters.
mask	: See network mask.
Mbps	Abbreviation for Megabits per second, or one million bits per second. Network data rates are often expressed in Mbps.
Microfilter	In splitterless deployments, a microfilter is a device that removes the data frequencies in the DSL signal, so that telephone users do not experience interference (noise) from the data signals. Microfilter types include in-line (installs between phone and jack) and wall-mount (telephone jack with built-in microfilter). See also splitterless.

NAT	Network Address Translation A service performed by many routers that translates your network's publicly known IP address into a Private IP address for each computer on your LAN. Only your router and your LAN know these addresses; the outside world sees only the public IP address when talking to a computer on your LAN.
NAT rule	A defined method for translating between public and private IP addresses on your LAN.
network	A group of computers that are connected together, allowing them to communicate with each other and share resources, such as software, files, etc. A network can be small, such as a LAN, or very large, such as the Internet.
network mask	A network mask is a sequence of bits applied to an IP address to select the network ID while ignoring the host ID. Bits set to 1 mean "select this bit" while bits set to 0 mean "ignore this bit." For example, if the network mask 255.255.255.0 is applied to the IP address 100.10.50.1, the network ID is 100.10.50, and the host ID is 1. See also binary, IP address, subnet
NIC	Network Interface Card An adapter card that plugs into your computer and provides the physical interface to your network cabling, which for Ethernet NICs is typically an RJ-45 connector. See Ethernet, RJ-45.
packet	Data transmitted on a network consists of units called packets. Each packet contains a payload (the data), plus overhead information such as where it came from (source address) and where it should go (destination address).
ping	Packet Internet (or Inter-Network) Groper A program used to verify whether the host associated with an IP address is online. It can also be used to reveal the IP address for a given domain name.
port	A physical access point to a device such as a computer or router, through which data flows into and out of the device.
POTS	Plain Old Telephone Service Traditional analog telephone service using copper telephone lines. Pronounced pots. See also PSTN.
POTS splitter	See splitter.
PPP	Point-to-Point Protocol A protocol for serial data transmission that is used to carry IP (and other protocol) data between your ISP and your computer. The WAN interface on the My ADSL Modem uses two forms of PPP called PPPoA and PPPoE. See also PPPoA, PPPoE.

PPPoA	Point-to-Point Protocol over ATM One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoE. You can define only one PPPoA interface per VC.
PPPoE	Point-to-Point Protocol over Ethernet One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoA. You can define one or more PPPoE interfaces per VC.
protocol	A set of rules governing the transmission of data. In order for a data transmission to work, both ends of the connection have to follow the rules of the protocol.
remote	In a physically separate location. For example, an employee away on travel who logs in to the company's intranet is a remote user.
RIP	Routing Information Protocol The original TCP/IP routing protocol. There are two versions of RIP: version and version II.
RJ-11	Registered Jack Standard-11 The standard plug used to connect telephones, fax machines, modems, etc. to a telephone jack. It is a 6-pin connector usually containing four wires.
RJ-45	Registered Jack Standard-45 The 8-pin plug used in transmitting data over phone lines. Ethernet cabling usually uses this type of connector.
routing	Forwarding data between your network and the Internet on the most efficient route, based on the data's destination IP address and current network conditions. A device that performs routing is called a router.
rule	See filtering rule, NAT rule.
SDNS	Secondary Domain Name System (server) A DNS server that can be used if the primary DSN server is not available. See DNS.
SNMP	Simple Network Management Protocol The TCP/IP protocol used for network management.
splitter	A device that splits off the voice component of the DSL signal to a separate line, so that data and telephone service each have their own wiring and jacks. The splitter is installed by your telephone company where the DSL line enters your home. The CO also contains splitters that separate the voice and data signals, sending voice to the PSTN and data on high-speed lines to the Internet. See also CO, PSTN, splitterless, microfilter.

splitterless	A type of DSL installation where no splitter is installed, saving the cost of a service call by the telephone company. Instead, each jack in the home carries both voice and data, requiring a microfilter for each telephone to prevent interference from the data signal. ADSL is usually splitterless; if you are unsure if your installation has a splitter, ask your DSL provider. See also splitter, microfilter.
subnet	A subnet is a portion of a network. The subnet is distinguished from the larger network by a subnet mask which selects some of the computers of the network and excludes all others. The subnet's computers remain physically connected to the rest of the parent network, but they are treated as though they were on a separate network. See also network mask.
subnet mask	A mask that defines a subnet. See also network mask.
TCP	See TCP/IP.
TCP/IP	Transmission Control Protocol/Internet Protocol The basic protocols used on the Internet. TCP is responsible for dividing data up into packets for delivery and reassembling them at the destination, while IP is responsible for delivering the packets from source to destination. When TCP and IP are bundled with higher-level applications such as HTTP, FTP, Telnet, etc., TCP/IP refers to this whole suite of protocols.
Telnet	An interactive, character-based program used to access a remote computer. While HTTP (the web protocol) and FTP only allow you to download files from a remote computer, Telnet allows you to log into and use a computer from a remote location.
TFTP	Trivial File Transfer Protocol. A protocol for file transfers, TFTP is easier to use than File Transfer Protocol (FTP) but not as capable or secure.
TTL	Time To Live A field in an IP packet that limits the life span of that packet. Originally meant as a time duration, the TTL is usually represented instead as a maximum hop count; each router that receives a packet decrements this field by one. When the TTL reaches zero, the packet is discarded.
twisted pair	The ordinary copper telephone wiring long used by telephone companies. It contains one or more wire pairs twisted together to reduce inductance and noise. Each telephone line uses one pair. In homes, it is most often installed with two pairs. For Ethernet LANs, a higher grade called Category 3 (CAT 3) is used for 10BASE-T networks, and an even higher grade called Category 5 (CAT 5) is used for 100BASE-T networks. See also 10BASE-T, 100BASE-T, Ethernet.
upstream	The direction of data transmission from the user to the Internet.

USB	Universal Serial Bus A serial interface that lets you connect devices such as printers, scanners, etc. to your computer by simply plugging them in. The My ADSL Modem is equipped with a USB interface for connecting to a stand-alone PC.
VC	Virtual Circuit A connection from your ADSL router to your ISP.
VCI	Virtual Circuit Identifier Together with the Virtual Path Identifier (VPI), the VCI uniquely identifies a VC. Your ISP will tell you the VCI for each VC they provide. See also VC.
VPI	Virtual Path Identifier Together with the Virtual Circuit Identifier (VCI), the VPI uniquely identifies a VC. Your ISP will tell you the VPI for each VC they provide. See also VC.
WAN	Wide Area Network Any network spread over a large geographical area, such as a country or continent. With respect to the My ADSL Modem, WAN refers to the Internet.
Web browser	A software program that uses Hyper-Text Transfer Protocol (HTTP) to download information from (and upload to) web sites, and displays the information, which may consist of text, graphic images, audio, or video, to the user. Web browsers use Hyper-Text Transfer Protocol (HTTP). Popular web browsers include Netscape Navigator and Microsoft Internet Explorer. See also HTTP, web site, WWW.
Web page	A web site file typically containing text, graphics and hyperlinks (cross-references) to the other pages on that web site, as well as to pages on other web sites. When a user accesses a web site, the first page that is displayed is called the Home page. See also hyperlink, web site.
Web site	A computer on the Internet that distributes information to (and gets information from) remote users through web browsers. A web site typically consists of web pages that contain text, graphics, and hyperlinks. See also hyperlink, web page.
WWW	World Wide Web Also called (the) Web. Collective term for all web sites anywhere in the world that can be accessed via the Internet.

Appendix D: Registering your NetComm Product

All NetComm Limited (“NetComm”) products have a standard 12 month warranty from date of purchase against defects in manufacturing and that the products will operate in accordance with the specifications outlined in the User Guide. However some products have an extended warranty option (please refer to packaging). To be eligible for the extended warranty you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering on-line via the NetComm web site at:

www.netcomm.com.au

Contact Information

If you have any technical difficulties with your product, please do not hesitate to contact NetComm’s Customer Support Department.

Email: support@netcomm.com.au

Fax: (+612) 9424-2010

Web: www.netcomm.com.au

NOTE: NetComm Technical Support for this product only covers the basic installation and features outlined in the Quick Start Guide. For further information regarding the advanced features of this product, please refer to the configuring sections in this User Guide or contact a Network Specialist.

Appendix E: Legal & Regulatory Information

This manual is copyright. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the Copyright Act, no part may be reproduced, stored in a retrieval system or transmitted in any form, by any means, be it electronic, mechanical, recording or otherwise, without the prior written permission of NetComm Limited. NetComm Limited accepts no liability or responsibility, for consequences arising from the use of this product.

NetComm Limited reserves the right to change the specifications and operating details of this product without notice.

NetComm is a registered trademark of NetComm Limited.

All other trademarks are acknowledged the property of their respective owners.

Customer Information

ACA (Australian Communications Authority) requires you to be aware of the following information and warnings:

- (1) This unit shall be connected to the Telecommunication Network through a line cord which meets the requirements of the ACA TS008 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 ACA. 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.

Product Warranty

The warranty is granted on the following conditions:

1. This warranty extends to the original purchaser (you) and is not transferable;
2. This 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; and,
5. NetComm does not have any liability or responsibility under this 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.
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.

The warranty is automatically voided if:

1. You, or someone else, use the product, or attempts 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; and,
6. The serial number has been defaced or altered in any way or if the serial number plate has been removed.

Limitations of Warranty

The Trade Practices Act 1974 and corresponding State and Territory Fair Trading Acts or legalisation of another Government ("the relevant acts") in certain circumstances imply mandatory conditions and warranties which cannot be excluded. This warranty is in addition to and not in replacement for such conditions and warranties.

To the extent permitted by the Relevant Acts, in relation to your product and any other materials provided with the product ("the Goods") the liability of NetComm under the Relevant Acts is limited at the option of NetComm to:

- Replacement of the Goods; or
- Repair of the Goods; or
- Payment of the cost of replacing the Goods; or
- Payment of the cost of having the Goods repaired.

All NetComm ACN 002 490 486 products have a standard 12 months warranty from date of purchase. However some products have an extended warranty option (refer to packaging). To be eligible for the extended warranty you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering on-line via the NetComm web site at www.netcomm.com.au.



RJ11 for ADSL
connection to
telephone line

4 x RJ45 Ports for
10/100 Ethernet LAN connection

Reset/
factory
defaults

Power jack for
AC power
adaptor

KEY FEATURES

- Advanced Security Firewall (SPI/DoS)
- 4-Port 10/100 Switch
- Port Forwarding
- Universal Plug & Play (UPnP)
- VPN passthrough
- Easy Setup Wizard
- NetComm's Video Tutorial Guide on the NB4 is a step-by-step movie, complete with commentary, which walks you through the various configuration options to help you get up and running as quickly as possible
- **3-YEAR WARRANTY WHEN YOU REGISTER ONLINE**
1 year warranty out of the box. Extra 2 years **FREE** with online registration at www.netcomm.com.au
(Conditional upon registration online)



NetCommTM
Broadband Solutions

SHARE THE  EXPERIENCE

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