Broadband Router

DC-202v6

Full manual

Introduction **3**
Features 3
Minimum Requirements 3
Package Content 3
Note 3
Get to know the Broadband Router 4
Back Panel 4
Front Panel 5
Setup Diagram 6
Getting started 7
Chapter 1: Home **14**
1.1 Status 14
1.2 Connection Status 15
1.3 System Log 16
1.4 Active DHCP Client 17
Chapter 2: Wizard **18**
Chapter 3: Basic Settings **20**
3.1 Host Name 20
3.2 Time 21
3.3 Password 22
3.4 LAN Settings 24
3.5 DHCP Mapping 26
Chapter 4: Advanced Settings **27**
4.1 Static Routing 27
4.2 Dynamic Routing 28
4.3 Routing Table 29
4.4 UPnP 30
4.5 UPnP Port Mapping 31
4.6 DDNS 32
Chapter 5: Firewall **34**
5.1 Hacker Prevention 34
5.2 Client Filtering 36
5.3 URL Filtering 38
5.4 MAC Filtering 39
5.5 DMZ 40
5.6 Special Applications 42
5.7 Virtual Server 44
5.8 Port Mapping 46
Chapter 6: Toolbox **47**
6.1 Back-up 47
6.2 Firmware Upgrade 48
6.3 Reset 49

Appendix A **50**
Glossary **51**

Introduction

Congratulations on purchasing this Broadband Router. This Broadband Router is a cost-effective IP Sharing Router that enables multiple users to share the Internet through an ADSL or cable modem. Simply configure your Internet connection settings in the Broadband Router and plug your PC to the LAN port and you're ready to share files and access the Internet. As your network grows, you can connect another hub or switch to the router's LAN ports, allowing you to easily expand your network. The Broadband Router provides a total solution for the Small and Medium-sized Business (SMB) and the Small Office/Home Office (SOHO) markets, giving you an instant network today, and the flexibility to handle tomorrow's expansion and speed.

Features

- High Internet Access throughput
- Allow multiple users to share a single Internet line
- Supports up to 253 users
- Internet Access via Cable or xDSL modem
- Access Private LAN Servers from the Public Network
- Equipped with four LAN ports (10/100M) and one WAN port (10/100M)
- Support DHCP (Server/Client) for easy setup
- Support advance features such as: Special Applications, DMZ, Virtual Servers, Client Filtering, Firewall.
- Allow you to monitor the router's status such as: DHCP Client Log, Security Log and Device/Connection Status
- Easy to use Web-based GUI for configuration and management purposes
- Remote Management allows configuration and upgrades from a remote site (over the Internet)

Minimum Requirements

- One External xDSL (ADSL) or Cable modem with an Ethernet port (RJ-45)
- Network Interface Card (NIC) for each Personal Computer (PC)
- PCs with a Web-Browser (Internet Explorer 4.0 or higher, or Netscape Navigator 4.7 or higher)

Package Content

- One 4-port Broadband router unit
- One Quick Installation Guide
- One User Manual CD
- One Power Adapter
- Accessories

Note

The WAN "idle timeout" auto-disconnect function may not work due to abnormal activities of some network application software, computer virus or hacker attacks from the Internet. For example, some software sends network packets to the

Internet in the background, even when you are not using the Internet. So please turn off your computer when you are not using it. This function also may not work with some ISP. So please make sure this function can work properly when you use this function in the first time, especially when your ISP charge you by time used.

Get to know the Broadband Router

Back Panel

The diagram (fig1.0) below shows the broadband router's back panel. The router's back panel is divided into three sections, **LAN**, **WAN** and **Reset**:

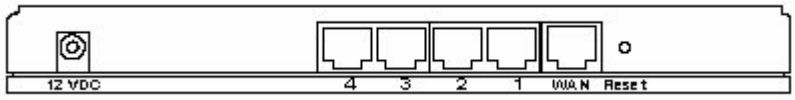


Figure 1.0

1) Local Area Network (LAN)

The Broadband router's 4 LAN ports are where you connect your LAN's PCs, printer servers, hubs and switches etc.

2) Wide Area Network (WAN)

The WAN port is the segment connected to your xDSL or Cable modem and is linked to the Internet.

3) Reset

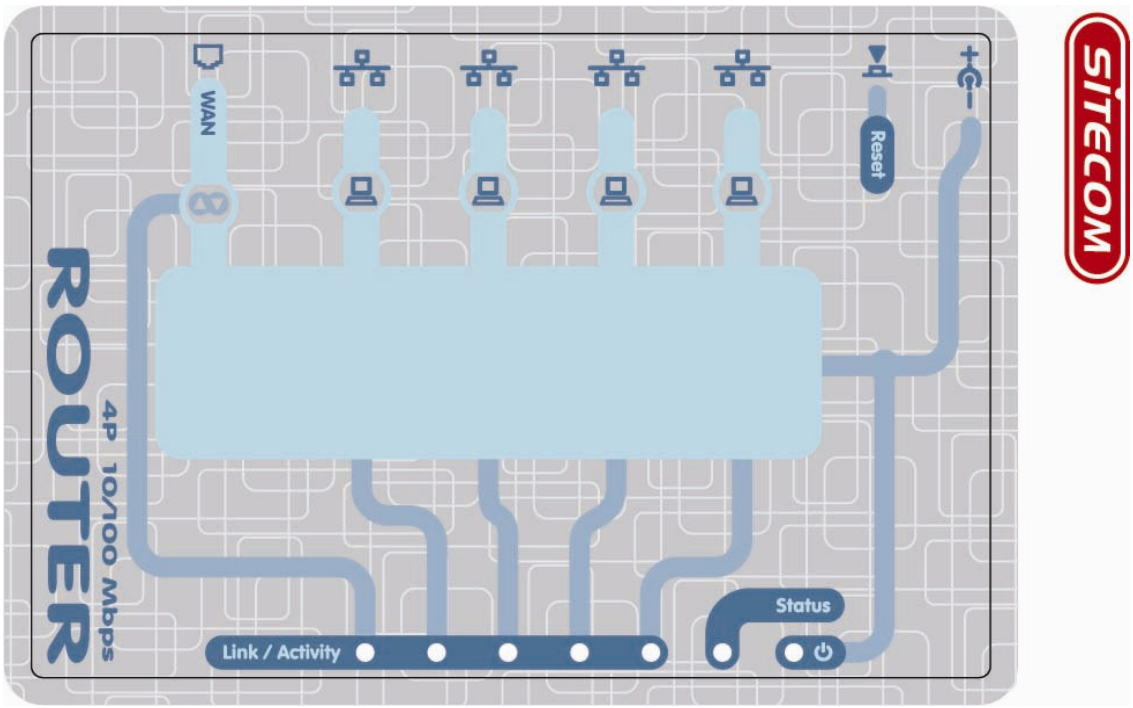
The Reset button allows you to do one of two things.

1) If problems occur with your router, press the router's reset button with a pencil tip (for 2~4 seconds) and the router will re-boot itself, keeping your original configurations. Every time when you finished configuration the router, please also to the reset to make the new configuration take effect.

2) If problems persist or you experience extreme problems or you forgot your password, press the reset button for longer than 5 seconds and the router will reset itself to the factory default settings (**warning**: your original configurations will be replaced with the factory default settings)

Front Panel

On the router's front panel there are LED lights that inform you of the router's current status. Below is an explanation of each LED and its description.



LED	Light Status	Description
PWR	ON	Router's power supply is on
WAN LNK/ACT	ON	WAN is connected
	Off	No WAN connection
	Flashing	WAN port has Activity (ACT), data being sent
LAN LNK/ACT (Port 1-4)	ON	LAN is connected
	Off	No LAN connection
	Flashing	LAN port has Activity (ACT), data being sent

Setup Diagram

Figure 1.2 below shows a typical setup for a Local Area Network (LAN).

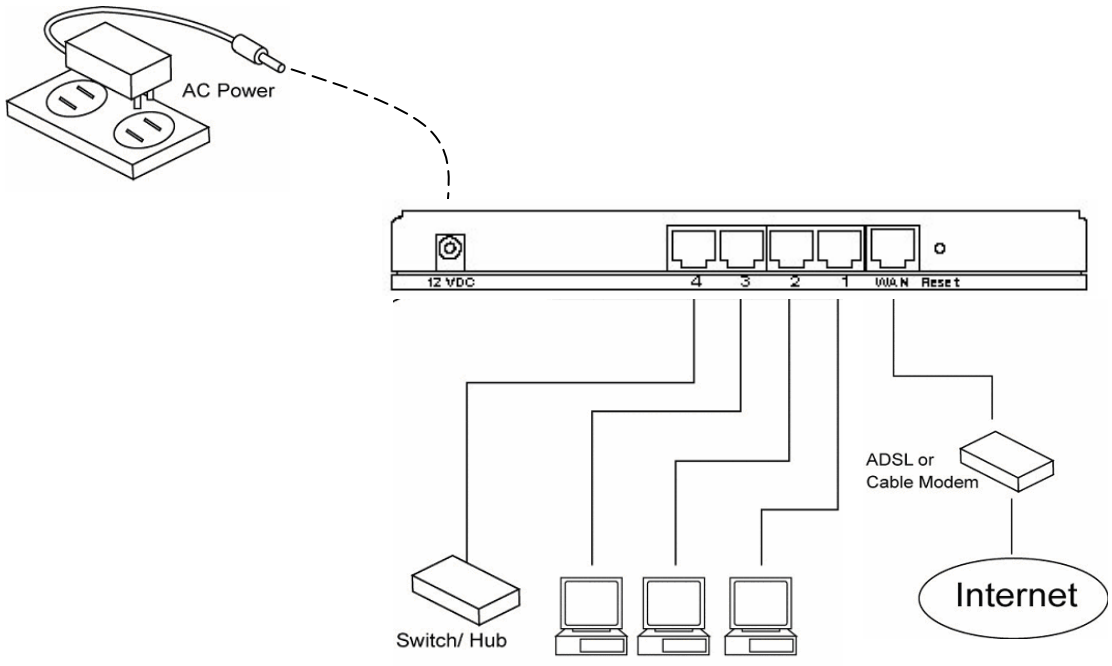


Figure 1.2

Getting started

This is a step-by-step instruction on how to start using the router and get connected to the Internet.

1) Setup your network as shown in the setup diagram above (fig 1.2).

2) You then need to set your LAN PC clients so that it can obtain an IP address automatically. All LAN clients require an IP address. Just like an address, it allows LAN clients to find one another. (If you have already configured your PC to obtain an IP automatically then proceed to step 3, page 11)

Configure your PC to obtain an IP address automatically

By default the broadband router's DHCP is on, this means that you can obtain an IP address automatically once you've configured your PC to obtain an IP address automatically. This section will show you how to configure your PC's so that it can obtain an IP address automatically for either Windows 95/98/Me, 2000 or NT operating systems. For other operating systems (Macintosh, Sun, etc.), follow the manufacturer's instructions. The following is a step-by-step illustration on how to configure your PC to obtain an IP address automatically for 2a) **Windows 95/98/Me**, 2b) **Windows XP**, 2c) **Windows 2000** and 2d) **Windows NT**.

2a) Windows 95/98/Me

1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

2: Double-click *Network* icon. The *Network* window will appear.

3: Check your list of Network Components. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 6**.

4: In the *Network Component Type* dialog box, select *Protocol* and click *Add* button.

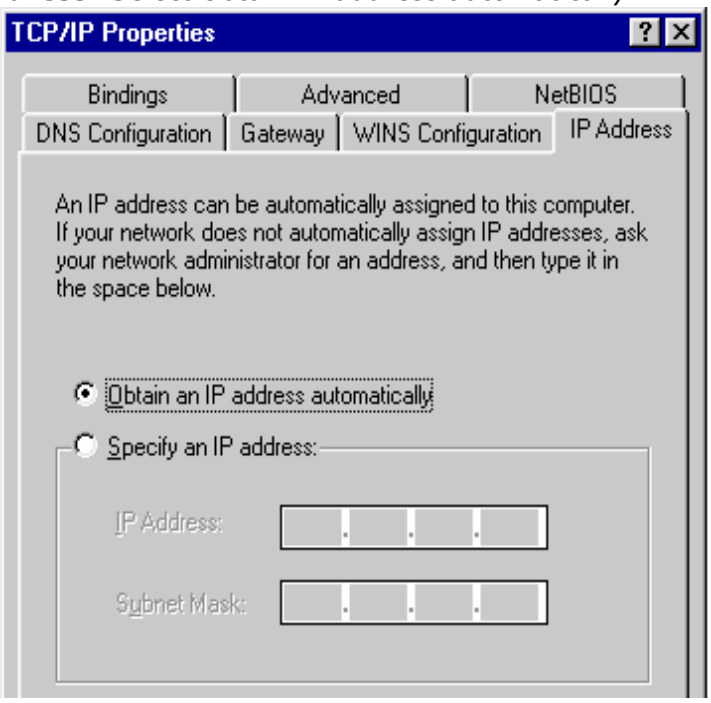
5: In the *Select Network Protocol* dialog box, select *Microsoft* and *TCP/IP* and then click the *OK* button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.

6: After installing TCP/IP, go back to the *Network* dialog box. Select *TCP/IP* from the list of *Network Components* and then click the *Properties* button.

7: Check each of the tabs and verify the following settings:

- **Bindings**: Check *Client for Microsoft Networks* and *File and printer sharing for Microsoft Networks*.
- **Gateway**: All fields are blank.
- **DNS Configuration**: Select *Disable DNS.*
- **WINS Configuration**: Select *Disable WINS Resolution.*

- **IP Address**: Select *Obtain IP address automatically*.



8: Reboot the PC. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3

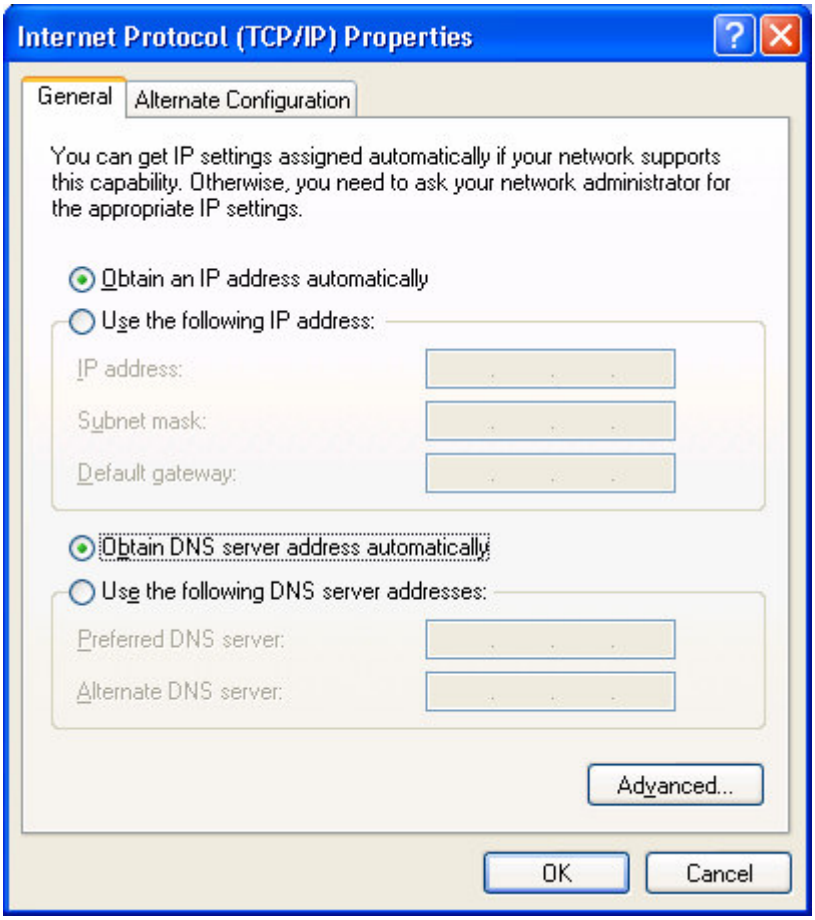
2b) Windows XP

1: Click the *Start* button and select *Settings*, then click *Network Connections.* The *Network Connections* window will appear.

2: Double-click *Local Area Connection* icon. The *Local Area Connection* window will appear.

3: Check your list of Network Components. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.

4: In the Internet Protocol (TCP/IP) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.



5: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

2c) Windows 2000

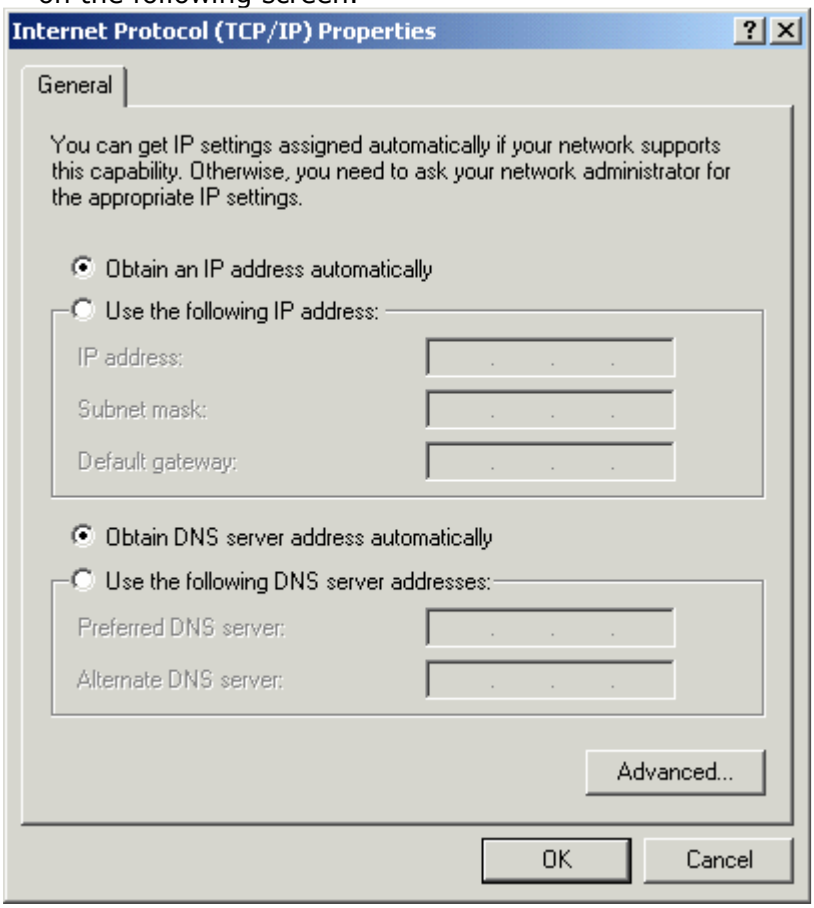
1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

2: Double-click *Network and Dial-up Connections* icon. In the *Network and Dial-up Connection* window, double-click *Local Area Connection* icon. The *Local Area Connection* window will appear.

3: In the *Local Area Connection* window, click the *Properties* button.

4: Check your list of Network Components. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.

5: In the Internet Protocol (TCP/IP) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.



6: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

2d) Windows NT

1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

2: Double-click *Network* icon. The *Network* window will appear. Select the *Protocol* tab from the *Network* window.

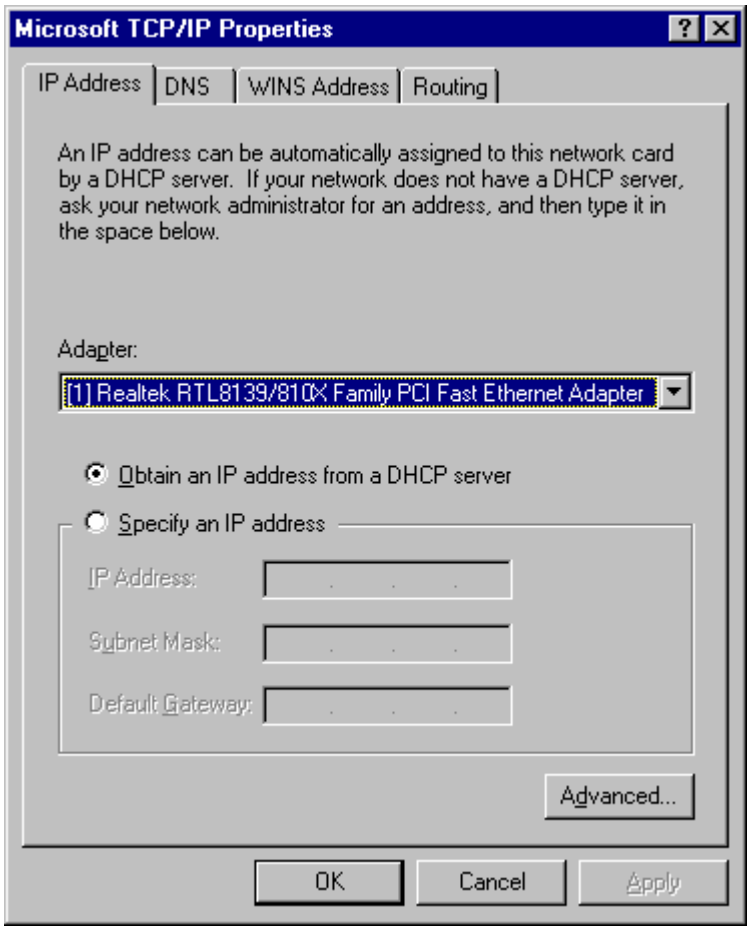
3: Check if the *TCP/IP Protocol* is on your list of *Network Protocols*. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 5**.

4: In the *Select Network Protocol* window, select the *TCP/IP Protocol* and click the *Ok* button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.

5: After you install TCP/IP, go back to the *Network* window. Select *TCP/IP* from the list of *Network Protocols* and then click the *Properties* button.

6: Check each of the tabs and verify the following settings:

- **IP Address:** Select *Obtain an IP address from a DHCP server*.
- **DNS:** Let all fields are blank.
- **WINS:** Let all fields are blank.
- **Routing:** Let all fields are blank.



7: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

3) Once you have configured your PCs to obtain an IP address automatically, the router's DHCP server will automatically give your LAN clients an IP address. By default the Broadband Router's DHCP server is enabled so that you can obtain an IP address automatically. To see if you have obtained an IP address, see Appendix A.

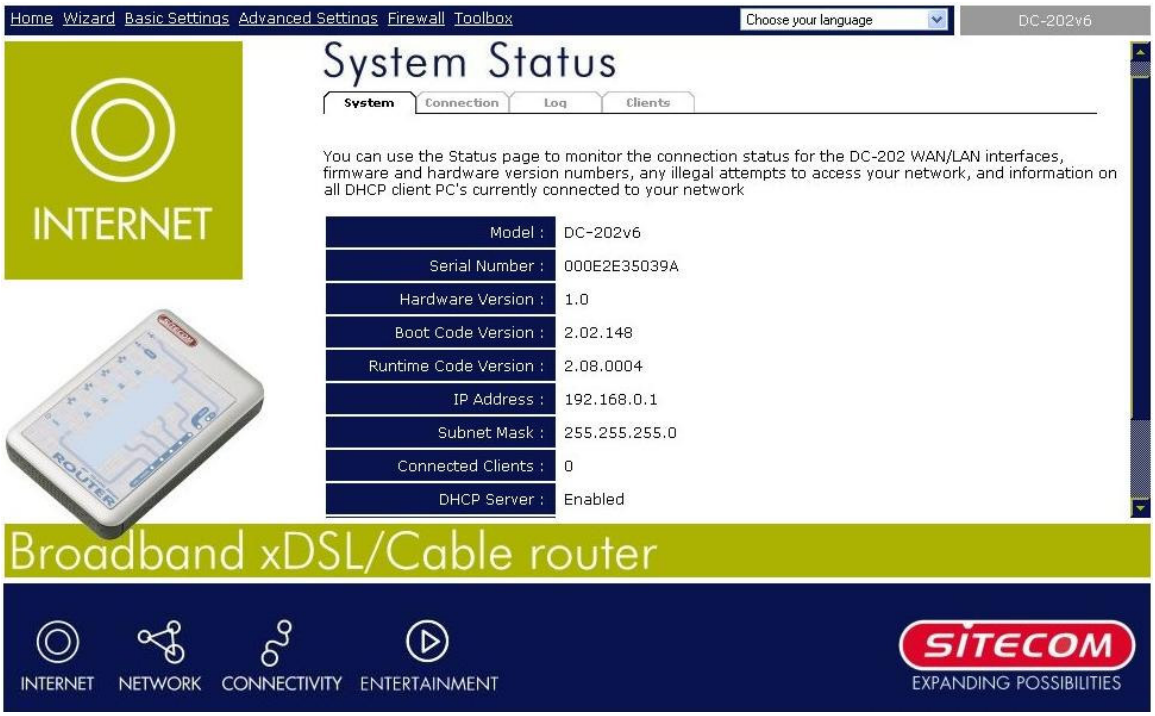
   Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN. If there is another DHCP on your network, then you'll need to switch one of the DHCP servers off. (To disable the Broadband router's DHCP server see chapter 2 LAN Port)

4) Once your PC has obtained an IP address from your router, enter the default IP address **192.168.0.1** (broadband router's IP address) into your PC's web browser and press <enter>

5) The login screen below will appear. Enter the "User Name" and "Password" and then click <OK> to login.

   Note: By default the user name is "**admin**" and the password is "**admin**". For security reasons it is recommended that you change the password as soon as possible (in General setup/system/password, see chapter 2)

The **HOME** page screen below will appear.

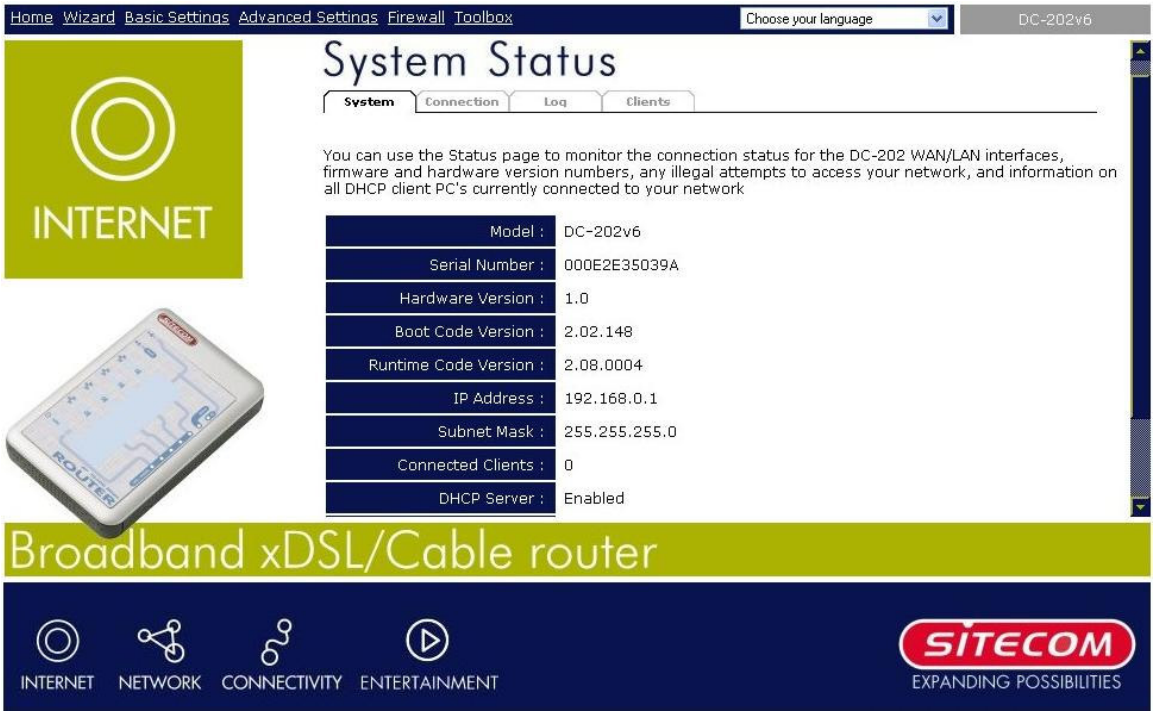


6) Click on **Wizard** (see chapter 2) to start configuring settings required by your ISP so that you can start accessing the Internet. The other sections (Basic Settings, Advanced Settings, Firewall and Toolbox) do not need to be configured unless you wish to implement/monitor more advance features/information.

Chapter 1: Home

1.1 Status

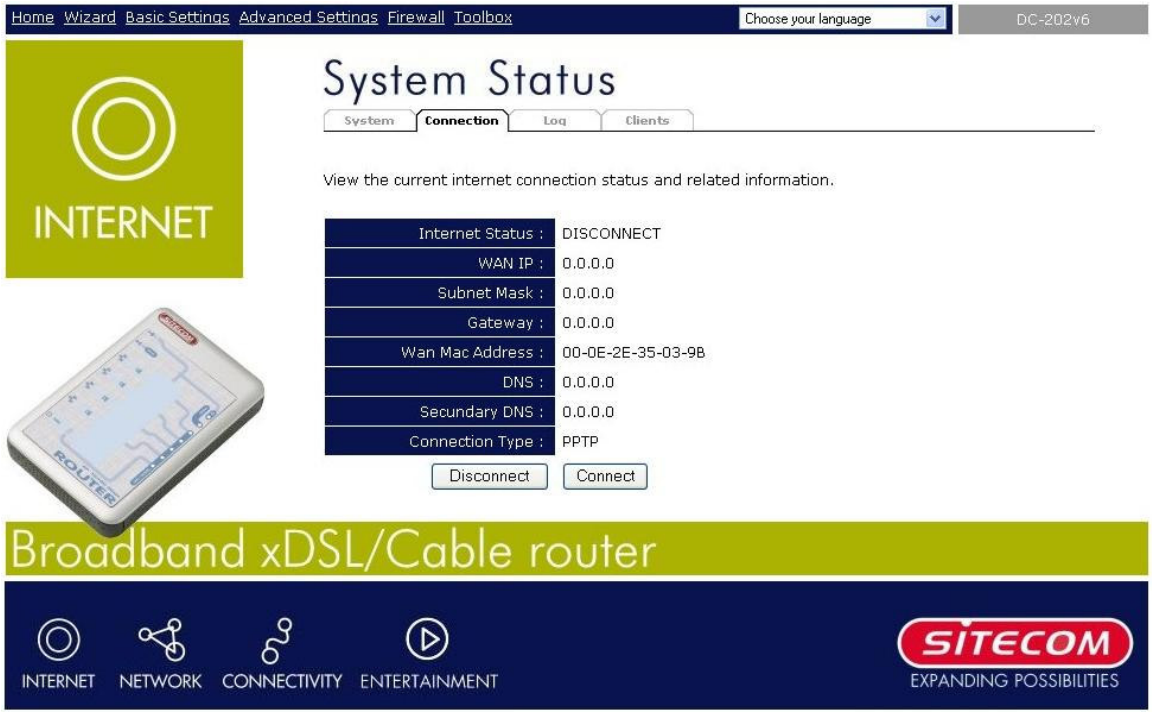
The Status section allows you to monitor the current status of your router. You can use the Status page to monitor: the connection status of the Broadband router's WAN/LAN interfaces, the current firmware and hardware version numbers, any illegal attempts to access your network, and information on all DHCP client PCs currently connected to your network.



Parameters	Description
1.1 System Status	Shows the router's system information and other related information.
1.2 Connection	Shows the current connection information.
1.3 Log	View the Broadband router's system log
1.4 Clients	View DHCP client list

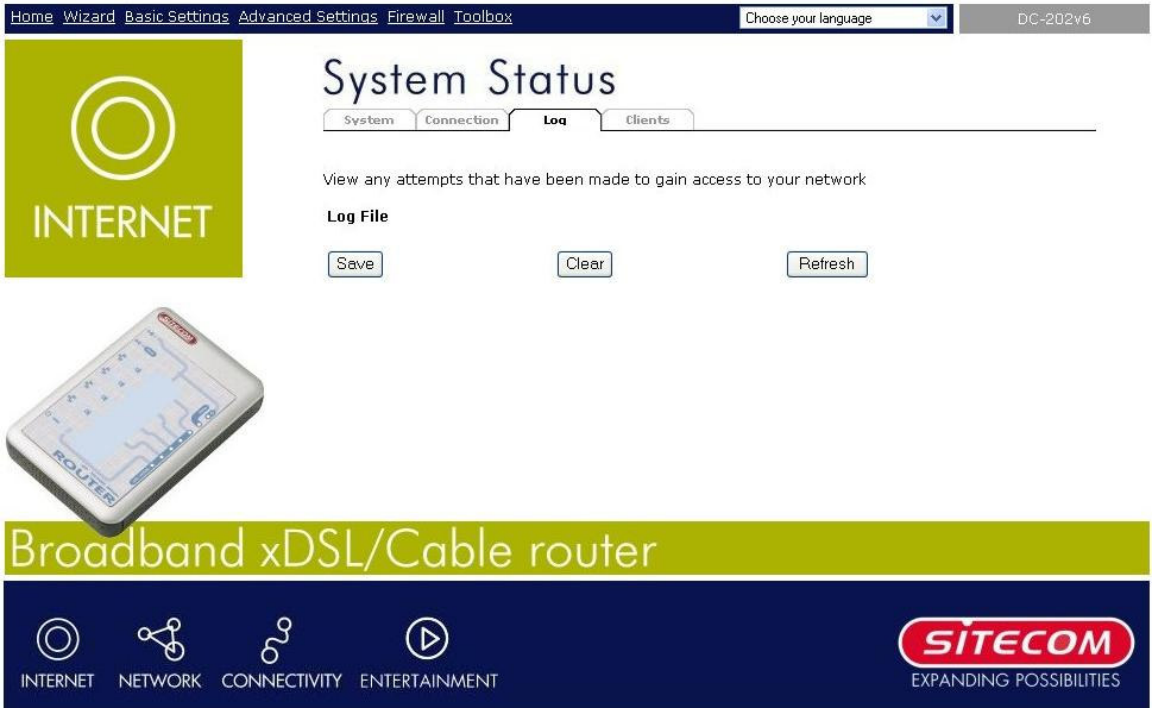
1.2 Connection Status

The Connection Status section allows you to monitor the current connection status of your router.



1.3 System Log

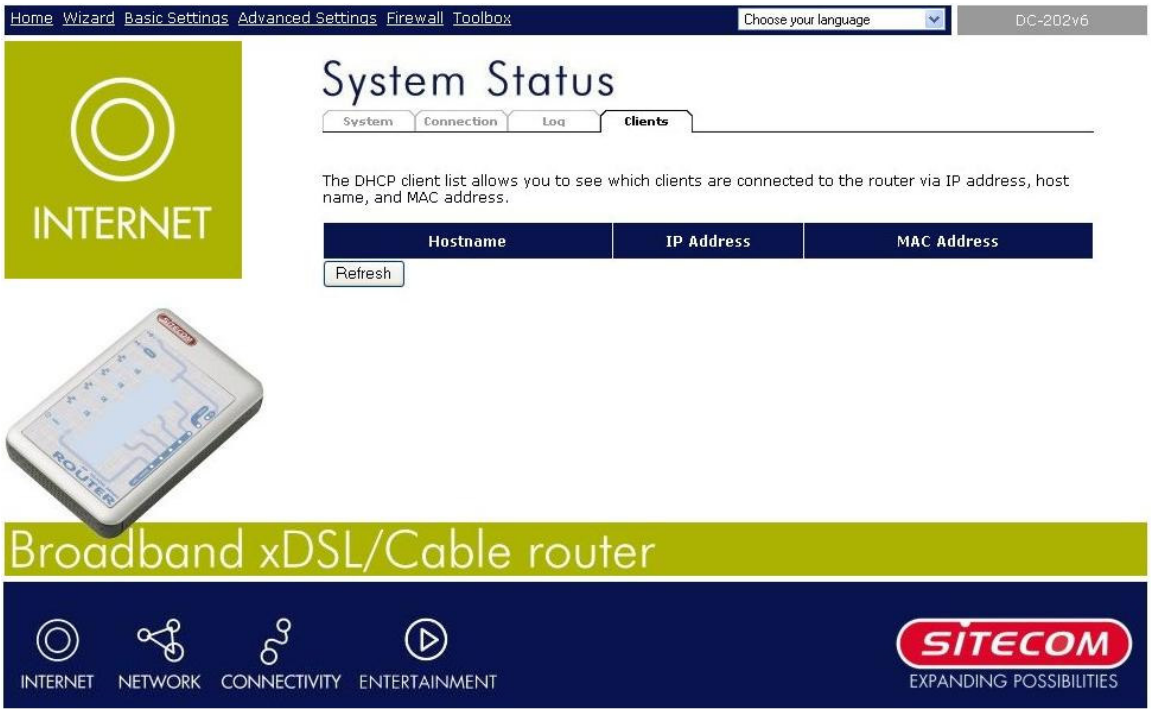
View the operation log of the system.



Parameters	Description
System Log	This page shows the current system log of the Broadband router. At the bottom of the page, the system log can be saved <**Save**> to a local file for further processing or the system log can be cleared <**Clear**> or it can be refreshed <**Refresh**> to get the most updated situation. When the system is powered down, the system log will disappear if not saved to a local file.

1.4 Active DHCP Client

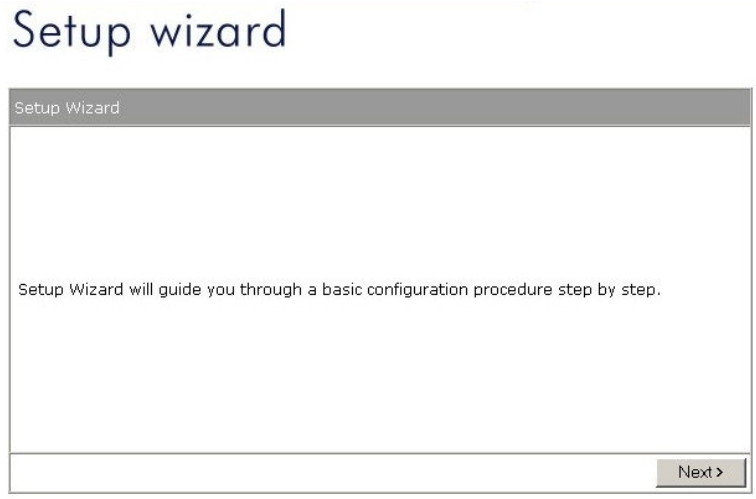
View your LAN client's information that is currently linked to the Broadband router's DHCP server



Parameters	Description
Active DHCP Client	This page shows all DHCP clients (LAN PCs) currently connected to your network. The "Active DHCP Client Table" displays the **IP** address and the **MAC** address and Time Expired of each LAN Client. Use the **Refresh** button to get the most updated situation

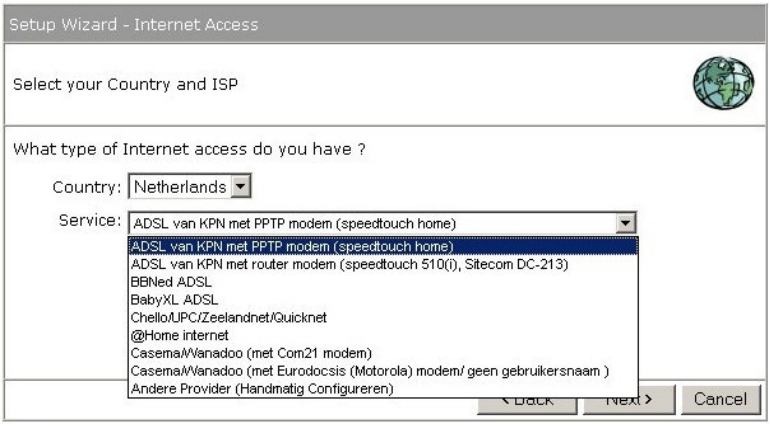
Chapter 2: Wizard

- Click **Wizard** to configure the router.
- The **Setup wizard** will now be displayed; check that the modem is connected and click **Next**.

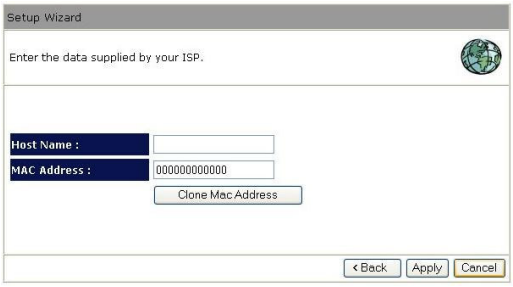


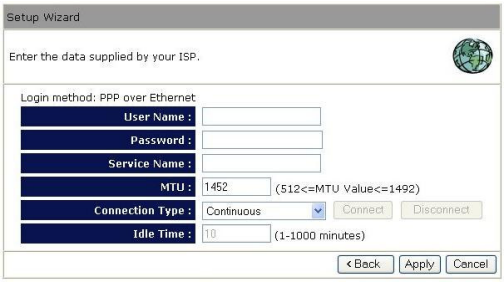
- Select your country from the **Country** list.

- From **Service,** select your internet provider. Click **Next**.



- Depending on the chosen provider, you may need to enter your user name and password, MAC address or hostname in the following window. After you have entered the correct information, click **Next**.



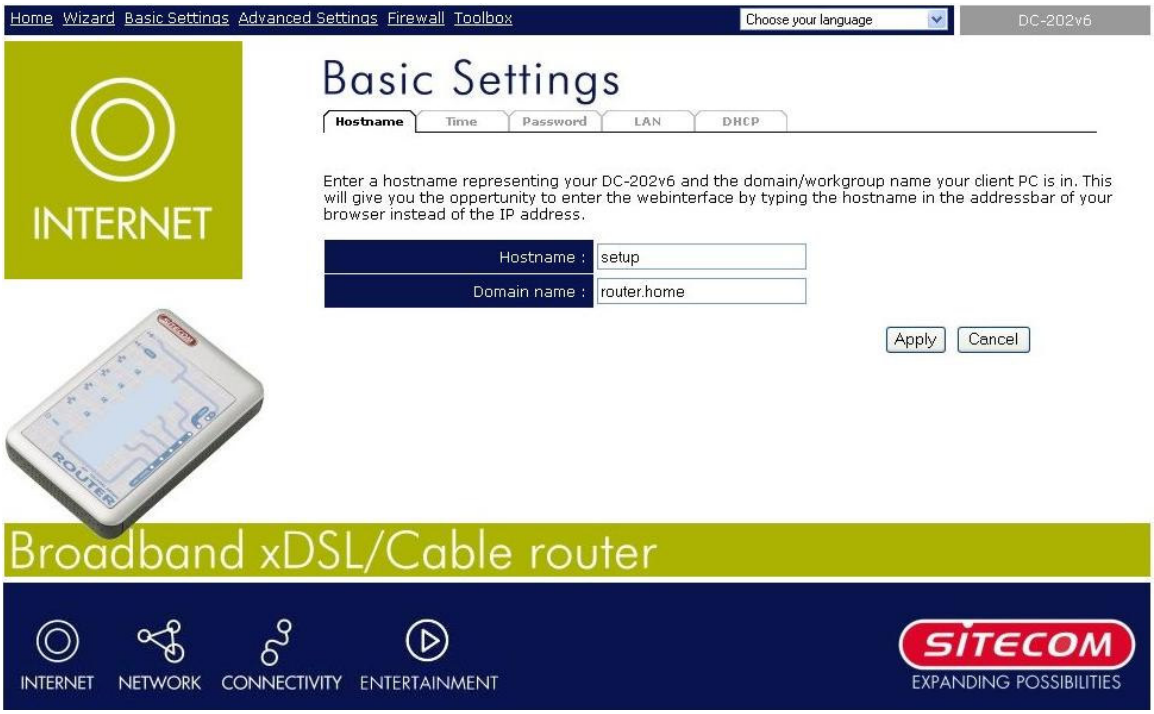


- Wait for about 20 seconds to allow the router to connect to the Internet.

Chapter 3: Basic Settings

3.1 Host Name

This page allows you to assign Host Name and Domain Name to the router. You can do web configuration from the LAN by typing the whole name you configured here except for the IP address.

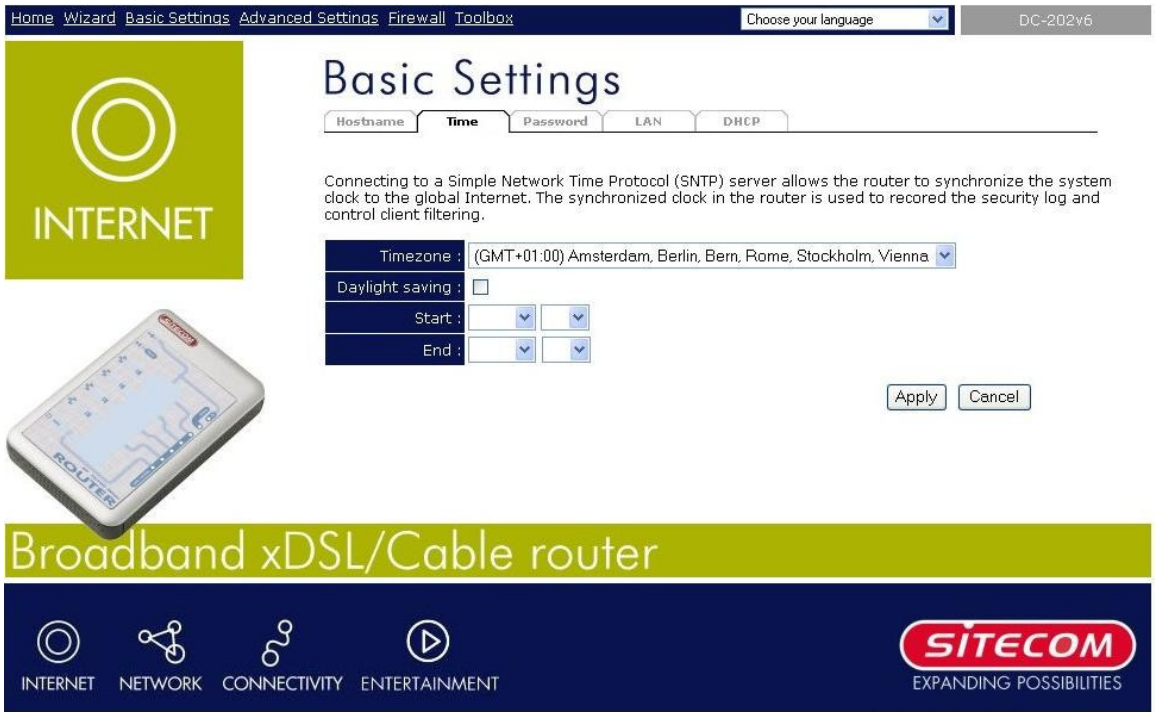


Parameter	Description
Host Name	Enter the Host Name of this router.
Domain Name	Enter the Domain Name of this router.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.2 Time

The System Time allows your router to reference or base its time on the Time Zone settings configured here, which will affect functions such as Log entries and Firewall settings.

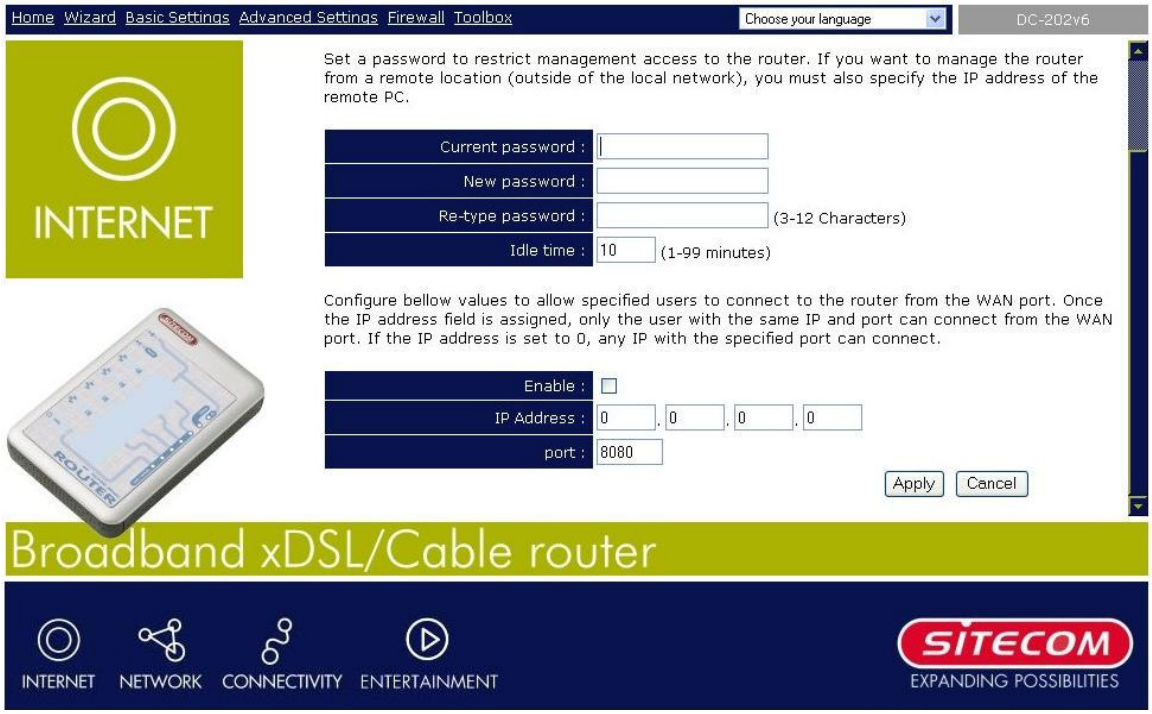


Parameter	Description
Set Time Zone	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Enable Daylight Savings	The router can also take Daylight savings into account. If you wish to use this function, you must check/tick the enable box to enable your daylight saving configuration (below).
Start from	Select the period in which you wish to start daylight Savings Time
End by	Select the period in which you wish to end daylight Savings Time

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.3 Password

You can change the password required to log into the broadband router's system web-based management. Passwords can contain 3 to 12 alphanumeric characters, and are case sensitive. The remote management function allows you to designate a host in the Internet the ability to configure the Broadband router from a remote site. Enter the designated host IP Address in the Host IP Address field.



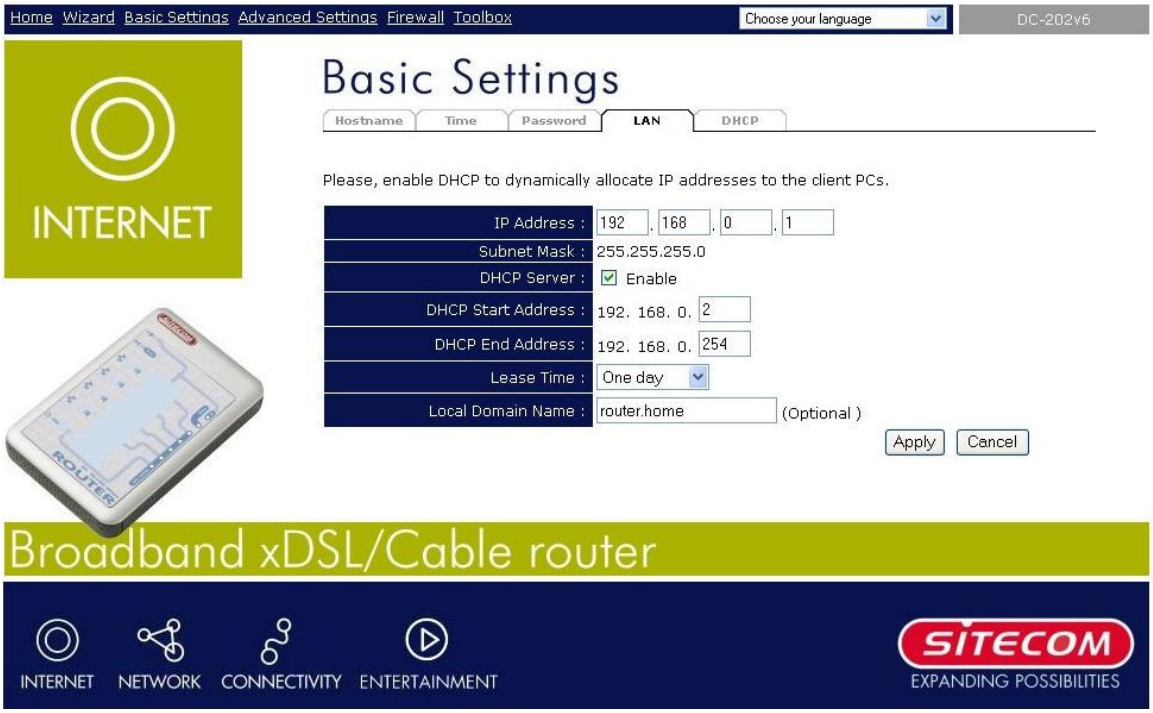
Parameters	Description
Current Password	Enter your current password for the remote management administrator to login to your Broadband router.
New Password	Enter your new password
Confirmed Password	Enter your new password again for verification purposes **Note**: If you forget your password, you'll have to reset the router to the factory default with the reset button (see router's back panel)
Idle Time Out	Enter the Max Idle Time (in minutes) allowed after login to the web configuration. If you idle long then this time, the router will force to close the login session and you have to login again if you want to continue doing further configuration. If you assign "0" for this value, there will be no time out.

Enable	Check "Enable" to enable the remote management function.
IP Address	This is the IP address of the host in the Internet that will have management/configuration access to the Broadband router from a remote site. This means if you are at home and your home IP address has been designated the Remote Management host IP address for this router (located in your company office), then you are able to configure this router from your home. If the IP Address is left **0.0.0.0** this means anyone can access the router's web-based configuration from a remote location, providing they know the password. Click the **Enable** box to enable the Remote Management function. **Note**: When you want to access the web-based management from a remote site, you must enter the router's WAN IP address (e.g. 10.0.0.1) into your web-browser followed by port number 8080, e.g. 10.0.0.1:8080 (see below). You'll also need to know the password set in the Password Setting screen in order to access the router's web-based management. 
Port	The port number of remote management web interface.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4 LAN Settings

The LAN Settings allow you to specify a private IP address for your router's LAN ports as well as a subnet mask for your LAN segment. You also can enable the DHCP server to let the router manage private IP addresses for you automatically.



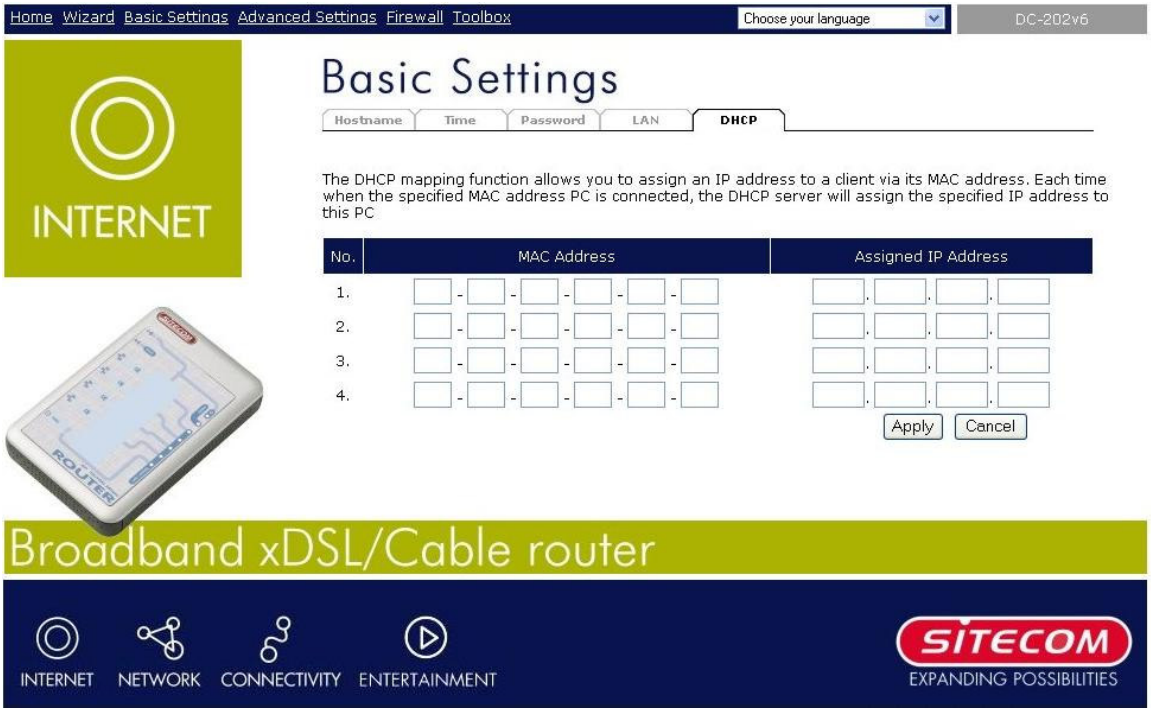
Parameters	Default	Description
IP address	192.168.0.1	This is the router's LAN port IP address (Your LAN clients default gateway IP address).
Subnet Mask	255.255.255.0	The Subnet Mask for your LAN segment is fixed as 255.255.255.0
DHCP Server	Enabled	You can enable or disable the DHCP server. By enabling the DHCP server the router will automatically give your LAN clients an IP address. If the DHCP is not enabled then you'll have to manually set your LAN client's IP addresses; make sure the LAN Client is in the same subnet as this broadband router if you want the router to be your LAN client's default gateway.

Lease Time	The DHCP when enabled will temporarily give your LAN clients an IP address. In the Lease Time setting you can specify the time period that the DHCP lends an IP address to your LAN clients. The DHCP will change your LAN client's IP address when this time threshold period is reached.
IP Address Pool	You can select a particular IP address range for your DHCP server to issue IP addresses to your LAN Clients. **Note:** By default the IP range is from: Start IP **192.168.0.2** to End IP **192.168.0.254**. If you want your PC to have a static/fixed IP address then you'll have to change this settings and choose an IP address outside the IP address Pool.
Lease Time	The DHCP when enabled will temporarily give your LAN clients an IP address. In the Lease Time setting you can specify the time period that the DHCP lends an IP address to your LAN clients. The DHCP will change your LAN client's IP address when this time threshold period is reached.
Local Domain Name	You can specify a Domain Name for your LAN.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place).

3.5 DHCP Mapping

The DHCP Mapping allows you to manually assign the client MAC address and IP address mapping and let the clients in the list get the same IP address every time.



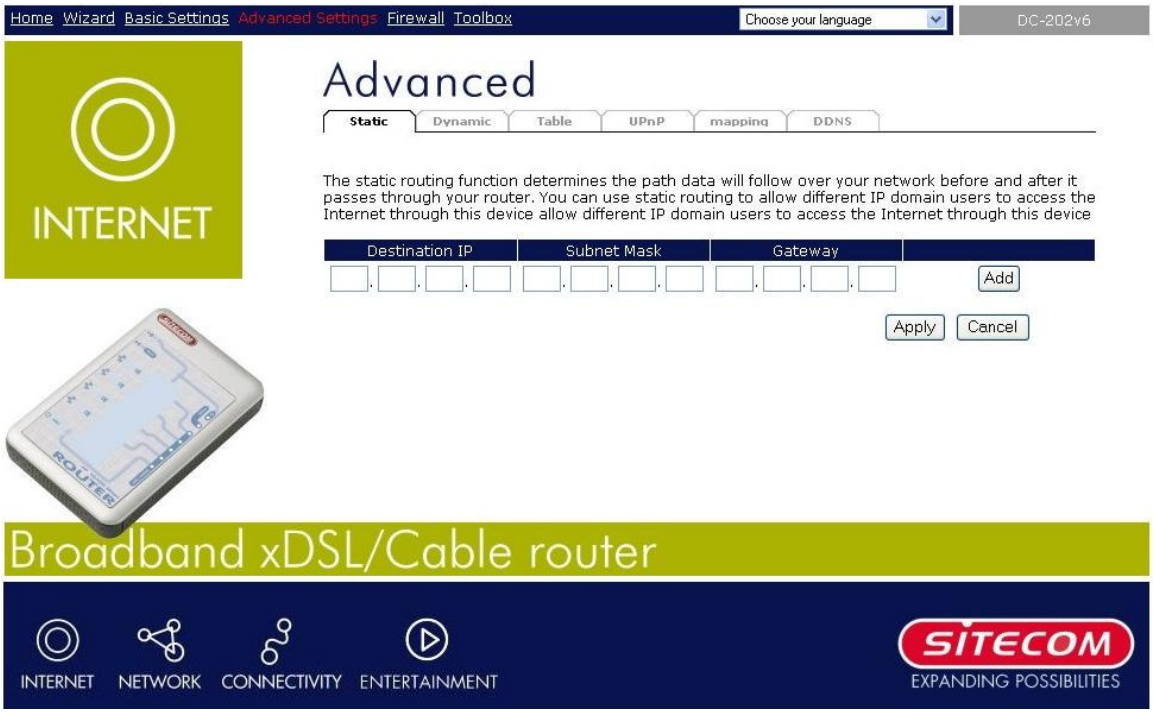
Parameters	Description
Client MAC Address	The MAC Address of the client.
Assigned Address	The IP Address that will be assigned to the client.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

Chapter 4: Advanced Settings

4.1 Static Routing

Static Routing allows you to configure the routing table of this router.

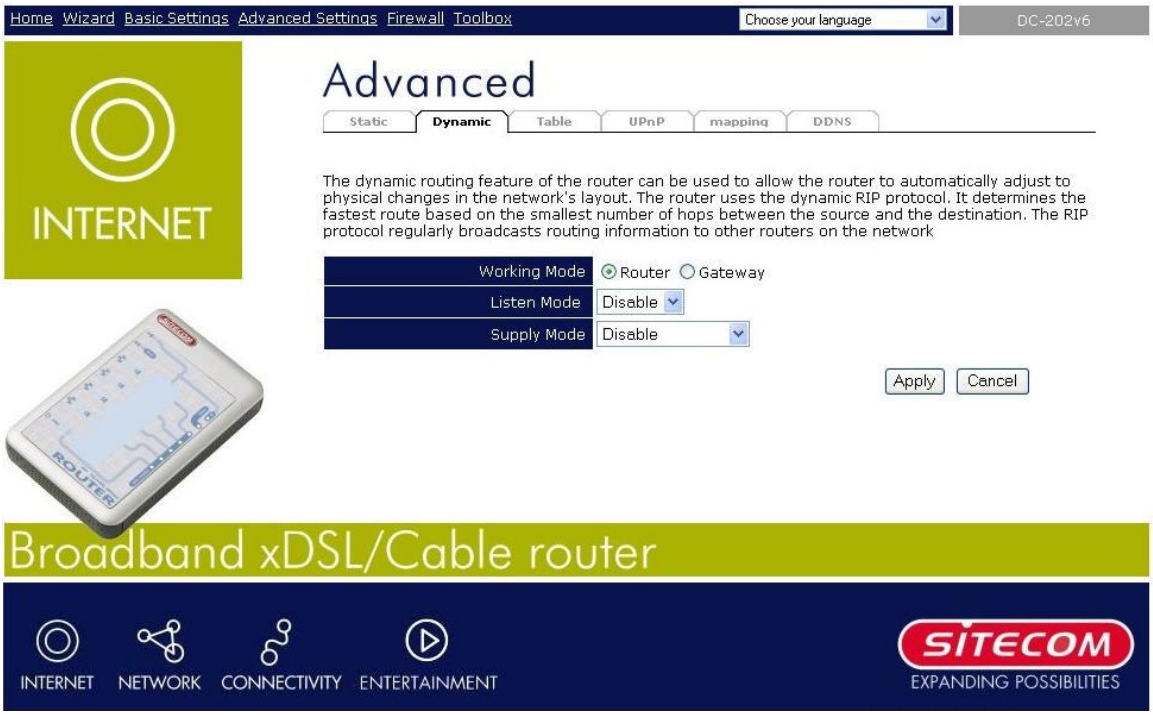


Parameters	Description
Destination LAN IP	The network IP address of the destination LAN.
Subnet Mask	The IP subnet mask of the destination LAN.
Gateway	The IP address of the neighbor gateway in the path toward the destination LAN.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

4.2 Dynamic Routing

Dynamic Routing allows the router to automatically adjust the physical changes in the network layout.

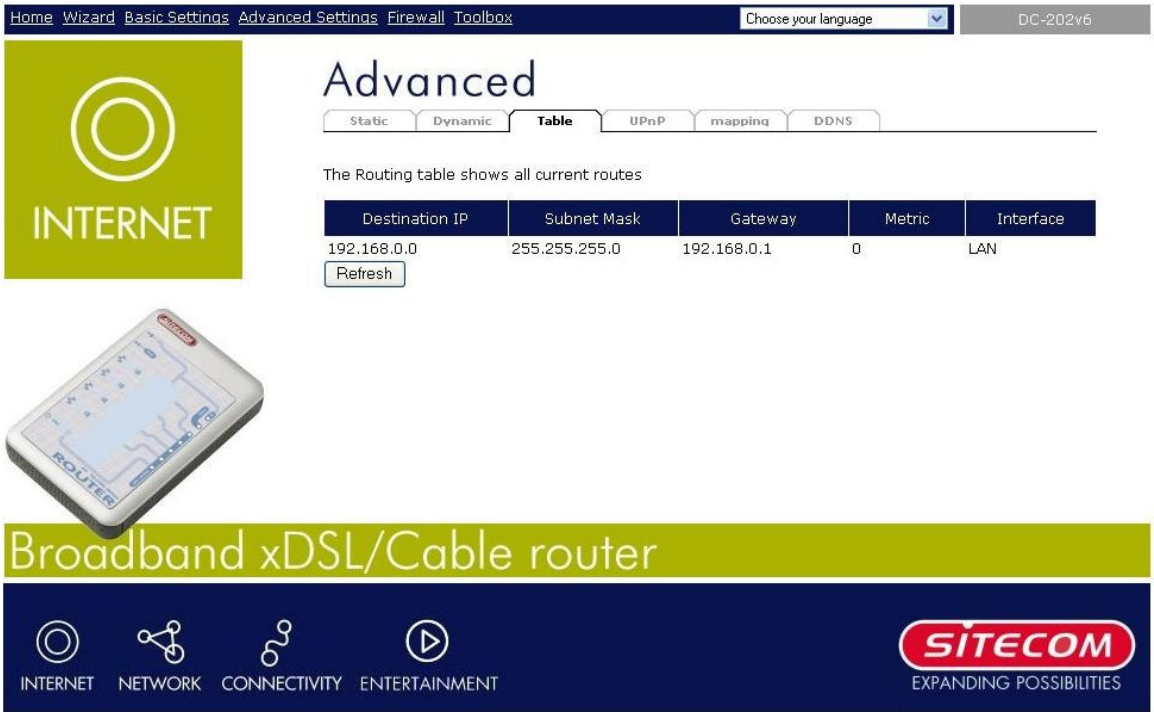


Parameters	Description
Working Mode	Select the working mode of dynamic routing. You can select "Router" or "Gateway".
Listen Mode	Select the dynamic routing protocol that this router will listen to. You also can select "Disabled" to discard the dynamic routing packets.
Supply Mode	Select the dynamic routing protocol that this router will use to provide routing information. You also can select "Disabled" to let the router stop providing routing information.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

4.3 Routing Table

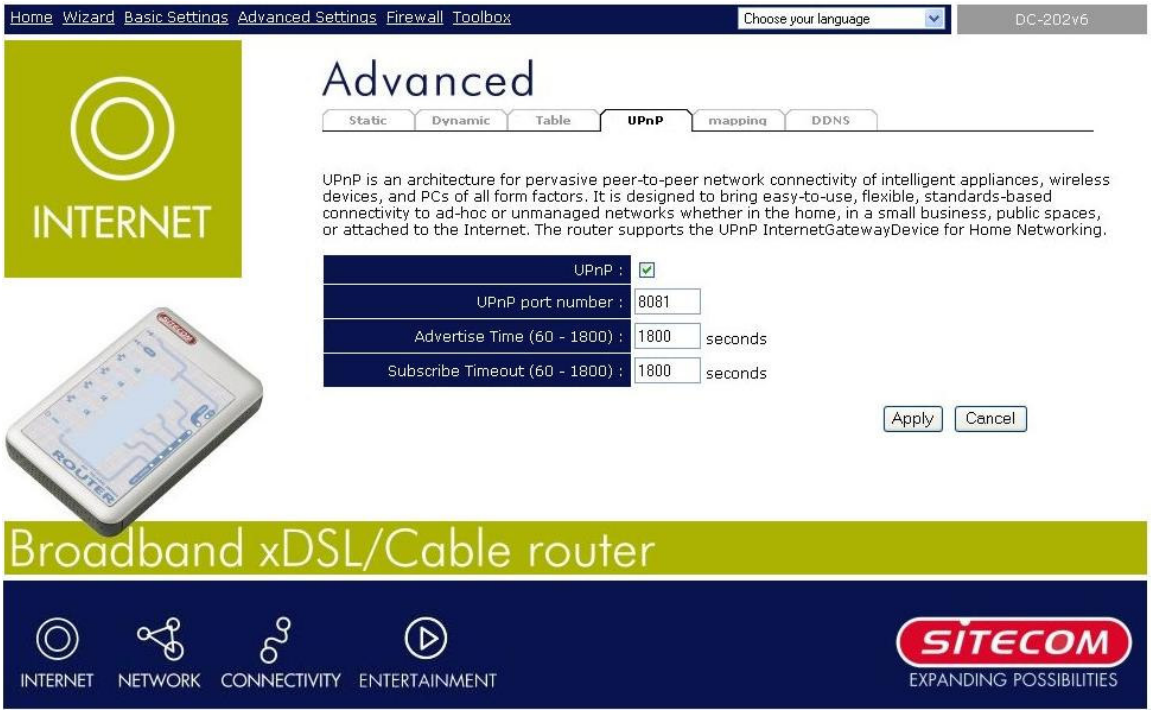
View the routing table of this router.



Parameters	Description
Routing Table	This page shows the routing table of this router. It displays the Destination LAN IP, Subnet Mask, Gateway, Metric and Interface of each routing table entry. Use the **Refresh** button to get the most updated situation

4.4 UPnP

UPnP Settings allows you to configure the basic parameters of UPnP.

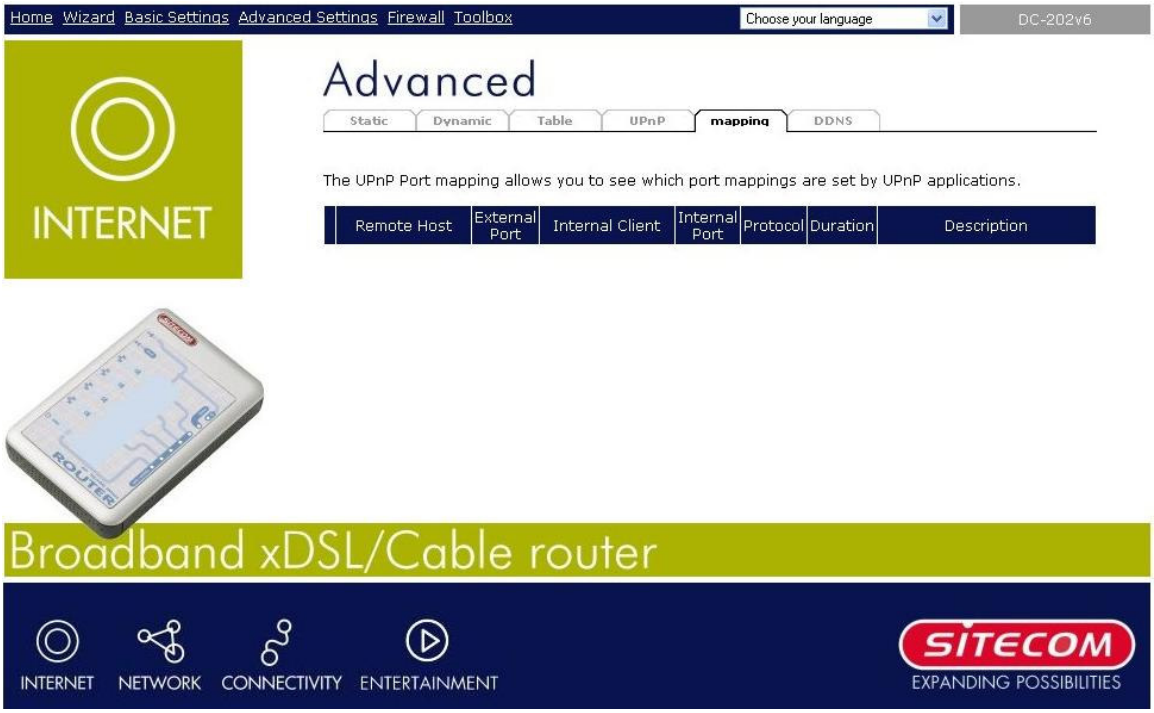


Parameters	Description
Enable UPnP	Check this box to enable the UPnP function.
UPnP Port Number	Enter the port number used by UPnP.
Advertise Time	Enter the interval in second that the router advertise its existence as an UPnP IGD.
Subscribe Timeout	Enter the valid time of a subscription.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

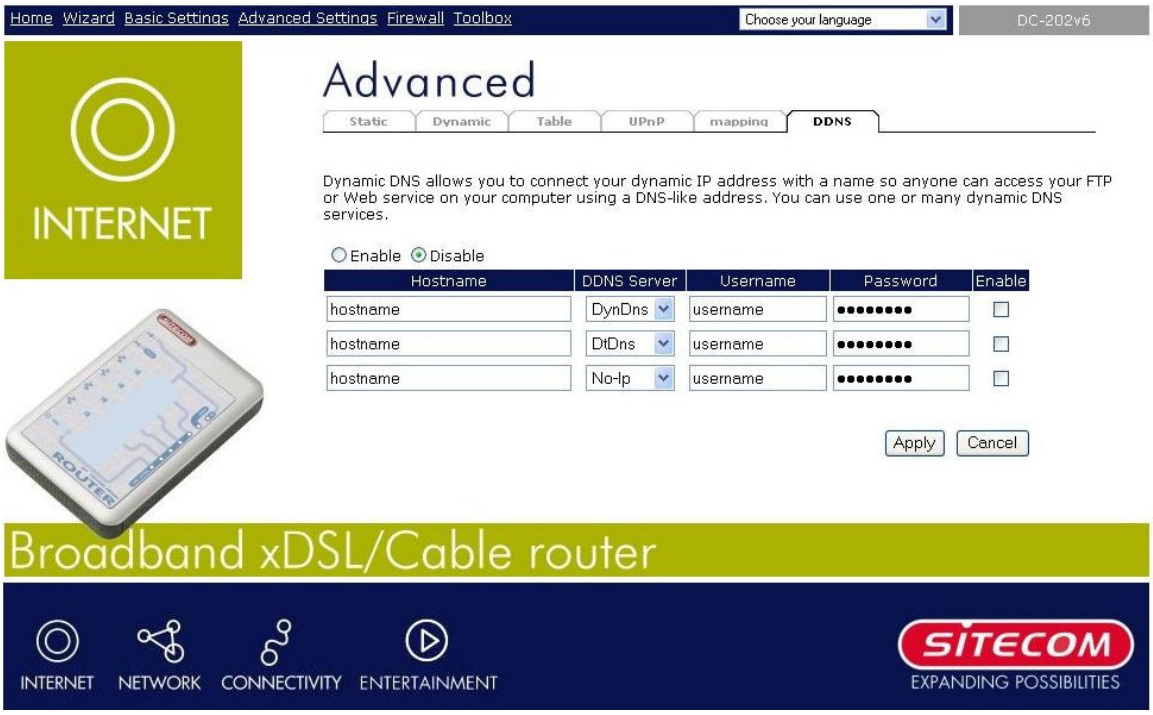
4.5 UPnP Port Mapping

UPnP Port mapping allows you to see the port mappings of UPnP applications.



4.6 DDNS

DDNS allows you to map the static domain name to a dynamic IP address. You must get an account, password and your static domain name from the DDNS service providers.



Parameters	Description
Enable DDNS	Select "Enable" above the table to enable DDNS function.
Disable DDNS	Select "Disable" above the table to disable DDNS function.
Host Name	Enter the host name of your server.
DDNS Server	Select the DDNS service provider to make use of the DDNS server.
User Name	Enter the user name of the account given by the DDNS service provider.
Password	Enter the password of the account given by the DDNS service provider.

DDNS Retry Time	Enter the retry time in minutes of the DDNS registration.
Enable	Check this box to enable this DDNS entry.

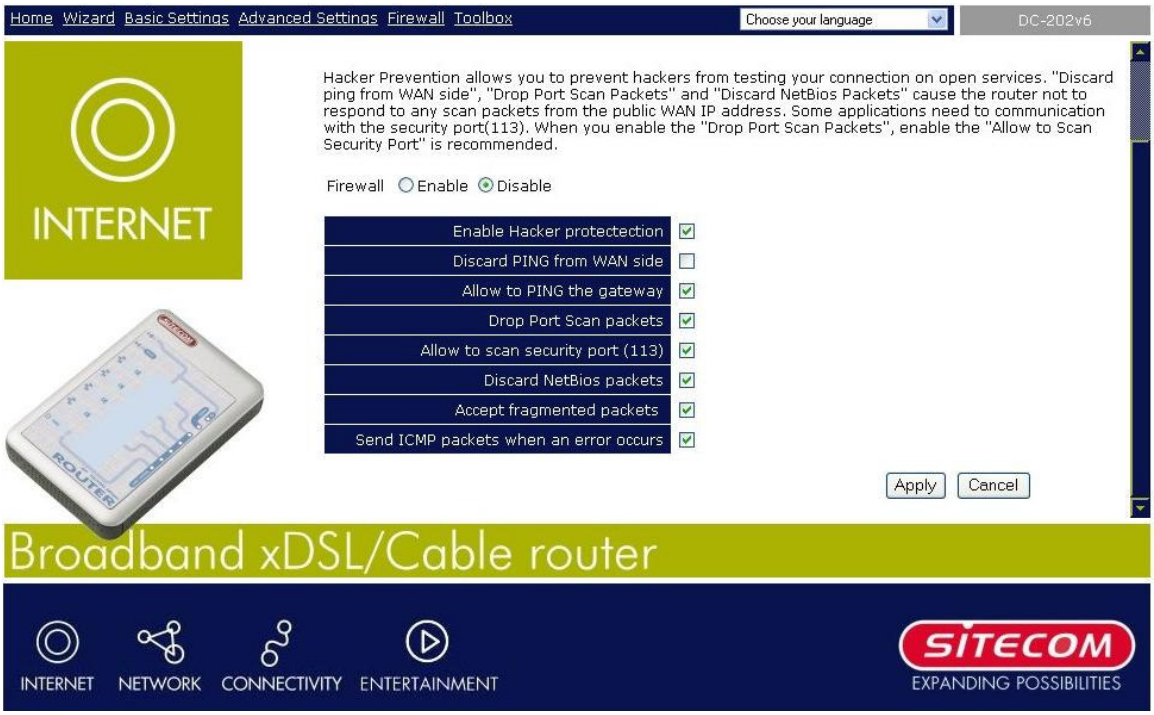
Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

Chapter 5: Firewall

5.1 Hacker Prevention

The Broadband router's firewall can block common hacker attacks, including Denial of Service, Ping of Death, Port Scan and Sync Flood. If Internet attacks occur the router can log the events.

Note: To enable the Firewall settings select **Enable** and click **Apply**



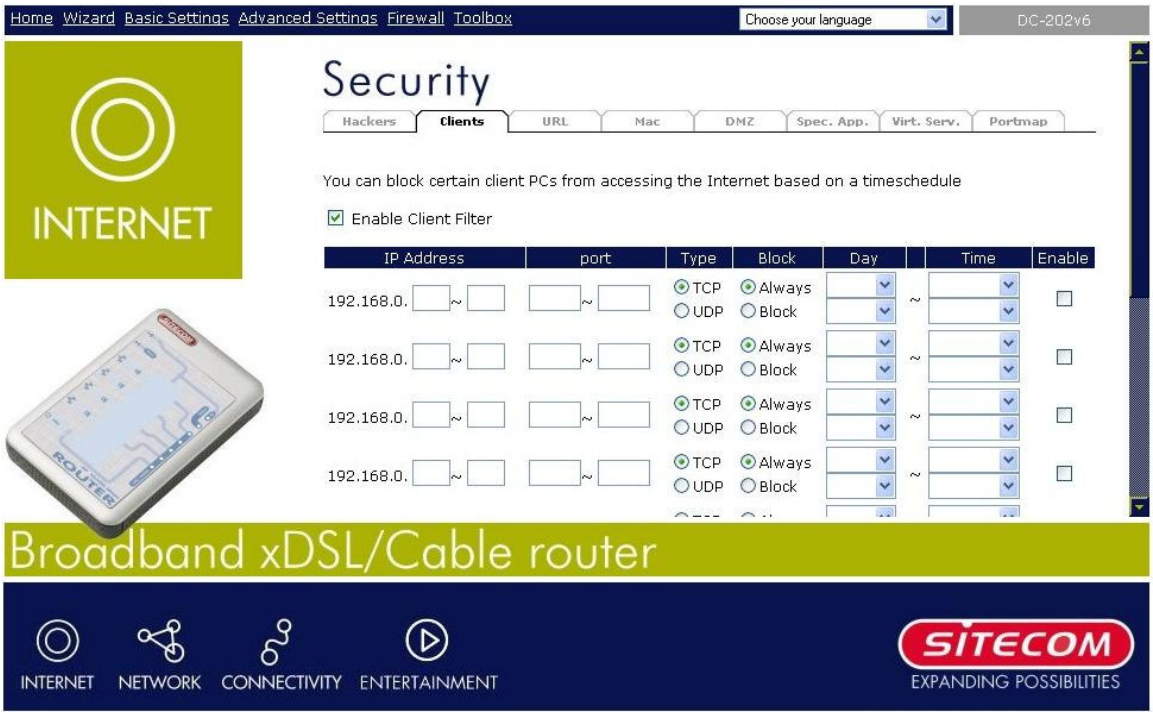
Parameters	Description
Enable Hacker Attack Protect	Check this box to enable the hacker DoS attacks.
Discard PING from WAN side	Check this box to discard PING packets come from the WAN side.
Allow to PING the Gateway	Check this box to let the router's WAN port will not respond to any Ping requests
Drop Port Scan Packets	Check this box to protect the router from Port Scan.

Allow to Scan Security Port	Check this box to allow client scan security port 113.
Discard NetBIOS Packets	Check this box to discard NetBIOS packets from passing through this router.
Accept Fragment Packets	Check this box to accept fragment packets.
Send ICMP Packets When Error	Check this box to enable sending ICMP packets when an error occurs.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

5.2 Client Filtering

If you want to restrict users from accessing certain Internet applications/services (e.g. Internet websites, email, FTP etc.), then this is the place to set that configuration. Client Filtering allows users to define the traffic type permitted in your LAN. You can control which PC client can have access to these services.



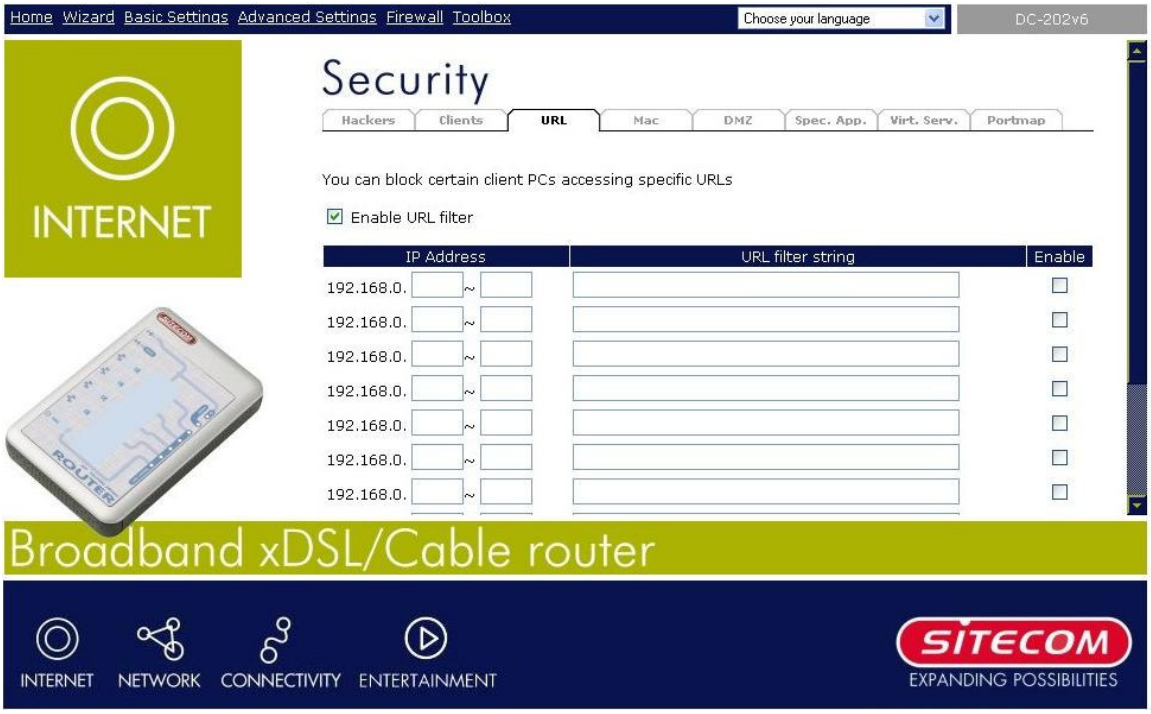
Parameters	Description
Enable Client Filter	Check this box to enable Client Filtering function.
IP	Enter the client IP range that you want to filter.
Port	Enter the port range of services that you want to restrict the clients to access.
Type	Select the protocol type of services that you want to restrict the clients to access.
Block Time	Select "Always" if you want to block the clients from accessing the services all the time. Select "Block" if you want to block the clients from accessing the services only during the assigned time period.

Day	Select the period of week day you want to apply this rule.
Time	Select the time period in a day you want to apply this rule.
Enable	Check this box to enable this rule.

You can now configure other advance sections or start using the router (with the advance settings in place)

5.3 URL Filtering

You can block access to some Web sites from particular PCs by entering a full URL address or just keyword of the Web site.

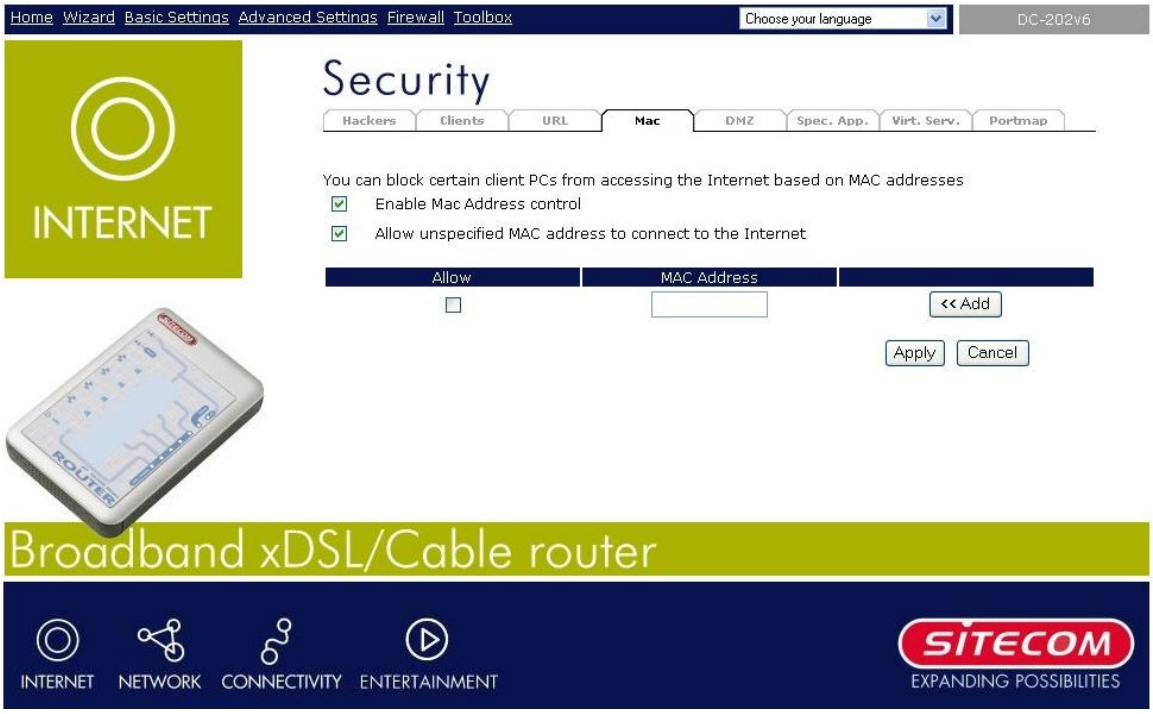


Parameters	Description
Enable URL Filtering	Check this box to enable the URL Filtering function.
IP	Enter the client IP address range that you want to block from accessing the URL with specified keyword.
URL filtering string	You can enter the full URL address or the keyword of the web site you want to block.
Enable	Check this box to enable this rule.

You can now configure other advance sections or start using the router (with the advance settings in place)

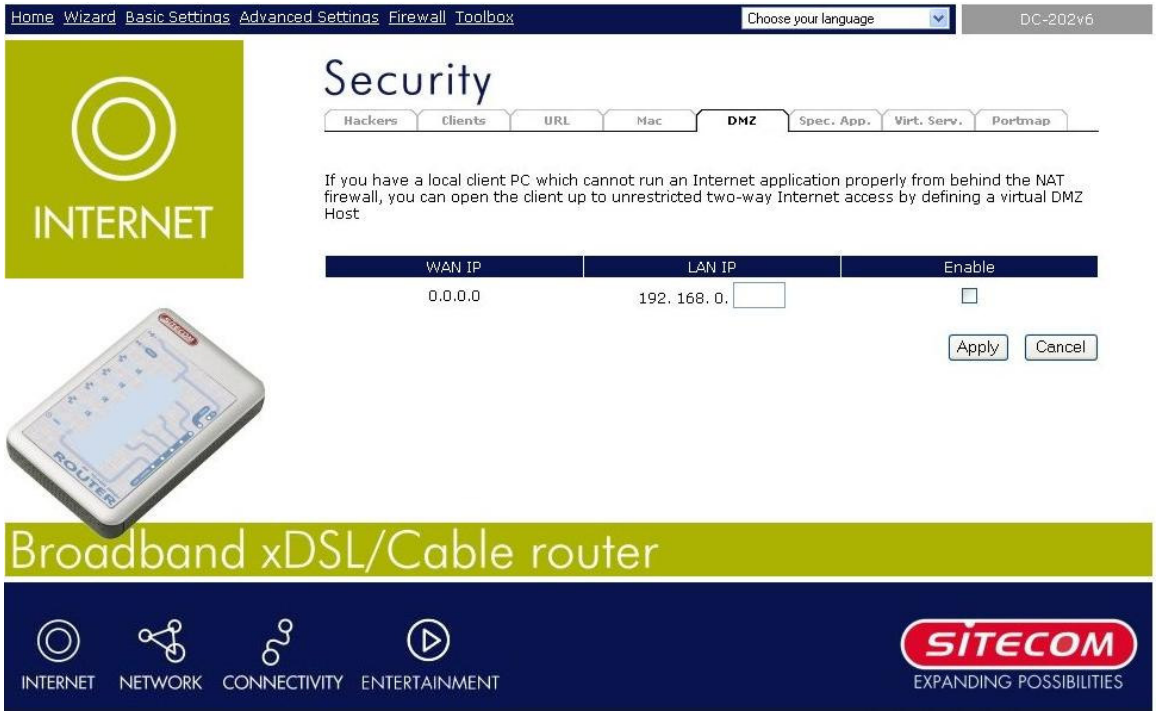
5.4 MAC Filtering

This router provides MAC Address Control, which can prevent unauthorized MAC Addresses from accessing the internet.



5.5 DMZ

If you have a local client PC that cannot run an Internet application (e.g. Games) properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a DMZ Host. The DMZ function allows you to re-direct all packets going to your WAN port IP address to a particular IP address in your LAN. The difference between the virtual server and the DMZ function is that the virtual server re-directs a particular service/Internet application (e.g. FTP, websites) to a particular LAN client/server, whereas DMZ re-directs all packets (regardless of services) going to your WAN IP address to a particular LAN client/server.



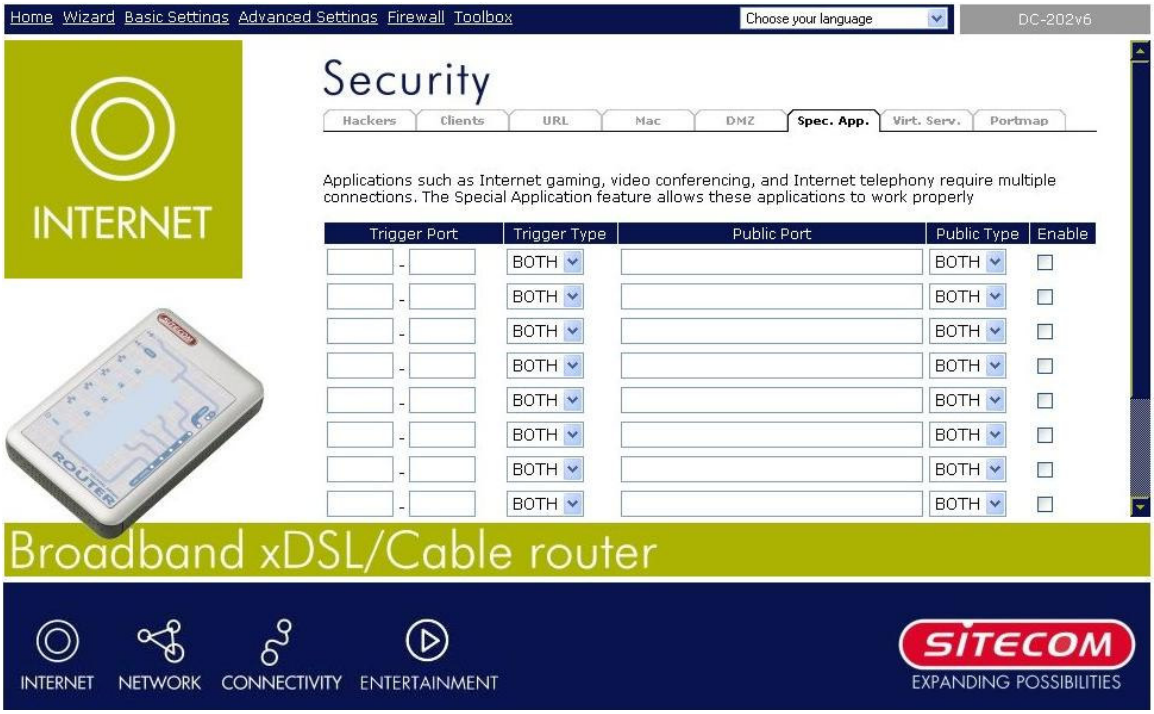
Parameters	Description
Enable	You have to check this box to enable the DMZ function. **Note**: If there is a conflict between the Virtual Server and the DMZ setting, then Virtual Server function will have priority over the DMZ function.
WAN IP	The WAN IP address that a particular DMZ host in your LAN will be mapped to.
Private IP	Input the IP address of a particular host in your LAN that will receive all the packets originally going to the WAN port/Public IP address above.

Note: You need to give your LAN PC clients a fixed/static IP address for DMZ to work properly.

You can now configure other advance sections or start using the router (with the advance settings in place)

5.6 Special Applications

Some applications require multiple connections, such as Internet games, video conferencing, Internet telephony and others. In this section you can configure the router to support multiple connections for these types of applications.



Parameters	Description
Trigger Port	This is the out going (Outbound) port number for this particular application
Trigger Type	Select whether the outbound port protocol is "TCP" or "UDP".
Public Port	Enter the In-coming (Inbound) port or port range for this type of application (e.g. 2300-2400, 47624) **Note**: Individual port numbers are separated by a comma (e.g. 47624, 5775, 6541 etc.). To input a port range use a "dash" to separate the two port number range (e.g. 2300-2400)
Public Type	Select the Inbound port protocol type: "TCP" or "UDP".
Enabled	You have to check this box to enable this rule.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

Example: Special Applications
If you need to run applications that require multiple connections, then specify the port (outbound) normally associated with that application in the "Trigger Port" field. Then select the protocol type (TCP or UDP) and enter the public ports associated with the trigger port to open them up for inbound traffic.

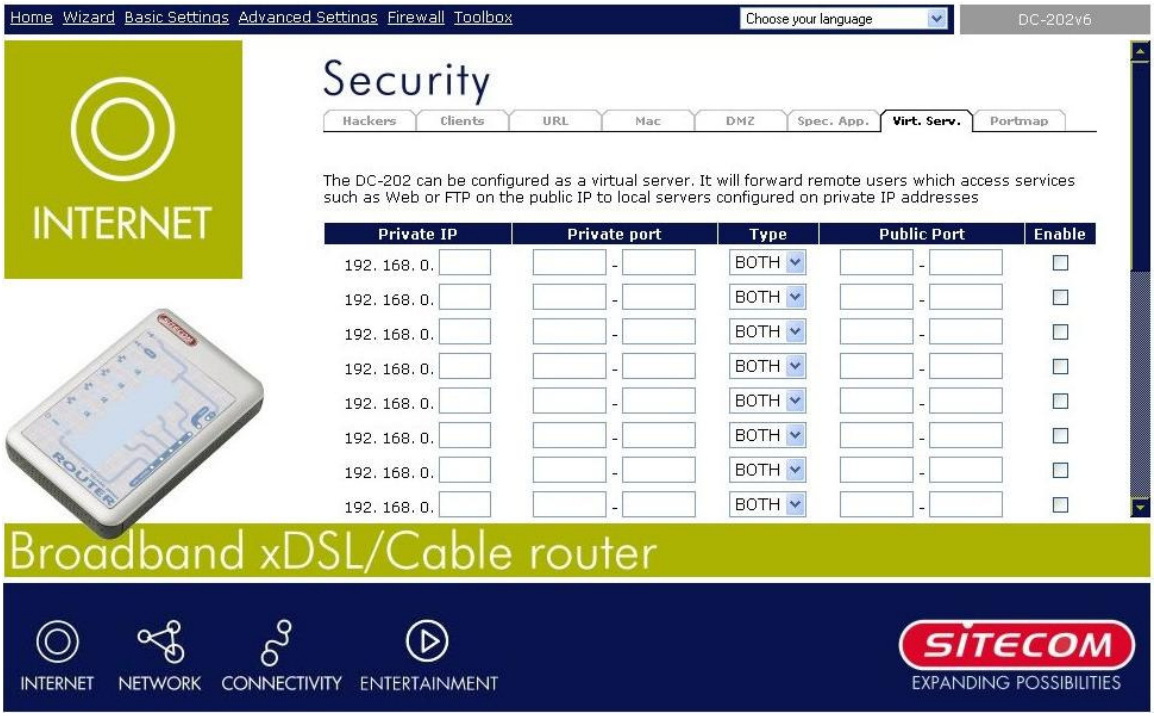
Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	28800	UDP	2300-2400, 47624	TCP	MSN Game Zone
2	6112	UDP	6112	UDP	Battle.net

In the example above, when a user trigger's port 28800 (outbound) for MSN Game Zone then the router will allow incoming packets for ports 2300-2400 and 47624 to be directed to that user. **Note**: Only one LAN client can use a particular special application at a time.

5.7 Virtual Server

Use the Virtual Server function when you want different servers/clients in your LAN to handle different service/Internet application type (e.g. Email, FTP, Web server etc.) from the Internet. Computers use numbers called port numbers to recognize a particular service/Internet application type. The Virtual Server allows you to re-direct a particular service port number (from the Internet/WAN Port) to a particular LAN private IP address and its service port number. (See Glossary for an explanation on Port number)



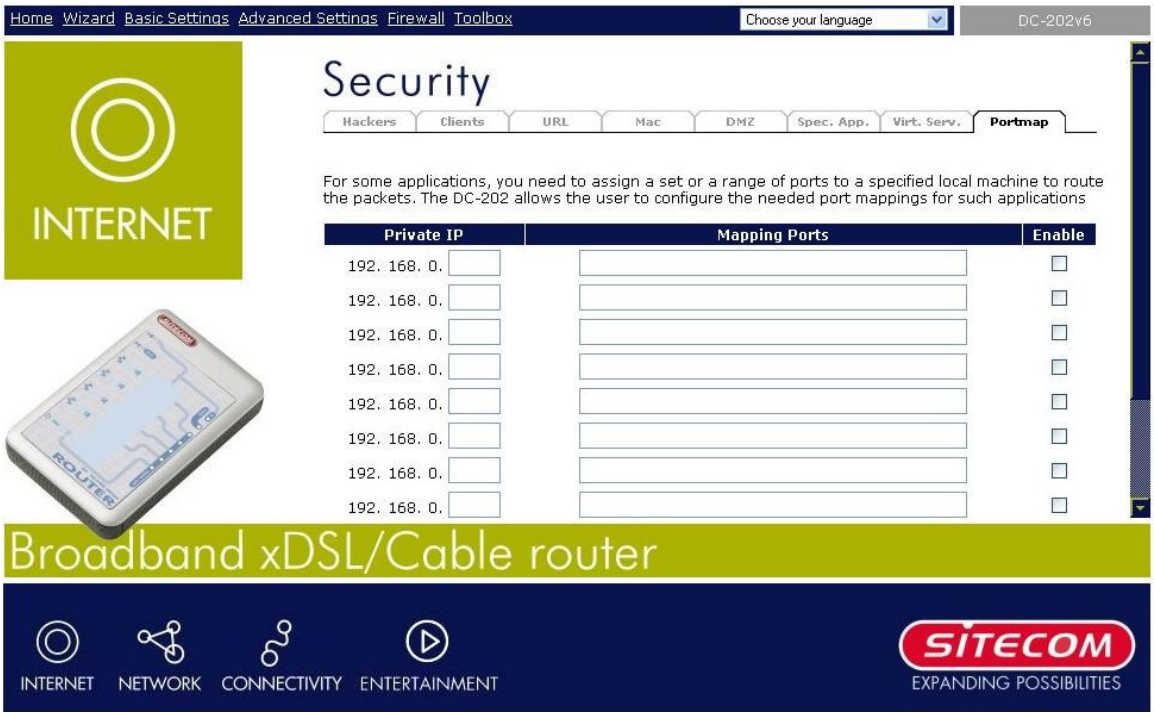
Parameters	Description
Private IP	This is the LAN client/host IP address that the Public Port number packet will be sent to. **Note:** You need to give your LAN PC clients a fixed/static IP address for Virtual Server to work properly.
Private Port	This is the port number (of the above Private IP host) that the below Public Port number will be changed to when the packet enters your LAN (to the LAN Server/Client IP)
Type	Select the port number protocol type (TCP or UDP).

Public Port	Enter the service (service/Internet application) port number from the Internet that will be re-directed to the above Private IP address host in your LAN **Note**: Virtual Server function will have priority over the DMZ function if there is a conflict between the Virtual Server and the DMZ settings.
Enabled	You have to check this box to enable this rule.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

5.8 Port Mapping

The Port Forwarding allows you to re-direct a particular range of service port numbers (from the Internet/WAN Ports) to a particular LAN IP address. It helps you to host some servers behind the router NAT firewall.



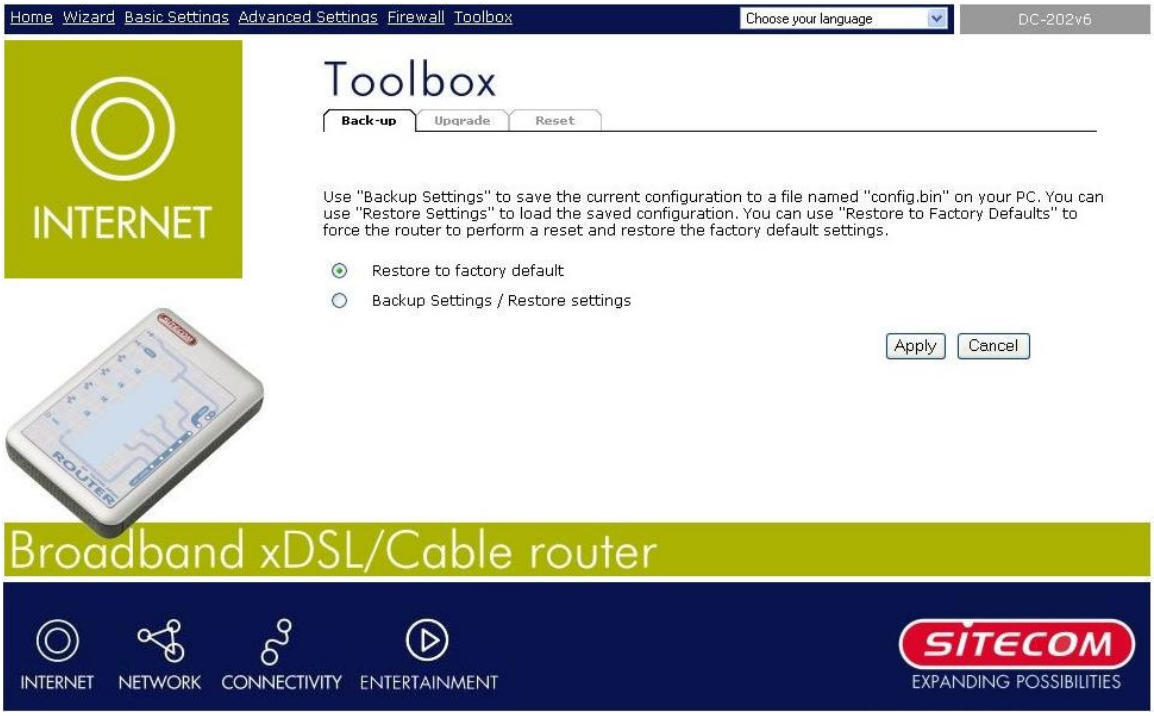
Parameter	Description
Server IP	This is the private IP of the server behind the NAT firewall. **Note:** You need to give your LAN PC clients a fixed/static IP address for Port Forwarding to work properly.
Mapping Ports	The range of ports to be forward to the private IP. (e.g. 2300-2400, 47624) **Note**: Individual port numbers are separated by a comma e.g. 47624, 5775, 6541 etc.). To input a port range use a "dash" to separate the two port number range (e.g. 2300-2400)
Enabled	You have to check this box to enable this rule.

Click <**Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

Chapter 6: Toolbox

6.1 Back-up

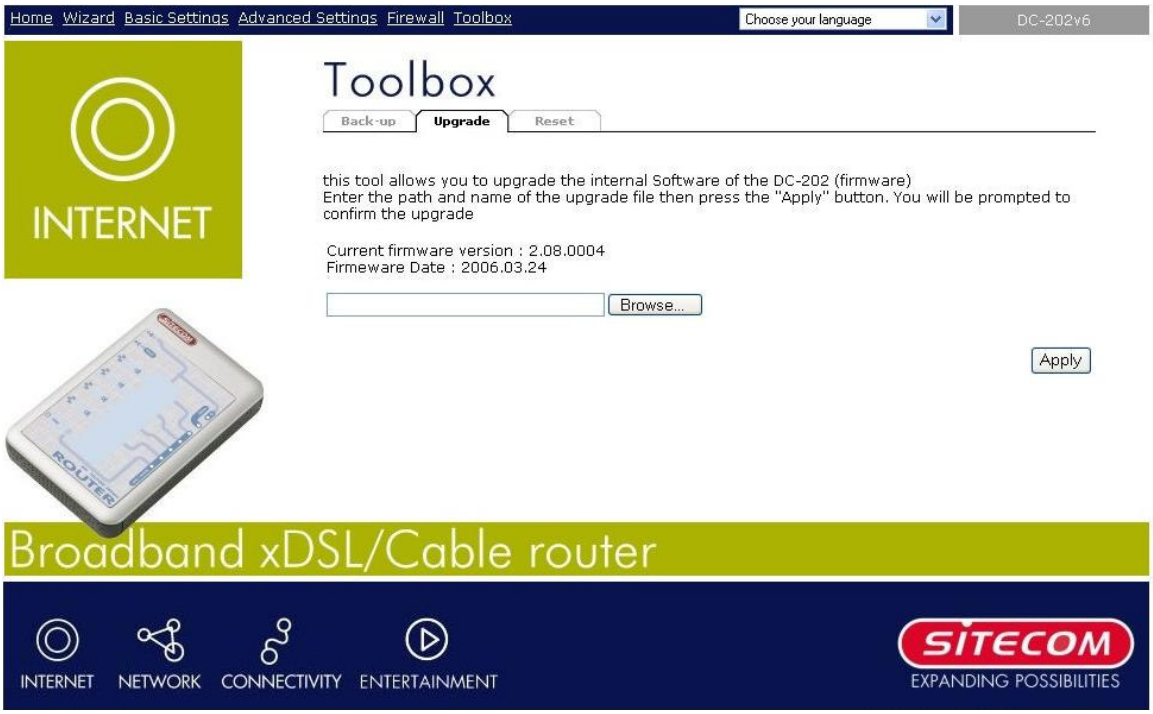
The Toolbox screen allows you to save (**Backup**) the router's current configuration setting. Saving the configuration settings provides an added protection and convenience should problems occur with the router and you have to reset to factory default. When you save the configuration setting (Backup) you can re-load the saved configuration into the router through the **Restore** selection. If extreme problems occur you can use the **Restore to Factory Defaults** selection, this will set all configurations to its original default settings (e.g. when you first purchased the router).



Parameters	Description
Configuration Tools	Use the "**Backup**" tool to save the Broadband router current configuration to a file named "config.bin" on your PC. You can then use the "**Restore**" tool to restore the saved configuration to the Broadband router. Alternatively, you can use the "**Restore to Factory Defaults**" tool to force the Broadband router to perform a power reset and restore the original factory settings.

6.2 Firmware Upgrade

This page allows you to upgrade the router's firmware

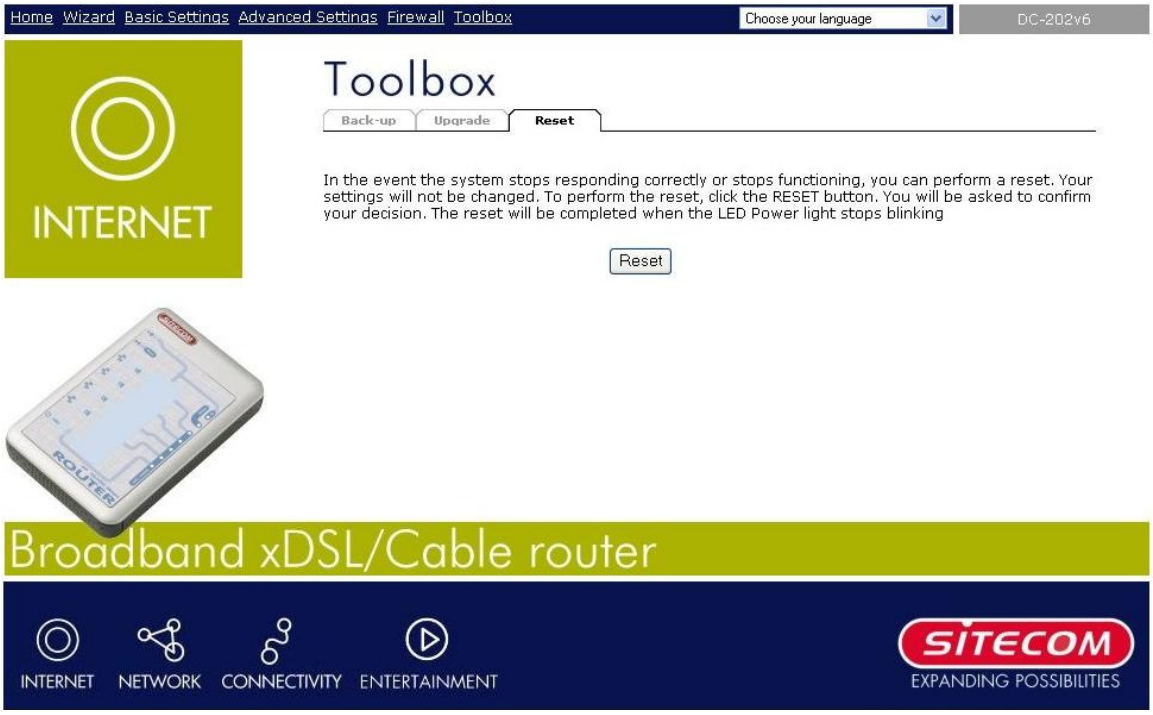


Parameters	Description
Firmware Upgrade	This tool allows you to upgrade the Broadband router's system firmware. To upgrade the firmware of your Broadband router, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also use the Browse button to find the firmware file on your PC.

Once you've selected the new firmware file, click <**Apply>** at the bottom of the screen to start the upgrade process. (You may have to wait a few minutes for the upgrade to complete). Once the upgrade is complete you can start using the router.

6.3 Reset

You can reset the router's system should any problem exist. The reset function essentially Re-boots your router's system

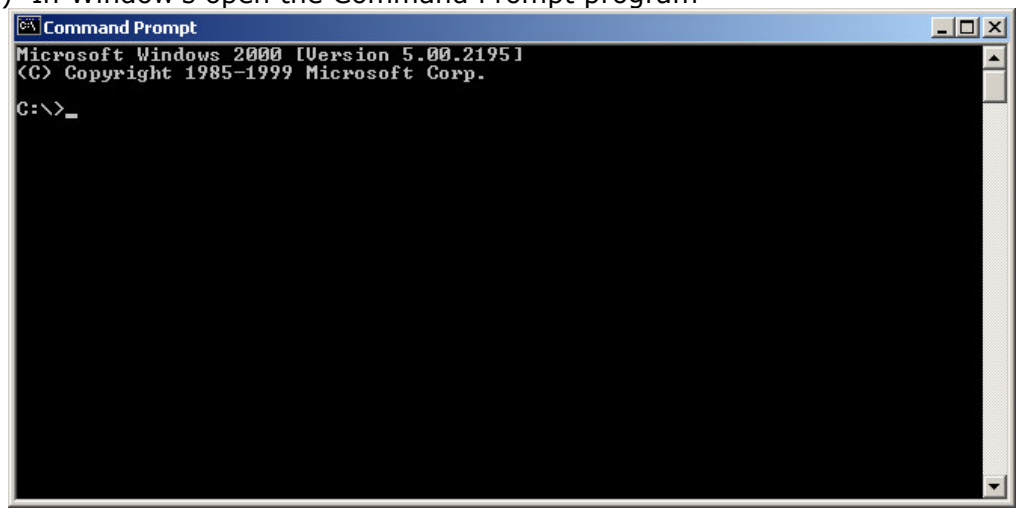


Parameters	Description
Reset	In the event that the system stops responding correctly or in some way stops functioning or you modify the configuration, you can perform a reset. **Your settings will not be changed**. To perform the reset, click on the <Reset> button. You will be asked to confirm your decision. The reset will be complete when the power light stops blinking. Once the reset process is complete you may start using the router again. **Note:** Every time when you finished configuration, please reset the router to make sure that the new settings take effect.

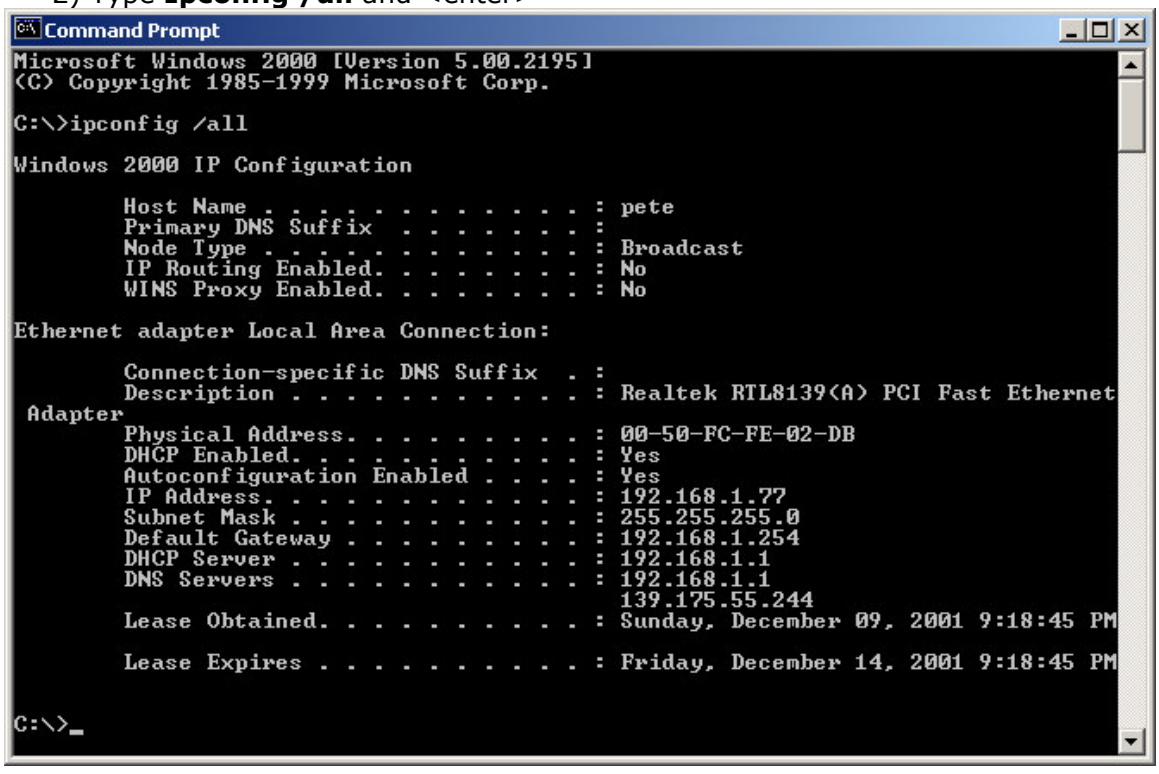
Appendix A

How to Manually find your PC's IP and MAC address

1) In Window's open the Command Prompt program



2) Type **Ipconfig /all** and <enter>



- Your PC's IP address is the one entitled **IP address** (192.168.1.77)
- The router's IP address is the one entitled **Default Gateway** (192.168.1.254)
- Your PC's MAC Address is the one entitled **Physical Address** (00-50-FC-FE-02-DB)

Glossary

Default Gateway (Router): Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address: DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as www.Broadbandrouter.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "Broadbandrouter.com" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and hubs, and move data around at up to 10/100 million bits per second (Mbps).

Idle Timeout: Idle Timeout is designed so that after there is no traffic to the Internet for a pre-configured amount of time, the connection will automatically be disconnected.

IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, that identifies a single, unique Internet computer host in an IP network. Example: 192.168.2.1. It consists of 2 portions: the IP network address, and the host identifier.

The IP address is a 32-bit binary pattern, which can be represented as four cascaded decimal numbers separated by ".": aaa.aaa.aaa.aaa, where each "aaa" can be anything from 000 to 255, or as four cascaded binary numbers separated by ".": bbbbbbbb.bbbbbbbb.bbbbbbbb.bbbbbbbb, where each "b" can either be 0 or 1.
A network mask is also a 32-bit binary pattern, and consists of consecutive leading 1's followed by consecutive trailing 0's, such as 11111111.11111111.11111111.00000000. Therefore sometimes a network mask can also be described simply as "x" number of leading 1's.
When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.

For example, if the IP address for a device is, in its binary form,
11011001.10110000.10010000.00000111, and if its network mask is,
11111111.11111111.11110000.00000000
It means the device's network address is
11011001.10110000.10010000.00000000, and its host ID is,

00000000.00000000.00000000.00000111. This is a convenient and efficient method for routers to route IP packets to their destination.

ISP Gateway Address: (see ISP for definition). The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

NAT: Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using the broadband router's NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port: Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below is a list of common applications and protocol/port numbers:

Application	Protocol	Port Number
Telnet	TCP	23
FTP	TCP	21
SMTP	TCP	25
POP3	TCP	110
H.323	TCP	1720
SNMP	UCP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	TCP	1723
PC Anywhere	TCP	5631
PC Anywhere	UDP	5632

PPPoE: Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers

Protocol: A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

Subnet Mask: A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP, UDP: Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocol. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

WAN: Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI): Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.