



OfficeConnect®

11g Cable/DSL Router

User Guide

3CRWE554G72T
3CRWE554G72TU



The Standard for
Wireless Fidelity.

<http://www.3com.com/>

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ABOUT THIS GUIDE

This guide describes how to install and configure the OfficeConnect 11g Cable/DSL Router (3CRWE554G72T and 3CRWE554G72TU).

This guide is intended for use by those responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks) and Internet Router systems.



If a release note is shipped with the OfficeConnect 11g Cable/DSL Router and contains information that differs from the information in this guide, follow the information in the release note.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) on the 3Com World Wide Web site:

<http://www.3com.com>

Naming Convention

Throughout this guide, the OfficeConnect 11g Cable/DSL Router is referred to as the "Router".

Category 3 and Category 5 Twisted Pair Cables are referred to as Twisted Pair Cables throughout this guide.

Conventions

[Table 1](#) and [Table 2](#) list conventions that are used throughout this guide.

Table 1 Notice Icons

Icon	Notice Type	Description
	Information note	Information that describes important features or instructions.
	Caution	Information that alerts you to potential loss of data or potential damage to an application, system, or device.
	Warning	Information that alerts you to potential personal injury.

Table 2 Text Conventions

Convention	Description
The words “enter” and “type”	When you see the word “enter” in this guide, you must type something, and then press Return or Enter. Do not press Return or Enter when an instruction simply says “type.”
Keyboard key names	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
Words in <i>italics</i>	Italics are used to: <ul style="list-style-type: none"> ■ Emphasize a point. ■ Denote a new term at the place where it is defined in the text. ■ Identify menu names, menu commands, and software button names. Examples: From the <i>Help</i> menu, select <i>Contents</i>. Click <i>OK</i>.

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Your suggestions are very important to us. They will help make our documentation more useful to you. Please e-mail comments about this document to 3Com at:

pddtechpubs_comments@3com.com

Please include the following information when commenting:

- Document title
- Document part number (on the title page)
- Page number (if appropriate)

Example:

- OfficeConnect 11g Cable/DSL Router User Guide
- Part Number DUA0554-TAAA01
- Page 24



Do not use this e-mail address for technical support questions. For information about contacting Technical Support, please refer to the Support and Safety Information sheet.

Related Documentation

In addition to this guide, each Router document set includes one Installation Guide. This guide contains the instructions you need to install and configure your Router.

Product Registration

You can now register your Router on the 3Com web site and receive up-to-date information on your product:

<http://www.3com.com/register/>

1

INTRODUCING THE ROUTER

Welcome to the world of networking with 3Com®. In the modern business environment, communication and sharing information is crucial. Computer networks have proved to be one of the fastest modes of communication but, until recently, only large businesses could afford the networking advantage. The OfficeConnect® product range from 3Com has changed all this, bringing networks to the small office.

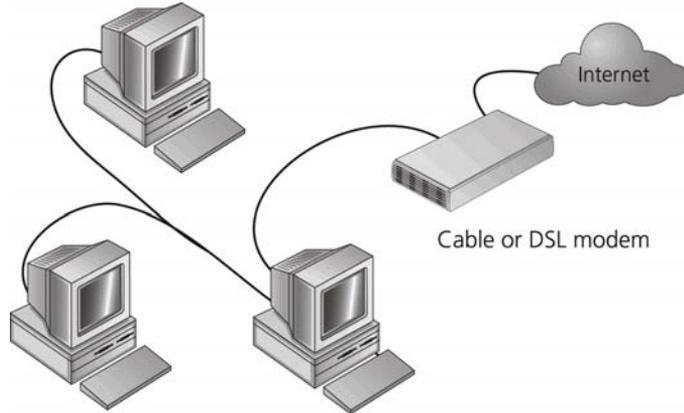
The products that compose the OfficeConnect range give you, the small office user, the same power, flexibility, and protection that has been available only to large corporations. Now, you can network the computers in your office, connect them all to a single Internet outlet, and harness the combined power of all of your computers.

OfficeConnect 11g Cable/DSL Router

The OfficeConnect 11g Cable/DSL Router is designed to provide a cost-effective means of sharing a single broadband Internet connection amongst several wired and wireless computers. The Router also provides protection in the form of an electronic "firewall" preventing anyone outside of your network from seeing your files or damaging your computers. The Router can also prevent your users from accessing Web sites which you find unsuitable.

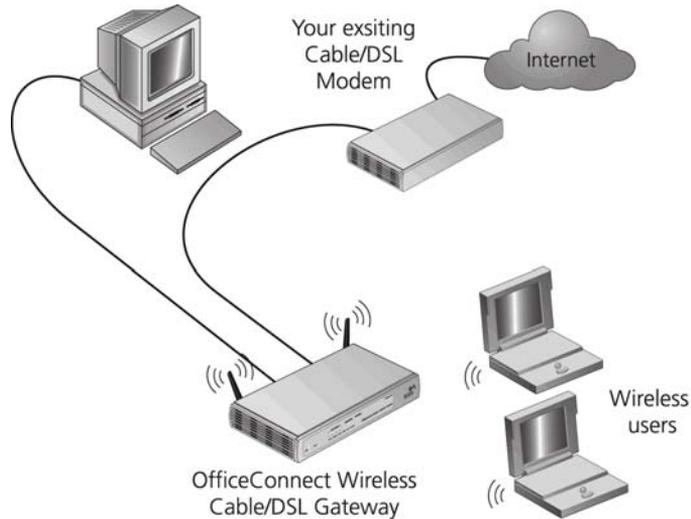
[Figure 1](#) shows an example network without a Router. In this network, only one computer is connected to the Internet. This computer must always be powered on for the other computers on the network to access the Internet.

Figure 1 Example Network Without a Router



When you use the Router in your network ([Figure 2](#)), it becomes your connection to the Internet. Connections can be made directly to the Router, or to an OfficeConnect Switch or Hub, expanding the number of computers you can have in your network.

Figure 2 Example Network Using a Cable/DSL Router



Router Advantages

The advantages of the Router include:

- Shared Internet connection for both wired and wireless computers
- High speed 802.11g wireless networking
- No need for a dedicated, “always on” computer serving as your Internet connection
- Cross-platform operation for compatibility with Windows, Unix and Macintosh computers
- Easy-to-use, Web-based setup and configuration
- Provides centralization of all network address settings (DHCP)
- Acts as a Virtual server to enable remote access to Web, FTP, and other services on your network
- Security — Firewall protection against Internet hacker attacks and encryption to protect wireless network traffic
- Filtered access of inappropriate Web sites using the built-in URL filter

Package Contents

The Router kit includes the following items:

- One OfficeConnect 11g Cable/DSL Router
- One power adapter for use with the Router
- Four rubber feet
- One Ethernet cable
- One CD-ROM containing the Router Discovery program and this User Guide
- Installation Guide
- One Support and Safety Information Sheet
- One Warranty Flyer

If any of these items are missing or damaged, please contact your retailer.

Minimum System and Component Requirements

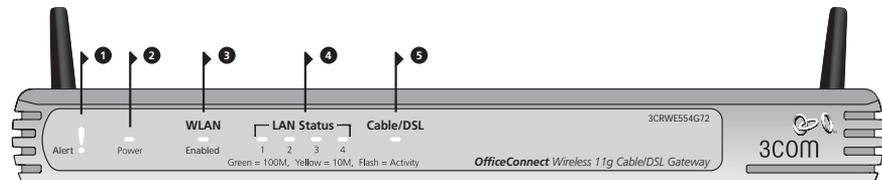
Your Router requires that the computer(s) and components in your network be configured with at least the following:

- A computer with an operating system that supports TCP/IP networking protocols (for example Windows 95/98/NT/Me/2000/XP, Unix, Mac OS 8.5 or higher).
- An Ethernet 10Mbps or 10/100 Mbps NIC for each computer to be connected to the four-port switch on your Router.
- An 802.11b or 802.11g wireless NIC.
- A cable modem or DSL modem with an Ethernet port (RJ-45 connector).
- An active Internet access account.
- A Web browser that supports JavaScript, such as Netscape 4.7 or higher, Internet Explorer 5.0 or higher, or Mozilla 1.2.1 or higher.

Front Panel

The front panel of the Router contains a series of indicator lights (LEDs) that help describe the state of various networking and connection operations.

Figure 3 Router - Front Panel



1 Alert LED

Orange

Indicates a number of different conditions, as described below.

Off - The Router is operating normally.

Flashing quickly - Indicates one of the following conditions:

- The Router has just been started up and is running a self-test routine, or

- The administrator has invoked the *Reset to Factory Defaults* command, or
- The system software is in the process of being upgraded

In each of these cases, wait until the Router has completed the current operation and the alert LED is Off.

Flashing slowly - The Router has completed the *Reset to Factory Defaults* process, and is waiting for you to reset the unit. To do this, remove power, wait 10 seconds and then re-apply power. The Router will then enter the start-up sequence and resume normal operation.



If you have used a cable to reset the unit to Factory Defaults, follow steps 5 to 7 in [“Forgotten Password and Reset to Factory Defaults”](#) on [page 85](#).

On for 2 seconds, and then off - The Router has detected and prevented a hacker from attacking your network from the Internet.

Continuously on - A fault has been detected with your Router during the start-up process. Refer to [Chapter 6 “Troubleshooting”](#).

2 Power LED

Green

Indicates that the Router is powered on.

3 Wireless LAN (WLAN) Status LED

Yellow

If the LED is on it indicates that wireless networking is enabled. If the LED is flashing, data is being transmitted or received. If the LED is off, the Wireless LAN has been disabled in the Router, or there is a problem. Refer to [Chapter 6 “Troubleshooting”](#).

4 Four LAN Status LEDs

Green (100Mbps link) / yellow (10Mbps link)

If the LED is on, the link between the port and the next piece of network equipment is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected, the connected device is switched off, or there is a problem with the connection (refer to [Chapter 6 “Troubleshooting”](#)). The port will automatically adjust to the correct speed and duplex.

5 Cable/DSL Status LED

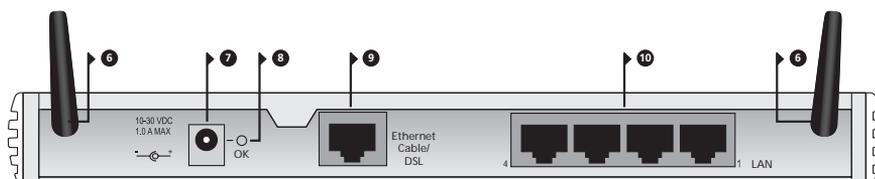
Green (100Mbps link) / yellow (10Mbps link)

If the LED is on, the link between the Router and the cable or DSL modem is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected, the modem is switched off or there is a problem (refer to [Chapter 6 “Troubleshooting”](#)).

Rear Panel

The rear panel ([Figure 4](#)) of the Router contains four LAN ports, one Ethernet Cable/DSL port, a power adapter OK LED, and a power adapter socket.

Figure 4 Router - Rear Panel



6 Wireless Antennae

The antennae on the product should be placed in a ‘V’ position when initially installed.



CAUTION: Do not force the antennae beyond their mechanical stops. Rotating the antennae further may cause damage.

7 Power Adapter Socket

Only use the power adapter supplied with this Router. Do not use any other adapter.

8 Power Adapter OK LED

Green

Indicates that the power adapter is supplying power to the Router. If the LED is off, there may be a problem with the power adapter or adapter cable.

9 Ethernet Cable/DSL port

Use the supplied patch cable to connect the Router to the Ethernet port on your cable or DSL modem. The port will automatically adjust to the correct speed and duplex, and will set itself to MDI or MDIX depending on the device to which they are connected and the type of cable used.

10 Four 10/100 LAN ports

Using suitable RJ-45 cable, you can connect your Router to a computer, or to any other piece of equipment that has an Ethernet connection (for example, a hub or a switch). The LAN ports will automatically set themselves to MDI or MDIX depending on the device to which they are connected and the type of cable used.

2

HARDWARE INSTALLATION

Introduction

This chapter will guide you through a basic installation of the Router, including:

- Connecting the Router to the Internet.
- Connecting the Router to your network.
- Setting up your computers for networking with the Router.

Safety Information



WARNING: Please read the [“Safety Information”](#) section in [Appendix D](#) before you start.



VORSICHT: Bitte lesen Sie den Abschnitt [“Wichtige Sicherheitshinweise”](#) sorgfältig durch, bevor Sie das Gerät einschalten.



AVERTISSEMENT: Veuillez lire attentivement la section [“Consignes importantes de sécurité”](#) avant de mettre en route.

Positioning the Router

You should place the Router in a location that:

- is conveniently located for connection to the cable or DSL modem that will be used to connect to the Internet.
- is centrally located to the wireless computers that will connect to the Router. A suitable location might be on top of a high shelf or similar furniture to optimize wireless connections to computers in both horizontal and vertical directions, allowing wider coverage.
- allows convenient connection to the computers that will be connected to the four LAN ports on the rear panel, if desired.
- allows easy viewing of the front panel LED indicator lights, and access to the rear panel connectors, if necessary.

When positioning your Router, ensure:

- It is out of direct sunlight and away from sources of heat.
- Cabling is away from power lines, fluorescent lighting fixtures, and sources of electrical noise such as radios, transmitters and broadband amplifiers.
- Water or moisture cannot enter the case of the unit.
- Air flow around the unit and through the vents in the side of the case is not restricted. 3Com recommends you provide a minimum of 25 mm (1 in.) clearance.

Using the Rubber Feet

Use the four self-adhesive rubber feet to prevent your Router from moving around on your desk or when stacking with other flat top OfficeConnect units. Only stick the feet to the marked areas at each corner of the underside of your Router.

Wall Mounting

There are two slots on the underside of the Router that can be used for wall mounting.



When wall mounting the unit, ensure that it is within reach of the power outlet.

You will need two suitable screws to wall mount the unit. To do this:

- 1 Ensure that the wall you use is smooth, flat, dry and sturdy and make two screw holes which are 150 mm (5.9 in.) apart.
- 2 Fix the screws into the wall, leaving their heads 3 mm (0.12 in.) clear of the wall surface.
- 3 Remove any connections to the unit and locate it over the screw heads. When in line, gently push the unit on to the wall and move it downwards to secure.



When making connections, be careful not to push the unit up and off the wall.



CAUTION: *Only wall mount single units, do not wall mount stacked units.*

Before you Install your Router

Before you install and configure your Router, you need the following additional information. If you do not have this information, contact your Internet Service Provider (ISP). Space is provided below for you to record this information.

If you have a DSL connection and your ISP allocates IP information dynamically over PPPoE, you need a User Name and Password:

PPPoE User Name	:	_____
PPPoE Password	:	_____
PPPoE Service Name	:	_____

If you have a DSL connection and your ISP allocates IP information dynamically over PPTP, you need a User Name, Password and PPTP Server Address:

PPTP User Name	:	_____
PPTP Password	:	_____
PPTP Server Address	:	____.____.____.____



You only need a PPPoE Service Name if your ISP requires one. Do not enter anything if your ISP does not require this information.

If your ISP allocates fixed or static IP information, you need the following information:

IP Address	:	____.____.____.____
Subnet Mask	:	____.____.____.____
Default Router address	:	____.____.____.____
DNS address	:	____.____.____.____



If your ISP allocates IP information dynamically over a protocol other than PPPoE, you do not need any further information. This configuration is typical of cable connections.

Powering Up the Router

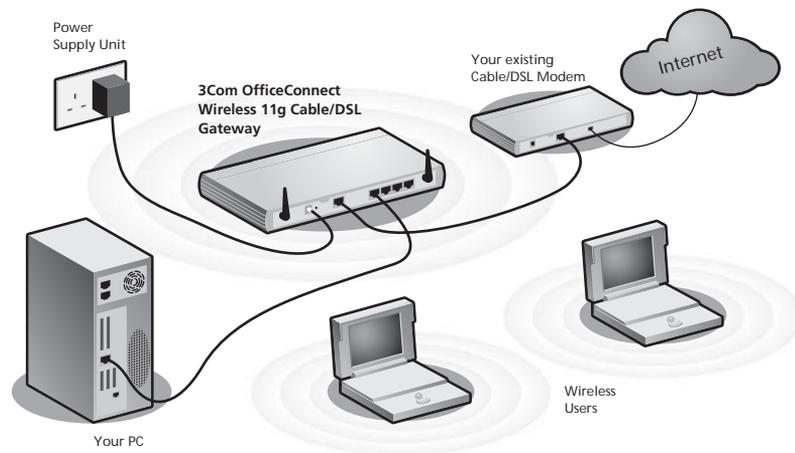
To power up the Router:

- 1 Plug the power adapter into the power adapter socket located on the back panel of the Router.
- 2 Plug the power adapter into a standard electrical wall socket.

Connecting the Router

The first step for installing your Router is to physically connect it to a cable or DSL modem and then connect it to a computer in order to be able to access the Internet. See [Figure 5](#):

Figure 5 Connecting the Router



To use your Router to connect to the Internet through an external cable or DSL modem:

- 1 Insert one end of the supplied Ethernet (RJ-45 Category 5) cable into the Cable/DSL port on the rear panel of the Router.
- 2 Insert the other end of the cable into the RJ-45 port on your cable or DSL modem. Check that the Cable/DSL status LED lights on the Router.
- 3 Connect the cable or DSL modem to the Internet.

- 4 Connect your computer to one of the four LAN ports on the Router using a twisted pair cable. Check that the corresponding LAN status LED on the Router lights.

You have now completed the hardware installation of your Router. Next you need to set up your computers so that they can make use of the Router to communicate with the Internet.

3Com recommends that you perform the initial Router configuration from a computer that is directly connected to one of the LAN ports.

If you configure the Router from a wireless computer, note that you may lose contact with the Router if you change the wireless configuration.

To communicate wirelessly with your Router, your wireless NIC should be set as follows:

- Encryption — none
- Service Area Name/SSID — 3Com
- Channel — 11

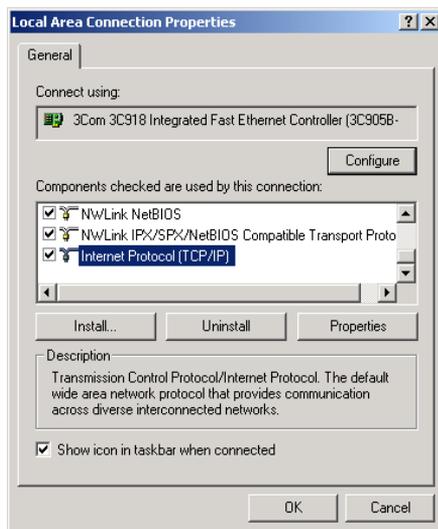
3

SETTING UP YOUR COMPUTERS

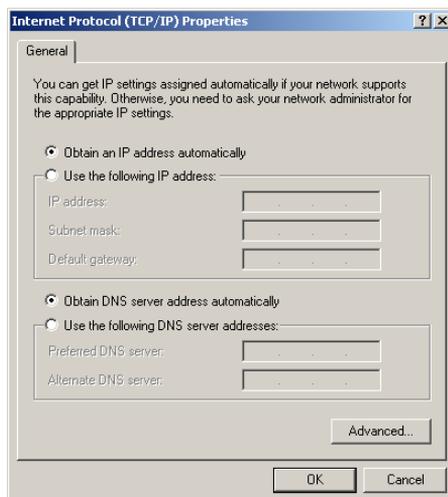
The Router has the ability to dynamically allocate network addresses to the computers on your network, using DHCP. However, your computers need to be configured correctly for this to take place. To change the configuration of your computers to allow this, follow the instructions in this chapter. If your computers are configured with fixed or static addresses and you do not wish to change this, then you should use the Discovery program on the Router CD-ROM to detect and configure your Router. Refer to [Appendix A](#) for information on using the Discovery program.

Obtaining an IP Address Automatically

- Windows 2000** If you are using a Windows 2000-based computer, use the following procedure to change your TCP/IP settings:
- 1 From the Windows *Start* Menu, select *Settings > Control Panel*.
 - 2 Double click on *Network and Dial-Up Connections*.
 - 3 Double click on *Local Area Connection*.
 - 4 Click on *Properties*.
 - 5 A screen similar to [Figure 6](#) should be displayed. Select *Internet Protocol TCP/IP* and click on *Properties*.

Figure 6 Local Area Properties Screen

- 6 Ensure that the options *Obtain an IP Address automatically*, and *Obtain DNS server address automatically* are both selected as shown in [Figure 7](#). Click **OK**.

Figure 7 Internet Protocol (TCP/IP) Properties Screen

- 7 Restart your computer.

Windows XP

- 1 From the Windows *Start* menu, select *Control Panel*.
- 2 Click on *Network and Internet Connections*.
- 3 Click on the *Network Connections* icon.
- 4 Double click on *LAN or High Speed Connection* icon. A screen titled *Local Area Connection Status* will appear.
- 5 Select *Internet Protocol TCP/IP* and click on *Properties*.
- 6 Ensure that the options *Obtain an IP Address automatically*, and *Obtain DNS servers automatically* are both selected. Click *OK*.
- 7 Restart your computer.

Windows 95/98/ME

- 1 From the Windows *Start* Menu, select *Settings > Control Panel*.
- 2 Double click on *Network*. Select the *TCP/IP* item for your network card and click on *Properties*.
- 3 In the *TCP/IP* dialog, select the *IP Address* tab, and ensure that *Obtain IP address automatically* is selected. Click *OK*.

Macintosh If you are using a Macintosh computer, use the following procedure to change your *TCP/IP* settings:

- 1 From the desktop, select *Apple Menu*, *Control Panels*, and *TCP/IP*.
- 2 In the *TCP/IP* control panel, set *Connect Via:* to "Ethernet".
- 3 In the *TCP/IP* control panel, set *Configure:* to "Using DHCP Server."
- 4 Close the *TCP/IP* dialog box, and save your changes.
- 5 Restart your computer.

Disabling PPPoE and PPTP Client Software

If you have PPPoE or PPTP client software installed on your computer, you will need to disable it. To do this:

- 1 From the Windows *Start* menu, select *Settings > Control Panel*.
- 2 Double click on *Internet Options*.
- 3 Select the *Connections* Tab. A screen similar to [Figure 8](#) should be displayed.
- 4 Select the *Never Dial a Connection* option.

Figure 8 Internet Properties Screen



You may wish to remove the PPPoE client software from your computer to free resources, as it is not required for use with the Router.

Disabling Web Proxy

Ensure that you do not have a web proxy enabled on your computer.

Go to the *Control Panel* and click on *Internet Options*. Select the *Connections* tab and click *LAN Settings* at the bottom. Make sure that the *Use Proxy Server* option is unchecked.

4

RUNNING THE SETUP WIZARD

Accessing the Wizard

The Router setup program is Web-based, which means that it is accessed through your Web browser (Netscape Navigator 4.7 or higher, Internet Explorer 5.0 or higher, or Mozilla 1.2.1 or higher).

To use the Setup Wizard:

- 1 Ensure that you have at least one computer connected to the Router. Refer to [Chapter 2](#) for details on how to do this.
- 2 Launch your Web browser on the computer.
- 3 Enter the following URL in the location or address field of your browser: **http://192.168.1.1** ([Figure 9](#)). The Login screen displays.

Figure 9 Web Browser Location Field (Factory Default)



- 4 To log in as an administrator, enter the password (the default setting is **admin**) in the *System Password* field and click *Log in* ([Figure 10](#)).

Figure 10 Router Login Screen

- 5 If the password is correct, the *Country Selection* screen will appear. Select the country you wish to configure the Router for, then click *Apply*. ([Figure 11](#))

Figure 11 Country Selection Screen

- 6 When you have selected a country either:
- The *Welcome* screen will appear ([Figure 12](#)). Select the *Wizard* tab and click *Wizard*.
- or

- If your Router has not been configured before, the Wizard will launch automatically (refer to [Figure 13](#)).
- 7 Click *Next*.
 - 8 You will be guided step by step through a basic setup procedure.

Figure 12 Welcome Screen

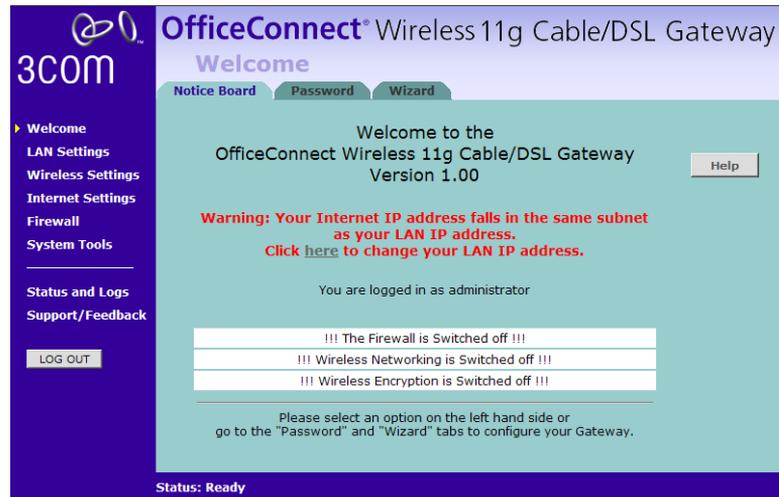
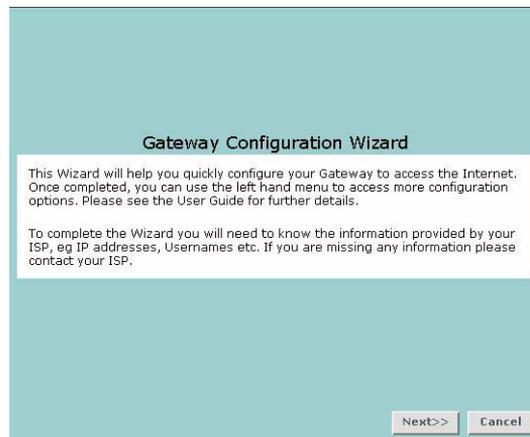


Figure 13 Wizard Screen



Password Figure 14 Change Administration Password Screen

When the *Change Administration Password* screen (Figure 14) appears, type the *Old Password*, then a new password in both the *New Password* and *Confirm Password* boxes.



*3Com recommends entering a new password when setting up the Router for the first time. The Router is shipped from the factory with a default password, **admin**.*

1. *Password is case sensitive.*
2. *Write the new password down and keep it in a safe place, so that you can change your settings in the future.*

Click *Next* to display the *Time Zone* setup screen (Figure 15).

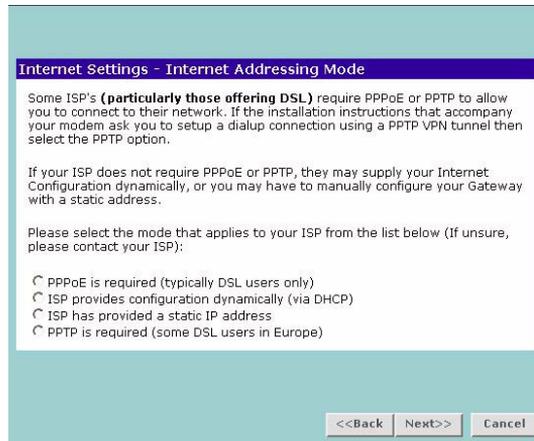
Time Zone Figure 15 Time Zone Screen

Select your time zone from the pull-down menu, check the daylight savings option if required, and then click *Next*.



The Daylight Savings option advances the system clock by one hour. It does not cause the system clock to be updated for daylight savings time automatically.

WAN Settings **Figure 16** Internet Settings Screen



This *Internet Addressing Mode* window allows you to set up the Router for the type of Internet connection you have. Before setting up your Internet connection mode, have the modem setting information from your ISP ready.

Select an Internet Addressing mode from the following:

- PPPoE is required (typically DSL users only) see [page 34](#)
- ISP provides configuration dynamically (via DHCP) see [page 35](#)
- ISP has provided a static IP address see [page 36](#)
- PPTP is required (some DSL users in Europe) see [page 37](#)

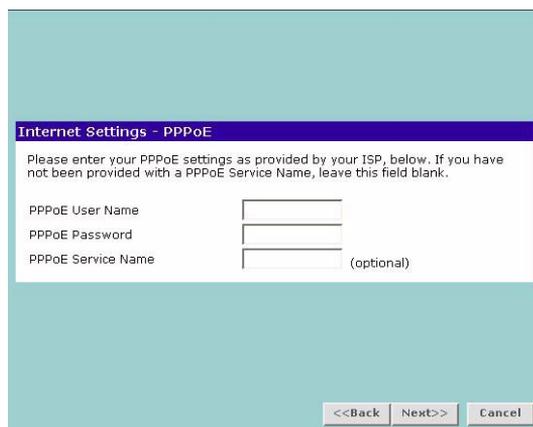
and click *Next*.



For further information on selecting a mode see ["Internet Settings"](#) on [page 57](#).

PPPoE Mode

Figure 17 PPPoE Screen



The screenshot shows a window titled "Internet Settings - PPPoE". The window has a light blue background. At the top, there is a dark blue header bar with the title "Internet Settings - PPPoE" in white text. Below the header, there is a white text area with the following text: "Please enter your PPPoE settings as provided by your ISP, below. If you have not been provided with a PPPoE Service Name, leave this field blank." Below this text, there are three text input fields. The first is labeled "PPPoE User Name", the second is labeled "PPPoE Password", and the third is labeled "PPPoE Service Name" with "(optional)" to its right. At the bottom of the window, there are three buttons: "<<Back", "Next>>", and "Cancel".

To setup the Router for use with a PPP over Ethernet (PPPoE) connection, use the following procedure:

- 1 Enter your PPP over Ethernet user name in the *PPPoE User Name* text box.
- 2 Enter your PPP over Ethernet password in the *PPPoE Password* text box.
- 3 Enter your PPP over Ethernet service name in the *PPPoE Service Name* text box.

This is optional. Not all ISPs require a PPPoE service name.



Do not enter anything in this box if your ISP does not require a service name.

- 4 Check all of your settings, and then click *Next*. Refer to [“LAN Settings”](#) on [page 38](#) for more information.

Dynamic IP Address Mode

To setup the Router for use with a dynamic IP address connection:

- 1 Select the *ISP provides configuration dynamically (via DHCP)* and then click *Next*. See [Figure 16](#).

Figure 18 Hostname Screen

- 2 Some ISPs require a host name. If your ISP has this requirement, enter the host name in the *Host Name* text box ([Figure 18](#)) and click *Next*. The Clone MAC Address screen displays.

Figure 19 Clone MAC Address Screen

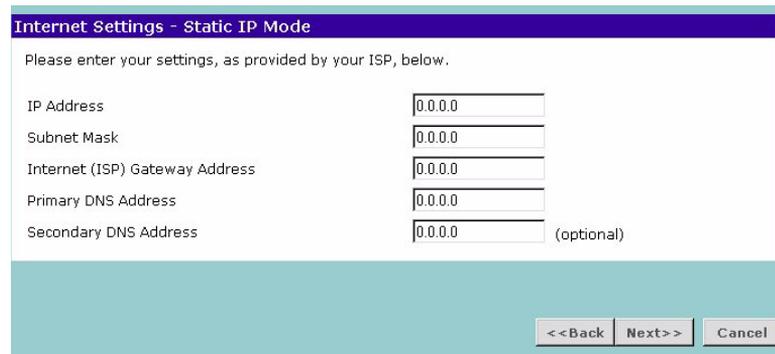
- 3 If your ISP requires an assigned MAC address, select *Yes, I would like to enter a MAC address manually* and enter the values for a MAC address if required ([Figure 19](#)). If the computer you are now using is the one that was previously connected directly to the cable modem, choose *Yes, please clone the MAC address from the PC I'm currently using*.

Static IP Mode

To setup the Router for use with a static IP address connection, use the following procedure:

- 1 Select *ISP has provided a static IP address*, (see [Figure 16](#)) and then click *Next*. [Figure 20](#) displays.

Figure 20 Static IP Mode Screen



The screenshot shows a window titled "Internet Settings - Static IP Mode". Below the title bar, there is a instruction: "Please enter your settings, as provided by your ISP, below." The form contains five input fields, each with "0.0.0.0" entered: "IP Address", "Subnet Mask", "Internet (ISP) Gateway Address", "Primary DNS Address", and "Secondary DNS Address". The "Secondary DNS Address" field has "(optional)" to its right. At the bottom right of the window, there are three buttons: "<<Back", "Next>>", and "Cancel".

- 2 Enter your IP Address in the *IP Address* text box.
- 3 Enter your subnet mask in the *Subnet Mask* text box.
- 4 Enter your ISP Router address in the *Internet (ISP) Router Address* text box.
- 5 Enter your primary DNS address in the *Primary DNS Address* text box.
- 6 Enter your secondary DNS address in the *Secondary DNS Address* text box.

This step is optional. Not all ISPs require a secondary DNS address.

- 7 Check all of your settings, and then click *Next*.

PPTP Mode

Figure 21 PPTP Mode Screen

Internet Settings - PPTP Mode

Please enter your PPTP account settings, as provided by your ISP, below.

The PPTP Server is typically located in your DSL modem. In the case of an Alcatel Speed Touch modem, its default address is 10.0.0.138

PPTP Server Address: 10.0.0.138

PPTP User Name:

PPTP Password:

Primary DNS Address: 0.0.0.0 (optional)

Secondary DNS Address: 0.0.0.0 (optional)

<<Back Next>> Cancel

To setup the Router for use with a PPTP connection, use the following procedure:

- 1 Enter your PPTP server address in the *PPTP Server Address* text box.
- 2 Enter your PPTP user name in the *PPTP User Name* text box.
- 3 Enter your PPTP password in the *PPTP Password* text box.
- 4 Enter your *Primary DNS Address* and *Secondary DNS address*.

Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave 0.0.0.0 in the boxes.

- 5 Check all of your settings, and then click *Next*. [Figure 22](#) displays.

Figure 22 PPTP IP Settings

Internet Settings - PPTP Mode

You must specify some IP settings to be used when establishing the PPTP connection. If your ISP has provided you with these settings, then you should use them. Otherwise, if the PPTP server is located in your DSL modem, you can use the Suggest button to generate suitable values for you.

Initial IP Address: 0.0.0.0

Initial Subnet Mask: 0.0.0.0 Suggest

- 6 IP settings must be used when establishing a PPTP connection. Fill in the *Initial IP Address* and the *Initial Subnet Mask* fields if your ISP has provided you with these settings. Alternatively, if the PPTP server is located in your DSL modem, click *Suggest* to select an IP address on the same subnet as the PPTP server.

LAN Settings **Figure 23** LAN IP Address Screen

This screen displays a suggested LAN IP address and subnet mask of the Router. It also allows you to change the IP address and subnet mask.

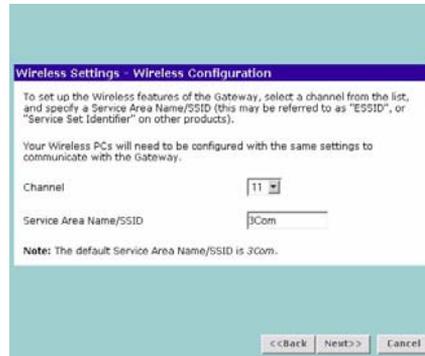
- DHCP** The Router contains a Dynamic Host Configuration (DHCP) server that can automatically configure the TCP/IP settings of every computer on your network.

Figure 24 DHCP Server Setup Screen

To activate the DHCP Server option, select *Enable the DHCP server with the following settings:* and specify the IP pool range. The largest available continuous IP pool will be automatically entered; if this is not appropriate,

make your required changes. To disable DHCP, select *Do not enable the DHCP server*. Click *Next* when you have finished.

Wireless Settings **Figure 25** Wireless Configuration Screen



This screen displays the Channel and Service Area Name. It also allows you to change these settings. There are a maximum of 14 channels, the number available to you is dependent on the country you reside in. Selecting *Clear Channel Select* allows the Router to automatically select an available channel when first powered on.

The Service Area Name default for 3Com products is "3Com". Up to 32 (case sensitive) characters can be entered for the Service Area Name.

3Com strongly recommends that you change the SSID to something other than the default.



If you are configuring the Router from a wireless computer any changes you make to the wireless configuration will result in communication between the Router and your computer being lost. This is why 3Com strongly recommends that you configure the Router from a wired computer.



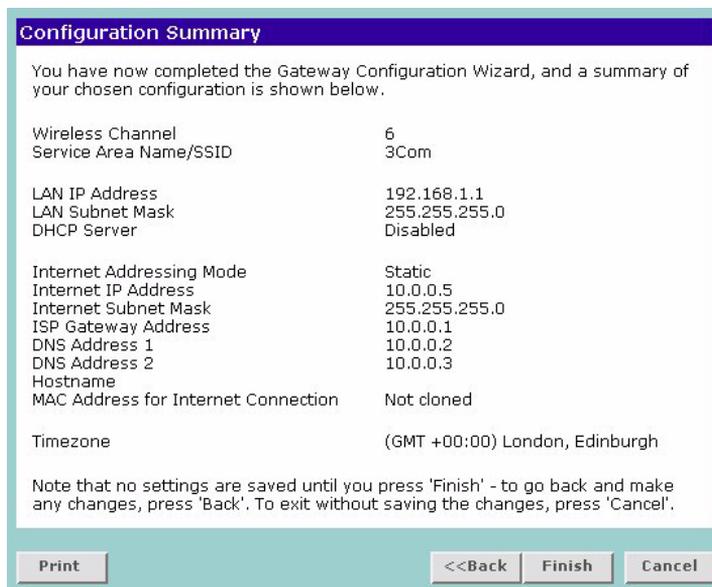
It is very important that you set up your wireless clients to use the same Service Area Name or SSID as the one you use on this screen. If your clients use a different Service Area Name then they will not be able to communicate with the Router.



The choice of channel is less important as Clients will generally search all of the available channels. You should however make a note of the

channel you select as this may be useful if you experience problems with your clients.

Summary **Figure 26** Configuration Summary Screen



When you complete the Setup Wizard, a configuration summary will display. Verify the configuration information of the Router and then click *Finish* to save your settings. 3Com recommends that you print this page for your records.

If you have made changes to the LAN Settings or wireless configuration options, you may need to reconfigure the computer you are using in order to make contact with the Router again.

Your Router is now configured and ready for use.



For information on improving your Wireless network security see ["Wireless Settings"](#) on [page 47](#).

See [Chapter 5](#) for a detailed description of the Router configuration screens.

5

ROUTER CONFIGURATION

Navigating Through the Router Configuration Pages

This chapter describes all the screens available through the Router configuration pages, and is provided as a reference. To get to the configuration pages, browse to the Router by entering the URL in the location bar of your browser. The default URL is **http://192.168.1.1** but if you changed the Router LAN IP address during initial configuration, use the new IP address instead. When you have browsed to the Router, log in using your system password (default **admin**).

Main Menu

At the left side of all screens is a main menu, as shown in [Figure 27](#) on [page 42](#). When you click on a topic from the main menu, that page will appear in the main part of the screen.

- Welcome — displays the firmware version of the Router, allows you to change your password, and launch the Wizard
- LAN Settings — allows you to configure IP address and subnet mask information, set up DHCP server parameters, and display the DHCP client list.
- Wireless Settings — enables /disables access from wireless computers, and provides facilities for improving the security of the wireless network.
- Internet Settings — sets up Internet addressing modes such as PPPoE and PPTP connections, allows you to clone the Router's MAC address, and set up dynamic IP address allocation and static IP address settings.
- Firewall — allows configuration of the Router's firewall features: Virtual Servers, Special Applications, PCs Privileges, URL Filtering and Security options
- System Tools — allows the administrator to perform maintenance activities on the Router.

- Status and Logs — displays the current status and activity logs of the Router.
- Support/Feedback — contains a comprehensive online help system and allows you to provide 3Com with feedback on your Router.

Option Tabs Each corresponding menu page may also provide sub-sections which are accessed through the use of tabs (see [Figure 27](#) for example). To access a sub-section, simply click on the required tab.

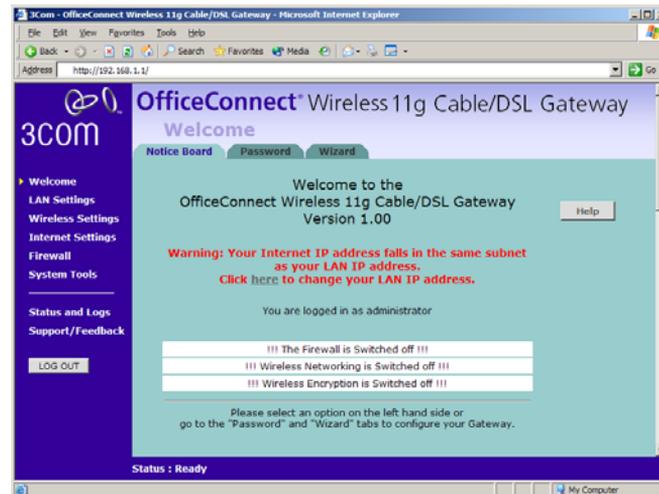
Getting Help

On every screen, a Help button is available which provides access to the context-sensitive online help system. Click *Help* for further assistance and guidance relating to the current screen.

Welcome Screen

The *Welcome* section allows you to view the Notice board and to change your Password. You can also gain access to the Configuration Wizard. (See “[Accessing the Wizard](#)” on [page 29](#) for details).

Notice Board **Figure 27** Notice Board Screen



The Notice Board is used to display configuration warning messages. For example, you would be warned if you had disabled wireless networking or wireless encryption.

Password Figure 28 Password Screen

Changing the Administration Password

You can change the password to prevent unauthorized access to the Administration System. To do this:

- 1 Enter the current password in the *Old Password* field
- 2 Enter the new password in the *New Password* field
- 3 Enter the new password again in the *Confirm Password* field
- 4 Click *Apply* to save the new password



The password is case sensitive.



If you have forgotten your password you need to reset the Router. See [“Forgotten Password and Reset to Factory Defaults”](#) on [page 85](#)

Wizard Figure 29 Wizard Screen

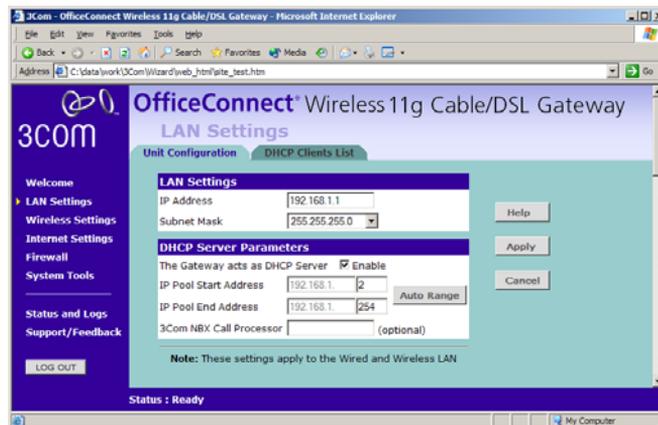


Click *WIZARD...* to launch the configuration wizard. Refer to [Chapter 4](#) for information on how to run the wizard.

LAN Settings

The LAN Settings menu provides the following options:

Unit Configuration Figure 30 Unit Configuration Screen



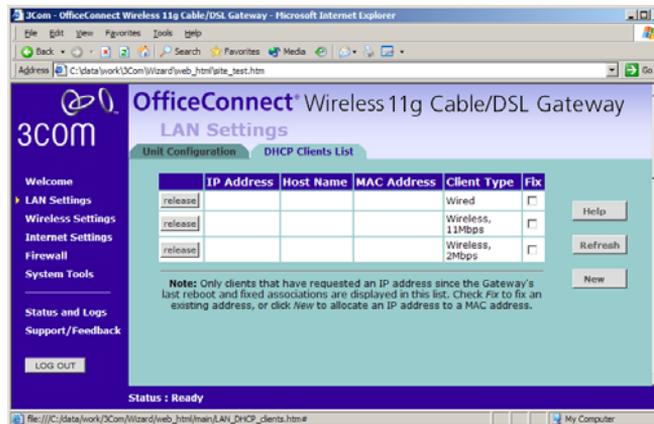
The LAN Settings screen is used to specify the LAN IP address of your Router, and to configure the DHCP server.

- 1 Select *Unit Configuration* and then specify the Router *IP Address* and *Subnet Mask* in the LAN Settings field. The default IP address of the Router is 192.168.1.1.
- 2 If you want to use the Router as a DHCP Server, click in the *Enable* check box.
- 3 Clicking *Auto Range* will automatically choose the largest available range of addresses for your network.
- 4 Check all of your settings, and then click *Apply*.



The DHCP server will give out addresses to both wired and wireless clients.

DHCP Clients List **Figure 31** DHCP Clients List Screen



The DHCP Clients List provides details on the devices that have received IP addresses from the Router. The list is only created when the Router is set up as a DHCP server. For each device that is connected to the LAN the following information is displayed:

- IP address — The Internet Protocol (IP) address issued to the client machine.
- Host Name — The client machine's host name, if configured.
- MAC Address — The Media Access Control (MAC) address of the

- client's network card.
- Client Type — Whether the client is connected to the Router by wired or wireless connection.
- Fix — This box is checked if the IP address is fixed to the MAC address of the client's network card. Clients that have fixed addresses will get the same IP address each time they connect.

Check the box to fix an association. Uncheck the box to remove the fixed association.

As you connect more devices, the client list will grow to a maximum number of 253 clients.

The *release* button allows the lease time for the IP address that has been issued to a device to be cleared. The lease time is set at 12 hours. If a PC has been switched off, using the Release button would allow the 12 hour lease time to be cleared. The IP address would then be available for another device if there were no other IP addresses available.

Adding Fixed DHCP Mappings

You can add Fixed Mappings so that the Router allocates an IP address chosen by you when it encounters a particular device.



You only need to create Fixed Mappings for devices that need a specific IP address. For devices that do not need a specific IP address, the Router will automatically allocate addresses.

To add a Fixed Mapping:

- 1 Click New. The DHCP Fixed Mapping Setup screen will be displayed.
- 2 Enter the MAC Address for which you want to create a Fixed Mapping in the MAC Address of Client box.



The MAC Address must be entered as 6 hexadecimal pairs, e.g. 12-34-56-78-90-ab.

- 3 Enter the IP Address that you want to reserve in the IP Address for client box.
- 4 Click Add to add the Fixed Mapping or Close to close the window without adding the Fixed Mapping.

The Fixed DHCP Mapping will be displayed in the DHCP Clients list as a Fixed Association.

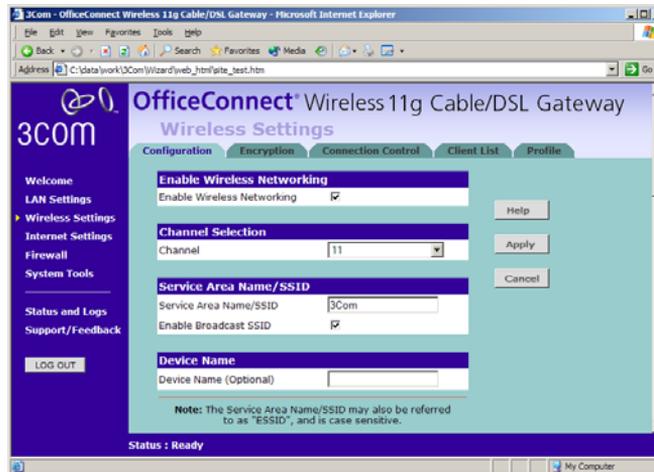
Wireless Settings



To improve the security of your wireless network, 3Com recommends that you:

1. Change the SSID from its default value - see [page 48](#)
2. Enable Encryption - see [page 49](#)
3. Enable Connection Control - see [page 53](#)

Configuration Figure 32 Configuration Screen



Enable Wireless Networking

Allows you to enable/disable the wireless section of your LAN. When disabled, no wireless PCs can gain access to either the Internet or other PCs on your Wired or Wireless LAN through this Router.

Channel Selection

The Channel Selector allows you to specify which Channel the Router will transmit and receive on. If another access point or Router nearby is using the same Channel as you, there will be a reduction in the performance of your network. If this seems to be the case, you should select a different channel number. Usually the Wireless computers will scan to find the correct channel, but if they don't you must configure them to use the same Channel number as the Router.

Choose the *Clear Channel Select* option to automatically choose the clearest channel. The Router will check for the clearest channel whenever it is rebooted, powered up, and when the *Clear Channel Select* option is first applied.



Valid channels are country dependent. See [“Channels”](#) on [page 119](#) for a list of channels approved by each country.

Service Area Name/SSID

This allows you to name your Wireless network. The field will accept any alphanumeric string and has a maximum length of 32 characters. Your Wireless computers must be configured with exactly the same name or you will not establish a connection. The Service Area Name may also be referred to as “ESSID” depending on your networking vendor. By default the Router uses the name “3Com”. 3Com recommends that you change the default name.



In order that your wireless computers can connect to the Router, you must:

- *Use Infrastructure Mode not Adhoc Mode.*
- *Have the same Service Area Name as the Router.*
- *Have the same Channel number as the Router.*
- *Use the same encryption type and keys as the Router.*
- *Ensure that the PC is included in the authorized Wireless PCs list if Connection Control is enabled. See [page 53](#).*

Enable Broadcast SSID

This feature can be used to improve the security of your wireless network. When the tickbox is checked, the Router will broadcast the Service Area Name/SSID of your wireless network. This will allow unauthorized clients from detecting your SSID and attempting to connect to your network.

If you have a wireless client that can detect all the available SSIDs in your area, your client will not list the Router SSID unless this feature is enabled. The clients will still be able to connect, provided that they are supplied with the SSID.

3Com recommends that you install your wireless network with this feature enabled and then disable it once you have set up the Router and wireless clients.

Encryption When setting up wireless networks, it is important to remember that with encryption disabled, anyone with a Wireless PC can eavesdrop on your network. 3Com recommends that you get the network working with encryption disabled first and then enable it as the last step. This will simplify setting up your network.

The Router supports two types of encryption:

- WPA — Wi-Fi Protected Access (WPA) is a 256 bit encryption method with keys that change over time.
- WEP — Wireless Equivalent Privacy (WEP) is a 64 bit or 128 bit encryption method with user configurable fixed keys.



WPA provides a higher level of security, provided by its longer key and dynamic changes made to the key over time. 3Com recommends that you use WPA with any clients which support it.



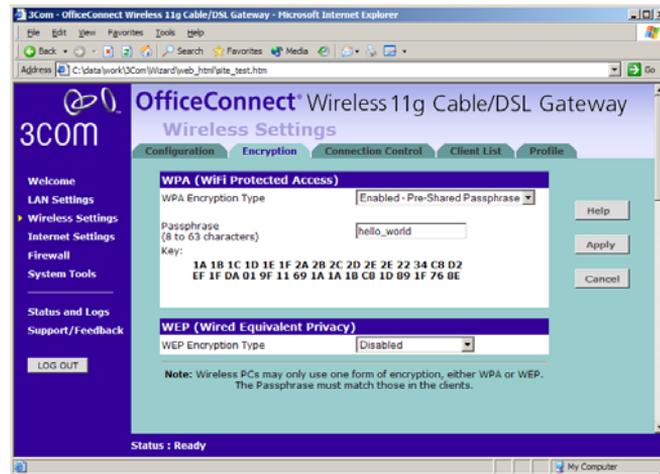
If you enable encryption on the Router, you must reconfigure your wireless PCs to use exactly the same Encryption Type and Keys otherwise the devices will not understand each other.



The encryption methods used by the Router secure data transmitted through wireless communications between the Router and its wireless clients. Enabling encryption has no security effect on data transmitted through wired (Ethernet) connections or through your connections to the Internet.

Configuring WPA Encryption

The only configuration that is needed for WPA is to enter the pre-shared key. This key is used to start the dialog between the Router and the client. During this dialog, a new key is agreed, making it more difficult to eavesdrop on wireless networks encrypted using WPA, than those encrypted using WEP. The pre-shared key can be entered as a 256 bit series of hexadecimal digits or as a pass-phrase.

Figure 33 Encryption Keys Screen showing WPA configuration

To enter the pre-shared key as hexadecimal digits:

- 1 Select *Enabled - Manual Pre-shared Key* from the *WPA Encryption Type* drop-down box.
- 2 Enter a pair of hexadecimal digits in each of the 32 *Key* fields. Each field can contain a hexadecimal number from 00 to ff, for example 1a.
- 3 Click *Apply* to generate the key.

To enter the pre-shared key as a pass-phrase:

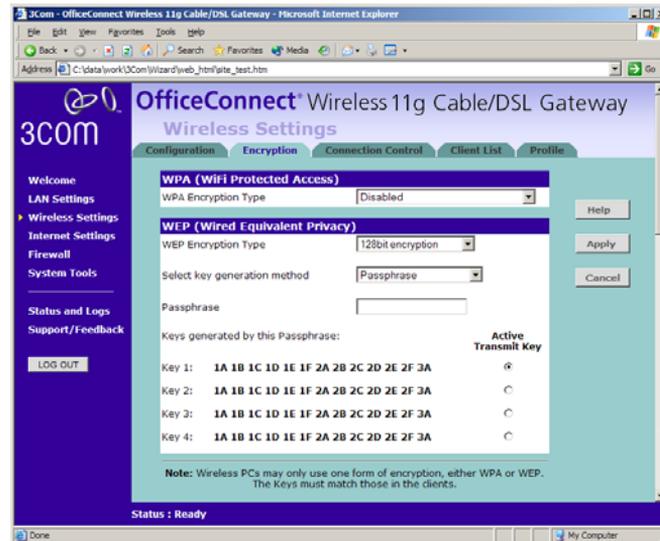
- 1 Select *Enabled - Pre-Shared Passphrase* from the *WPA Encryption Type* drop-down box.
- 2 Enter a phrase of between 8 and 63 characters in length in the *Passphrase* field. This passphrase will be used to generate a 256 bit key.
- 3 Click *Apply* to generate the key.

Configuring WEP Encryption

There are two levels of WEP encryption available, 64 bit (sometimes referred to as 40 bit) and 128 bit. Use the *WEP Encryption Type* box to select the desired level.

Encryption Keys

Figure 34 Encryption Keys Screen showing WEP configuration



A Key is a hexadecimal (0-9, A-F) number used to encrypt and decrypt the data. There can be up to 4 keys and each key can be as long as 26 digits. The Router also offers a number of methods for converting plain text into hex keys. The text is much easier to remember than hex keys but it relies on your wireless adapters also supporting this feature. Different manufacturers have developed different ways of converting plain text and so interoperability is not guaranteed. If you are experiencing difficulty, the Manual Hex Key method is supported by most vendors.

There are four methods available to generate the encryption keys:

- Manual Key Entry - This method allows you to manually enter hex keys. Virtually all manufacturers support this scheme. Enter a two digit hexadecimal number in every box. Hexadecimal numbers are formed from 0-9 and A-F.
- 3Com Encryption String - This method is supported by 3Com Wireless products. The string can contain any alphanumeric characters and must be between 6 and 30 characters long. A single string will automatically generate 4 unique keys for 64 or 128 bit WEP.
- ASCII - This method is supported by some adapter cards running under Windows XP. The string must be exactly 5 characters for 64 bit

WEP and 13 characters for 128 bit WEP. You must enter a separate string for each of the 4 Keys. You can leave a string blank provided this Key is not selected as the Active Transmit Key.

- Passphrase - This is another common method and similar to the 3Com Encryption string. In 64 bit WEP, the passphrase will generate 4 different keys. However, in 128 bit WEP, this method only generates 1 key which is replicated for all 4 keys. The passphrase can be up to 31 characters long and may contain any alphanumeric characters.

Select the key generation method you wish to use from the drop down list. If you have other wireless products choose the scheme that is compatible with these, then enter the appropriate information.



If you encounter any difficulty when you enable WEP ensure that you check that each key on your wireless computer is exactly the same as each key on your Router. In other words, Key number 1 on the Wireless computer must have the same Hex number as Key number 1 on the Router, Key 2 on the Wireless computer must match Key 2 on the Router and so on.

The *Active Transmit Key* selects which of the 4 Keys the Router uses when it transmits. You can change the selected key periodically to increase the security of your network.

Some wireless adapters have only one key available on their WEP configuration page. If this is the case ensure it is the same as Key 1 on the Router and that it is selected as the active transmit key.

Connection Control **Figure 35** Connection Control Screen



A higher level of security can be achieved for your wireless network if you use both encryption and you specify only certain wireless computers can connect to the Router. By default, any wireless computer that has the same Service Area Name/SSID, channel and encryption settings as the Router can connect to it.

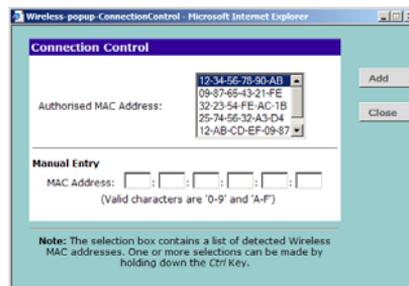
Select *Only Authorized Wireless PCs can connect to the Router* to enable and configure this feature.



If you enable this feature from a Wireless PC, it will automatically be added to the Authorized Wireless PC list.

Authorized Wireless PCs

Figure 36 Connection Control Detail Screen



To create a list of Wireless computers that can access the Router:

- 1 Press *New*. The screen shown in [Figure 36](#) opens.
- 2 Select the MAC addresses of the Wireless PCs for which you want to allow access.



To select multiple MAC addresses, hold down the Ctrl key while clicking on the addresses.



The drop down list on the Connection Control window will contain the MAC addresses of all Wireless PCs that are in range, currently operating, and have the same Service Area Name/SSID, channel and encryption settings as the Router. You will find this screen easier to use if you set up and make a note of all of your wireless PC's on your network first. You may also add the entries manually if you know the MAC address.

To add a MAC address that is not in the list, enter the MAC address in the appropriate fields. A MAC address consists of 12 characters. Valid characters are '0-9', and 'A-F'.

- 3 Press *Add*.



Click Close to discard all changes.

Modifying a MAC Address

- 1 Click on the MAC address to be modified in the table ([Figure 37](#)).
- 2 Modify the MAC address.
- 3 Press *Apply* to accept the changes.

Figure 37 MAC Address Table

Authorised Wireless PCs	
delete	CO-FF-EE-01-23-45
delete	00-0C-12-65-BF-98
delete	12-34-56-78-90-AB



Click Close to discard all changes.

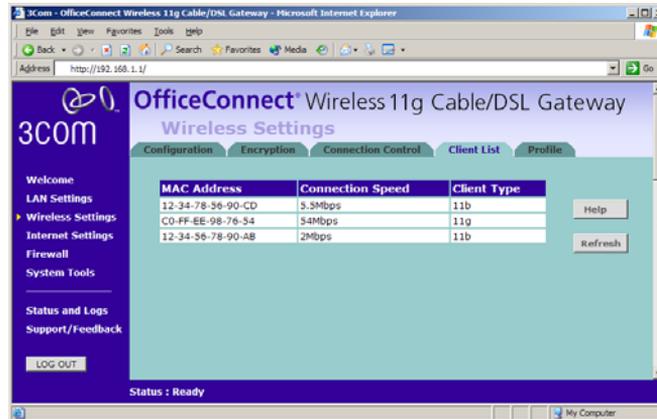
Deleting a MAC Address

The connection rights for a Wireless PC listed in the table can be removed by pressing *Delete* for that entry in the table.



Once an entry has been deleted it cannot be undone. Please wait 30 seconds for changes to take effect.

Client List Figure 38 Client List Screen



The Wireless Client List provides details on the devices that are connected to the Wireless LAN. The list is only created when Wireless Networking is enabled. For each device that is connected to the Wireless LAN, the MAC address and Connection Speed of that device is displayed. As you connect more devices to the Wireless LAN, the client list will grow to a maximum of 32 (the maximum number of wireless devices that the Router can support).

Profile Figure 39 Profile Screen



Some 3Com Wireless Network Adapters allow you to import Wireless configurations via a 'profile'. The Router can generate a profile so that you do not need to configure your Wireless PCs manually.

The profile contains three items as follows:

- **Service Area Name/SSID of the Router**

This is configured on the *Configuration* tab under the *Wireless Settings* option.

- **Encryption settings from the Router**

This is configured on the *Encryption* tab under the *Wireless Settings* option.

- **Profile Name**

This is used to identify the profile once it has been imported into the Wireless Network Adapter configuration software.

To set up a profile (once the Service Area Name/SSID and Encryption settings have been configured in the Router):

- 1 Enter a Profile Name (up to 25 alphanumeric characters) and then click *Save Profile*.
- 2 Your browser will then prompt you to enter a file name and folder location in which to save the profile. Once the profile has been saved it can be copied on to another PC and imported into the 3Com Wireless Network Adapter.



For instructions on how to import a profile, refer to the User Guide that accompanies your 3Com Wireless Network Adapter(s).

If, once the profile is imported, the Wireless Network Adapter cannot connect to the Router, check that:

- the adapter is within range of the Router

if *Connection Control* has been enabled in the Router, the MAC address of the Wireless Network Adapter must be included in the list of authorized Wireless PCs.

Internet Settings

Before you can configure the Router, you need to know the IP information allocation method used by your ISP. There are four different ways that ISPs can allocate IP information, as described below:

1 Static IP Address (DSL or Cable)

The ISP provides the IP addressing information for you to enter manually. To configure the Router you will need to know the following:

- IP Address
- Subnet Mask
- ISP Router
- DNS address(es)

2 Dynamic IP Address (DSL or Cable)

Dynamic IP addressing (or DHCP) automatically assigns the Router IP information. This method is popular with Cable providers. This method is also used if your modem has a built in DHCP server.

3 PPPoE (DSL only)

If the installation instructions that accompany your modem ask you to install a PPPoE client on your PC, then select this option. To configure the Router you will need to know the following:

- Username
- Password
- Service Name (if required by your ISP)



When you install the Router, you will not need to use the PPPoE software on your PC.

4 PPTP (DSL or Cable)

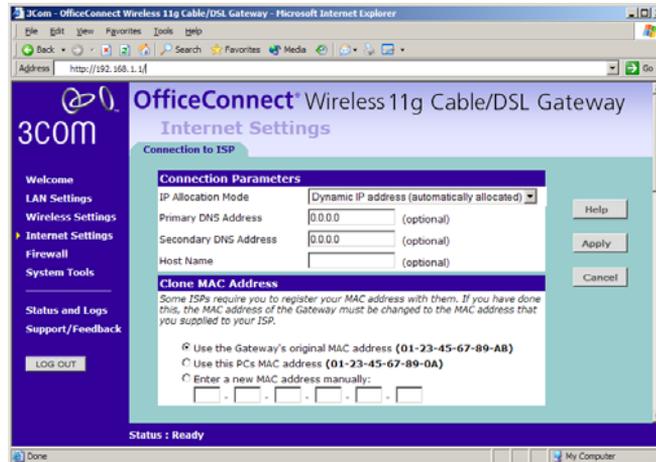
PPTP is only used by some European providers. If the installation instructions that accompany your modem ask you to setup a dialup connection using a PPTP VPN tunnel then select this option. To configure the Router you will need to know the following:

- Username
- Password
- VPN Server address (usually your modem)



When you install the Router, you will not need to use the dialup VPN on your PC anymore.

Connection to ISP Figure 40 Connection to ISP Screen



Before beginning this section, ensure you have the required information from your ISP. (See [“Before you Install your Router”](#) on [page 21](#).)

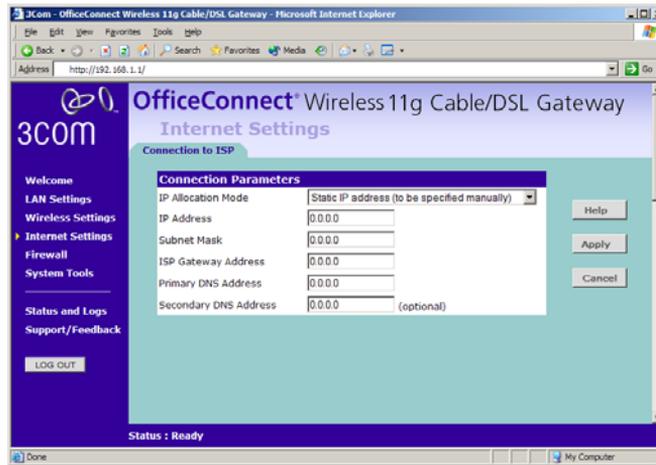
Select *Internet Settings* from the main menu to display *Connection to ISP* ([Figure 40](#)). Choose an *IP Allocation Mode* from the drop down box.

Select an IP Allocation Mode from the following:

- Static IP address (to be specified manually) see [page 59](#)
- Dynamic IP address (automatically allocated) see [page 60](#)
- PPPoE (used by DSL providers only) see [page 61](#)
- PPTP (used by some European providers) see [page 62](#)

Static IP Address

Figure 41 Connection Parameters Screen - Static IP



To setup the Router for use with a Static IP address connection:

- 1 Select *Static IP Address (to be specified manually)* in the *IP Allocation Mode* field ([Figure 41](#)).

- 2 Enter your IP Address in the *IP Address* text box.

This information, along with the rest of the information in this screen, should be provided to you by your ISP. If the information is already entered, your ISP has pre-configured your Router, and you should go to [step 7](#).

- 3 Enter your subnet mask in the *Subnet Mask* text box.

- 4 Enter your ISP Router address in the *ISP Router Address* text box.

- 5 Enter your primary DNS address in the *Primary DNS Address* text box.

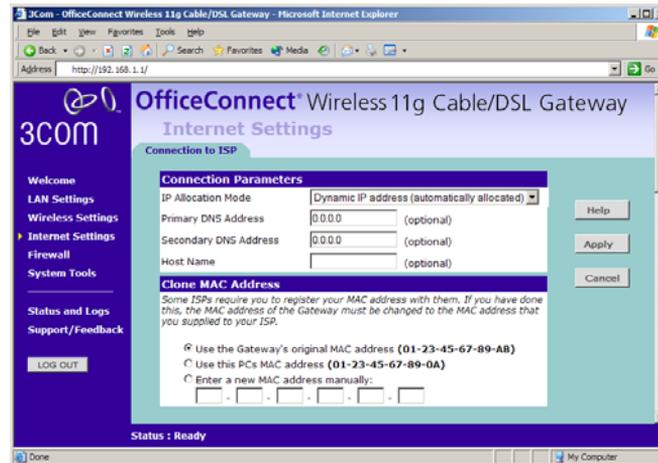
- 6 Enter your secondary DNS address in the *Secondary DNS Address* text box.

This step is optional. Not all ISPs require a secondary DNS address.

- 7 Check all of your settings, and then click *Apply*.

Dynamic IP Address

Figure 42 Connection Parameters Screen - Dynamic IP



If this mode is selected, your IP Address, Subnet Mask, and DNS Address will be obtained automatically from your ISP. They are not displayed on this screen, but may be viewed on the Status screen (click on *Status and Logs* on the left hand menu bar).

To setup the Router for use with a dynamic IP address connection:

- 1 Select *Dynamic IP Address (automatically allocated)* in the *IP Allocation Mode* field. (Figure 42)
- 2 Enter your *Primary DNS Address* and *Secondary DNS address*.

Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave *0.0.0.0* in the boxes.

- 3 Enter the *Host Name* (optional).

Some ISPs require a host name. If your ISP has this requirement, enter the host name in the *Host Name* text box.

- 4 If you use 'Cable', your ISP may use your MAC address to authenticate you. If this is the case, you will need to 'Clone' your MAC address. There are three options:
 - *Use the Router's original Internet MAC address* - This field is selected by default and is automatically filled in with the MAC address of the Router.