Proxim

Skyline

Skyline Wireless Broadband Gateway

User's Guide

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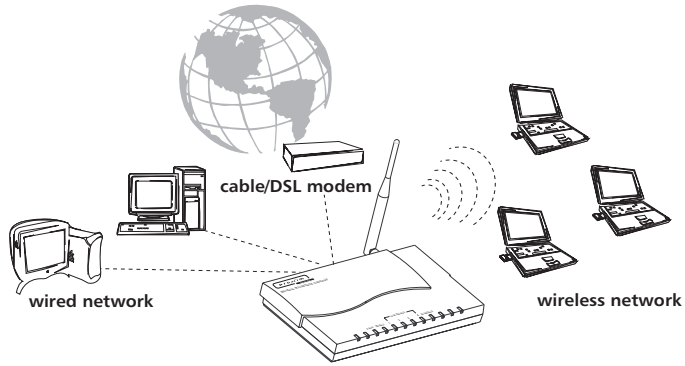
Chapter 1

Getting Started

Proxim's Skyline™ Wireless Broadband Gateway serves as a bridge between your cable/DSL modem and the computers on your local wired and wireless networks, allowing computers to share your single broadband connection to the Internet.



Skyline Wireless Broadband Gateway

This chapter covers the most common situations for setting up your Skyline Wireless Broadband Gateway for use with:

- A cable modem with DHCP being served or using a device name and DHCP
- A DSL modem with DHCP being served or DSL with PPPoE (such as EnterNet, MacPoet or WinPoet)

See "Configuration" on page 15 for more information about the configuration options available with your Skyline Broadband Gateway.

Requirements

The Skyline Wireless Broadband Gateway is designed to share a single broadband connection to the Internet with computers using the TCP/IP protocol connected to the following networks:

- Local wired network: computers connected via a 10Base-T or 100Base-TX Ethernet network.
- Local wireless network: computers using wireless adapters (such as PC cards or wireless USB adapters) compliant with IEEE 802.11b specifications.

In order to use the Skyline Wireless Broadband Gateway, you should have one or both of the networks above, and the following:

- Broadband connection: A cable or DSL modem with access to a working account with an ISP (Internet Service Provider).
- Web browser: Browser software such as Netscape Navigator 3.01 (or higher) or Microsoft Internet Explorer 3.01 (or higher) installed on the computers you want to access the Internet.

Package contents

- Skyline Wireless Broadband Gateway
- Straight-through Ethernet cable
- Power supply (12V)
- Documentation and utilities CD-ROM
- Quick Start Card

Features

The Skyline Wireless Broadband Gateway's features include:

- **Four 10/100Mbps Ethernet ports.** The 10/100Base-T Ethernet ports offer direct connections to Ethernet-enabled devices on the local network.
- **Wireless antenna.** The Skyline Wireless Broadband Gateway provides a wireless access point linking 802.11b (DSSS) wireless clients to the Ethernet network and allowing them to share the broadband Internet connection.
- **Broadband port**. The Broadband port connects the Skyline Wireless Broadband Gateway to your cable/DSL modem.
- **Shared Internet access.** All computers on the local network can access the Internet through the Skyline Wireless Broadband Gateway, using only a single external IP Address.
- **DHCP server support**. DHCP (Dynamic Host Configuration Protocol) support allows the Skyline Wireless Broadband Gateway to automatically provide IP Addresses to computers on your local network.
- **PPPoE support.** Connect to your DSL provider using PPPoE (PPP over Ethernet), if your ISP uses this method, including EnterNet, MacPoet and WinPoet.
- **Easy setup and management.** Use your web browser from any computer on the local network to configure the Skyline Wireless Broadband Gateway.
- **Firewall protection.** The Skyline Wireless Broadband Gateway's use of NAT (Network Address Translation) provides firewall protection for your local network. NAT masks the local network's IP Addresses from the Internet. Additional protection can be achieved using the advanced features of the Skyline Wireless Broadband Gateway.
- **Advanced features.** The Skyline Wireless Broadband Gateway supports many advanced configuration features including the following: User-defined virtual servers; special Internet applications; exposed computer; password protection and access control.
- **Wireless security features.** The Skyline Wireless Broadband Gateway supports 64 bit and 128 bit WEP encryption on the wireless network using Shared or Open Key Authentication. The Skyline Wireless Broadband Gateway also provides MAC address control, which allows individual wireless clients to be granted access to the Internet or to the local wired network while all other wireless clients are blocked.

Skyline Wireless Broadband Gateway overview

Top panel

The Skyline Wireless Broadband Gateway LEDs provide information about the status of the network and unit.

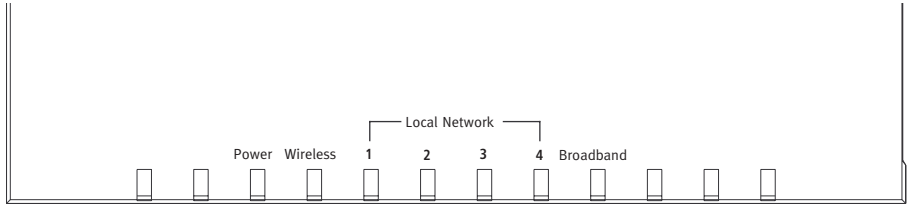


TABLE 1: TOP PANEL LEDS

LED	On	Off	Blinking
Power	Unit is on.	Unit is not on.	Red to green: unit is starting up.
Wireless	A wireless connection is established.	No wireless connection is established.	Data is being transmitted or received on the wireless network.
Local Network (1-4)	An Ethernet device is connected to the corresponding numbered port.	No Ethernet device is connected to the corresponding numbered port.	Data is being transmitted or received on the local Ethernet network.
Broadband	A broadband connection is established.	No broadband connection is established.	Data is being transmitted or received on the broadband port.

Rear panel

The Skyline Wireless Broadband Gateway ports provide connections to the local network and the cable/DSL modem. The Reset button restores default settings to the Skyline Wireless Broadband Gateway.

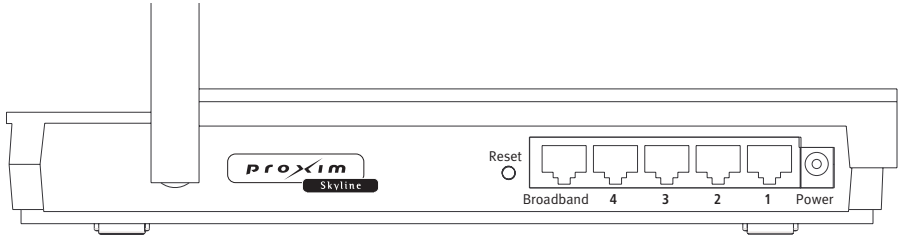


TABLE 2: REAR PANEL

Item	Function
Reset button	When pressed and released, the Skyline Wireless Gateway will restart. If depressed and held for more than 3 seconds, all data will be cleared, and the factory default values restored. Any configuration changes you have made to the unit will be cleared.
Broadband port	Use a standard straight-through Ethernet cable to connect this port to your cable/DSL modem.
Local network ports 1-4	Use standard straight-through Ethernet cable (RJ45 connectors) to connect these ports to 10Base-T or 100Base-TX devices.
Power port	Connect the power adapter here. Use only the 12V DC power supply provided with your Skyline Wireless Broadband Gateway.
Antenna	For best wireless range, point the antenna upward and remove any nearby obstructions.

Installation

Install the Skyline Wireless Broadband Gateway at the center of your wireless coverage area. Obstructions between the Skyline Wireless Broadband Gateway and wireless clients may impact the performance of the wireless network.

Installing the Skyline Wireless Broadband Gateway

- Make sure your cable/DSL modem and Skyline Wireless Broadband Gateway are powered **OFF** before beginning installation.
- Leave your cable/DSL modem connected to its phone line or cable input.

1. Use standard straight-through Ethernet cables to connect the Ethernet ports on the Skyline Wireless Broadband Gateway to Ethernet devices on your local network.
2. Use the Ethernet cable provided with your cable/DSL modem to connect your modem to the Broadband port on the Skyline Wireless Broadband Gateway.
3. Turn your cable/DSL modem ON.
4. Connect the Skyline Wireless Broadband Gateway's power adapter. Use only the power adapter provided by Proxim.
5. When powered on, the Skyline Wireless Broadband Gateway's Power LED should flash red, then remain lit green.

Note: Any other device on the local network using the Skyline Wireless Broadband Gateway's default IP Address of 192.168.0.1 must be turned off until the Skyline Wireless Broadband Gateway is given a new IP Address during configuration.

Next, configure the client computers on your local network to use DHCP in order to share a single IP Address provided by your Internet Service Provider. If you are unable to use DHCP on your local network you can assign a fixed IP Address for each computer on the local network, but it is preferable to use DHCP if possible.

See "Client configuration" on the next page.

Client configuration

Computers on your local network must be configured correctly to access the Internet through the Skyline Wireless Broadband Gateway. It is recommended that you set client computers up to use DHCP and allow the Skyline Broadband Gateway to serve IP Addresses to the computers on the local network.

Macintosh clients

- To set your Macintosh up for DHCP (the Skyline Wireless Broadband Gateway will serve IP Addresses dynamically to the computers on your local network) see “DHCP for Macintosh” on page 8.
- To manually assign your Macintosh an IP Address (if you want to assign each computer on your local network a specific IP Address) see “Fixed IP Address for Macintosh” on page 9.

Windows clients

- To set your Windows PC up for DHCP (the Skyline Wireless Broadband Gateway will serve IP Addresses dynamically to the computers on your local network) see “DHCP for Windows” on page 10.
- To manually assign your Windows PC an IP Address (if you want to assign each computer on your local network a specific IP Address) see “Fixed IP Address for Windows” on page 11.

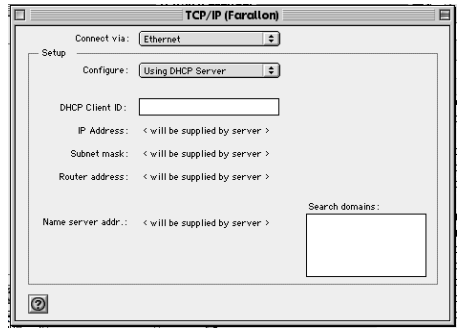
Macintosh and Windows wireless clients

- A wireless client must be configured with the same SSID and WEP settings as the Skyline Wireless Broadband Gateway. After you set the wireless client up to use DHCP (or fixed IP Addresses) see page 14 for wireless configuration.

DHCP for Macintosh

To set your Macintosh up to connect to the Internet through the Skyline Wireless Broadband Gateway using DHCP:

1. Open the TCP/IP Control Panel. Select **Ethernet** (or Wireless, or AirPort or whatever you are using to connect this computer to your local network) from the **Connect via** pop-up menu.
2. Select **Using DHCP Server** from the **Configure** pop-up menu. The DHCP Client ID field can be left blank.

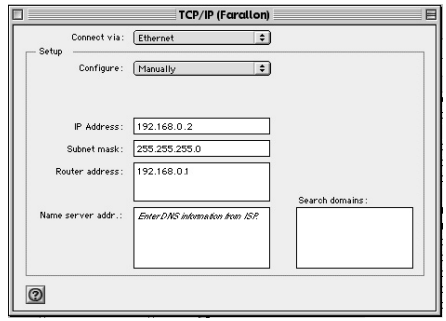


3. Close the TCP/IP panel, saving your settings.
4. Next, connect to the Skyline Wireless Broadband Gateway.
   - If this is a computer on the Ethernet network, see page 13.
   - If this is a wireless computer, see page 14.

Fixed IP Address for Macintosh

To manually assign IP Addresses to the computers on your local network:

1. Open the TCP/IP Control Panel. Select **Ethernet** (or Wireless, or AirPort or whatever you are using to connect this computer to your local network) from the **Connect via** pop-up menu.
2. Select **Manually** from the **Configure** pop-up menu.



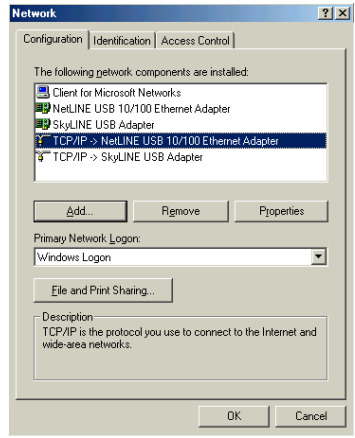
Enter the following information into the TCP/IP panel:

- **IP Address**: Enter **192.168.0.x**, where **x** is a number from **2** to **252**. If you are intentionally using a different range of IP Addresses on your local network, enter a number within that network range. Each computer on the network should have a distinct IP Address within the range you are using.
- **Subnet Mask**: Enter **255.255.255.0**
- **Router Address**: Enter **192.168.0.1**
- **Name Server Address**: Enter the **Domain Name Server** information from your ISP. This is required in order for the client computers to be able to connect to the Internet. If you do not know your ISP Domain Server information, see “ISP DNS information” on page 50.
- **Search domains**: Enter the domain information from your ISP.

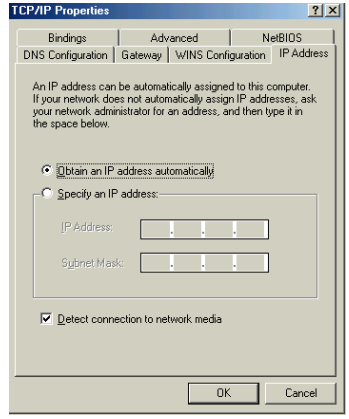
3. Close the TCP/IP Control Panel, saving your settings.
4. Next, connect to the Skyline Wireless Broadband Gateway.
   - If this is a computer on the Ethernet network, see page 13.
   - If this is a wireless computer, see page 14.

DHCP for Windows

1. Open the **Network** Control Panel.
2. Select the **TCP/IP ···⁘ Network card** entry in the Network **Configuration** panel. (Note that if TCP/IP is not listed you must add it using your original Windows CD or .cab files).



3. Click the **Properties** button.
4. The **Obtain an IP address automatically** setting must be selected on the IP Address screen.

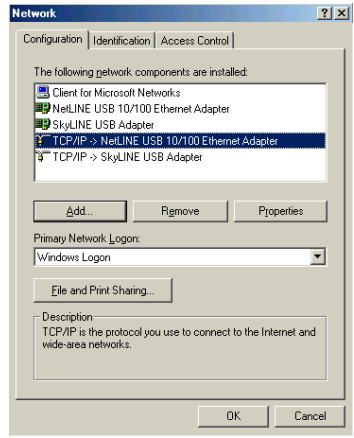


5. Click the DNS Configuration panel and select **Disable DNS**.
6. Next, connect to the Skyline Wireless Broadband Gateway.
   - If this is a computer on the Ethernet network, see page 13.
   - If this is a wireless computer, see page 14.

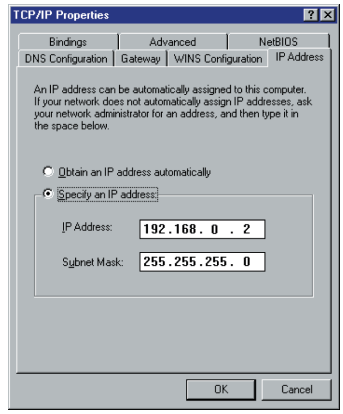
Fixed IP Address for Windows

To manually assign IP Addresses to the computers in your local network:

1. Open the **Network** Control Panel.
2. Select the **TCP/IP ···⁘ Network card** entry in the Network **Configuration** panel. (Note that if TCP/IP is not listed you must add it using your original Windows CD or .cab files).



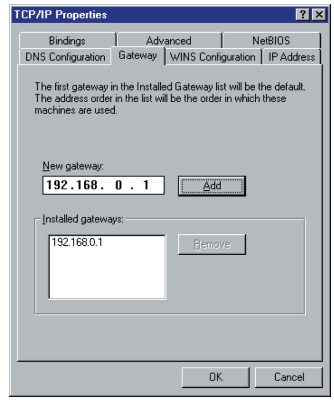
3. Click the **Properties** button.
4. Enter the following into the **IP Address** tab:



- **IP Address:** enter **192.168.0.x**, where **x** is any number from **2** to **252**. If you are intentionally using a different range of IP Addresses on your local network, enter a number within that network range. Each computer on the network should have a distinct IP Address within the range you are using.
- **Subnet mask:** enter **255.255.255.0**

5. Click the **DNS Configuration** tab and enter the DNS information provided by your ISP. Enter the **Domain Name Server** information from your ISP. This is required in order for the client computers to be able to connect to the Internet. If you do not know your ISP Domain Server information, see “ISP DNS information” on page 50.

6. Click the **Gateway** tab and enter the IP Address of the Skyline Wireless Broadband Gateway into the **Gateway IP Address** field: **192.168.0.1.**



7. Click **OK** and restart the PC.

8. Next, connect to the Skyline Wireless Broadband Gateway.

   - If this is a computer on the Ethernet network, see page 13.
   - If this is a wireless computer, see page 14.

Connect to the Skyline Wireless Broadband Gateway

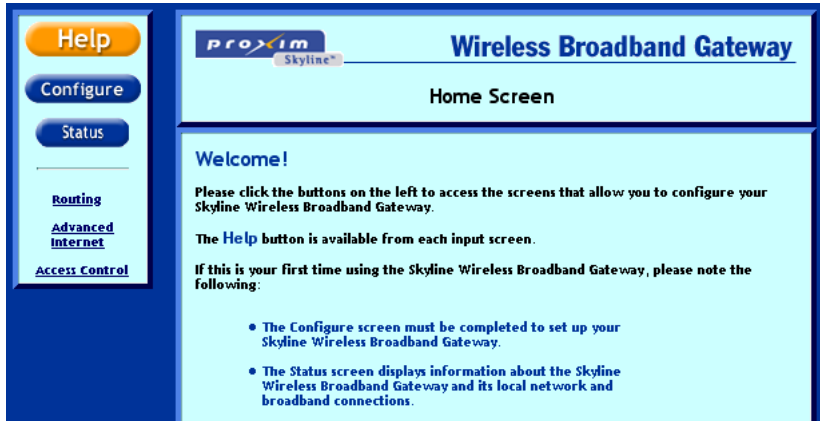
Use a web browser such as Netscape Navigator or Microsoft Internet Explorer on a client computer to access the Skyline Wireless Broadband Gateway configuration web utility. The default configuration may work with your network, allowing client computers to connect to the Internet without further configuration, but it is recommended that you verify the Local Network and Broadband Network Port configurations as described in this manual.

- To connect a computer on the Ethernet network to the Skyline Wireless Broadband Gateway, see "Ethernet network clients" below.
- To connect a wireless network client to the Skyline Wireless Broadband Gateway, see "Wireless network clients" on page 14.

Ethernet network clients

1. Start the web browser on a computer connected to the local Ethernet network. Internet access may be temporarily unavailable, but is not necessary for configuration. In the Address or Location box of your web browser, enter the IP Address of the Skyline Wireless Broadband Gateway: **HTTP://192.168.0.1.**

2. The Home screen of the Skyline Wireless Broadband Gateway configuration web utility will appear.



- To change or verify the default configuration of the Skyline Wireless Broadband Gateway, see page 15.

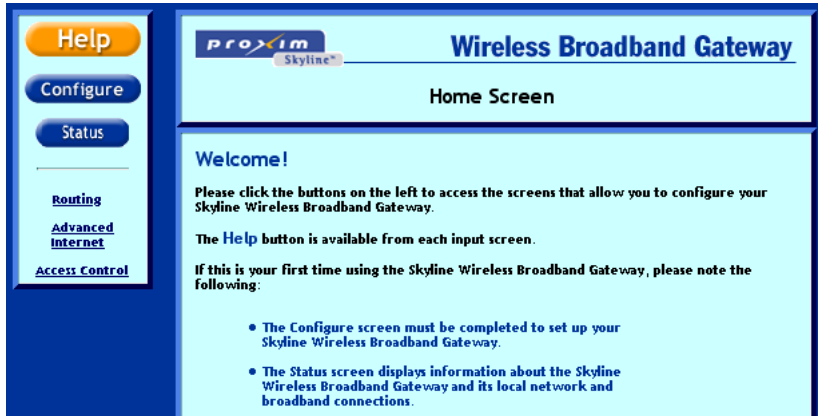
Wireless network clients

Follow your wireless adapter's instructions for connecting to a wireless access point. Some adapters (like the AirPort or the Skyline PC Card) will automatically find the Skyline Wireless Broadband Gateway if it is the only wireless access point on the network. If not, you may be required to configure the wireless adapter with information about the Skyline Wireless Broadband Gateway:

- **Mode** Set all wireless devices to use **Infrastructure** mode.
- **SSID** The default setting is **default**. You may change it after you connect to the Skyline Wireless Broadband Gateway web utility. Enter the SSID into all wireless clients. The SSID is case and space sensitive.
- **WEP** By default, WEP is disabled. If you enable WEP on the Skyline Wireless Broadband Gateway, you must enable WEP on wireless clients.

1. Configure the wireless adapter used by the wireless client computer (see the manual for your adapter) to connect to the Skyline Wireless Broadband Gateway.
2. Open the web browser on the wireless computer. Internet access may be temporarily unavailable, but is not necessary for configuration. In the Address or Location box of your web browser, enter the IP Address of the Skyline Wireless Broadband Gateway: **HTTP://192.168.0.1.**

3. The Home screen of the Skyline Wireless Broadband Gateway configuration web utility will appear.



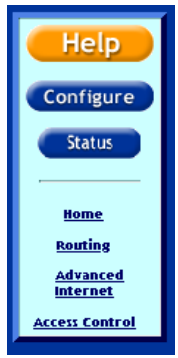
- To change or verify the default configuration of the Skyline Wireless Broadband Gateway, see page 15.

Chapter 2

Configuration

The default settings of the Skyline Wireless Broadband Gateway will work for many users. If your ISP uses DHCP and assigns dynamic IP Addresses, you may not need to make changes to the configuration, though it is recommended that you change the Local Network Port settings to match the DNS information from your ISP as described in this chapter.

If your cable/DSL provider uses PPPoE (EnterNet, MacPoet or WinPoet) or has given you a static IP Addresses, you will need to configure the Skyline Wireless Broadband Gateway. The configuration web utility appears in your browser offering several navigational links and buttons to help you access all of the features of the Skyline Wireless Broadband Gateway.



The **Help** button provides context-sensitive help at each data input screen of the configuration web utility.

The **Configure** button allows you to configure the main settings of the Skyline Wireless Broadband Gateway.

The **Status** button takes you to the status screens.

The **Home** link (on every page except the Home page) takes you back to the introductory screen.

Advanced configuration features are accessible from their main links. They include: **Routing, Advanced Internet** and **Access Control.**

Configuring the Skyline Wireless Broadband Gateway

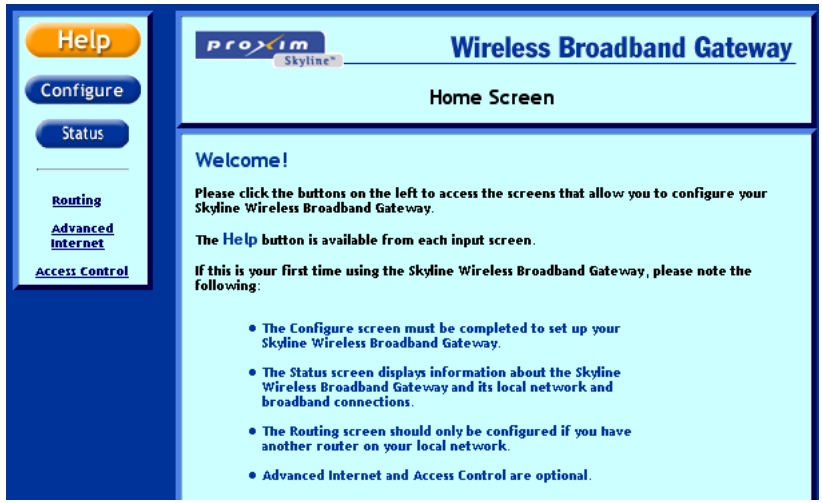
Once your computers are set up on the local network (see “Client configuration” on page 7) you can use your web browser to configure the Skyline Wireless Broadband Gateway.

This portion of the Configuration chapter provides basic step-by-step instructions for setting up your Skyline Wireless Broadband Gateway. Please see “Configuration options” on page 21 for a detailed description of the features available on each web utility screen.

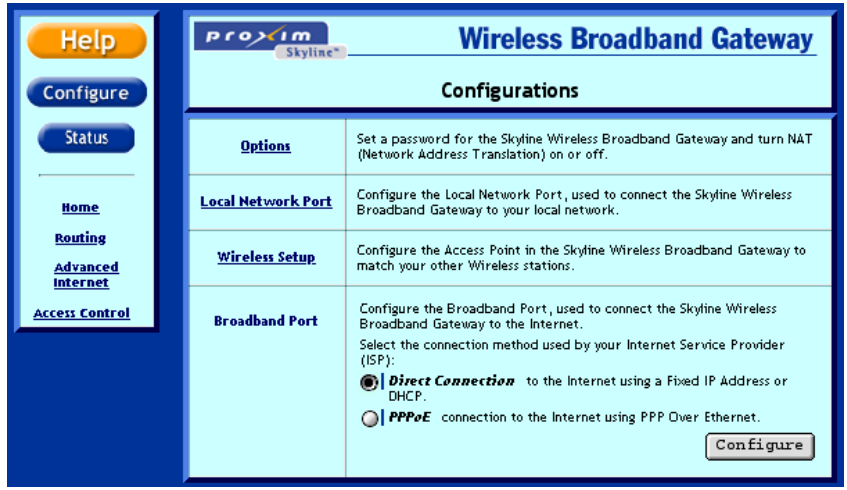
Configure the Local Network Port

1. Connect to the Home screen of the Skyline Wireless Broadband Gateway configuration web utility as described in “Connect to the Skyline Wireless Broadband Gateway” on page 13.

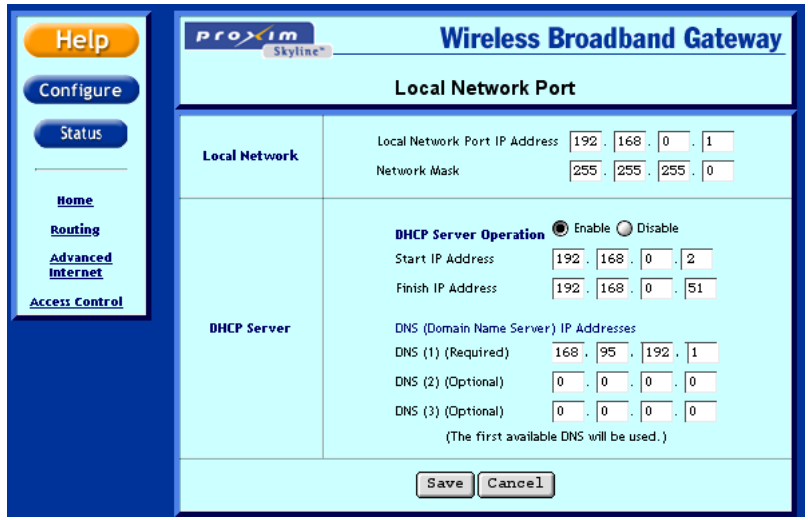
2. Click the **Configure** button on the left side of the Home screen.



3. The **Configurations** screen will appear.



4. Click the **Local Network Port** link to open the Local Network Port screen.



5. It is important to leave most of the data, including the **Local Network Port IP Address, Network Mask** and **DHCP Server Operation**, unchanged. However, you must replace the default **DNS (Domain Name Server) IP Address** of **168.95.192.1** with the DNS from your own ISP. See page 50 if you need help. Enter the DNS numbers from your ISP into the **DNS (1) Required** field.

6. Save your changes, finish and return to the **Configurations** screen. Next, configure your **Broadband Network Port** as described on the next page.

Configure the Broadband Network Port

There are three common configurations for the broadband port of the Skyline Broadband Gateway, depending on your ISP.

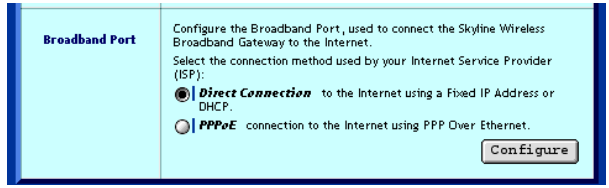
DHCP ..... If your ISP serves an IP Address dynamically each time you connect to the Internet, see "Configure the Broadband Port for DHCP" below.

Fixed IP Address..... If your ISP has given you a fixed IP Address, see "Configure the Broadband Port for a Fixed IP Address" on page 19.

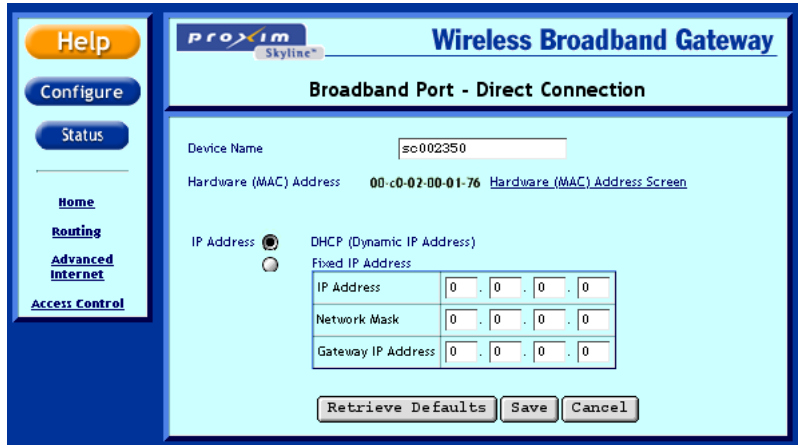
PPPoE..... If your ISP is using PPPoE (EnterNet, MacPoet or WinPoet) see "Configure the Broadband Port for PPPoE" on page 20.

Configure the Broadband Port for DHCP

1. Open the **Configurations** page of the web utility. Leave the default **Direct Connection** selected in the **Broadband Port** section, and click **Configure**.



2. Enter the necessary information into the fields provided:

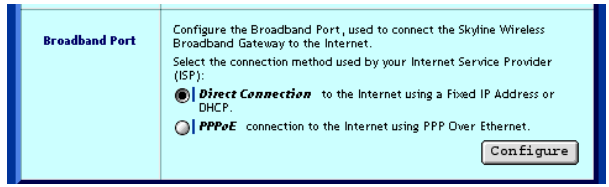


- **Device Name:** Enter any **host name**, network name or client ID from your ISP.
- **Hardware (MAC) Address:** If your ISP asks for the MAC Address of the device connecting to the cable/DSL modem, give them this information. The **Hardware (MAC) Address Screen** link opens the Hardware (MAC) Address Screen. See page 28 for more information about this link.
- **IP Address:** Enable the **DHCP (Dynamic IP Address)** radio button.

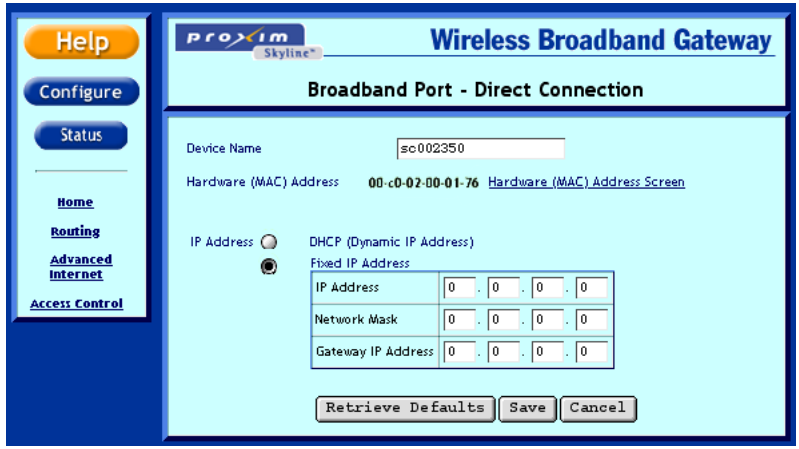
3. Save your changes and finish configuration. After restarting your web browser, you should be able to connect to the Internet from computers on your network.

Configure the Broadband Port for a Fixed IP Address

1. Open the **Configurations** page of the web utility. Leave the default **Direct Connection** selected in the **Broadband Port** section, and click **Configure**.



2. Enter the necessary information into the fields provided:

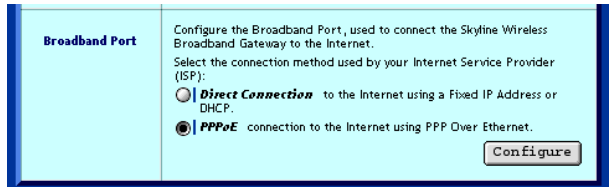


- **Device Name:** Enter any **host name**, network name or client ID given to you by your ISP.
- **Hardware (MAC) Address:** If your ISP asks for the MAC Address of the device connecting to the cable/DSL modem, give them this information. The **Hardware (MAC) Address Screen** link opens the Hardware (MAC) Address Screen. See page 28 for more information about this link.
- **IP Address:** Enable the **Fixed IP Address** button and enter all of the necessary information provided by your ISP for your connection including the **IP Address, Network Mask** and **Gateway IP Address.**

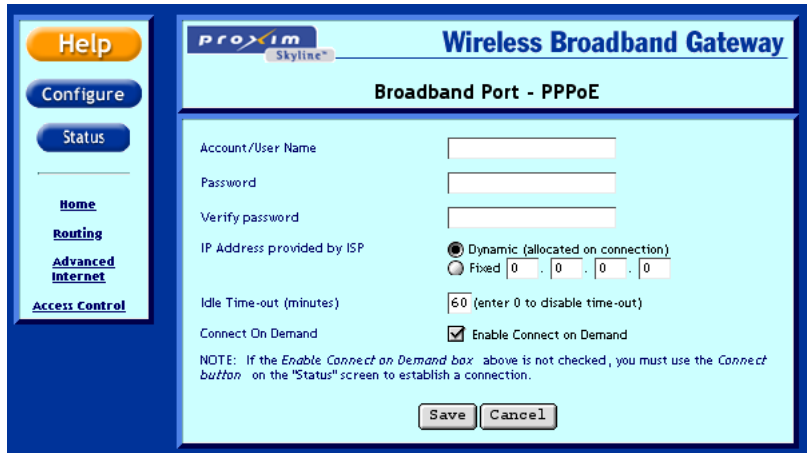
3. Save your changes and finish configuration. After restarting your web browser, you should be able to connect to the Internet from computers on your network.

Configure the Broadband Port for PPPoE

1. Open the **Configurations** page of the web utility. In the **Broadband Port** section, click the **PPPoE** radio button, then click **Configure**.



2. Enter the necessary information into the fields provided:



- **Account/User Name:** Enter your account or user name. The user name might be something like yourname@yourdomain.com or simply yourname, depending on your ISP.
- **Password/Verify password:** Enter your password into the fields provided.
- **IP Address provided by ISP:** If your ISP has not provided you with a fixed IP Address, leave the **Dynamic** radio button selected. If your ISP has provided you with a fixed IP Address, click the **Fixed** button and enter the IP Address into the field provided.
- **Idle Time-Out**: Enter zero into the Idle Time-Out field if you want to remain connected to your ISP continuously.
- **Connect On Demand:** Leave the Enable box checked to allow your computer to connect to the Internet.

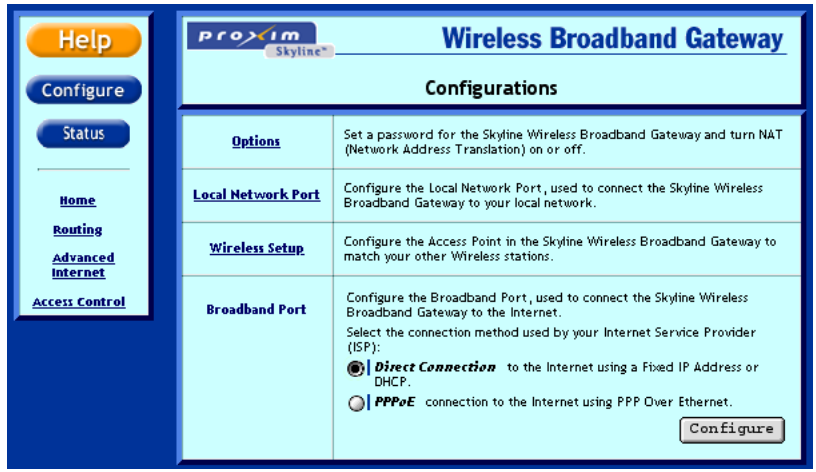
3. Save your changes and finish configuration. After restarting your web browser, you should be able to connect to the Internet from computers on your network.

Configuration options

The Skyline Wireless Broadband Gateway web utility offers many configuration options that allow you to modify network settings.The first part of this chapter offered step-by step instructions for setting up your Skyline Wireless Broadband Gateway using the web utility.

The remaining pages of this chapter describe the basic configuration options available to you on each screen of the Skyline Wireless Broadband Gateway web utility. Advanced configuration options (visible as text links on the left of the main screen) are described in “Advanced Configuration” on page 35. The Status screens, which provide useful data about the network are described in “Status” on page 30.

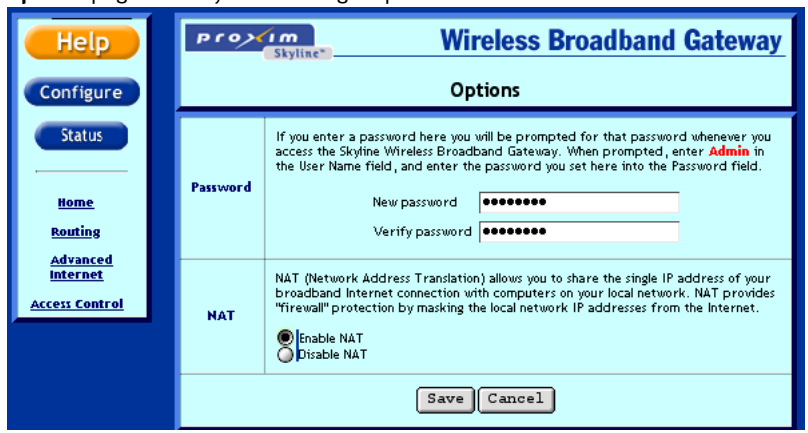
When you first open the Skyline Wireless Broadband Gateway web utility, you will see the Home page. Clicking the **Configure** button takes you to the **Configurations** screen, where you will find links to the main configuration screens:



- “Options” described on page 22
- “Local Network Port” described on page 24
- “Wireless Setup” described on page 25
- “Broadband Port” described on page 27

Options

Clicking on the **Options** link takes you to the Skyline Wireless Broadband Gateway **Options** page where you can assign a password and enable or disable NAT.



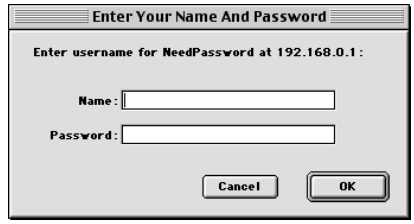
Buttons: The **Save** button saves any data entered on screen. The **Cancel** button cancels data entered since the last save.

Password

It is not necessary to use a password, but once a password has been entered, it will be required in order to access the web utility to view or modify the Skyline Wireless Broadband Gateway's configuration. Passwords are case sensitive and can be up to 8 alphanumeric characters with no spaces or punctuation. Do not forget your password, or you will have to restore the Skyline Wireless Broadband Gateway's default settings. (See page 50 for details.)

To create or change the password, enter the password into both the New Password and Verify Password input fields.

IMPORTANT! After a password has been set, your web browser will prompt you for it when you return to the configuration utility. When prompted by your browser, enter **Admin** into the Name or User Name field, and enter your password into the Password field.



NAT (Network Address Translation)

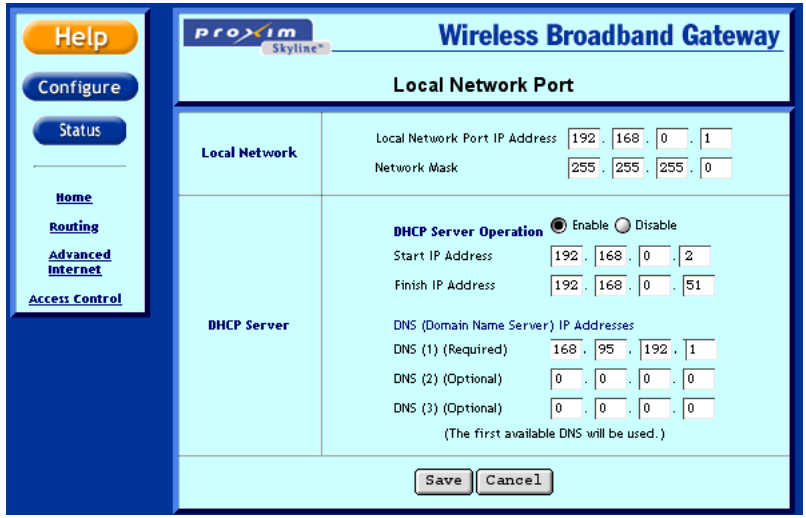
NAT allows computers on your local network to share a single Internet IP Address. NAT protects your local network by enabling firewall protection from Internet traffic initiated outside of the local network. Choose Enable or Disable:

- Enable NAT if you want computers on your local network to share Internet access using the Skyline Wireless Broadband Gateway.
- Disable NAT if the Skyline Wireless Broadband Gateway is not being used to provide shared Internet access.
- Disable NAT if the Skyline Wireless Broadband Gateway will be used only as a bridge between the wireless and Ethernet networks.

IMPORTANT! If you disable NAT, the Advanced Internet features (Virtual Servers, Special Applications, and Exposed Computer) and firewall protection will no longer be available. It is advisable to only disable NAT if you are using the Skyline Wireless Broadband Gateway as a router or wireless access point.

Local Network Port

Use the **Local Network Port** screen to configure your local network settings.



Buttons: The **Save** button saves any data entered on screen. The **Cancel** button cancels data entered since the last save.

Local Network

It is recommended that you leave these settings at their default.

Local Network Port IP Address..... The IP Address of your Skyline Wireless Broadband Gateway. Use the default value of 192.168.0.1.

Network Mask ..... The default value of 255.255.255.0 is standard for small networks.

DHCP Server

The Skyline Wireless Broadband Gateway can act as a DHCP server, providing IP Addresses to computers on your local network.

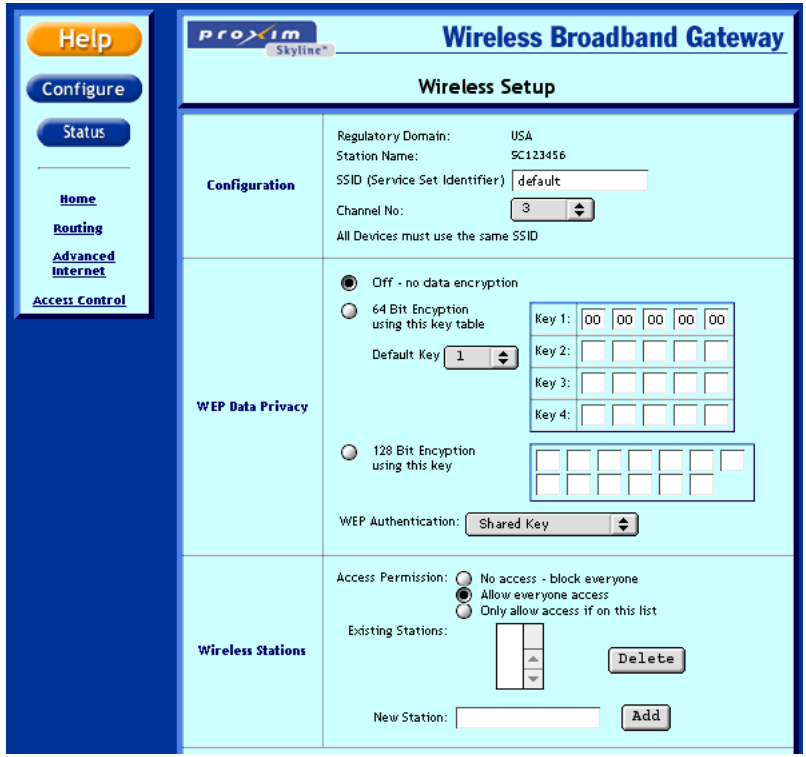
DHCP Server Operation ..... If Enabled, the Skyline Wireless Broadband Gateway will function as a DHCP server, and computers configured as DHCP clients on the local network will automatically receive an IP Address from the Skyline Wireless Broadband Gateway.

Start IP Address/Finish IP Address ..... These define the range of IP Addresses used by the DHCP server (the maximum number of clients allowed is 253).

DNS (Domain Name Server) IP Addresses..... Replace the default DNS with DNS information from your ISP. Multiple entries will be accessed in the order entered.

Wireless Setup

Use the **Wireless Setup** screen to configure the wireless connection.



Buttons: The **Save** button saves any data entered on screen. The **Cancel** button cancels data entered since the last save.

Configuration

Regulatory Domain ..... Only use the Skyline Wireless Broadband Gateway within the indicated regulatory domain.

Station name ..... This is the same as the Device (Host) Name on the Broadband Port screen (see page 27).

SSID ..... All devices on the wireless network MUST use this SSID/ESSID. The default SSID is **default**, but can be changed. The SSID is case and space sensitive.

Channel No. ..... All devices on the wireless network must use the same Channel, which is set by the access point. If you experience lost connections or slow data transfers you can experiment with different channels to see which works the best.

WEP Data Privacy

Turn **WEP Data Privacy** on by selecting **64 bit** or **128 bit** WEP and entering the keys you wish to use. The WEP keys must match on the Skyline Wireless Broadband Gateway and all wireless clients.

- **64 bit WEP:** Enter the ten digit alpha numeric key supplied by your network manager directly into the provided boxes.
- **128 bit WEP:** Enter the 26 digit alphanumeric supplied by your network manager directly into the provided boxes.

Off/On ..... If set to OFF (default), data is not encrypted before being transmitted. If set to ON, data is encrypted before being transmitted.

Key Table ..... Select 64 bit or 128 bit WEP and enter the keys you wish to use. Only the key selected as the Default Key will be used. If using 64 bit WEP, the default key is Key 1. For maximum compatibility with a range of client systems (some of which will only work with Key 1) you may want to leave Key 1 as the default.

WEP Authentication..... Select **Open** or **Shared** from the pop-up menu, depending on what your wireless clients use. The default setting is Shared, which is compatible with Skyline and Apple AirPort wireless adapters.

Note: See “Using WEP” on page 58 for more information about WEP keys and authentication.

Wireless Stations

Access Permission..... If **Allow everyone access** (default) is selected, no check is performed on the station address before allowing it to connect to the Skyline Wireless Broadband Gateway.

Existing Stations..... The wireless devices you have entered. If you have not entered any devices, this list will be empty.

New station ..... To add a new station to the list, enter its MAC address here, and click the Add button. Enter the MAC address of the device exactly, with colons separating every two digits as in: 00:00:c5:09:AE:09.

Delete button ..... Delete an entry or entries from the list.

Add button..... Add an entry or entries to the list.

Broadband Port

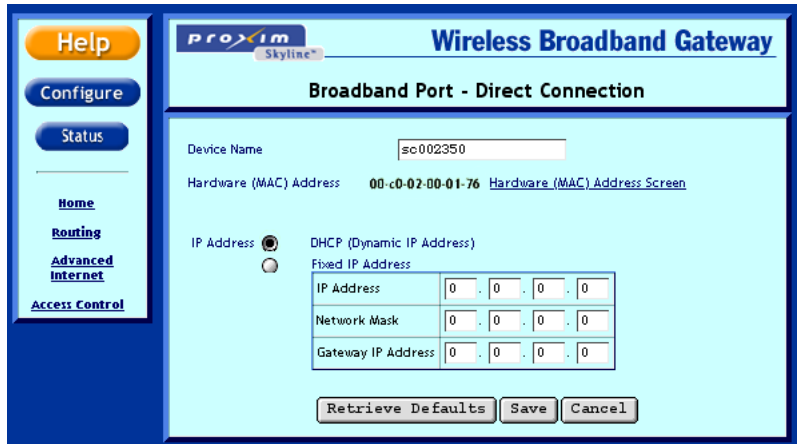
To configure the Broadband Port, first select the kind of connection your ISP supports in the **Configurations** screen.

- **Direct Connection:** If your ISP documentation does not specifically refer to PPPoE, select Direct Connection.
- **PPPoE (PPP Over Ethernet)** If your ISP documentation refers to PPPoE (EnterNet, MacPoet or WinPoet), select PPPoE.

After you select Direct Connection or PPPoE, click **Configure**.

Broadband Port - Direct Connection

This screen shows information about the Skyline Wireless Broadband Gateway's direct connection to your ISP.



Buttons: The **Retrieve Defaults** button recovers the default **Device Name** and clears other items. After clicking this button, you must click **Save** to restore the default values to the Skyline Wireless Broadband Gateway. The **Save** button saves any data entered on screen. The **Cancel** button cancels data entered since the last save.

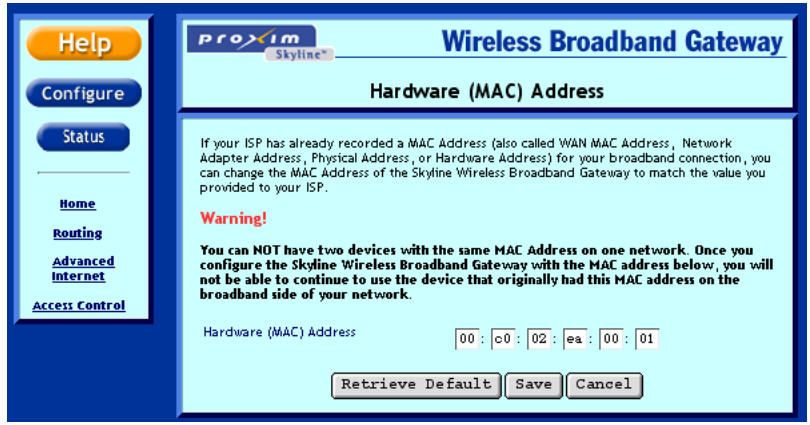
Device Name..... If your ISP assigned you a specific **host name**, network name or DHCP client ID, enter it here.

Hardware (MAC) Address..... If your ISP asks for the MAC Address of the device connecting to the cable/DSL modem, give them this information. The MAC Address is also referred to as a Network Adapter Address, Physical Address or Hardware Address. See page 28 for information about the Hardware (MAC) Address Screen link.

IP Address - DHCP (Dynamic IP Address) .....Leave DHCP enabled if you want the Skyline Wireless Broadband Gateway to be given an IP Address by your ISP.

IP Address - Fixed IP Address..... Select this if your ISP has given you a fixed IP Address. If this option is selected, the following data must be entered from your ISP: IP Address, Network Mask and Gateway IP Address.

Hardware (MAC) Address Screen link ..... This link opens the **Hardware (MAC) Address Screen** where you can change the MAC Address of the Skyline Wireless Broadband Gateway.



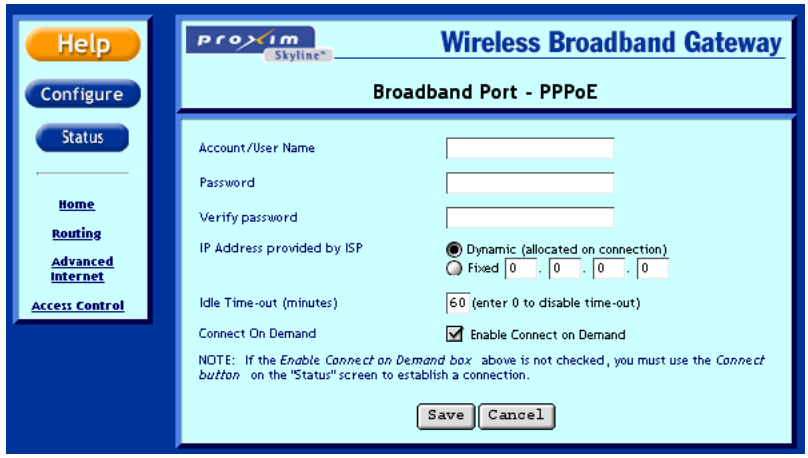
Only change the MAC Address if your ISP requires that you use a specific MAC Address for the device connected to the cable/DSL modem. (Media One is one such ISP, and instructions for using the Skyline Wireless Broadband Gateway with Media One are on page 63 of this manual.)

If your ISP cannot change the MAC Address at their end to match the default MAC Address of the Skyline Wireless Broadband Gateway, or you simply do not want to ask them to do so, you can change the MAC Address used by the Skyline Wireless Broadband Gateway. This is known as “spoofing” the MAC Address.

To change the MAC Address of the Skyline Wireless Broadband Gateway to match the MAC Address of the Ethernet card originally connected to the modem, enter the MAC Address of the Ethernet card into the spaces provided on the Hardware (MAC) Address Screen. Save your changes and finish configuration.

Broadband Port - PPPoE

The necessary data for your PPPoE connection comes from your ISP.



Buttons: The **Save** button saves any data entered on screen. The **Cancel** button cancels data entered since the last save.

Account/User Name ..... The name of your Internet account provided by your ISP. Some ISPs work with the entire account name along with the hosting domain (such as *yourname@yourdomain.com*) and others require that you enter only the account name (*yourname*).

Password..... Enter the password for your Internet account.

Verify Password ..... Re-enter the password.

IP Address provided by ISP..... Normally, this is Dynamic; use this setting if your ISP's documentation does not mention an IP Address. If your ISP did provide an IP Address, select Fixed and enter the address into the provided field.

Idle Time-out..... If a connection is inactive for longer than this time period, it will be terminated. You can increase the amount of time before you are disconnected from the Internet by increasing this value. Set the value to zero to disable time-out completely.

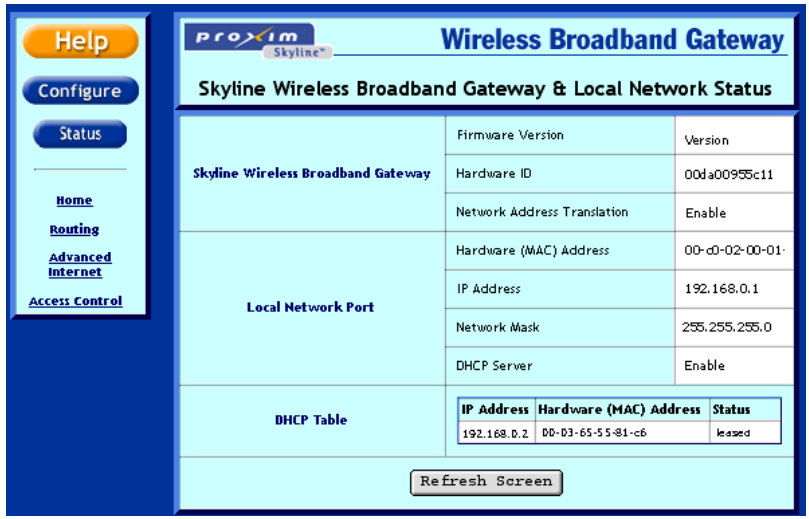
Connect on Demand ..... Normally, this should be enabled. This setting allows a connection to the Internet to be established when needed, such as when a web browser is started on a computer. If this is unchecked, you must use the **Connect** button on the Broadband Status page of the of the web utility (see "Broadband Status - PPPoE" on page 32) each time you want to connect to the Internet.

Status

Clicking the **Status** button will open a status screen. The screen will indicate the local network status, or the status of the connection to the Internet the Skyline Wireless Broadband Gateway is configured to use.

Skyline Wireless Broadband Gateway & Local Network

This screen shows current information about your local network configuration.



Buttons: Use the **Refresh Screen** button to update the data.

Skyline Wireless Broadband Gateway

Firmware Version..... Version of the firmware (embedded software) which is currently installed on the Skyline Wireless Broadband Gateway.

Hardware ID ..... The hardware ID of the Skyline Wireless Broadband Gateway.

Network Address Translation..... This displays Enable or Disable depending on the NAT setting for the Skyline Wireless Broadband Gateway (see page 16).

Local network Port

Hardware (MAC) Address..... The hardware address of the Skyline Wireless Broadband Gateway, as seen by other devices on the local network.

IP Address ..... The IP Address of the Skyline Wireless Broadband Gateway, as seen by other devices on the local network.

Network Mask ..... The Network Mask (Subnet Mask) for the IP Address on the local network.

DHCP Server ..... This shows whether the DHCP Server function is Enabled or Disabled.

DHCP Table

This table lists the devices on the local network which have been allocated IP Addresses by the Skyline Wireless Broadband Gateway's DHCP server function. Only IP Addresses in use will be listed.

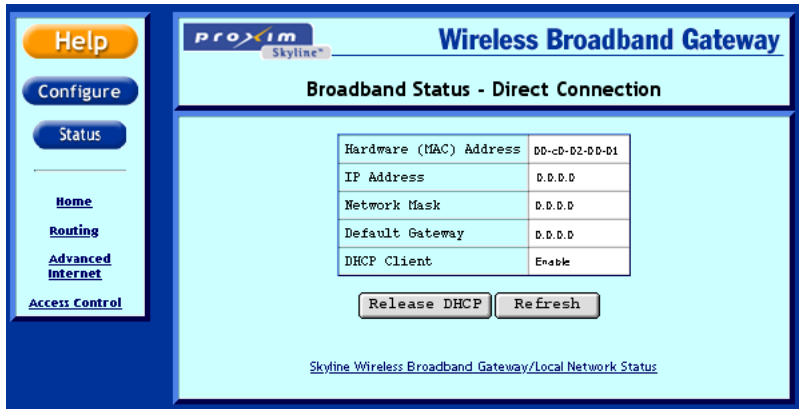
IP Address ..... The IP Address which has been allocated by the Skyline Wireless Broadband Gateway's DHCP server.

Hardware (MAC) Address ..... The hardware address of the device which has been allocated a IP Address.

Status ..... Shows if the IP Address is Leased (the IP Address is allocated to the device shown) or Reserved.

Broadband Status - Direct Connection

This screen shows current information about your broadband configuration using a direct connection to your ISP.



Buttons: Use the **Release DHCP** button to verify DHCP is being received from your ISP. Use the **Refresh** button to update the screen. The **Skyline Wireless Broadband Gateway/Local Network Status** link takes you to that status page (see page 30).

Hardware (MAC) Address ..... The hardware address of the Skyline Wireless Broadband Gateway, as seen by devices on the Internet and your ISP.

IP Address ..... The IP Address of the Skyline Wireless Broadband Gateway, as seen by devices on the Internet.

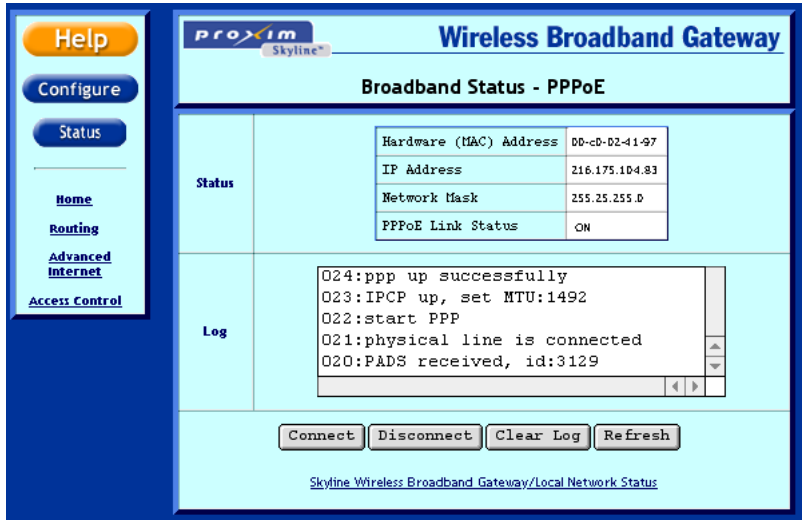
Network Mask ..... The Network Mask for the Internet IP Address.

Default Gateway..... IP Address of the Router/Gateway on the Internet.

DHCP Client ..... Displays Enabled or Disabled, indicating whether this Skyline Wireless Broadband Gateway is acting as a DHCP client on the Internet.

Broadband Status - PPPoE

This screen shows current information about your broadband configuration using PPPoE to connect to your ISP.



Buttons: Use the **Connect** button to establish a connection to your ISP if you do not have Connect in Demand enabled (see page 32). Use the **Disconnect** button to hang up the connection to your ISP. The **Clear Log** button deletes all data in the Log, and the **Refresh** button updates the Log data. The **Skyline Wireless Broadband Gateway/Local Network Status** link takes you to that status page (see page 30).

Status

Hardware (MAC) Address..... The hardware address of the Skyline Wireless Broadband Gateway, as seen by devices on the Internet.

IP Address ..... The IP Address of the Skyline Wireless Broadband Gateway, as seen by devices on the Internet.

Network Mask ..... The Network Mask (Subnet Mask) for the Internet IP Address.

PPPoE Link Status ..... This indicates whether or not the connection is currently established. The Connect button can be used to establish or terminate a connection.

Log

Log window ..... The log window shows status messages relating to the existing connection. The most common messages are:

- ***Connect on Demand***: Connection attempt has been triggered by the "Connect on Demand" setting.
- ***Manual connection***: Connection attempt started by the Connect button.
- ***Reset physical connection***: Preparing line for connection attempt.
- ***Connecting to remote server***: Attempting to connect to the ISP's server.
- ***Remote Server located***: ISP has responded to connection attempt.
- ***Start PPP***: Attempting to login to ISP and establish a PPP connection.
- ***PPP up successfully***: Able to login to ISP and establish a PPP connection.
- ***Idle time-out reached***: The connection has been idle for the time period specified in the Idle Time-out field. The connection will now be terminated.
- ***Disconnecting***: The current connection is being terminated, due to either Idle Time-out or the Disconnect button being clicked.
- ***Error: Remote Server not found***: ISP did not respond. This could be a Server problem, or a problem with the link to the server.
- ***Error: PPP Connection failed***: Unable to establish a PPP connection with the ISP's server. This could be a login problem (name or password) or a server problem.
- ***Error: Connection to Server lost***: The existing connection has been lost. This could be caused by a power failure, link failure, or server failure.
- ***Error: Invalid or unknown packet type***: The data received from the ISP's server could not be processed. This could be caused by data corruption (from a bad link), or the server using a protocol which is not supported by the Skyline Wireless Broadband Gateway.

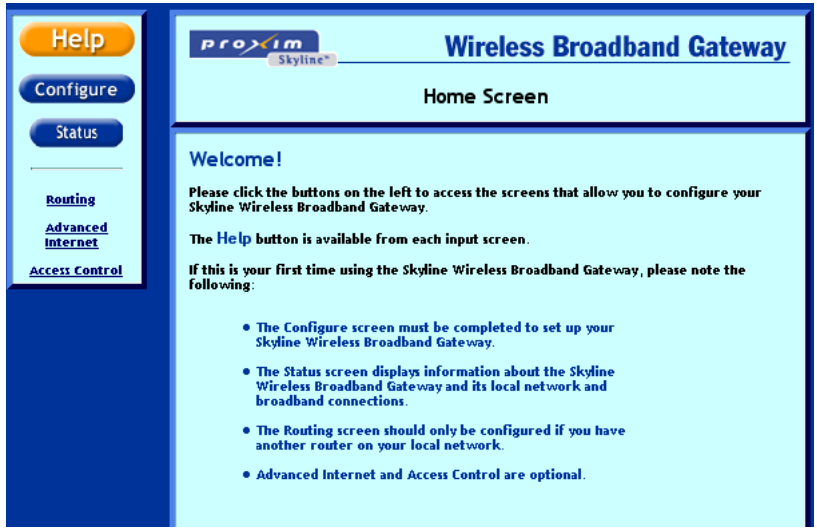
Chapter 3

Advanced Configuration

This chapter covers more advanced Skyline Wireless Broadband Gateway settings accessible from the configuration web utility.

Follow installation instructions in “Getting Started” on page 1.

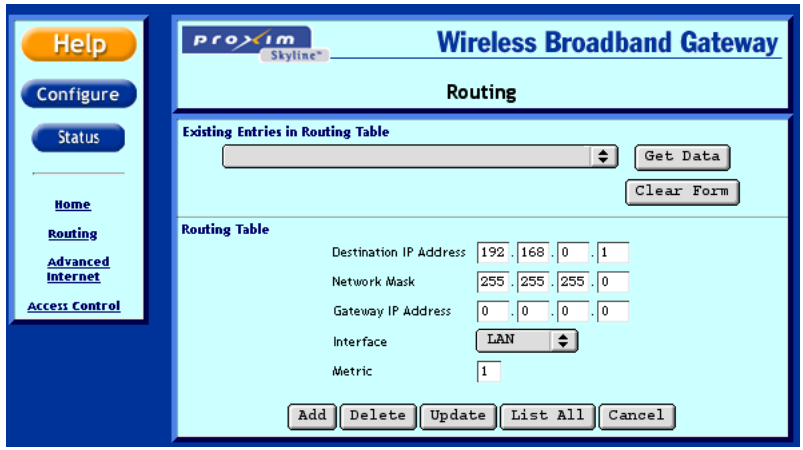
1. Start your web browser.
2. In the Address box, enter: **HTTP://192.168.0.1**
3. The **Home** screen appears.



4. The advanced configuration links appear at the left of the screen: Routing, Advanced Internet and Access Control.

Routing

If you have another router on your local network, configure both the other router and the Skyline Wireless Broadband Gateway's **Routing** table. The routing table should only be used when all the routers on the local network will connect to the Internet through the Skyline Wireless Broadband Gateway. See your router's documentation for instructions and configure it to use the Skyline Wireless Broadband Gateway as the Default Gateway. An entry in the routing table is required for each segment on your local network, other than the segment to which the Skyline Wireless Broadband Gateway is attached.



Existing Entries in Routing Table .... Any existing entries are shown in the pop-up menu.

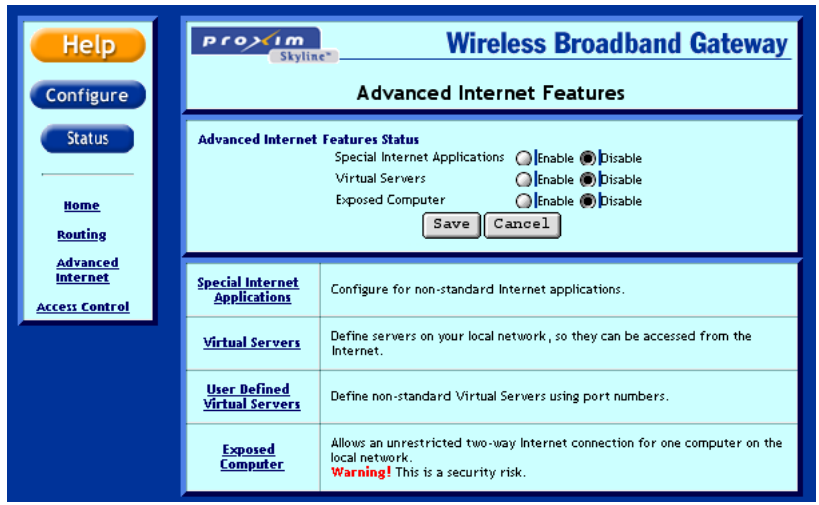
Routing Table ..... The routing table offers the following configuration entries:

- **Destination IP Address:** The network address of the remote network segment. For standard class C networks (under 255 computers), the network address is the first three fields of this Destination IP Address. The fourth (last) field can be left at zero.
- **Network Mask:** The Network Mask used on the remote network segment. For class C networks (under 255 computers) the standard Network Mask is 255.255.255.0
- **Gateway IP Address:** The IP Address of the router on the local network segment to which the Skyline Broadband Gateway is attached.
- **Interface:** Select the appropriate interface; LAN (local network) or WAN (external network) from the drop-down list.
- **Metric:** The number of routers which must be passed through to reach the remote network segment. The default value is 1.

Advanced Internet

For situations in which the Skyline Wireless Broadband Gateway is being used to provide shared Internet access, the following advanced features are provided. See Appendix B on page 57 for descriptions of some common uses for these advanced features.

- Special Internet Applications
- Virtual Servers
- User Defined Virtual Servers
- Exposed Computer

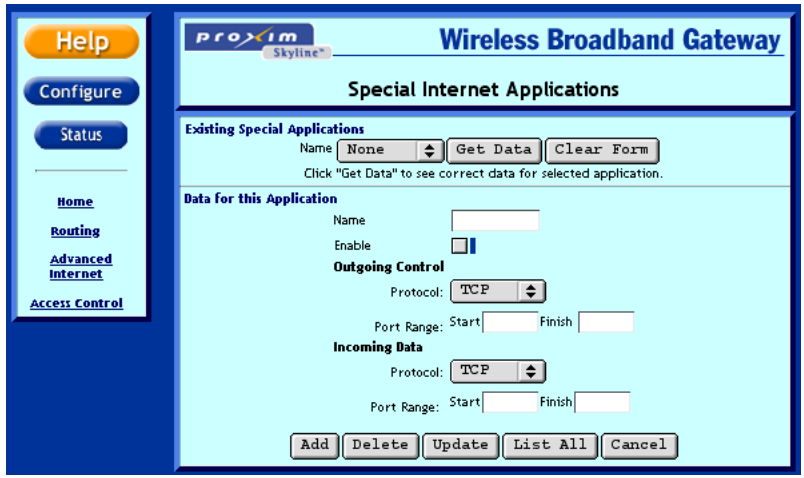


Special Internet Applications

This feature is used with Internet applications (such as video streaming and on-line games) that require two-way communication, multiple connections, or combined TCP/UDP connections.

Special Internet Applications allows unrestricted two-way access to the Internet through specified TCP and UDP ports. Use the Special Internet Applications screen to configure the ports for two-way communication.

Only one computer at a time can use each special application. Configuration data (port numbers) must be obtained from the provider of the software being used for two-way communication.



Existing Special Applications

Existing Special Applications are listed here. Use the pop-up menu to select the applications you want.

Data for this application

Name .....Enter a name to identify each entry.

Enable .....Use this to Enable or Disable support for each application, as required.

Outgoing Control

Protocol.....The protocol (TCP or UDP) used when you connect to the special application service.

Port Range.....The beginning and end of the range of port numbers used by the application server, for data you send to it. If the application uses a single port number, enter it in both the **Start** and **Finish** fields.

Incoming Data

Protocol ..... The protocol (TCP or UDP) used when the application or service sends data to you.

Port Range.....The beginning and end of the range of port numbers used by the application server when data is sent to you. If the application uses a single port number, enter it in both the **Start** and **Finish** fields.

Using Special Internet Applications

To enable or disable an application: Select it from the drop-down list. Click Get Data. Check Enable or Disable. Click Update.

To delete an application: Select it from the drop-down list. Click Delete.

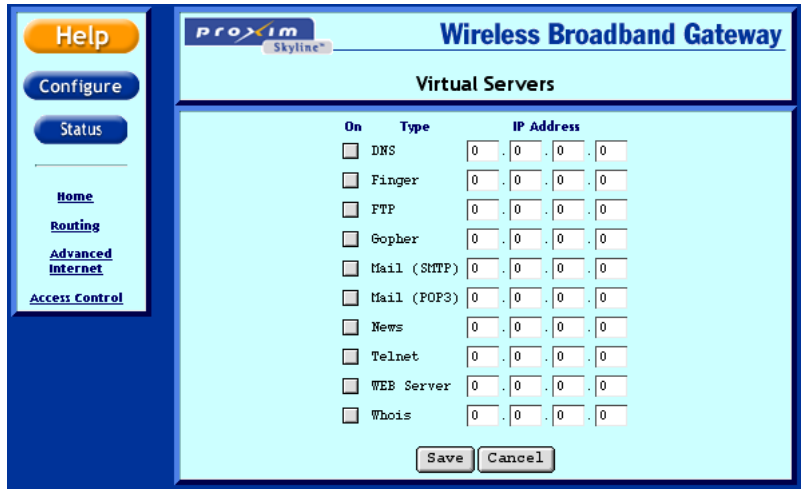
To modify an application: Select it from the drop-down list. Click Get Data. Make any desired changes, and then click Update.

To create a new application: Click Clear Form. Enter the required data and click Add.

To list all applications: Click the List All button.

Virtual Servers

In order for Internet users to connect to a virtual server on your local network, the virtual server should have a static IP Address.



The Skyline Wireless Broadband Gateway supports two types of Virtual Servers:

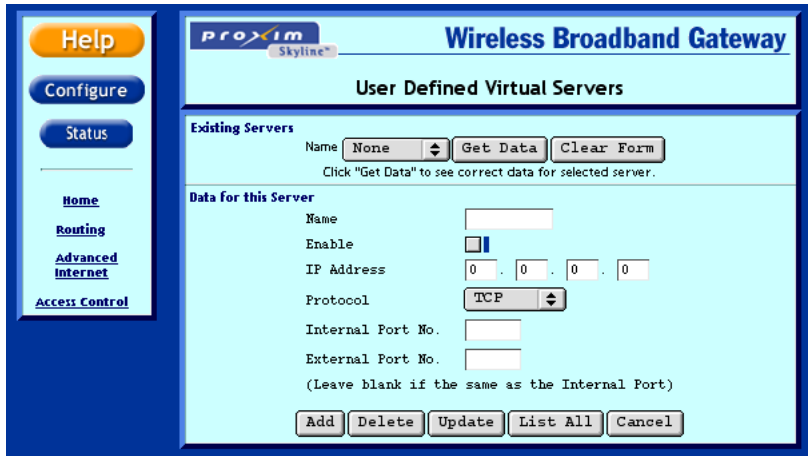
- Pre-defined - Standard server types. The only data required is the IP Address of the server on your local network.
- User-defined - Non-standard servers. You must provide additional information about the server.

IMPORTANT: The total number of Virtual Servers (both pre-defined and user defined) which can be used is 10.

Select the server type or types you wish to use, enter the IP Address of the server on your local network, and click **Save.**

User Defined Virtual Servers

If the type of server you wish to use is not listed on the Virtual Server screen, you can define it using this feature.



Existing servers

Existing Virtual Servers are listed here. Use the pop-up menu to select the server you want.

Data for this server

Name ..... Enter a name to identify each server entry.

Enable ..... Use this to Enable or Disable support for each server, as required.

IP Address ..... The IP Address of the computer on your local network which is running the server software.

Protocol ..... Select the protocol (TCP or UDP) used by the server.

Internal Port Number..... Enter the port number used by the server to connect to clients.

External Port Number..... The port number used by clients when connecting to the server. This is normally the same as the Internal Port Number. If it is different, the Skyline Wireless Broadband Gateway will allow you to configure the server to use one port address, while clients use a different port address.

Using user defined virtual servers

To create a new server: Click the Clear Form button. Enter the required data. Click Add.

To modify a server: Select it from the drop-down list. Click Get Data. Make any desired changes. Note that you can Enable and Disable a Server using this process. Click Update.

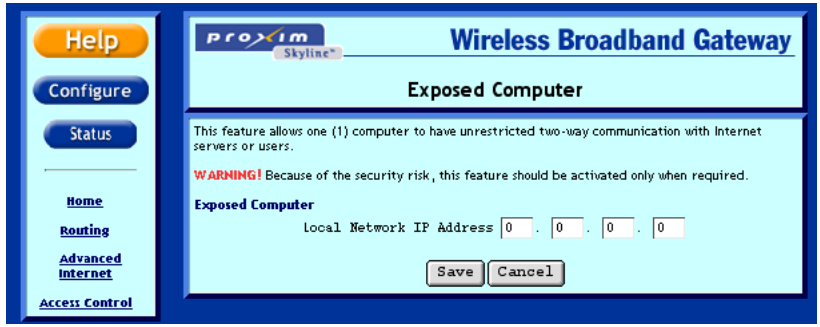
To delete a server: Select it from the drop-down list. Click Delete.

To list all servers: Click the List All button.

Exposed Computer

This feature allows one computer on your local network to be exposed to all users on the Internet, allowing unrestricted two-way communication.

WARNING! Any Internet user who knows this address can connect to the Exposed Computer. Using this feature is a security risk.

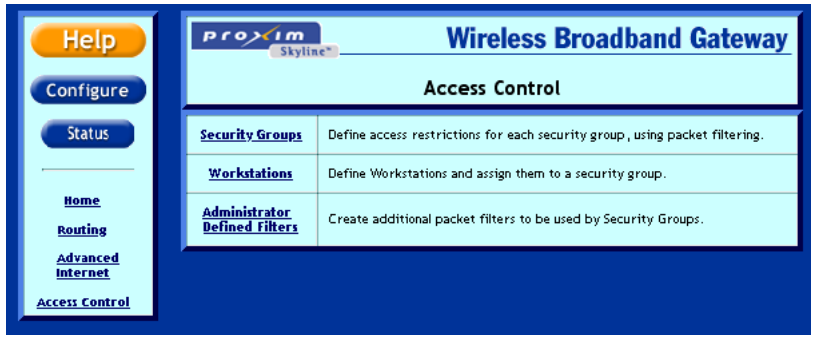


The only data required is the **Local Network IP Address**. Enter the IP Address of the computer on your local network which will become the exposed computer. The exposed computer will be able to receive all data packets that are sent to the Skyline Wireless Broadband Gateway's IP Address.

IMPORTANT! To allow unrestricted access to the exposed computer, the firewall will be disabled, creating a security risk. You should use this feature only if the Special Applications feature is insufficient to allow an application to function correctly.

Access Control

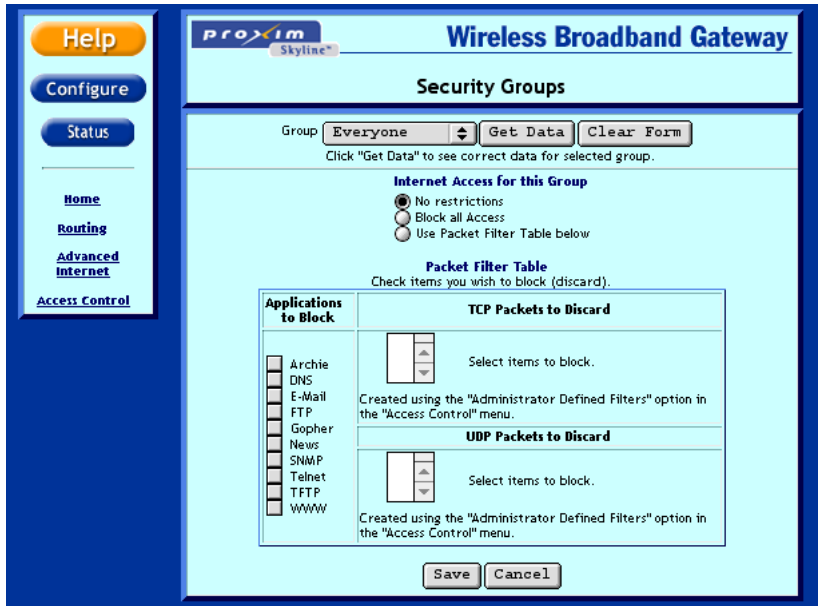
The Access Control feature allows administrators to restrict Internet access by individual workstations on your local network. You can limit Internet access for all computers by applying the desired restrictions to the Everyone group or you can apply individual restrictions to computers using the Workstations screen.



To use this feature:

- The **Security Groups** screen allows you to set the desired restrictions on the Everyone group. By default, all computers are in the Everyone group unless explicitly moved to another group, using the Workstation screen. Set the desired restrictions on the other groups (Group 1, Group 2, etc.) as needed.
- The **Workstations** screen allows you to set up individual workstations with security settings. For each Workstation you wish to move from the Everyone group, enter the details on the Workstation screen, and assign them to the desired group.
- The **Administrator Defined Filters** screen allows you to define packet filters. When you define security groups on the Security Groups screen, you can select from any filters defined here, as well as the pre-defined filters.

Security Groups



Internet Access for this Group

No restrictions..... No packets are blocked. Use this to create an Unlimited Access group, or to temporarily remove restrictions from a group.

Block all Access ..... Group members cannot access the Internet at all. Use this to create the most restrictive group.

Use Packet Filter Table below ..... Use this to define levels of access using the Packet Filter table.

Packet Filter Table

Select the items you wish to block. You can choose from the pre-defined filters in the Applications to Block column, or your own filters in the TCP Packets to Discard and UPD Packets to Discard column.

Applications to Block ..... Any items checked will be blocked. Users will not be able to use the application.

TCP Packets to Discard..... This lists any TCP filters you have defined on the Administrator Defined Filters screen. If no filters have been defined, this is empty. Multiple items can be selected (or deselected) by holding down the Ctrl key while selecting items. Selected items can NOT be accessed by members of this group.

UDP Packets to Discard ..... This lists any UDP filters you have defined on the Administrator Defined Filters screen. If no filters have been defined, this is empty. Multiple items can be selected (or deselected) by holding down the Ctrl key while selecting items. Selected items can NOT be accessed by members of this group.

Using security groups

To Define a Security Group: Select the group from the drop-down box, then enter the required data. If necessary, click Clear Form to remove the existing information shown on screen. Click the Save button when finished.

To Change Access for an Existing Group: Select the group from the drop-down box, click Get Data to view their information, then change any fields you wish. Click Save when finished.

To Assign Workstations to a Security Group: All Workstations are automatically in the Everyone group unless the Workstations screen is used to move them to another group.

Workstations

Using workstations

To Add a New Workstation: Click the Clear Form button, and enter the Workstation details in the fields provided. Click Add when finished.

To Delete an Existing Workstation: Select the Workstation from the drop-down box, click Get Data to view the information and confirm that this is the correct Workstation, then click the Delete button.

To Change an Existing Workstation's Details: Select the Workstation from the drop-down box, click Get Data to view their information, then change any fields you wish. Click Update when finished.

To Generate a List of all Workstations: Click on the List All button. Data Workstation Name Enter a name to identify this workstation.

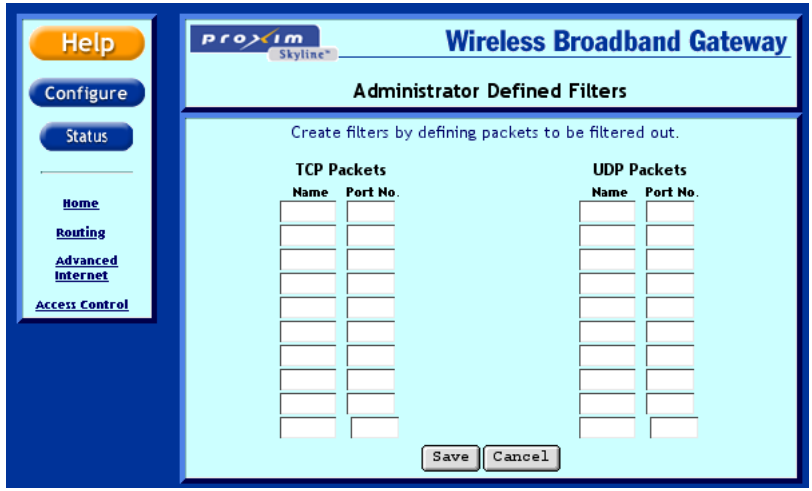
Network Adapter Address ..... Hardware address for this workstation.

Reserve entry in DHCP Table ..... Check this if you wish to reserve an IP Address for this workstation. This is useful if you have to provide the IP Address for other programs or users.

Reserved IP Address ..... This relates to the entry above. Enter the reserved address here. This MUST be within the range used by the DHCP server.

Security Group ..... Select the security group for this workstation. If you only wish to reserve an IP Address, and are not using the access control features, leave this at Everyone.

Administrator Defined Filters



This screen allows you to define packet filters. When you define security groups on the Security Groups screen, you can select from any filters defined here, as well as the pre-defined filters.

Data TCP Packets

Define the packets you wish to be filtered out, by entering the following data.

Name ..... Enter a descriptive name for this entry.

Port No ..... Enter a number representing the Port Number for this type of packet. A Network Analyzer or Packet Sniffer can be used to determine the correct port number.

UDP Packets

Define the packets you wish to be filtered out, by entering the following data.

Name ..... Enter a descriptive name for this entry.

Port No ..... Enter a number representing the Port Number for this type of packet. A Network Analyzer or Packet Sniffer can be used to determine the correct port number.

Chapter 4

Operation and Troubleshooting

This chapter outlines some troubleshooting tips for using your Skyline Wireless Broadband Gateway including:

- “Troubleshooting” on page 48
- “Restore Default IP Address and Clear Password” on page 50

Please note that detailed descriptions of the configuration utility can be found in the following chapters:

- “Configuration” on page 15
- “Advanced Configuration” on page 35

Click the Help button on the web configuration utility screen to access on-line help for the Skyline Wireless Broadband Gateway.

If you have trouble with your Skyline Wireless Broadband Gateway that you cannot resolve by reading this manual, please contact Proxim Technical Support (see page 51 for contact information).

Troubleshooting

IMPORTANT NOTE: If you have made configuration changes to your Skyline Wireless Broadband Gateway that do not seem to be working, try hitting the Reload or Refresh button on your browser.

Configuration checklist

If your local network is NOT using DHCP and does NOT have another router, check the following settings for each computer:

IP Address ..... Make sure that each computer has a unique IP Address in the same address range as the Skyline Wireless Broadband Gateway's IP Address. If the Skyline Wireless Broadband Gateway uses the recommended default IP Address of 192.168.0.1, the computers on your local network must be assigned IP Addresses in the range of 192.168.0.2 to 192.168.0.254.

Network Mask ..... All computers and the Skyline Wireless Broadband Gateway must use the same value for the Network Mask. The recommended default value is 255.255.255.0.

Gateway ..... Set the Default Gateway Address to the Skyline Wireless Broadband Gateway's IP Address. The recommended default IP Address is 192.168.0.1.

DNS (Domain Name Server) Address ..... This should match the DNS address entered into the DNS IP Address field on the Local Network Port screen (see "Local Network Port" on page 24).

Common problems

Can't connect to the Skyline Wireless Broadband Gateway

- Check that the Skyline Wireless Broadband Gateway is properly installed, local network connections are OK, and it is powered ON.
- Make sure your computer and the Skyline Wireless Broadband Gateway are on the same network segment.
- Check that your computer's IP Address is set in the correct range of 192.168.0.2 to 192.168.0.254 and the Network Mask is set to 255.255.255.0.
- Check all wireless WEP settings, including WEP keys. See "Using WEP" on page 58 for details about WEP keys.

Can't connect to the Internet

- Make sure that the DSL modem or cable modem is working with a direct connection to a single computer.

  IMPORTANT! Your ISP may require a special cable modem configuration. Appendix B on page 57 provides some useful guides for setting up the Skyline Wireless Broadband Gateway to work in specific situations including:

  - "Using AOL" on page 61
  - "@Home configuration" on page 62
  - "Media One configuration" on page 63

- If a wireless client is able to connect to the Skyline Wireless Broadband Gateway, but not able to access the Internet you may have the wrong WEP Key entered.

Time Out Error when entering IP Address or URL

Check the following:

- Check if other computers on the local network function. If they do, make sure that your computer's IP settings are correct (IP Address, Network Mask, Default Gateway and DNS).
- If the computer is configured correctly, but still not working, make sure the Skyline Wireless Broadband Gateway is connected and powered ON. Follow instructions in "Getting Started" on page 1 to use the configuration utility to check its settings.
- If the Skyline Wireless Broadband Gateway is configured correctly, check your Internet connection (modem) to see that it is working correctly.

Applications do not run properly

- Use the Special Applications feature (see "Advanced Internet" on page 37) to allow the use of Internet applications which do not function correctly.
- Use the Exposed Computer function (see "Advanced Internet" on page 37).
- See Appendix B on page 57 for commonly used applications.

ISP DNS information

The DNS (Domain Name Server) addresses provided by your Internet Service Provider should be entered into the Local Network Port configuration screen of the Skyline Wireless Broadband Gateway in place of the default DNS number.

You can get the necessary DNS number by:

- Checking the documentation from your ISP
- Calling your ISP and asking for the DNS address
- Looking on your ISP's website for their DNS addresses
- Connecting a client computer directly to the Skyline Wireless Broadband Gateway and checking the TCP/IP control panel of a Macintosh, or running winipcfg on a Windows computer.

You can also use the Skyline Wireless Broadband Gateway's Local Network Port default DNS address of 168.95.192.1, but this may not perform as well as your ISP's DNS server.

Restore Default IP Address and Clear Password

If you want to restore the Skyline Wireless Broadband Gateway to all of its factory defaults (including the password, IP Address and all other configuration settings) use the Reset button on the rear panel. Press and hold the button down for three seconds to reset all values.

Chapter 5

Proxim Technical Support

Proxim is committed to providing its customers with reliable products and excellent technical support. We encourage you to register your Skyline Wireless Broadband Gateway (please see the registration card included in your package).

Please look in this user's guide for possible solutions to any problems you come across, and be sure to read any paper release notes or electronic Read Me files that you receive from Proxim.

If you contact us by telephone, please be at the site of the problem, prepared to reproduce it and to try some troubleshooting steps.

If you have any questions, concerns, or suggestions, please contact us by telephone, fax, mail, or the Internet:

Phone:	(800) 613-4954
Fax:	(510) 346-8116
Mail:	Proxim Customer Service 3089 Teagarden St. San Leandro, California 94577-5720 USA
E-mail:	skyline@proxim.com
Web:	www.proxim.com

Appendix A

Technical Specifications and Compliance

Technical specifications

Dimensions	243.9mm(L) x 145.5mm(W) x 39.03mm (H)
	9.60 in x 5.73 in x 1.53 in
Operating Temperature	0° C to 40° C
Storage Temperature	-10° C to 70° C
Network Protocol	TCP/IP
Network Interface	4 - 10/100BaseT (RJ45) straight-through
	1 - 10BaseT (RJ45) for broadband
Wireless interface	IEEE 802.11b (1Mbps, 2Mbps, 5.5Mbps, 11Mbps)
Power Adapter	12 V DC 800Ma External

Compliance statements

FCC compliance statement

FCC Rules and Regulations - Part 15. This product has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Installed correctly, it probably will not interfere with radio or TV reception. However, we do not guarantee the absence of interference.

This product generates and uses energy of about the same frequency as radio and TV broadcasts. Installed incorrectly, it may interfere with reception of radio and TV broadcasts. If you suspect this product is causing interference, turn your computer on and off while the radio or TV is showing interference. If the interference disappears when you turn the computer off and reappears when you turn the computer on, something in the computer is causing interference. To reduce interference, try these suggestions:

• Change the direction of the radio or TV antenna.

• Move the computer, radio or TV. For example, if the computer is to the right of the TV, move it to the left of the TV. Or move them farther apart.

• Plug the computer into a different electrical outlet than the radio or TV.

• Ensure that all expansion slots (on the back or side of the computer) are covered. Also ensure that all metal retaining brackets are tightly attached to the computer.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: If the device is changed or modified without permission from Proxim, the user may void his or her authority to operate the equipment.

VCCI

This product is VCCI Class B compliant.

注意
この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準
に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨
害を引き起こすことがあります。この場合には使用者が適切な対策を講ずる
よう要求されることがあります。

Industry Canada (IC)

This Class B device meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

DSSS PHY frequency channel plan

Channel	Frequency	FCC	IC	ETSI	France	MKK
		USA	Canada	Europe	France	Japan
1	2412 Mhz	x	x	x		x
2	2417 Mhz	x	x	x		x
3	2422 Mhz	x	x	x		x
4	2427 Mhz	x	x	x		x
5	2432 Mhz	x	x	x		x
6	2437 Mhz	x	x	x		x
7	2442 Mhz	x	x	x		x
8	2447 Mhz	x	x	x		x
9	2452 Mhz	x	x	x		x
10	2457 Mhz	x	x	x	x	x
11	2462 Mhz	x	x	x	x	x
12	2467 Mhz			x	x	x
13	2472 Mhz			x	x	x
14	2484 Mhz					x

Appendix B

Setup Guides

This Appendix provides some guides for setting up the Skyline Wireless Broadband Gateway to work in specific situations.

Subjects addressed in this Appendix include:

- “Using WEP” on page 58
- “Using AOL” on page 61
- “@Home configuration” on page 62
- “Media One configuration” on page 63
- “Quick Time 4.0 video streaming setup” on page 65
- “Timbuktu Pro setup” on page 67
- “Remote configuration setup” on page 71

Using WEP

Turn **WEP** on in the **Wireless Setup** screen by selecting **64 bit** or **128 bit** WEP. 128 bit WEP uses one key of 26 characters. 64 bit WEP offers four keys, but only the key selected as the Default Key will be used. Use Key 1 for maximum compatibility with client systems.

Passwords

The following table gives examples of what WEP password you would enter into Key #1 when using the Skyline Wireless Broadband Gateway with a variety of wireless PC cards. The table uses **enter** as a sample password in use on the wireless network. The word **enter** converts to a hexadecimal key of **65 6e 74 65 72** according to "ASCII Character to hexadecimal key conversion" on page 60.

WEP ASCII and Hex password usage

Skyline Wireless Broadband Gateway WEP key	Type of wireless client in use	WEP key to use on wireless client
65 6e 74 65 72	SkyLINE 11Mb PC Card for Macintosh	■ **HEX:** 65 6e 74 65 72 ■ **ASCII:** "enter" in quotes. Key #1 only.
65 6e 74 65 72	SkyLINE 11Mb PC Card for Windows	■ **HEX:** 65 6e 74 65 72 ■ **ASCII:** not available.
65 6e 74 65 72	Airport Card	■ **HEX:** not available. ■ **ASCII:** "enter" in quotes. Key #1 only.
65 6e 74 65 72	Orinoco PC Card	■ **HEX:** 0x 65 6e 74 65 72 ■ **ASCII:** enter
65 6e 74 65 72	RangeLAN-DS PC Card	■ **HEX:** 65 6e 74 65 72 ■ **ASCII:** not available.

WEP Authentication

Select **Open** or **Shared** from the pop-up menu, depending on what your wireless clients use. The default setting is Shared, which is compatible with the Skyline and Apple AirPort clients. Note that some brands of wireless client cards are set to use Open Authentication only.

Using Air Port and WEP

AirPort clients use a five character ASCII password to generate a WEP Key. The Skyline Wireless Broadband Gateway requires that a hexadecimal WEP key be used. If you already have an ASCII password in use on your AirPort wireless network, you can convert it to a hexadecimal key for the Skyline Wireless Broadband Gateway. If not, you can enter an ASCII version of the hex key you choose for the Skyline Wireless Broadband Gateway into the AirPort client password field. Use the chart on page 60 to convert ASCII to Hex.

ASCII Character to hexadecimal key conversion

Character	Hex Key	Character	Hex Key	Character	Hex Key
A	41	X	58	u	75
B	42	Y	59	v	76
C	43	Z	5a	w	77
D	44	a	61	x	78
E	45	b	62	y	79
F	46	c	63	z	7a
G	47	d	64	0	30
H	48	e	65	1	31
I	49	f	66	2	32
J	4a	g	67	3	33
K	4b	h	68	4	34
L	4c	i	69	5	35
M	4d	j	6a	6	36
N	4e	k	6b	7	37
O	4f	l	6c	8	38
P	50	m	6d	9	39
Q	51	n	6e		
R	52	o	6f		
S	53	p	70		
T	54	q	71		
U	55	r	72		
V	56	s	73		
W	57	t	74		

Using AOL

To access AOL (America On Line) through the Skyline Wireless Broadband Gateway, the AOL software must be configured to use TCP/IP network access, rather than a dial-up connection.

1. Start AOL software. Ensure that it is Version 2.5, 3.0 or later. This procedure will not work with earlier versions.
2. Click the Setup button.
3. Select Create Location, and change the location name from New Locality to Skyline Wireless Broadband Gateway.
4. Click Edit Location. Select TCP/IP for the Network field. (Leave the Phone Number blank.)
5. Click Save, then OK. Configuration is now complete.
6. Before clicking Sign On, always ensure that you are using the Skyline Wireless Broadband Gateway location.

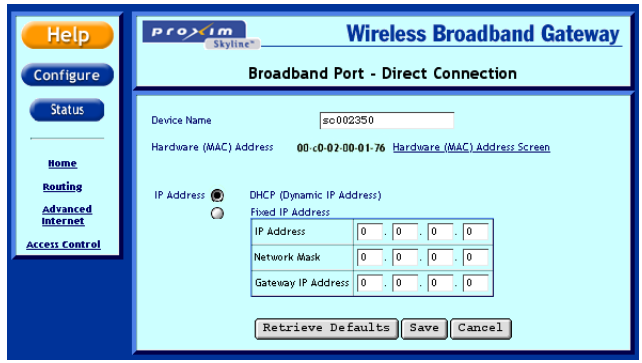
If you want to connect to your AOL account using your Skyline Wireless Broadband Gateway cable/DSL connection, simply open your web browser and log on to the AOL web site.

@Home configuration

@HOME uses a **host name**, also referred to as a **client ID**, to obtain a DHCP served IP Address. If you are using a fixed IP Address with your @HOME cable modem and do not know the host name, then you can ignore this section and set up the Skyline Wireless Broadband Gateway with the assigned static IP Address from @HOME.

If you are using DHCP with the @HOME cable modem, then you must enter the host name into the **Device Name** field on the **Broadband Port - Direct Connection** screen of the Skyline Wireless Broadband Gateway's web configuration utility.

1. Click the **Configure** button in the Skyline Wireless Broadband Gateway web utility.
2. Click **Direct Connection**, and then click the **Configure** button.
3. The **Broadband Port - Direct Connection** screen will appear. This screen will contain the **Device Name** and **Hardware (MAC) Address** information you need to configure the Skyline Wireless Broadband Gateway for use with your cable modem. The device name appears as **SC002350** in the **Device Name** field below:



4. Enter the **host name** or **client ID** from @Home into the **Device Name** field.
5. Save your changes and finish the configuration.

Media One configuration

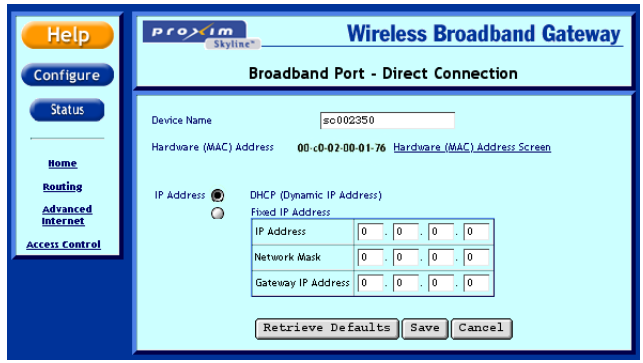
Media One (as well as some other cable companies) hard code the MAC address for the Ethernet card that you are using to connect to the cable modem at the time they install the service.

For the Internet connection to work after you install the Skyline Wireless Broadband Gateway, one of two things must happen:

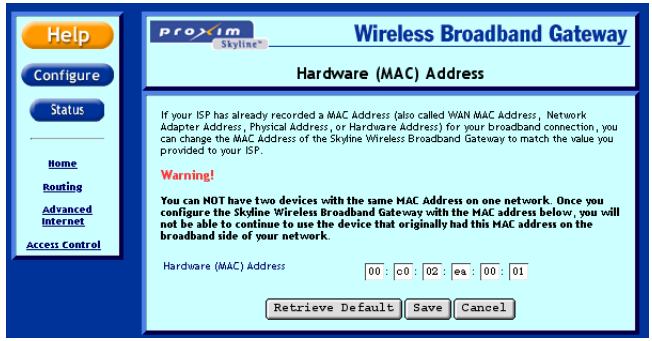
- the cable modem provider must change the hard coded MAC address to the broadband port MAC address for the Skyline Wireless Broadband Gateway
- you must change the MAC address used by the Skyline Wireless Broadband Gateway to match the one originally used by the Ethernet card the cable company installed

It is a good idea to check with your cable company to be sure before changing the Skyline Wireless Broadband Gateway's address, but if you do need to change the MAC address on the gateway, follow these steps:

1. Click the **Configure** button in the Skyline Wireless Broadband Gateway web utility.
2. Click **Direct Connection**, and then click the **Configure** button.
3. The **Broadband Port - Direct Connection** screen will appear.



4. Click on the **Hardware (MAC) Address Screen** link. The Hardware (MAC) Address screen will appear.



5. Change the **Hardware MAC Address** to the same address as the Ethernet card originally connected to the cable modem.

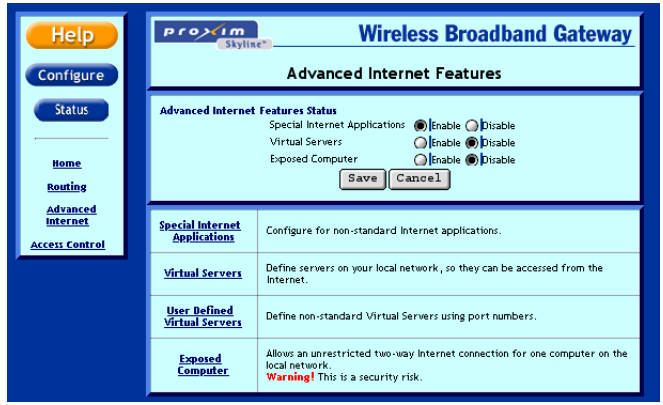
Note: You can get the Ethernet card's MAC address by running winipcfg on a Windows system or selecting Get Info from the TCP/IP control panel on a Macintosh system.

6. Save your changes and finish the configuration.

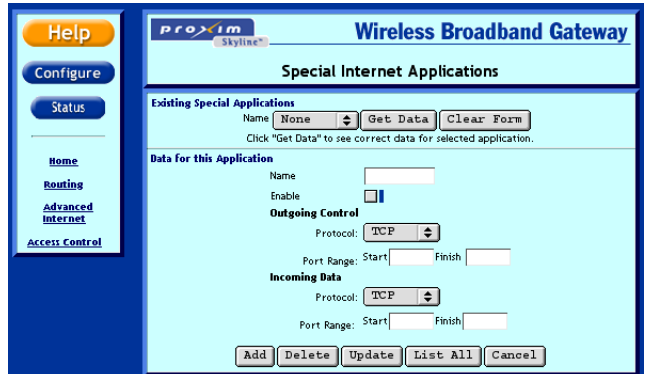
Quick Time 4.0 video streaming setup

To allow Apple's QuickTime 4 software to work with the Skyline Wireless Broadband Gateway, you must use the Special Internet Applications screen.

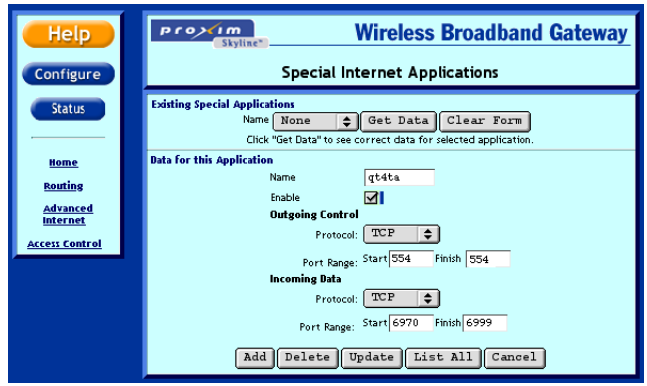
1. Access the **Advanced Internet Features** screen from the menu at the left of any web configuration screen.
2. Click the **Special Internet Applications Enable** button.



3. Click the **Special Internet Applications** link to access the Special Internet Applications screen.

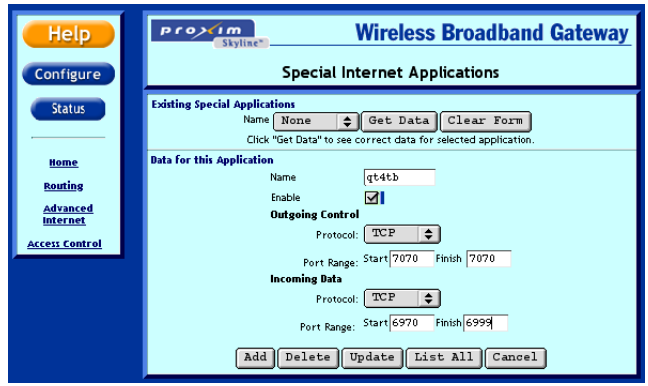


4. Enter the name **qt4a** in the **Name** field. Set the gateway to allow TCP **Outgoing Control** on port **554** and allows **UDP incoming Data** on ports **6970** through **6999** as shown below:



5. Click the **Add** button.

6. Create a second application with the name **qt4b** and set it up so that the gateway allows **TCP Outgoing Control** on port **7070** and allows **UDP incoming Data** on ports **6970** through **6999** as shown below:

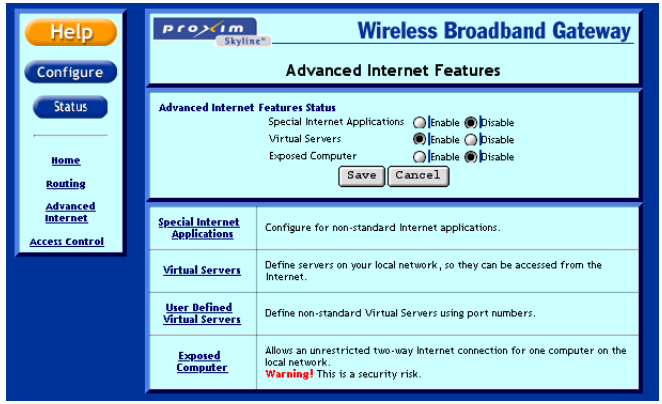


7. Click the **Add** button.

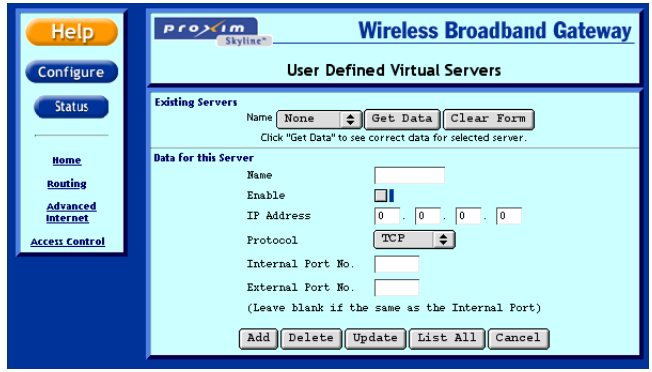
Timbuktu Pro setup

Netopia's Timbuktu Pro software allows remote control, remote observation and file exchange using TCP/IP over a local network or over the Internet. Timbuktu can be used on the local network side of the Skyline Wireless Broadband Gateway without any special settings required. If a device on the Internet wants to connect through the Skyline Wireless Broadband Gateway to a device on the local network, virtual server settings must be set up to allow specific Timbuktu services to be initiated from devices on the Internet.

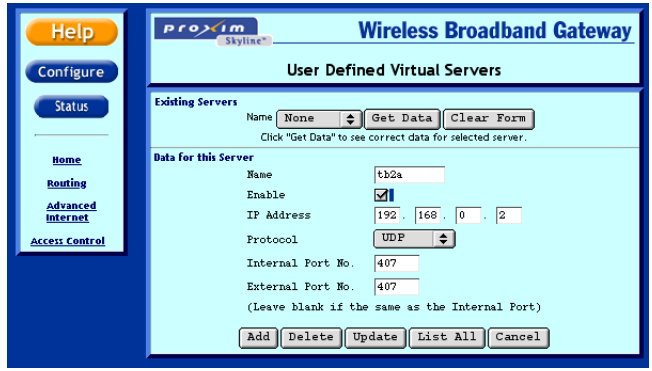
1. Access the **Advanced Internet Features** screen from the menu at the left of any web configuration screen.
2. Click the **Virtual Servers Enable** button.



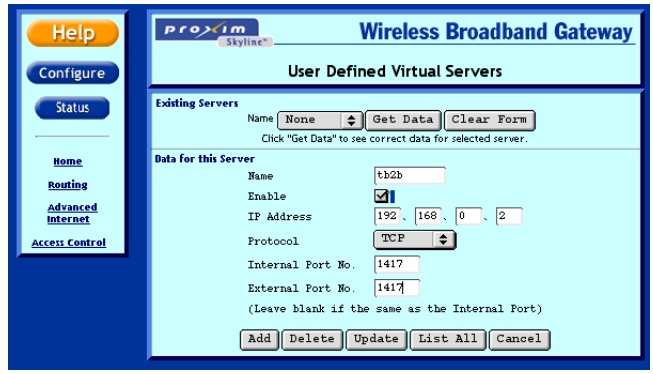
3. Click the **User Defined Virtual Servers** link to access the User Defined Virtual Servers screen.



4. Set up your server for Password Authentication and Handshaking as follows:

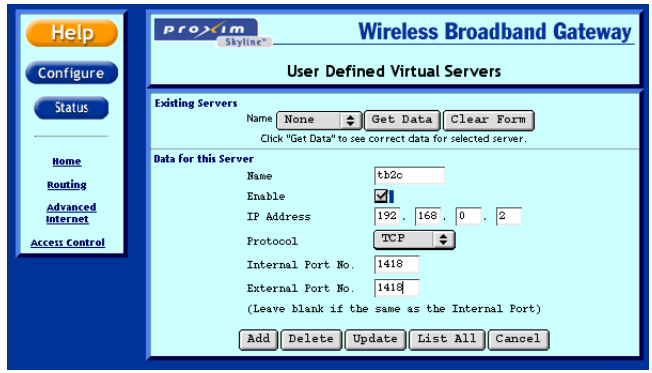


5. Click the **Add** button.
6. Set up your server for Control sessions as follows:

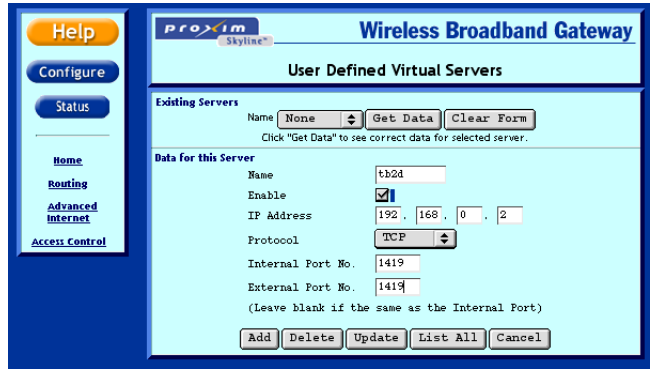


7. Click the **Add** button.

8. Set up your server for Observe sessions as follows:

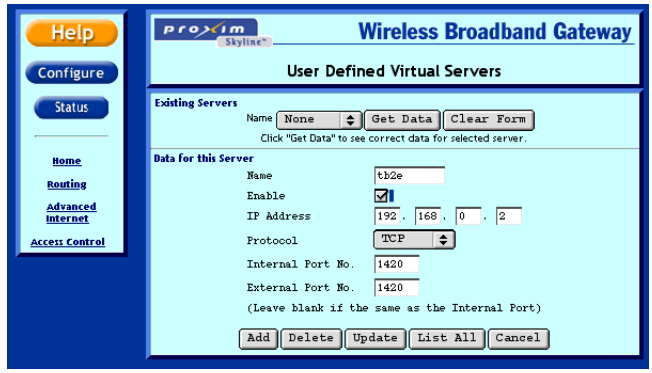


9. Click the **Add** button.
10. Set up your servers for Send Files sessions as follows:



11. Click the **Add** button.

12. Set up your servers for Exchange Files sessions as follows:



13. Click the **Add** button.

Using Timbuktu Pro with the Skyline Wireless Broadband Gateway

Timbuktu Pro uses a dynamic UDP port for initiating a request for permission to access services without a user name and password setup. This software also uses dynamic TCP ports for Chat, Notify and Intercom functions. In order to use these functions or request permission, the system on the local network must be set up as an exposed computer.

Timbuktu Pro uses a user name and a password for security and this must be set up prior to connecting through the gateway from systems on the Internet to systems on the local network. Without a user name and password defined in the Timbuktu Pro settings, the gateway settings described above will not work and the local network system will need to be setup as an exposed computer.

The Skyline Wireless Broadband Gateway can only have a maximum of 10 virtual server settings enabled total. This includes both user defined virtual servers and pre-defined virtual servers. Make sure that using the multiple server settings required for Timbuktu does not exceed this limit.

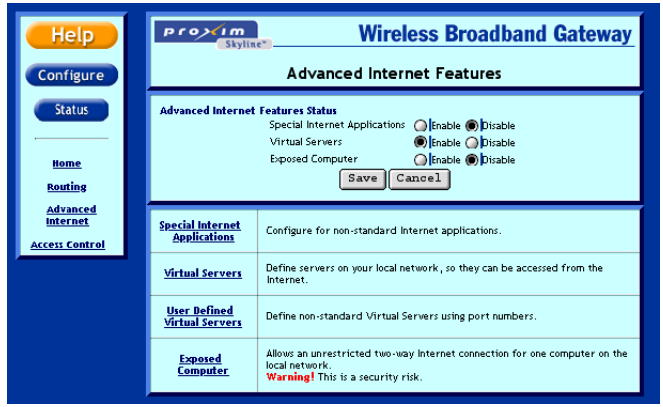
Remote configuration setup

The Skyline Wireless Broadband Gateway can be set up so that it can be configured from any computer on the Internet. To do this, you set up the Skyline Wireless Broadband Gateway's IP Address (the default address is 192.168.0.1) as a virtual web server. Once set up, the gateway can be configured by entering this IP Address into any system on the Internet and then entering the appropriate password.

Note: It is an important security consideration that a password must be entered to prevent unauthorized access to the local network.

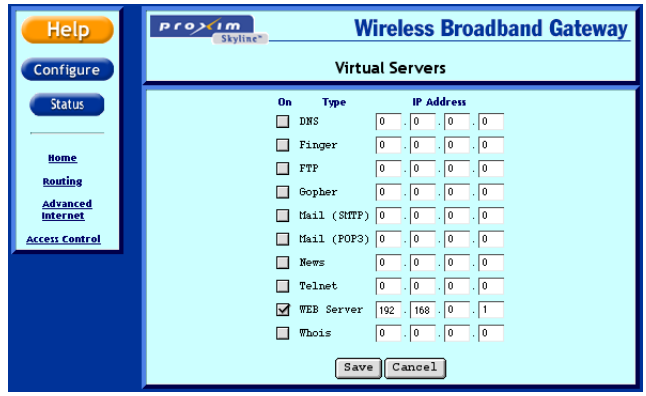
The screens below show the settings needed for remote configuration.

1. Access the **Advanced Internet Features** screen from the menu at the left of any web configuration screen.
2. Click the **Virtual Servers Enable** button.



3. Click the **Virtual Servers** link to access the Virtual Servers screen.

4. Check the **WEB Server** check box and enter the following:



5. Save your changes and finish the configuration.

Glossary

Broadband	A type of data transmission in which a single medium (such as cable) carries several channels of data at once.
Device name	Also known as DHCP client ID or network name. Sometimes provided by an ISP when using DHCP to assign addresses.
DHCP	Dynamic Host Configuration Protocol. This protocol allows a computer to be automatically assigned a single IP Address from a DHCP server.
DNS	Domain Name Server. The IP Address used to connect with an Internet Service Provider.
Firewall	A firewall determines which information passes in and out of a network. NAT can create a natural firewall by hiding a local network's IP Addresses from the Internet.
Gateway	A gateway is a network point that connects one network to another.
IEEE	The Institute of Electrical and Electronics Engineers. The IEEE sets standards for networking, including Ethernet LANs. IEEE standards ensure interoperability between systems of the same type.
IP Address	An IP Address identifies a computer on a TCP/IP network, allowing messages intended for that computer to be delivered to the correct destination.
ISP	Users log on to the Internet using an account with an ISP or Internet Service Provider. ISPs can serve IP Addresses dynamically, or assign static (fixed) IP Addresses to individual computers.

LAN	Local Area Network. A 2 - 1000 Mbps communications network that extends no more than a few hundred meters.
NAT	Network Address Translation. NAT masks a local network's group of IP Addresses from the external network, allowing a local network of computers to share a single ISP account.
PPP	Point-to-Point Protocol. PPP is a protocol for communication between computers using a serial interface, typically a personal computer connected by phone line to a server.
PPPoE	Point-to-Point Protocol over Ethernet. PPP using Ethernet to connect to an ISP.
TCP/IP	Transmission Control Protocol/Internet Protocol. Protocols used to connect hosts on the Internet.
WAN	Wide Area Network. A system of LANs, connected together.

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