Trademarks

Windows 95/98/Me and Windows NT/2000/XP are registered trademarks of Microsoft Corporation. All other brands and product names are trademarks of their respective companies.

Copyright

No part of this publication may be reproduced in any form or by any means or used to make any derivative (such as translation, transformation or adaptation) without the express written consent of the manufacturer as stipulated by the United States Copyright Act of 1976.

FCC Compliance Notice: Radio Frequency Notice

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.
2. This device must accept any interference received, including interference may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful

interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1). Reorient or relocate the receiving antenna, (2). Increase the separation between the equipment and receiver, (3). Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, (4). Consult the dealer or an experienced radio/TV technician for help.

Important Note:

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Part No. ZD01N9225AHFWP

Table of Contents

1. INTRODUCTION 1

PRODUCT OVERVIEW 1
MAIN BENEFITS 1
ABOUT THIS MANUAL 2
THE PACKING LIST 3
NETWORK SOFTWARE REQUIREMENTS 3
BROADBAND WIRELESS ROUTER EMBEDDED 4-PORT 10/100MBPS SWITCH 4
DSL/CABLE MODEM REQUIREMENT 6

2. HARDWARE INSTALLATION 7

OVERVIEW 7
PREPARATION 7
CONNECTING WIRELESS ROUTER TO THE DSL/CABLE MODEM (WAN) 8
CONNECTING WIRELESS ROUTER TO THE NETWORK 9
CONNECTING THE AC POWER ADAPTER 9
POWER ON SELF TEST (POST) 10
RESETTING THE WIRELESS ROUTER 10

3. GETTING STARTED 11

OVERVIEW 11
PREPARATION 12
SETTING UP THE WIRELESS ROUTER USING THE WEB BROWSER 13
CONFIGURING WINDOWS 95/98/ME OR WINDOWS NT/2000 (DHCP-CAPABLE) COMPUTERS 19

CONFIGURING BROADBAND DSL/CABLE WIRELESS ROUTER IN PRE-EXISTING IP NETWORKS 23
CONFIGURING NON-DHCP COMPUTERS 28
PASSWORD SETTING 30
SETTING DATE AND TIME 31
MONITOR STATUS 32
NETWORK ACCESS MONITOR 33
TOOLS 34
LOADING THE DEFAULT VALUES 37

4. ADVANCED CONFIGURATION 39

OVERVIEW 39
PREPARATION: CONNECTING TO THE BROADBAND DSL/CABLE WIRELESS ROUTER 40
DHCP SERVICE 41
DMZ HOST SETUP 47
ROUTING TABLE 50
LOCAL SERVER 53
DDNS (DYNAMIC DNS) 55

5.WIRELESS CONFIGURATION 57

OVERVIEW 57
WIRELESS CONCEPT 58
WIRELESS BASIC CONFIGURATION 60
WIRELESS ADVANCED CONFIGURATION 61
WEP 62

6.PRINT SERVER CONFIGURATION 65

PREPARATION 65
WIN 95/98/ME INSTALLATION PROCEDURE 67
WINDOWS NT LPR PORT PRINTING INSTALLATION 70

WINDOWS 2000 STANDARD TCP/IP PORT PRINTING INSTALLATION 73

7.FIREWALL CONFIGURATION 78

OVERVIEW 78
BASIC SETTING 79
LAN TO WAN ACCESS RULE 82
WAN TO LAN ACCESS RULE 84
URL BLOCKING 86
E-MAIL ALERTS 88
EVENT LOG 90

8. UPGRADING THE BROADBAND DSL/CABLE WIRELESS ROUTER 92

OVERVIEW 92
UPGRADING THE ROUTER IN WINDOWS NT/2000 (USING TCP/IP) 93
UPGRADING THE ROUTER IN WINDOWS 95/98/ME (USING TCP/IP) 94
UPGRADING THE ROUTER ON UNIX (USING TCP/IP) 96

9. TROUBLESHOOTING 97

SOLUTION 97

APPENDIX 100

LOADING THE DEFAULT VALUES 100

1. Introduction

Product Overview

Congratulations on your purchase of this Broadband DSL/Cable Wireless Router. During the design process, we have given much thought to making this device as convenient to use as possible. The end result is the Broadband DSL/Cable Wireless Router that can be set up in minutes, allowing network users to access the Internet via either the high-speed DSL or Cable connection.

Main Benefits

- Cost-effective solution using high-speed DSL or Cable connection.
- Mobility.
- Ideal for the small office or SOHO users.
- Internet access without delay.
- Have the system up and running in minutes.
- Saves time and money.
- Greater security.
- Multiple functions.

About This Manual

The instructions in this book describe how to connect and configure the Broadband DSL/Cable Wireless Router to a network and set up an Internet connection. The manual has been written for network administrators and experienced users and makes some assumptions about the readers. If you want to install the Broadband DSL/Cable Wireless Router on your network you should be familiar with:

- ☐ Microsoft Windows 95/98/Me or Windows NT/2000/XP
- ☐ Any TCP/IP-enabled systems like Mac OS and UNIX
- ☐ Basic functions in any Telnet program
- ☐ TCP/IP and related issues

This manual details procedures for Windows 95/98/Me or Windows NT/2000/XP operating systems. For other operating systems, please refer to your operating system documentation for networking and other information.

The Packing List

The following items should be included in the Broadband DSL/Cable Wireless Router package:

- ☐ One Broadband DSL/Cable Wireless Router unit
- ☐ One AC power adapter
- ☐ One User's Manual (including quick guide)

Network Software Requirements

The Broadband DSL/Cable Wireless Router requires one of the following types of software:

- ☐ Windows 95/98/Me or Windows NT/2000/XP
- ☐ Any TCP/IP-enabled systems like Mac OS and UNIX

Broadband Wireless Router Embedded 4-port 10/100Mbps Switch

The Broadband DSL/Cable Wireless Router with embedded 4-port 10/100Mbps Switch features auto-negotiation switch ports and provides the flexibility to fit into your operational space and network environment.

This device is built with plug & play, auto-negotiation supports all ports, half & full-duplex multi-selection, and a store and forward transmission scheme.

The Broadband DSL/Cable Wireless Router requires the following network hardware:

- ☐ UTP cable (Cat.5 Twisted-pair), 10Base-T or 100Base-TX Fast Ethernet.

Note: Prepare twisted-pair cables with RJ-45 plugs. Use Cat.5 cable for all connections. Make sure the length of each cable does not exceed 328 feet (approximately 100 meters).

LED Indicators

LED	State	Indication
Power	On (Green)	The Broadband DSL/Cable Wireless Router's power is on.
	Off	The Broadband DSL/Cable Wireless Router's power is off.
Status	On (Red)	When power is first switched on, the Status indicator will flash five times.
	Blinking (Red)	Data is being transmitted and received between WAN to LAN.
WAN	On (Orange)	The DSL/Cable modem's cable is linked with WAN port.
	Blinking (Orange)	Data is being transmitted and received via the WAN port.
W-LAN	Blinking (Orange)	Data is being transmitted and received via the W-LAN port.
LAN	On (Green)	Port has a valid network connection at 100Mbps.
	On (Orange)	Port has a valid network connection at 10Mbps.
	Off	Port has not established a network connection.
Activity	Blinking (Green)	Data is being transmitted and received at 100Mbps.
	Blinking (Orange)	Data is being transmitted and received at 10Mbps
Printer	Blinking (Green)	When printing, it flashes.

DSL/Cable Modem Requirement

The Broadband DSL/Cable Wireless Router requires one of the following external modem(s) or device(s):

- ☐ One external DSL modem with an RJ-45 (LAN) interface
- ☐ One external Cable modem with an RJ-45 (LAN) interface

2. Hardware Installation

Overview

This chapter details the step-by-step procedure required for correct installation of the Broadband DSL/Cable Wireless Router hardware. Topics discussed in this chapter include connecting and disconnecting the Broadband DSL/Cable Wireless Router to and from the modem, the network, and the power unit.

Preparation

The following items are needed in order to install the Broadband DSL/Cable Wireless Router unit:

- ☐ The Broadband DSL/Cable Wireless Router unit
- ☐ One AC power adapter
- ☐ UTP cable (Cat.5 Twisted-pair)
- ☐ One DSL/Cable modem with RJ-45 LAN interface

Connecting Wireless Router to the DSL/Cable Modem (WAN)

1. Turn off the modem's power.

2. Connect one end of the UTP cable to the Broadband DSL/Cable Wireless Router's WAN connector at the rear panel of the device.

3. Connect the other end of the UTP cable to the modem's UTP (RJ-45) port.

4. The connection is complete.

Note: We recommend you connect a single modem first, and then add additional modems as needed.

Connecting Wireless Router to the Network

1. Connect one end of the UTP cable to the Broadband DSL/Cable Wireless Router.

2. Connect the other end of the UTP cable to any network computer.

3. The connection is complete.

Connecting the AC Power Adapter

1. Connect the power adapter to the Broadband DSL/Cable Wireless Router's AC power adapter jack.

2. Plug the AC power adapter into a power outlet.

3. Turn the modem's power on.

4. The connection is complete.

Note: DO NOT use any AC power adapter other than the one shipped with the Broadband DSL/Cable Wireless Router; using an incorrect AC power adapter may damage the Broadband DSL/Cable Wireless Router.

Power On Self Test (POST)

The Broadband DSL/Cable Wireless Router automatically performs a **Power On Self Test** (**POST**) when powered on. Successful powering up of the Broadband DSL/Cable Wireless Router is indicated by **five** flashes of the red LED marked **Status** on the topside of the Broadband DSL/Cable Wireless Router. If the Red LED does not flash **five** times, please contact your dealer for repair or replacement.

Resetting the Wireless Router

The Broadband DSL/Cable Wireless Router has a reset button in the rear panel of the device. In some circumstances you may need to reset the Broadband DSL/Cable Wireless Router. Please follow the instructions below to reset the Broadband DSL/Cable Wireless Router.

1. With the Broadband DSL/Cable Wireless Router powered on, press the reset button once. The red LED light that is marked as **Status** will then flash once.

2. Reset the DSL/Cable modem.

3. Getting Started

Overview

Configuring the Broadband DSL/Cable Wireless Router for the first time can be done using the following method:

To configure the Broadband DSL/Cable Wireless Router uses the web browser.

Note: The configuration procedures described in this chapter are for basic setup purposes only.

Preparation

1. In general, using a Broadband DSL/Cable Wireless Router for Internet access requires at least the DSL or Cable service. We assume you have obtained DSL/Cable service from your local telephone company or Internet Service Provider (ISP).

   Please have your connection information ready, including:

   a. The IP address provided by the ISP for the connection.
   b. The Subnet mask provided by the ISP for the connection.
   c. The Gateway IP Address.
   d. Domain Name System (DNS) server's IP address.

Setting up the Wireless Router using the Web browser

Overview

We've designed an easy-to-use web-based configuration interface in the device. Users can set up the device by using the web browser. Furthermore, the enhanced HTTP support available in the device includes a quick and easy management tool for performing the configuration tasks, including all basic and advanced setup, on a TCP/IP network.

To access the device from your web browser you will need a web browser supporting frame structure within an HTML page. Netscape or Microsoft Internet Explorer version 3.0 or later is recommended.

Preparation

The Broadband DSL/Cable Wireless Router comes with a pre-set default IP address, ***192.168.1.1***. It also features a DHCP server. To configure it over your TCP/IP network, please follow the directions listed below.

Note: If you're installing the Broadband DSL/Cable Wireless Router in a pre-existing IP network, please see the **Configuring Broadband DSL/Cable Wireless Router in Pre-Existing IP Networks** section later in this chapter.

1. Please ensure your computer (Windows 95/98/Me or Windows NT/2000) has TCP/IP protocol installed. If not, please install the protocol first and then proceed to Step 2.

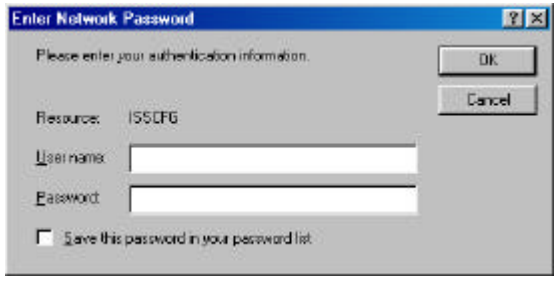
2. In your Network Properties dialog box, select the **Obtain IP address automatically** option. When done, restart the computer.

3. After the computer restarts, open your browser.

4. Type the default IP address (192.168.1.1) in the **Location** box and press **Enter**. The device's Home Page will then appear.

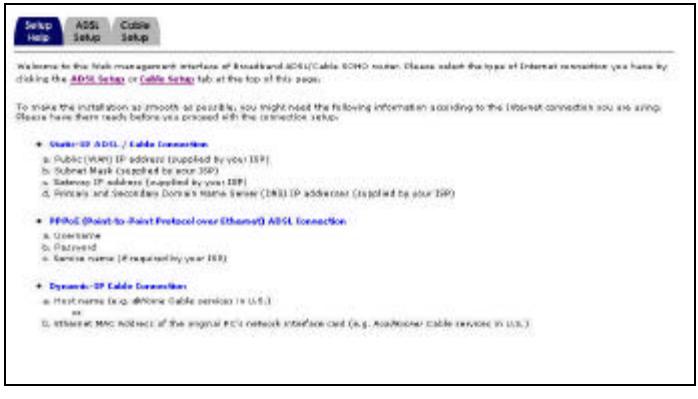
5. It then displays an authentication dialog for the Broadband DSL/Cable Wireless Router. Type the

default administration user name, **admin**, and type the default configuration password **0000** and click **OK** button as shown in following figure.



6. It then enters the Broadband DSL/Cable Wireless Router main setup menu as shown in the following figure.

7. Click the **Connection Setup** in the left-hand column, and the following box will appear.



8. Choose either DSL or Cable modem as your connection method.

9. Complete the following settings: (The example shown is for DSL fixed IP)

   Choose "**DSL setup**" page, and the following image will appear.

a. In "Use PPPoE DSL Service" choose "**No**".
b. Choose "**Specify an IP Address**".
c. In "**IP Address Assigned by Your ISP**" type the IP address provided by your ISP.
d. In "**Subnet Mask Assigned by Your ISP**" type the Subnet Mask IP address provided by your ISP.
e. In "**Gateway Address Assigned by Your ISP**" type the Default Gateway IP address provided by your ISP.
f. Set **DNS IP** as provided by your ISP.

10. Click **Save**.

11. Click **Apply**.

12. The configuration is now complete.

13. To configure the TCP/IP settings on each client computer, please see the **Configuring Windows 95/98/Me or Windows NT/2000 (DHCP-capable)**

Computers or the **Configuring Non-DHCP Computers** section.

Configuring Windows 95/98/Me or Windows NT/2000 (DHCP-capable) Computers

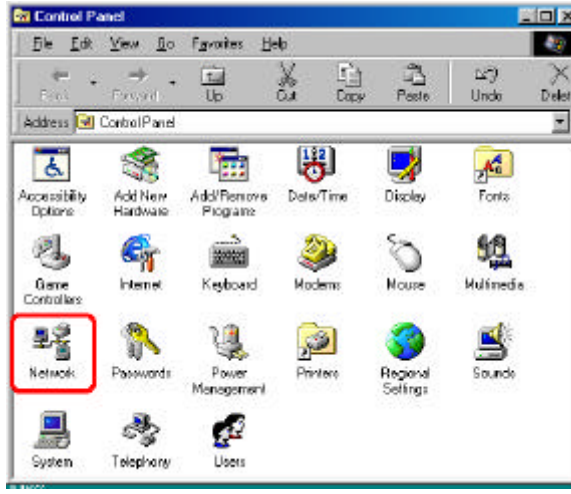
Each PC that supports DHCP and is located on your LAN must be configured so it can communicate with the Broadband DSL/Cable Wireless Router. Follow these steps to configure the reset of the PCs on your LAN.

(If you want to manually specify an IP address and related settings for the computers, please see the **Selecting an IP Address** section later in this chapter).

Note: The steps described in this section are for TCP/IP-capable operating systems like Windows 95/98/Me or Windows NT/2000. For non-TCP/IP systems like DOS/Windows 3.x, please see the **Configuring Non-DHCP Computers** section later in this chapter.

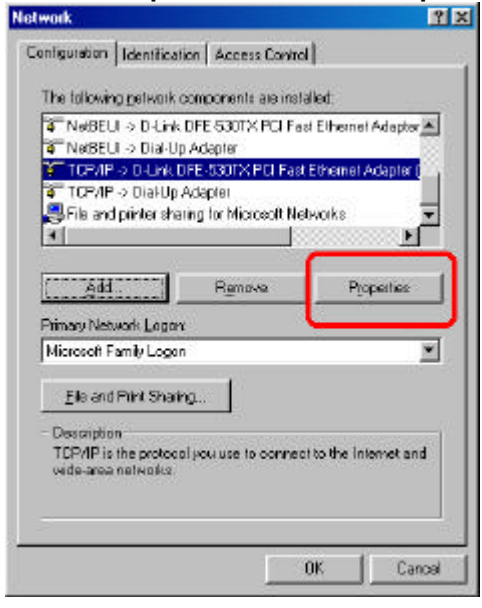
1. From your Windows 95/98/Me or Windows NT/2000 desktop, click **Start**, point to **Settings**, and select **Control Panel**.

2. Double-click the **Network** icon.

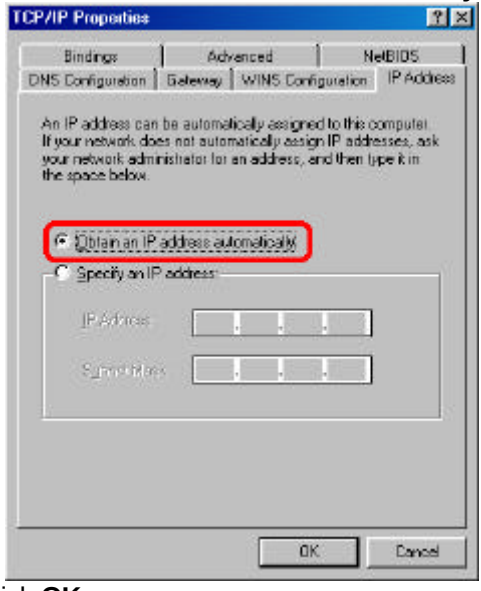


3. Check to see if the ***TCP/IP protocol*** is installed. If not, please add this protocol before proceeding to the next step.

4. Select **TCP/IP protocol** and click **Properties**.



5. Click **Obtain an IP address automatically**.



6. Click **OK**.

7. Click **OK**.

8. **Restart your computer**.

You are now ready to use your Web browser or other Internet applications.

Configuring Broadband DSL/Cable Wireless Router in Pre-existing IP Networks

The Broadband DSL/Cable Wireless Router is easily added to an existing network that already has IP addresses assigned. The following assumes that you have configured TCP/IP for your network (and on each computer) and are now adding the Broadband DSL/Cable Wireless Router for Internet access. We also assume that you will not be using the Broadband DSL/Cable Wireless Router DHCP server to dynamically allocate and assign addresses (since you already assigned IP addresses to each computer).

The following steps use an example pre-existing network of computers with IP addresses 204.1.1.1 through 204.1.1.154 (IP addresses of Class C, without any IP sub-networks). Please follow the steps listed below to use your existing IP addresses with the Broadband DSL/Cable Wireless Router.

1. From your range of available IP addresses, select a single IP address to be used as the Broadband DSL/Cable Wireless Router's address (such as 204.1.1.100).

2. Select one computer (we strongly recommend Windows 95/98/Me or Windows NT/2000) to configure the Broadband DSL/Cable Wireless Router.

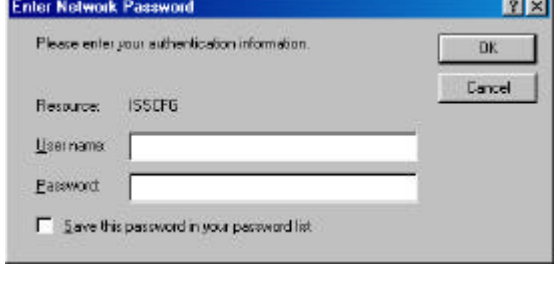
Open the **Network properties dialog** box of the computer, and write down its current IP settings, including IP address and DNS Server IP address (provided by your ISP).

Next, check (tick) the **Specify an IP Address** option in the **TCP/IP properties dialog** box and enter 192.168.1.2 for the IP address and 255.255.255.0 for the subnet mask. Finally, enter 192.168.1.1 for the gateway IP address. You must then **restart** your computer to update the new TCP/IP settings.

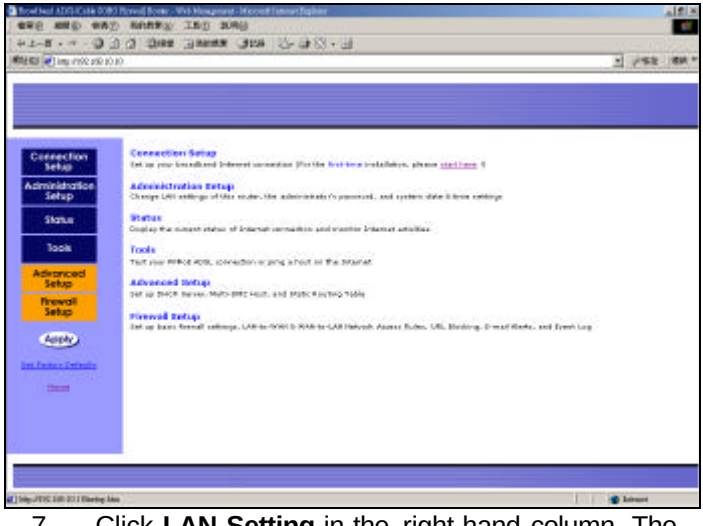
3. On the same computer, open your web browser.

4. Type the default IP address (192.168.1.1) in the **Location** box and press **Enter**. The device's Home Page will then appear.

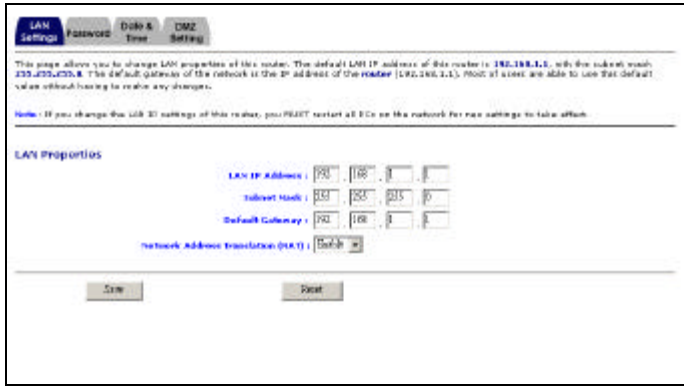
5. It then shows an authentication dialog for the Broadband DSL/Cable Wireless Router. Type the default administration user name, **admin**, and type the default configuration password **0000. Then** click **OK,** as shown in following figure.



6. Click **Administrator Setup** in the left-hand column. It then enters the sub-menu.



7. Click **LAN Setting** in the right-hand column. The LAN TCP/IP configuration page appears.



8. In the **TCP/IP Settings**, enter the IP address you selected in Step 1 (such as 204.1.1.100) in the **LAN IP Address** field.

9. Enter the subnet mask 255.255.255.0 in the **Subnet Mask** field.

10. Enter the IP address you selected in Step 1 (such as 204.1.1.100) in the **Default Gateway** field.

11. Click the **Save** button.

12. Click **Apply** in the left-hand column for the new settings to take effect.

13. Close your browser.

14. Now open the **Network properties dialog** box of the computer again and select **TCP/IP protocol**.

15. Change the computer's IP address, subnet mask, and DNS Server IP address (provided by your ISP) back to their original settings.

16. Next, enter the IP address of the Broadband DSL/Cable Wireless Router as the computer **gateway IP address** (see Step 1).

17. Finally, **restart** the computer for new TCP/IP settings to take effect.

18. Please refer to settings given in this chapter to continue configuring the Broadband DSL/Cable Wireless Router.

19. Repeat Step 16 and Step 17 on each computer located on your LAN.

Once your network and the Broadband DSL/Cable Wireless Router are both successfully configured, the computers on your network should be ready to access the Internet using the Broadband DSL/Cable Wireless Router.

Configuring Non-DHCP Computers

The Broadband DSL/Cable Wireless Router can be used with computers that do not support DHCP. Follow these steps to identify and configure non-capable DHCP computers.

1. Determine if any computers on your network are not DHCP capable. An example of a non-DHCP capable computer would be a DOS/Windows 3.x computer running an older version of TCP/IP software from a third-party vendor.

2. On each non-DHCP computer, enter the following information when configuring TCP/IP:

    a. IP Address (See the **Selecting an IP Address** section).
    b. Subnet Mask (typically 255.255.255.0 for a Class C IP address).
    c. Gateway IP Address (192.168.1.1 is the default).
    d. Primary DNS Server IP Address (provided by your ISP).
    e. Secondary DNS Server IP Address (optionally provided by your ISP).
    f. Domain Name (optionally provided by your ISP).

Selecting an IP Address

If your networked computers do not support DHCP or you would like to manually specify IP addresses, you need to manually set the IP address on each computer. The Broadband DSL/Cable Wireless Router is pre-configured with an IP address of 192.168.1.1 and a subnet mask of 255.255.255.0. The Broadband DSL/Cable Wireless Router recognizes computers with IP addresses in the range of 192.168.1.1 to 192.168.1.254, with the exception of the Broadband DSL/Cable Wireless Router s default IP address, 192.168.1.1.

The following are the general guidelines for manually assigning IP addresses and related settings to the computers.

1. Assign the first computer an IP address of 192.168.1.2. Next assign a subnet mask of 255.255.255.0, a gateway IP address of 192.168.1.1, and at least (primary) one DNS server IP address that should be provided by your ISP.

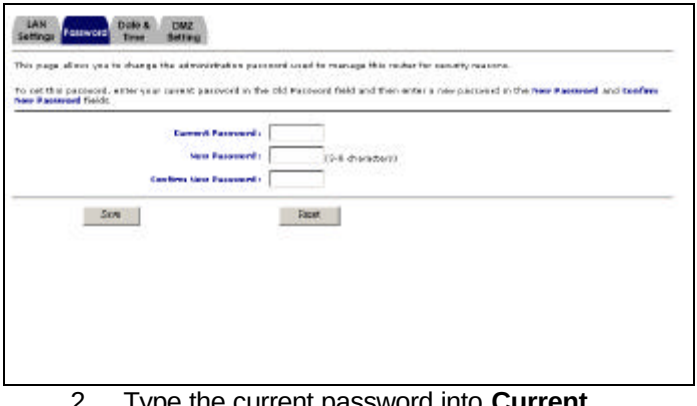
2. Assign the second computer an IP address of 192.168.1.3 and the *same* settings for the subnet mask, gateway IP address, and DNS server IP address as those in the first computer.

3. Continue assigning IP addresses and other related settings.

Password Setting

You may use a password to restrict who is able to change the Broadband DSL/Cable Wireless Router s settings. To do so, please follow the procedure below:

1. Click the **Administrator Setup** button in the left-hand column, and then choose "**Password**".



2. Type the current password into **Current Password**.

3. Type your new password into **New Password**.

4. Confirm the new password.

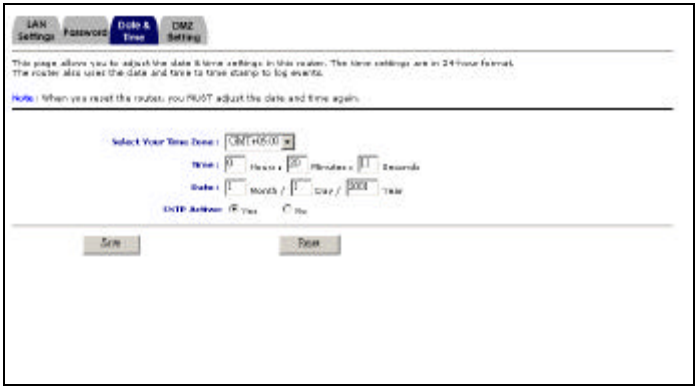
5. Click "**Save**" and then "**Apply**".

6. The password is now set.

Setting Date and Time

One function of Broadband DSL/Cable Wireless Router is that it allows you to set the initial time when you install the device. This enables the time of any hacker activity in your network to be recorded. To setup this function, follow the procedure below:

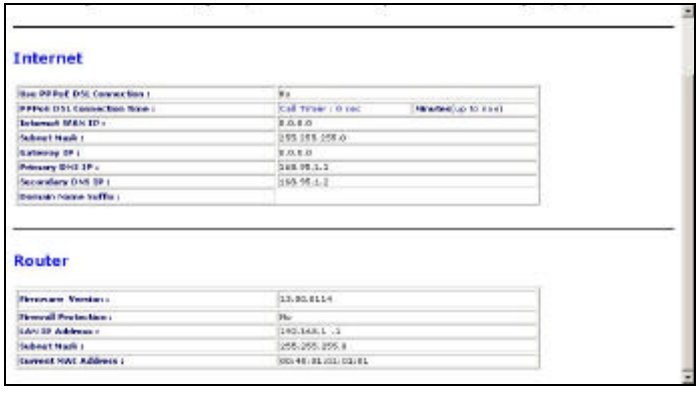
1. Click the **Administrator Setup** button in the left-hand column, and then choose "**Date & Time**".



2. Select your time zone.
3. Type "**Time**" and "**Date**".
4. Choose "SNTP Active" or not.
5. Click "**Save**" and then click "**Apply**".
6. The setup is now completed.

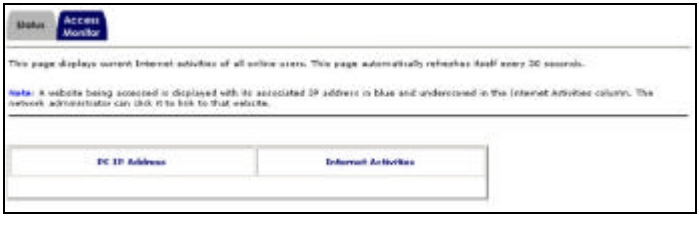
Monitor Status

You can view all the setting for the Broadband DSL/Cable Wireless Router's WAN and LAN status. Click the **Status** button in the left-hand column, and then choose **Status**". The following box will appear.



Network Access Monitor

You can use this function to monitor all the connections from LAN to WAN. Click the **Status** button in the left-hand column, and then choose "**Access Monitor**". The following box will then appear.



- PC IP Address: User's LAN IP.
- Internet Activities: User browses Public IP.

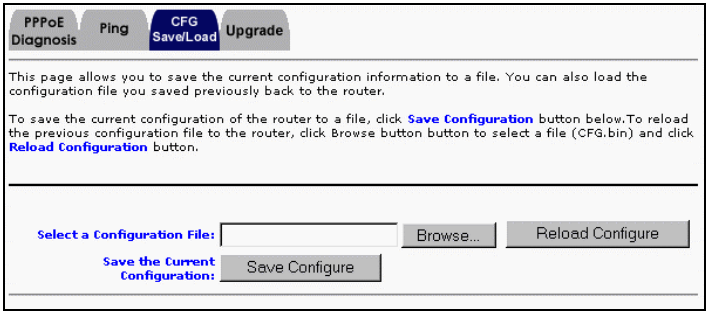
Tools

The Broadband DSL/Cable Wireless Router provides two tools.

1. **PPPoE Diagnosis**: This tool allows you to connect to an ISP and will disconnect yourself if necessary.

2. **Ping:** This tool could make sure that you could ping WAN IP or not.

3. **CFG Save/Load**:
   The Broadband DSL/Cable Wireless Router includes a function that enables the user to set the router once only, with no reset option. The function is "**Save/Load CFG Setting**".



Please follow these steps to setup Save/Load CFC Setting.

A. To "**save**" setting:
   Click the "**Save Configure**" button, it saves the current setting to a file "cfg.bin".

B. To "**restore**" setting:
   i. Click the "**Browse**" button, and select the cfg.bin file.
   ii. Then, click the "**Reload Configure**" button, to restore the setting.

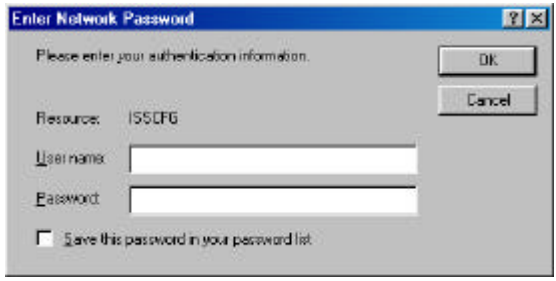
Loading the Default Values

If you make any errors while configuring the Broadband DSL/Cable Wireless Router, or if you wish to reset the Broadband DSL/Cable Wireless Router to default settings, please follow the steps below. This procedure will reset the settings to factory defaults.

1. On the desktop, open your web browser.

2. Type the **default IP address** (192.168.1.1) in the **Location** box and press **Enter**.

3. The authentication dialog for the Broadband DSL/Cable Wireless Router will then appear. Type the default administration user name, **admin**, and the default configuration password **0000** and click **OK** as shown in following figure.



4. Click the **Set Factory Defaults** button in the left-hand column.

defaults are loaded, please re-configure the Broadband DSL/Cable Wireless Router by following the steps given in the previous sections of this chapter.

Note: To load the default values by using the reset button, please see the **Appendix**.

features, including:

1. *DHCP Setup*
2. *DMZ Host Setup*
3. *Routing Table*
4. *Local Server*
5. *DDNS (Dynamic DNS)*

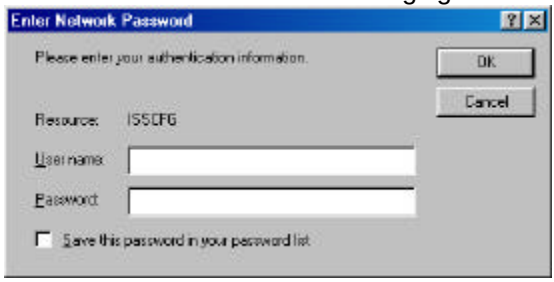
Preparation: Connecting to the Broadband DSL/Cable Wireless Router

In order to proceed with the advanced configuration of the Broadband DSL/Cable Wireless Router, you need to have completed the Broadband DSL/Cable Wireless Router basic setup detailed in Chapter 3.

1. Open the web browser in your Windows 95/98/Me or Windows NT/2000 computer.

2. Type the default IP address (192.168.1.1) in the **Location box** and press **Enter**.

3. It then shows an **authentication dialog** for the Broadband DSL/Cable Wireless Router. Type the default administration user name, **admin**, and type the default configuration password **0000**, click the **OK** button as shown in following figure.

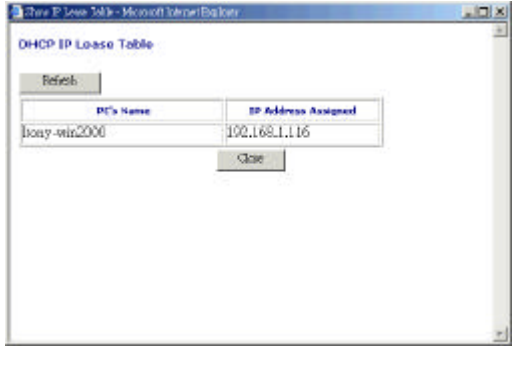


4. You then enter the Home Page of the device.

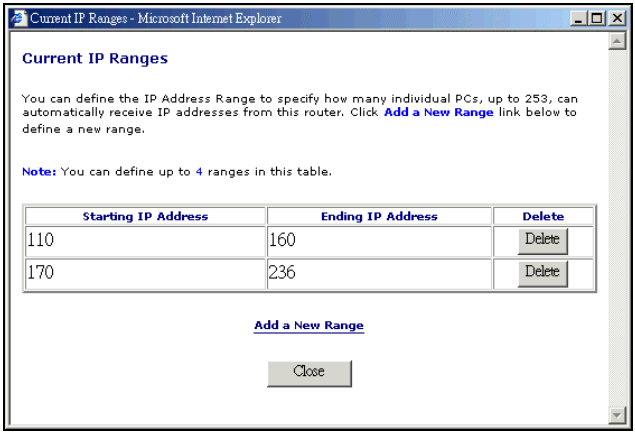
5. The preparation is now completed.

feature. When this service is disabled, the following tables and settings will be grayed out and not available for editing. **By default, the DHCP service of the Broadband DSL/Cable Wireless Router is enabled**.

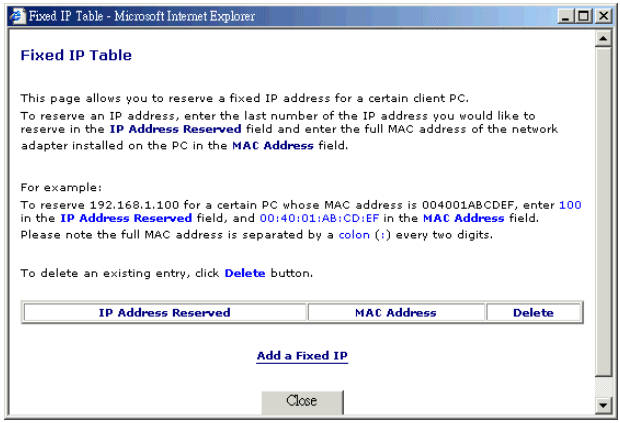
IP obtained from Broadband DSL/Cable Wireless Router.



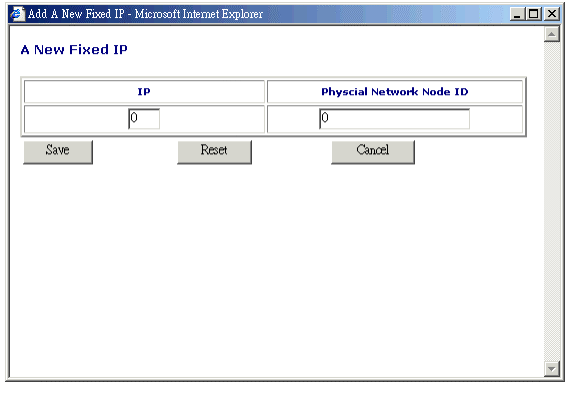
Show Current IP range: This option allows you to change the DHCP IP range.



Fixed IP Table: This option allows you to set aside the fixed IP address of a computer and its associated network interface card address. This is usually used to set aside the IP addresses for devices such as servers, mail hosts or Intranet servers that must have a fixed IP address for access purposes.



A. Click "**Add a Fixed IP**".



B. Insert the IP and MAC address.

C. Click "**Save**".

3. Click "**Save**".

4. Click "**Apply**".

5. The procedure is now completed.

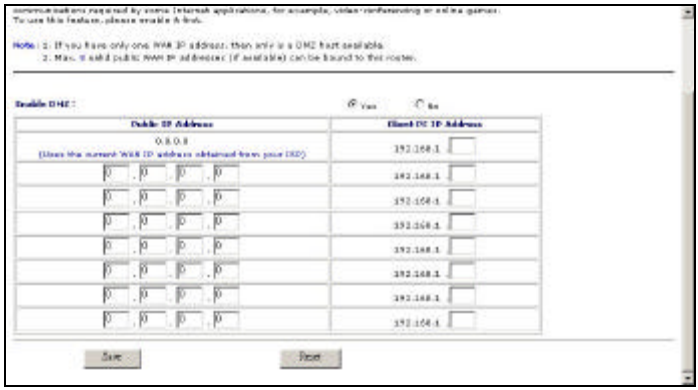
DMZ Host Setup

The DMZ Host can be accessed from the public Internet via the IP address associated with the DSL/Cable service. The current WAN IP address is displayed in the Traffic Monitoring report page as, for example, **WAN: [203.69.107.186]** (see the **Traffic Monitoring** section in this chapter).

Please follow these steps to set up the DMZ Host:

1. Click **Advanced Setup** in the left-column. The sub-menus then appear.

2. Click **DMZ Host**.



3. In the **Enable DMZ** field, choose "**Yes**". **By default, the DMZ feature of the Broadband DSL/Cable Wireless Router is enabled**.
4. In the **Public IP Address** field, type the internal WAN IP that you want. In the **Client PC IP Address** field, type the LAN IP of the computer you wish to make visible to the public Internet.

5. Click **Save** button.

6. Click **Apply** button.

7. The DMZ Host setup is now completed.

Microsoft VPN Setup

To set up this device to support Microsoft VPN (Pass-Through), please follow the instructions below:

1. Please ensure that the VPN server is running. Have the IP address of this computer ready.

2. Connect to the DMZ Firewall Router by using your browser.

3. Click **Advanced Setup** in the left-hand column.

4. Click **DMZ Host**.

5. In the **Client PC IP Address** field, type the IP address of VPN server.

6. Click the **Save** button.

7. Click the **Apply** button

Note: 1. When accessing the VPN server on your private network to Internet, the device will forward (pass through) all incoming VPN requests to the server.
2. Due to the nature of the NAT implemented, only one user at a time can access the same VPN server on the Internet through this device. This means that two private network users cannot access the same VPN server locate on the public Internet simultaneously.
3. For details on setting up a VPN client, please refer to your system's documentation.

Routing Table

This device allows users to define the internal routing table to best integrate this router into the current IP (sub) network.

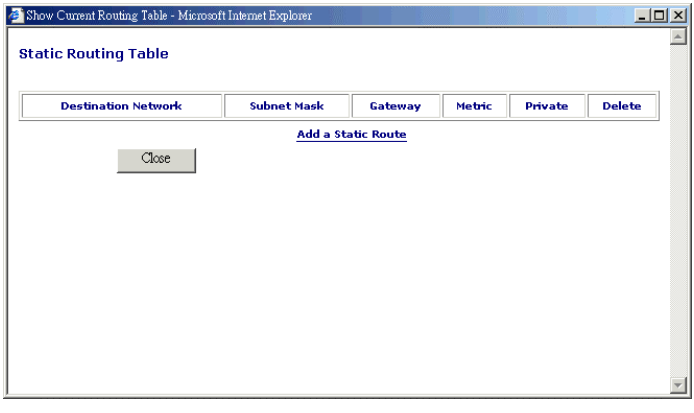
Note: Defining a new routing requires more advanced TCP/IP knowledge. Any wrong routing information may make the whole IP network *unreachable*, until it is corrected again. If you don't have this information, please ask your network administrator for help.

To define a new routing table, please follow the directions listed below:

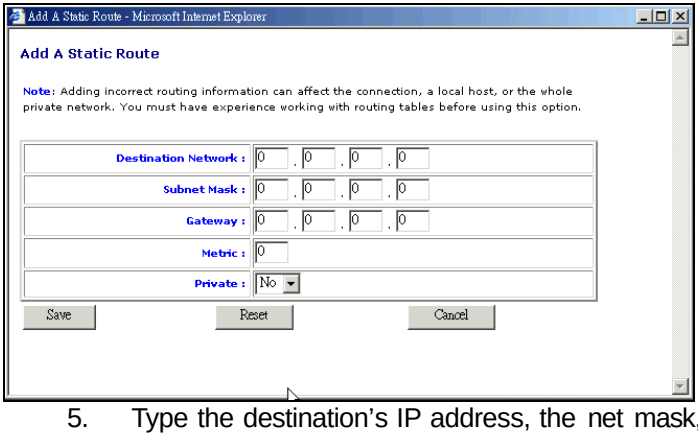
1. Click **Advanced Setup** in the left-column. The sub-menus then appear.

2. Click **Static Routing**.

3. Click "**View or add Static Routing Table**"



4. Click "**Add a Static Route**".



5. Type the destination's IP address, the net mask, the Gateway IP, and Metric.

6. Select "**Yes**" in the **Private** option, if you *do not* want the device to broadcast the routing information (RIP).

   Select "**No**", if you *do* want the device to broadcast the routing information to other routers on the network.

7. Click the **Save** button.

8. Click **Apply** in the left-hand column.

9. A new routing table has been defined.

you want.

6. Fill in the Internal Port number.
7. Click "**Save**" and then click "**Apply**".
8. The procedure is now completed.

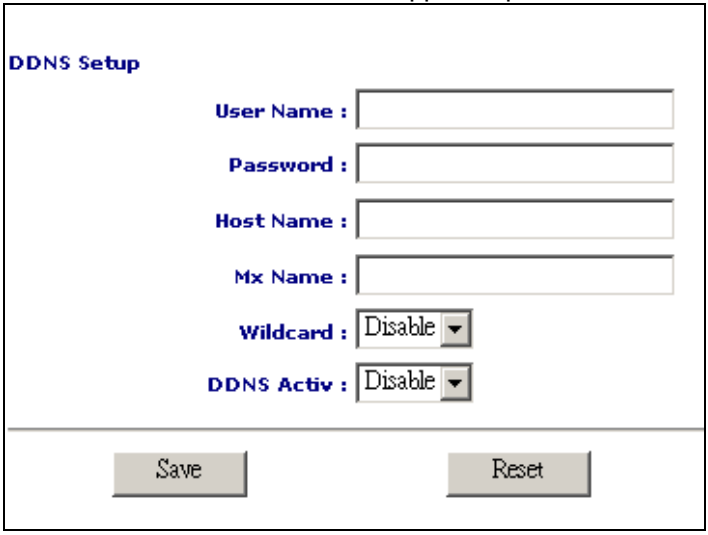
DDNS (Dynamic DNS)

The Broadband DSL/Cable DMZ Firewall Router has a special function to provide one user who only has a dynamic IP to setup a personal domain name. The function is DDNS (Dynamic Domain Name Service).

Please follow these steps to setup DDNS.

1. Click **Advanced Setup** in the left-column. It then appears the sub-menus.

2. Click **DDNS**, and then it will appear a picture as below.



3. Type username.

4. Type password.
5. Host name: It is your domain name.
6. Mx Name: It is your Mail server name.
7. Wildcard: You want to use "wildcard", or not.
8. DDNS Active: You want to use "DDNS", or not.
9. Click "Save".
10. Click "Apply".

【Note】

The Broadband DSL/Cable DMZ Firewall Router only provides to apply for DDNS to www.dyndns.org.

5.Wireless Configuration

Overview

The widespread strategic reliance on networking among competitive businesses and the meteoric growth of the Internet and online services are strong testimonies to the benefits of shared data and shared resources. With wireless LANs, users can access shared information without looking for a place to plug in, and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, service, convenience, and cost advantages over traditional wired networks.

Wireless Concept

Access Point (AP)

Access Point is a transparent media access controlled (MAC) bridge that provides Ethernet to Wireless access. With Access Point, wireless workstations can be added easily to an existing Ethernet. Access Point works with Wireless LAN Card just like Ethernet Hub works with NIC Card.

Ad-hoc

Ad-hoc is a peer-to-peer network connection mode, which like Ethernet NIC direct connection to NIC through crossover cable. During Ad-hoc mode, wireless LAN workstations connect to each other without Access Point.

Infrastructure mode

Infrastructure is a network connection mode that allows wireless LAN workstations connect with Access Point. When you setting network type to "Infrastructure", wireless workstation connect to other wireless nodes or Ethernet via Access Point.

BSS ID

A specific Ad hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSS ID.

ESS ID

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSS while served as a continuous connection to the network wireless stations and Access Points within an ESS must be configured with the same ESS ID and the same radio channel.

WEP

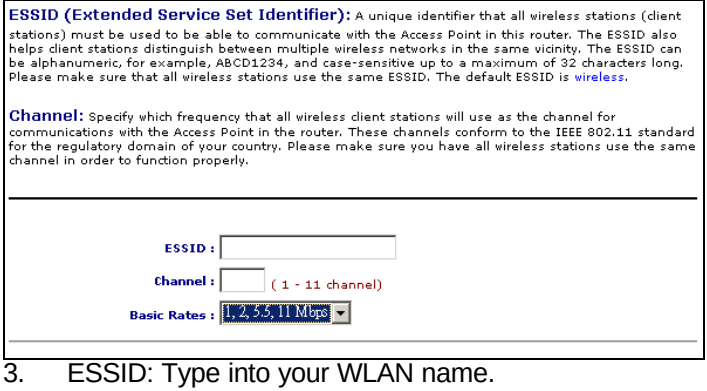
WEP is Wired Equivalent Protection. Data privacy mechanism based on a 40 bit (128 bit optional) shared key algorithm, as described in the IEEE 802.11 standard.

Wireless Basic Configuration

Please follow these steps to setup.

1. Click **Wireless Setup** in the left-column. It then appears the sub-menus.

2. Click **Wireless Settings**, and then it will appear a picture as below.



3. ESSID: Type into your WLAN name.

4. Channel: Type into your WLAN channel.

5. Basic Rates: Transmit speed.

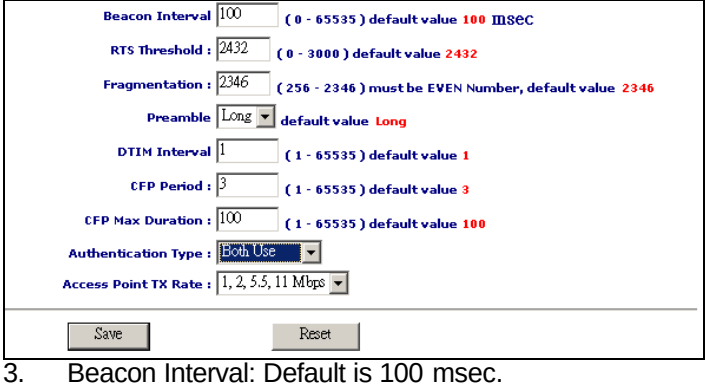
6. Done.

Wireless Advanced Configuration

Please follow these steps to setup.

1. Click **Wireless Setup** in the left-column. It then appears the sub-menus.

2. Click **Advanced Settings**, and then it will appear a picture as below.



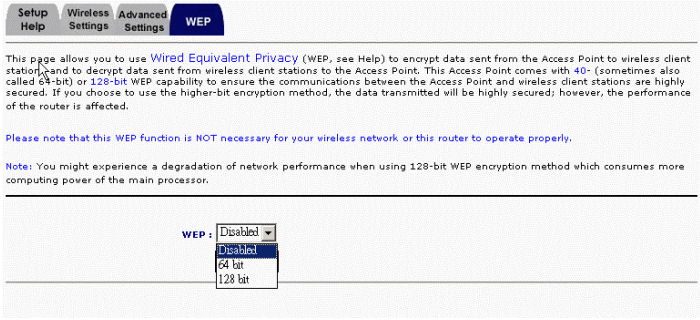
3. Beacon Interval: Default is 100 msec.
4. RTS Threshold: Packet size.
5. Fragmentation: Packet size.
6. Preamble: You could select "Long" or "Short".
7. DTIM Interval, CFP Period, and CFP Max Duration: You could use the default value.
8. Authentication Type: You could select "Open system" or "Share Key".
9. Access Point TX Rate: Transmit speed.
10. Done.

WEP

Please follow these steps to setup.

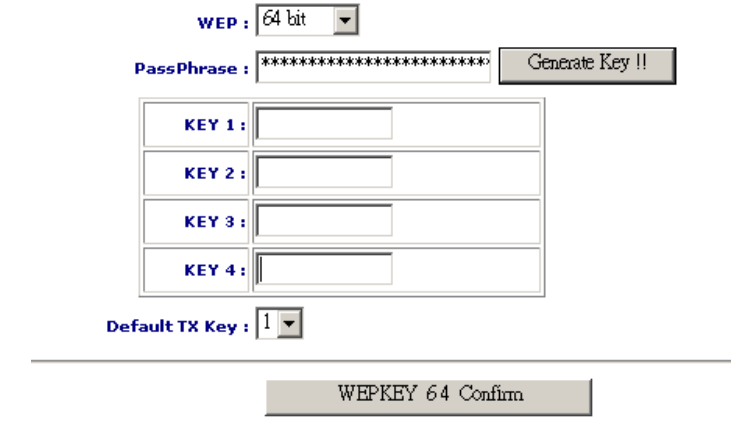
1. Click **Wireless Setup** in the left-column. It then appears the sub-menus.

2. Click **WEP**, and then it will appear a picture as below.



3. WEP: You could select "64 bits", "128 bits" or "Disable".

4. If you select "64 bits", it will appear a picture as below.

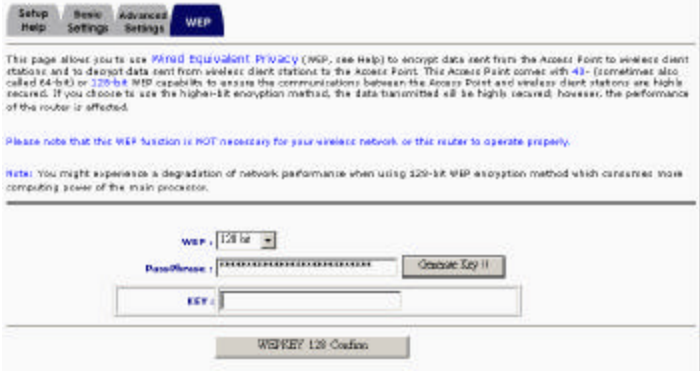


5. You could fill in the "Pass key", and select Default TX Key.

6. Click "**WEPKEY 64 Confirm**".

7. Done.

8. If you select "128 bits", it will appear a picture as below.



9. You could fill into the KEY.

10. Click "**WEPKEY 128 Confirm**"

11. Done.

6.Print Server Configuration

Preparation

The print server supports **TCP/IP** protocol under Windows 95/98/Me. Please make sure that the following steps have been completed before proceeding with installation under Windows PC.

TCP/IP

☐ The TCP/IP Protocol must be installed. For further information, please read "*TCP/IP Protocol Installation"* section in this chapter.

TCP/IP Protocol Installation

1. Click **Start**, point to **Settings** and select **Control Panel**.
2. Double click the **Network** icon.

3. If the **TCP/IP Protocol** is not already installed, click **Add**.

4. Select **Protocol** and click **Add**.

5. Select **Microsoft** from the Manufacturers list.

6. Select **TCP/IP Protocol** from the Network Protocols list.

7. Specify an IP address, Subnet Mask, and Gateway address or specific "Obtain IP address automatically", if a DHCP server is available on the LAN.

8. **Restart the computer.**

9. Done.

Note: Using TCP/IP protocol to access the print server requires well-configured TCP/IP settings. If you are not familiar with these settings, please consult your network administrator for details or ask for help.

Win 95/98/Me Installation Procedure

Please perform the steps as follows to ensure a smooth installation:

1. Run **Setup** from the print server's NetWare, Win 95/98/Me/NT/2000 Setup diskette

2. The **Zero One Print Monitor for Windows 95/98/Me Setup** will then appear. Click **Next**.

3. A message reading, "Setup is complete. You may add the Zero One Print Port by using the "PSAdmin" will appear. Click **OK**.

4. Click **Start**, point to **Settings**, and select **Printers**.

5. Double-click the **Add Printer** icon.

6. Select **Local Printer** and click **Next**.

7. Select the appropriate printer manufacturer and printer type and click **Next**.

8. Select **LPT1** and click **Next**.

9. Type in the **Printer Name** and click **Next**.

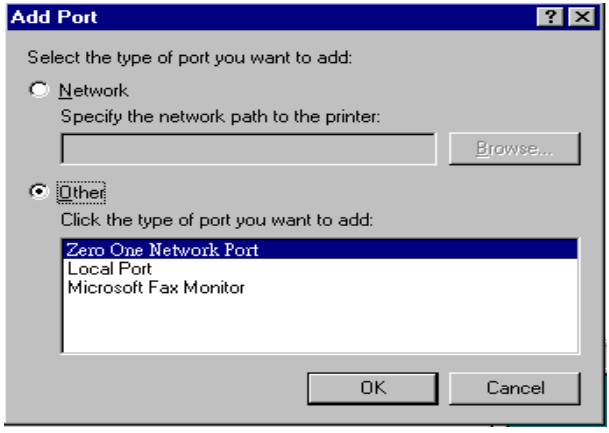
10. A message reading, "After your printer is installed, Windows can print a test page so you can confirm that the printer is set up properly." Select **No** and click **Finish**.

11. Double-click the newly created **Printer Name** icon.

12. Select **Printer** and **Properties**.

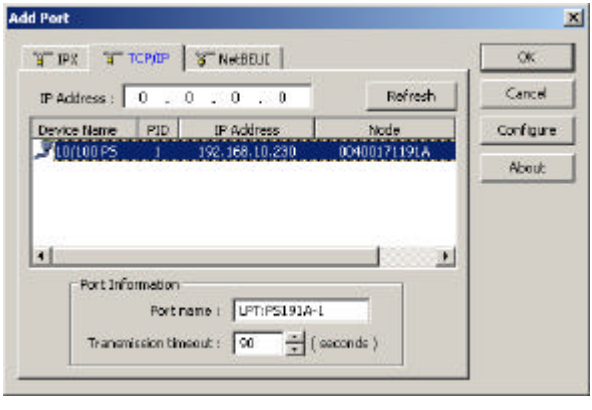
13. Click **Details** tab and select **Add Port**.

14. In the **Add Port** dialog box, select **Other,** as shown in the following picture.



15. Select the **Zero One Print Port** and click **OK**.

16. The Add Port box will then appear, along with the print server's Node ID *(The last 6 digits of the Node ID, located on the back of the print server unit)*. Select one printer server port from the list, which is now connected to (one of) your printer(s), as shown in the following picture.



17. Print Server's IP is wireless Router's IP. So you don't need to another one.

18. Change the **Port Name** or leave it in default (**recommended**) and click **OK**.

19. Done.

Windows NT LPR Port Printing Installation

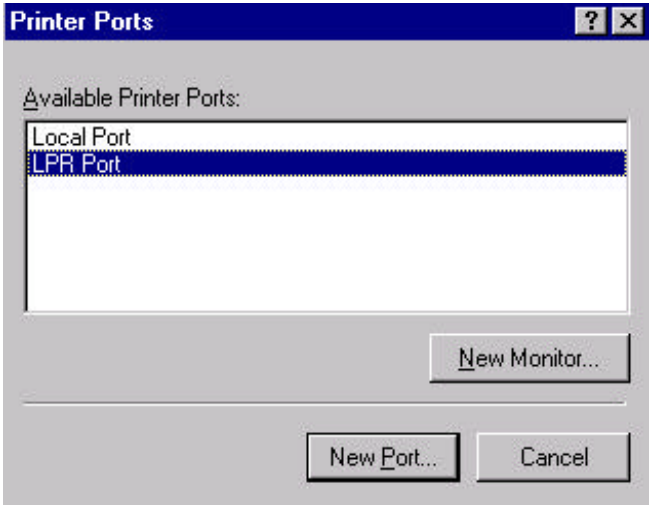
1. Click **Start**, point to **Settings**, and select **Printer**.

2. Run **Add Printer**.

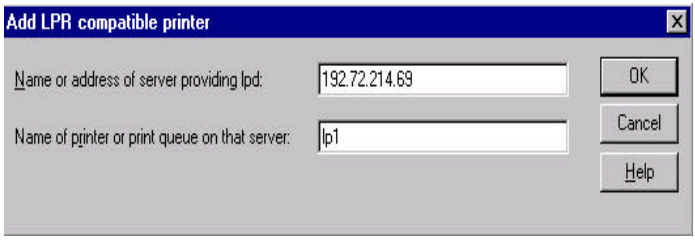
3. The Add Printer Wizard screen will appear, Select **My Computer** and click **Next**.

4. Click **Add Port**.

5. From the Printer Ports box as shown in the following picture, select the **LPR Port**.



6. The Add LPR compatible printers box will then appear as shown in the following picture. Type in the IP address assigned to the print server in the ***Name or address of server providing lpd*** box.



7. Print Server's IP is wireless Router's IP. So you don't need to another one.

8. In the ***Name of printer or print queue on that server*** box, type in a printer name, for example, lp1. Click **OK**.

9. In the Printer Ports box, select **Close**.

10. Click **Next**.

11. Select the appropriate printer manufacturer and printer type list and click **Next**.

12. Select **Shared**. Type in a new **Share Name** or leave it in default and click **Next**.

13. A message reading, "After your printer is installed, Windows can print a test page so you can confirm that the printer is set up properly. Select **Yes (Recommended)** and click **Finish**.

14. Done.

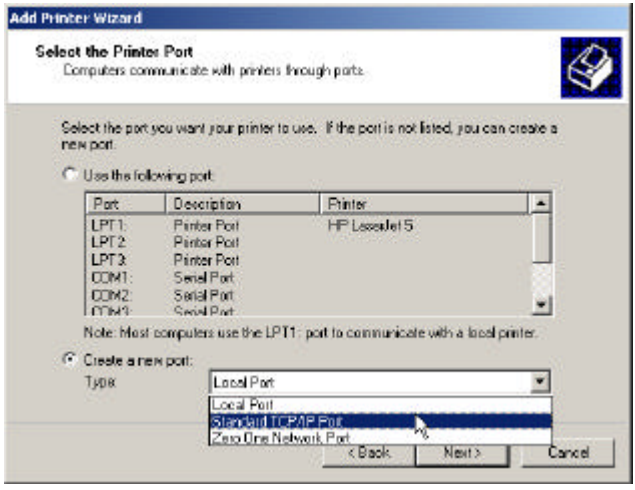
Windows 2000 Standard TCP/IP Port Printing Installation

1. Click **Start**, point to **Settings**, and select **Printer**.

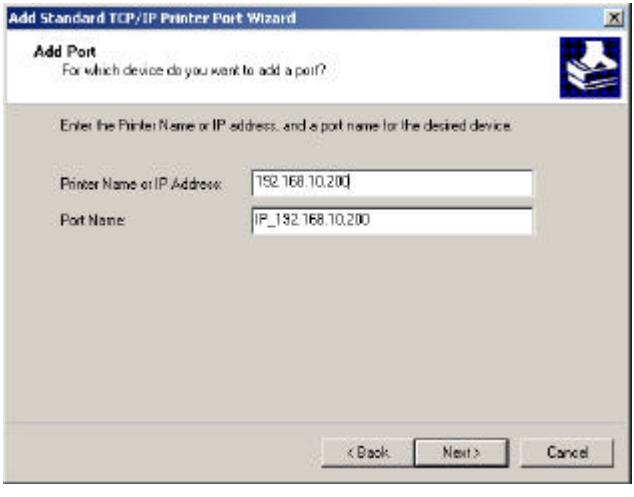
2. Run **Add Printer**, Click **Next**.

3. The Add Printer Wizard screen will appear, Select **Local Printer** and click **Next**.

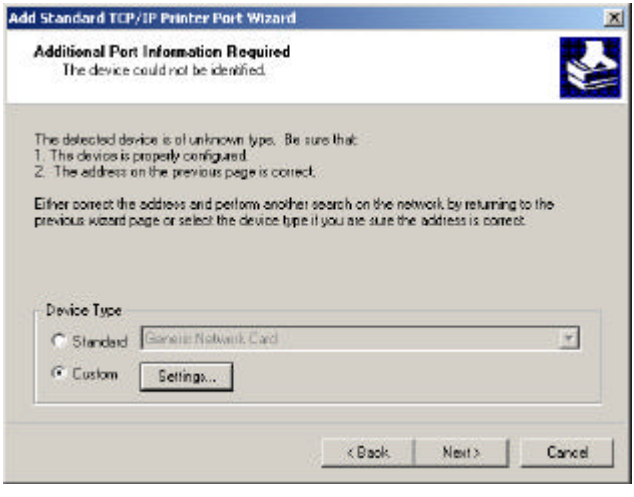
4. From the type of **Create a new port** box as shown in the following picture, select the **Standard TCP/IP Port**, Click **Next** and **Next**.



5. The Add Standard TCP/IP Printer Port Wizard box will then appear as shown the picture as below, and type in the IP address assigned to the print server in the ***Printer Name or IP Address*** box, Click **Next**.



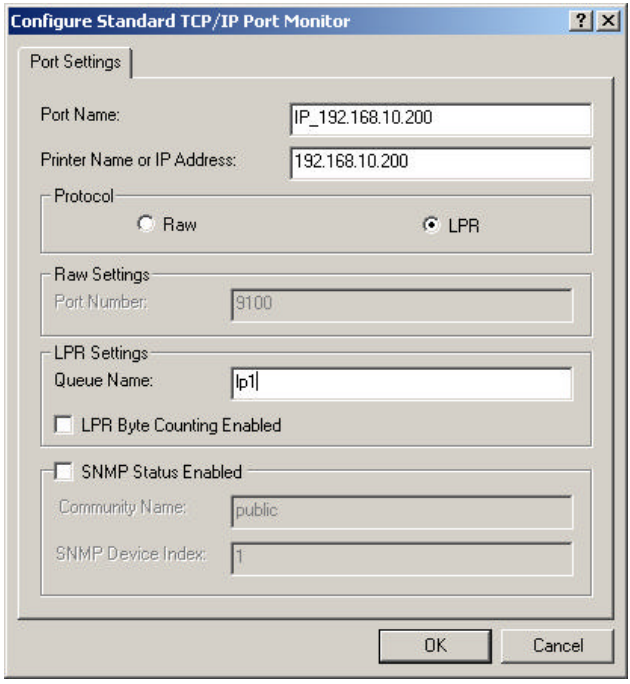
6. In the **Add Standard TCP/IP Printer Port Wizard** box as shown in the following picture, Select **Custom**, Click **Settings** button, and click **Next**.



7. Print Server's IP is wireless Router's IP. So you don't need to another one.

8. In the **Configure Standard TCP/IP Port Monitor** box as shown in the following picture, select **LPR** form Protocol, type in a queue name, for example, lp1.

9. Click **OK**, and **Next**.



Note: ***Please** DO NOT **type any other name than** lp1 **in this step.***

10. Click **Finish**.

11. Select the appropriate printer manufacturer and printer type list and click **Next**.

12. Type in a new **Printer name** or leave it in default, and click **Next** button.

13. A message reading, "To confirm that the printer is installed properly, you can print a test page". Select **Yes (Recommended)** and click **Finish**.

14. Done.

7.Firewall Configuration

Overview

An Internet firewall allows approved traffic in and out according to a predetermined plan. A firewall is a safeguard security mechanism that provides protection between LAN and WAN. It protects the intranet from intrusion by outsides and hackers, thus providing a secure environment for users. The Broadband DSL/Cable Wireless Router provides a number of functions to user, including:

1. *Basic Setting.*
2. *LAN to WAN Access Rule.*
3. *WAN to LAN Access Rule.*
4. *URL Blocking.*
5. *E-mail Alerts.*
6. *Event Log.*

Basic Setting

Follow the procedure below to setup the Broadband DSL/Cable Wireless Router's Basic Setting.

1. Click **Firewall Setup** in the left-column. The sub-menus then appear.

2. Click "**Basic Setting**", and the following box will appear.

3. If you want to start up the firewall, you must choose "**Yes**" in '**Enable Firewall Protection**'. The default is "**Disable**".

4. "Default Action for LAN-to-WAN Access Rule" allows you to use 'Internet service'. The default is "**Forward**".

5. "Number of Incomplete TCP Connections Allowed A Minute" judges how many packets of incomplete TCP connection constitute an attack. The default is "**20**" packets.

6. "Self-Protection Time When A DoS Attack Is Detected" could protect your network. If somebody attacks your network, the Broadband DSL/Cable Wireless Router will lock up. The default time is "**5 minutes**".

7. "Allows TCP/UDP Port #139 to Pass Through" allows for TCP/UDP port 139 by-pass. The default is "**No**".

8. "IP Source Routing" could protect against a hacker using another IP to attack your network. The default is "**No**".

9. "Enable Remote Management to this Router" default is "**No**".

10. "Respond to Ping from WAN Side" default is "**No**".

11. Click **Save**.

12. Click **Apply**.

13. The Broadband DSL/Cable Wireless Router Basic Setting is now in place.

LAN to WAN Access Rule

Broadband ADSL/Cable Firewall Router could be according to administrator's request to create LAN to WAN Access Rules. You could follow the procedure to setup it.

1. Click **Firewall Setup** in the left-column. It then appears the sub-menus.

2. Click "**LAN to WAN Access Rules**", and then it will appear a picture as below.

3. Select "TCP" or "UDP" port.

4. Type into the Source IP (LAN IP).

5. Type into the destination IP (WAN IP).

6. Type into the port number.

7. Select "**Forward**" or "**Discard**".

8. You want to record the "**Log**" or not.

9. HTTP Inspection must operate in coordination with URL Blocking rules.

10. Click "**Save**", and then click "**Apply**".

11. The setup is now completed.

WAN to LAN Access Rule

Broadband ADSL/Cable Firewall Router could be according to administrator's request to create WAN to LAN Access Rules. You could follow the procedure to setup it.

1. Click **Firewall Setup** in the left-column. It then appears the sub-menus.

2. Click "**WAN to LAN Access Rules**", and then it will appear a picture as below.

3. Select "TCP" or "UDP" port.

4. Type into the Source IP (WAN IP).

5. Type into the destination IP (LAN IP).

6. Type into the port number.

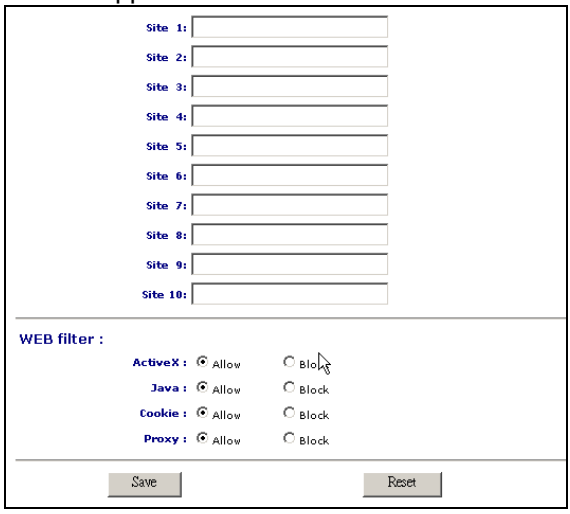
7. Select "**Forward**" or "**Discard**".
8. You want to record the "**Log**" or not.
9. Click "**Save**", and then click "**Apply**".
10. The setup is now completed.

URL Blocking

The Broadband DSL/Cable Wireless Router can be used to restrict users browsing the Home Page. You can fill in the URL or key word. To setup this restriction, please use the following procedure:

1. Click **Firewall Setup** in the left-column. The sub-menus then appear.

2. Click "**URL Blocking**", and the box pictured below will appear.



3. Fill in the **URL** or **Key Word** that you want to restrict access to.

4. Web Filter:

   A. Active X: Allows or disallows the Active X packet pass-through.
   B. Java: Allows or disallows the Java packet pass-through.
   C. Cookie: Allows or disallows the Cookie packet pass-through.
   D. Proxy: Allows or disallows the Proxy packet pass-through.

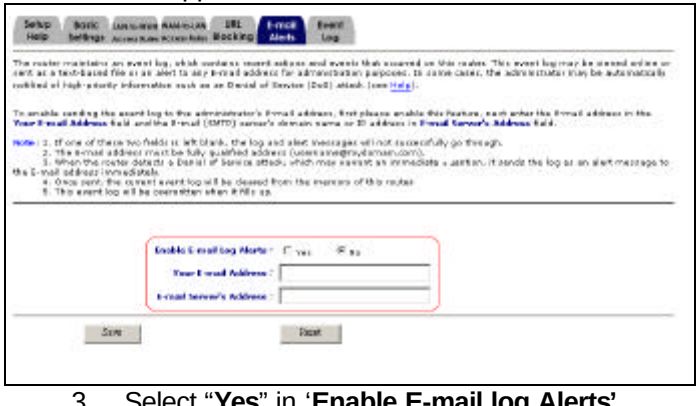
5. Click "**Save**", and then click "**Apply**".

6. URL Blocking is now in place.

hacker attacks your network, the Firewall Router can automatically send an e-mail to the administrator. Use the following procedure to setup this facility:

1. Click **Firewall Setup** in the left-column. The sub-menus then appear.

2. Click "**E-mail Alerts**", and the box pictured below will appear.



3. Select "**Yes**" in '**Enable E-mail log Alerts'**.

4. Fill in administrator's e-mail.

5. Fill in mail server's IP address.

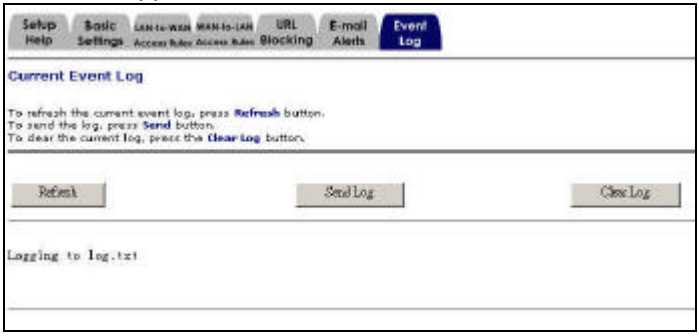
6. Click "**Save**", and then click "**Apply**".

7. The facility is now set up.

. Use the following procedure to setup this facility:

1. Click **Firewall Setup** in the left-column. The sub-menus then appear.

2. Click "**Event Log**", and the box pictured below will appear.



3. Refresh: Renew current record.

4. Send Log: Send log to administrator.

5. Clear log: Delete log.

6. When the log exceeds memory size, it will automatically send the log to the administrator, and then delete it.

8. Upgrading the Broadband DSL/Cable Wireless Router

Overview

As new software for the Broadband DSL/Cable Wireless Router is released in the future, you can update your Broadband DSL/Cable Wireless Router. The upgrade procedure will use the DOS-based TFTP program on Windows NT/2000. For Windows 95/98/Me, we provide user upgrade firmware via your browser.

Upgrading the Router in Windows NT/2000 (using TCP/IP)

1. Ensure that **igate15.bin** is located in your current working directory.

2. At the NT/2000's DOS prompt, type "**tftp <the Firewall router's IP address > get upgrade**".

3. Type "**tftp –i <the Firewall router's IP address> put igate15.bin**".

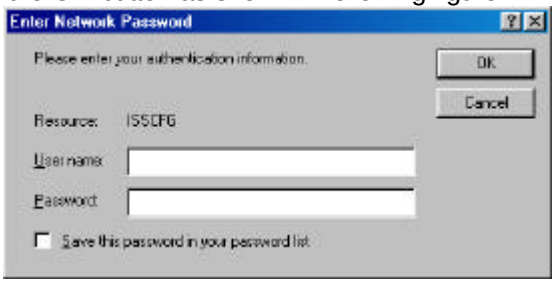
4. Wait for the "**transfer successful**" message.

5. The upgrade is now completed.

Upgrading the Router in Windows 95/98/Me (using TCP/IP)

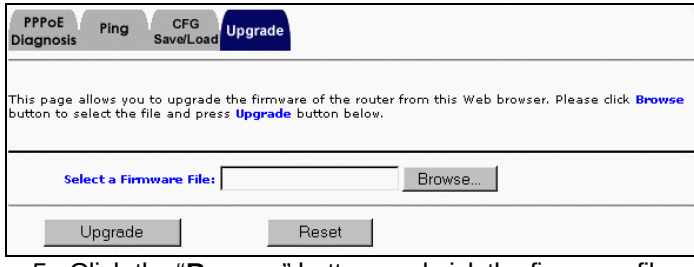
1. Type the default IP address (192.168.1.1) in the **Location box** and press **Enter**.

2. The **authentication dialog** for the Broadband DSL/Cable SOHO router then appears. Type the default administration user name, **admin**, and type the default configuration password **0000** and click the **OK** button as shown in following figure.



3. Select "**Tools**" in the left column.

4. Select "**Upgrade**".



5. Click the "**Browse**" button, and pick the firmware file.

6. Click the "**Upgrade**" button.

7. The upgrade is now completed.

Upgrading the Router on UNIX (using TCP/IP)

1. Log in as root.
2. Ensure **igate15.bin** is located in your current working directory.
3. Type "**tftp <the Firewall router's IP address>**".
4. At the tftp prompt, type "**get upgrade**".
5. Change to *binary* transfer mode.
6. At the tftp prompt, type "**put igate15.bin**".
7. Wait for the file transfer to finish.
8. Quit out of tftp.
9. The upgrade is now completed.

9. Troubleshooting

Problem A

IP Address Conflicts

If you start up your Windows 95/98/Me or Windows NT/2000 computer and the following message dialog box shows indicating an IP address conflict please follow the directions given below.

Solution

Windows 95/98/Me

1. Click **Start**, point to **Run**, and type **winipcfg**. When done, click the **Run** button.

2. The Winipcfg screen will then appear as shown in Figure A.

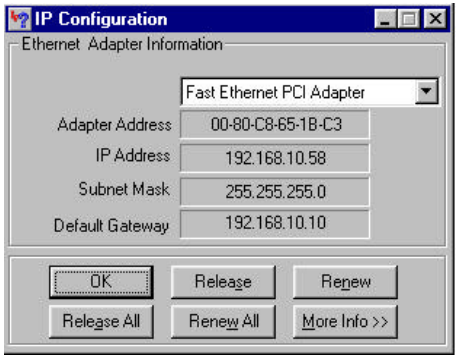


Figure A

3. Click the **Release All** button. The Winipcfg will then release your current TCP/IP configuration as shown in Figure B.

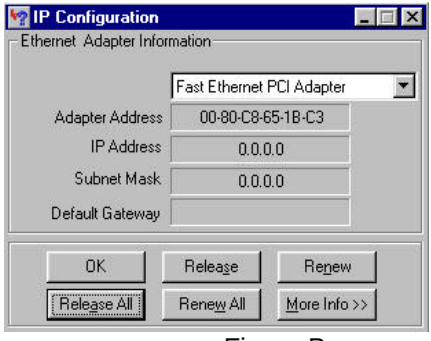


Figure B

4. Click OK.

5. Done.

Windows NT/2000

1. At your NT's DOS prompt, type **ipconfig /release** and press [*Enter*].

2. Next, type **ipconfig /renew** and press [*Enter*].

3. The conflict should now be resolved.

Appendix

Loading the Default Values

Once you have configured the Broadband DSL/Cable Wireless Router (see Chapters 3 and 4), the configuration settings are saved in the Broadband DSL/Cable Wireless Router's internal memory. However, you can manually reset them to factory defaults by using the web browser or by following the steps given below:

1. Power off-on the Broadband DSL/Cable Wireless Router.

2. After power on, the Status indicator will flash 5 times. Now hold down the reset button on the Broadband DSL/Cable Wireless Router. The red LED marked **Status** will give 1 long flash and 4 short flashes.

3. The factory defaults are now loaded.

After loading the default values, you might need to re-configure the Broadband DSL/Cable Wireless Router by following the steps in Chapter 3. Please see Chapter 3 for details.