



## Dell™ Wireless 2350 Broadband Router *User's Guide*

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# Introduction: Dell™ Wireless 2350 Broadband Router User's Guide

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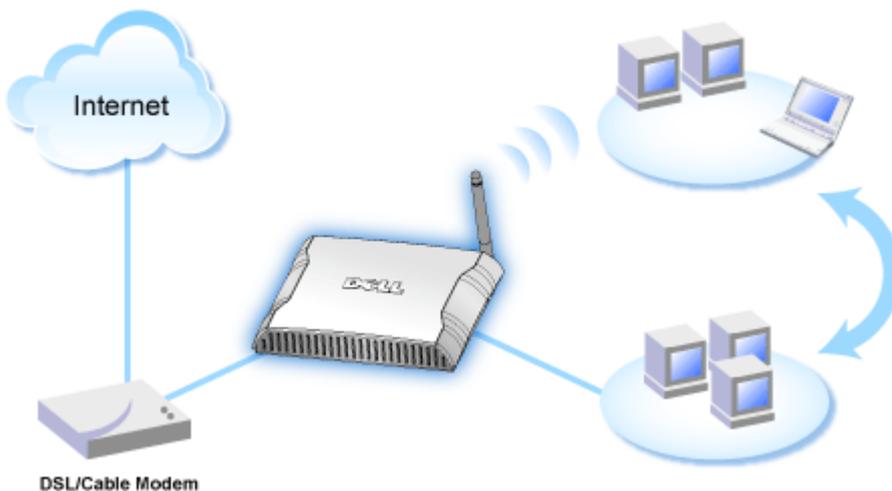
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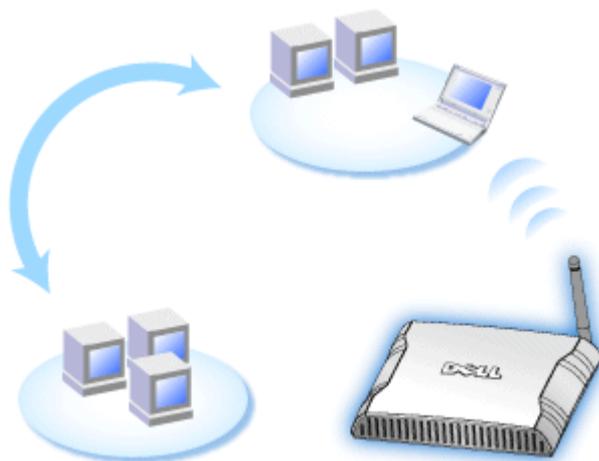
## Overview

The Dell Wireless 2350 Broadband Router is an 802.11b/g wireless access point with a built-in Internet router. Connecting to a DSL or cable modem, the Dell Wireless 2350 Broadband Router can offer both wired and wireless computers simultaneous access to the Internet. The Dell Wireless 2350 Broadband Router can be configured the following ways:

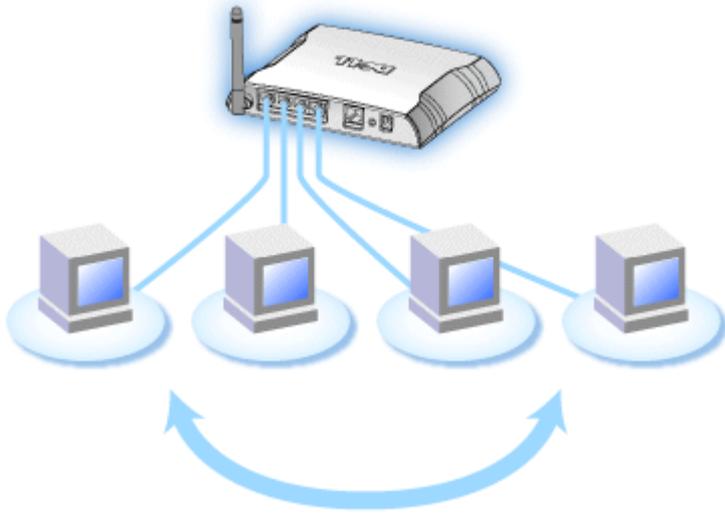
- **Internet router:** Connects to a cable or DSL modem providing Internet connectivity to both wired and wireless computers. The Dell Wireless 2350 Broadband Router includes a firewall feature to control Internet access and protect your network.



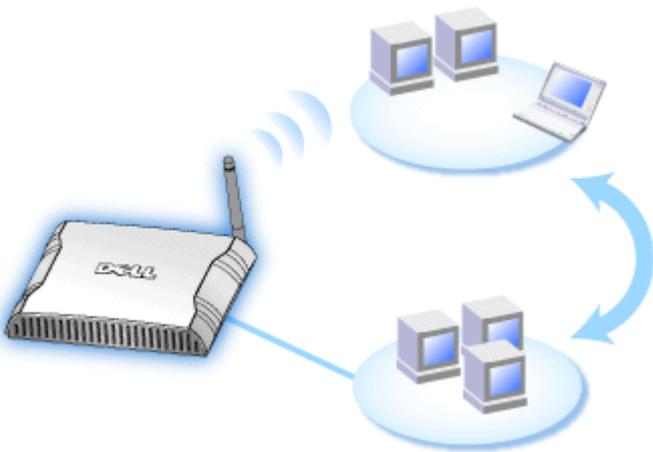
- **Wireless hub (Access Point):** Connects wireless computers for file and print sharing.



- **4-port Ethernet switch:** Connects four wired computers for file and print sharing.



- **Ethernet bridge:** Enables file and print sharing between wired and wireless computers. In addition, connects to an Ethernet hub, extending Internet connectivity and sharing to more wired computers.



The Dell Wireless 2350 Broadband Router supports up to 252 connect computers when used with additional router devices. Up to 16 of the 252 computers can be connected wirelessly. The **Network Address Translation** (NAT) feature allows 32 connected computers to simultaneously communicate out to the Internet. It can communicate at speeds up to 54 **Megabits per second** (Mbps) on the wireless network and at either 10 or 100 Mbps on the LAN (wired) port depending on the connected computer. The maximum distance between the Dell Wireless 2350 Broadband Router and each wirelessly connected computer is 300 feet. This distance may be less depending on your environment.

By default, you can use the Dell Wireless 2350 Broadband Router in the following ways:

- A wireless access point using **wireless** as the wireless network name.
- A DHCP (Dynamic Host Configuration Protocol) server that provides IP addresses to wireless and wired clients.
- A bridge to an Ethernet hub.

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## Wireless Networking Overview: Dell™ Wireless 2350 Broadband Router User's Guide

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### Wireless Local Area Network (WLAN)

A **Local Area Network** (LAN) is a network in one location. Computers at that location can share files, printers, and other services. In a LAN, a networked computer that requests services is called a client. A **Wireless Local Area Network** (WLAN) is a type of LAN that uses high frequency radio waves rather than wires to communicate and transmit data among the networked computers and devices. It is a flexible data communication system implemented as an extension to, or as an alternative for, a wired LAN.

In a WLAN, wireless adapters are installed in computers, also called wireless clients. The adapter allows the wireless client to communicate with the WLAN without cables. Instead, wireless clients send and receive information through a path in the air called a channel.

The standards for a WLAN are based on the IEEE 802.11b standard and IEEE 802.11g standard. All Dell 802.11b/g-compliant devices interoperate with other 802.11b/g-compliant wireless devices from other vendors. The WiFi certification logo indicates that the wireless device has been tested by an independent organization.

A wireless client operates in either infrastructure mode or peer-to-peer mode.

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### Identifying a WLAN

An ESSID and BSSID are both **Service Set Identifiers** (SSID) that identify and control the wireless client's access to a given WLAN. The SSID is sometimes referred to as the network name. The SSID indicates what WLAN you are referring to. In most cases, the user interface displays the SSID.

When installing an access point or wireless adapter in a wireless client, the installation program asks you to enter the SSID. Dell cannot provide you with this information, as it is specific to your network; but you may choose to use the default SSID, **wireless**, for your Dell Wireless 2350 Broadband Router. All wireless clients and access points in a WLAN must use the same network name.

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### Encryption

In a WLAN, wireless clients and access points send and receive information through the air. Without implementing security, it is possible for an unauthorized person to intercept the information.

A common way of implementing security and protecting information is encryption. Encryption applies a set of instructions, called an algorithm, to information. The instructions combine the plain or clear text of the information with a sequence of hexadecimal

numbers, called an encryption key.

Before transmitting information over the airwaves, the wireless client or access point encrypts or scrambles the information. The access point or wireless client receiving the information uses the same key to decrypt or unscramble the information. The information is only readable to WLAN devices that have the correct encryption key. The longer the key is, the stronger the encryption.

The Dell Wireless 2350 Broadband Router supports both **Wired Equivalent Privacy (WEP)** and **Wi-Fi Protected Access (WPA)**.

## **WEP**

WEP (Wired Equivalent Privacy) provides a way of creating an encrypted key that is shared between a wireless client (such as a notebook with a wireless PC card) and the router. In the Dell Wireless 2350 Broadband Router, WEP is an optional feature that can be enabled or disabled. When WEP encryption is enabled, you must set the WEP key in the client to match the WEP key used by the access point because you can **ONLY** connect to access points that have a matching WEP Key.

 **NOTE:** It is better to change keys frequently. The same algorithm is used for all the communications that should be protected. If the same key is used, the same message will give exactly the same cipher text. Then, it will be possible for an eavesdropper to break the encrypted data. For this reason, it is strongly recommended to change keys often.

There are two WEP encryption methods:

- 40(64)-bit Encryption
- 104(128)-bit Encryption

40-bit and 64-bit encryption are identical. Some vendors use the term 40-bit; others use 64-bit. A wireless device that claims to have 40-bit encryption interoperates with a device that claims to have 64-bit encryption; the same is true for the reverse. A 40(64)-bit key consists of 10 hexadecimal numbers, arrayed as follows:

Key #1: 1011121314

Key #2: 2021222324

Key #3: 3031323334

Key #4: 4041424344

A 104(128)-bit key has several trillion times as many possible combinations than a 40(64)-bit key. It consists of 26 hexadecimal numbers, arrayed as follows:

Key (#1): 101112131415161718191A1B1C

All wireless clients and access points in a WLAN must use the same encryption method and key. The following two examples stress how important this point is.

### **Example 1**

The encryption method for an access point is 40(64)-bit. The method for a wireless client is 104(128)-bit encryption. The client and access point cannot communicate with each other, even though the selected key is the same. To resolve this problem, set the access point to use 104(128)-bit encryption.

### **Example 2**

The encryption method is the same for the access point and wireless client. You select key 1 for the access point and key 2 for the wireless client. The wireless client cannot communicate with the WLAN. To resolve this problem, select key 1 for the wireless client.

 **NOTE:** Use the same key and encryption method for the wireless devices in the WLAN. Otherwise, they cannot communicate with each other.

The Dell Wireless 2350 Broadband Router uses either hexadecimal digits or ASCII characters to create encryption keys. Hexadecimal digits include the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system.

ASCII is the acronym for the American Standard Code for Information Interchange. Pronounced *ask-ee*, ASCII is a code for

representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase M is 77. Most computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another.

## **WPA**

WPA (Wi-Fi Protected Access) is an upgrade to the WEP standard for securing your wireless network. WPA is derived from and will be forward-compatible with the future IEEE 802.11i standard. It provides improved data encryption and user authentication.

To enhance the level of security, WPA uses **Temporal Key Integrity Protocol** (TKIP) encryption to address the vulnerabilities of the static keys used in WEP. TKIP includes four algorithms: **Message Integrity Check** (MIC), to protect packets from tampering; **Per-Packet Key** (PPK) hashing, to prevent weak key attacks; extended **Initialization Vector** (IV), to reduce IV reuse and the possibility that a hacker will collect sufficient packets to crack the encryption; and a re-keying mechanism, to change the temporal key dynamically. TKIP is the most commonly used encryption method; however, if your wireless clients do not support TKIP, the Dell Wireless 2350 Broadband Router also supports **Advanced Encryption Security** (AES) encryption. AES will replace 802.11's RC4-based encryption under the 802.11i specification. AES, the gold-standard encryption algorithm, provides maximum security for a wireless network.

For wireless client authentication, WPA adopts an authentication scheme through 802.1x. 802.1x provides a framework for user authentication and a key distribution management method. 802.1x consists of three main elements: an Authentication Server (typically a RADIUS server), WPA-enabled router or AP (called Authenticator), and a WPA-enabled client (called Supplicant). 802.1x ensures only authorized users can access the network.

In enterprises, WPA will be used in conjunction with both a wireless router and authentication server. In a **Small Office/Home Office** (SOHO) environment, where there is no authentication server, users can use **Pre-Shared Key** (PSK) mode in place of the authentication server. The Dell Wireless 2350 Broadband Router offers you WPA running in PSK mode. The mutual authentication and improved encryption technology of WPA allows wireless communication to achieve greater security.

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## **Automatic Rate Selection and Rate Scaling**

In 802.11g, wireless network adapters and access points can transmit data at one of the following rates: 54, 48, 36, 24, 18, 12, 9, or 6 Mbps. In 802.11b, the data can be transmitted at a rate of 11, 5.5, 2, or 1 Mbps. As the distance between an adapter and access point increases or decreases, the data rate automatically changes. Other factors, like interference, also affect the data rate. The Dell Wireless 2350 Broadband Router uses automatic rate selection and rate scaling to determine the most efficient rate of communication. Rate scaling maintains optimal communication between wireless clients and the Dell Wireless 2350 Broadband Router.

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# A Look at the Hardware: Dell™ Wireless 2350 Broadband Router User's Guide

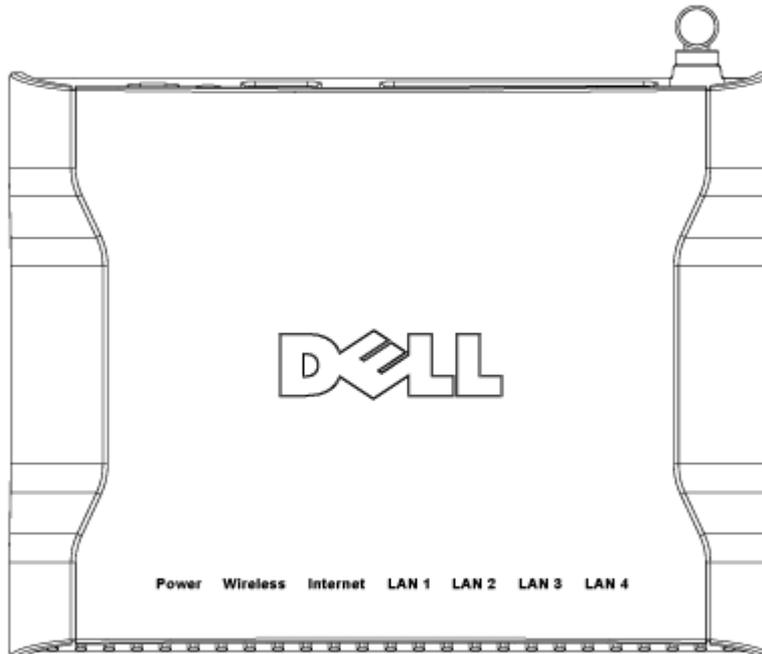
[▶ Front Panel](#)

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## Front Panel

The Dell Wireless 2350 Broadband Router has seven **Light Emitting Diodes** (LEDs), or link lights, on its front side. The following table defines the behaviour for each LED:

### Front Panel



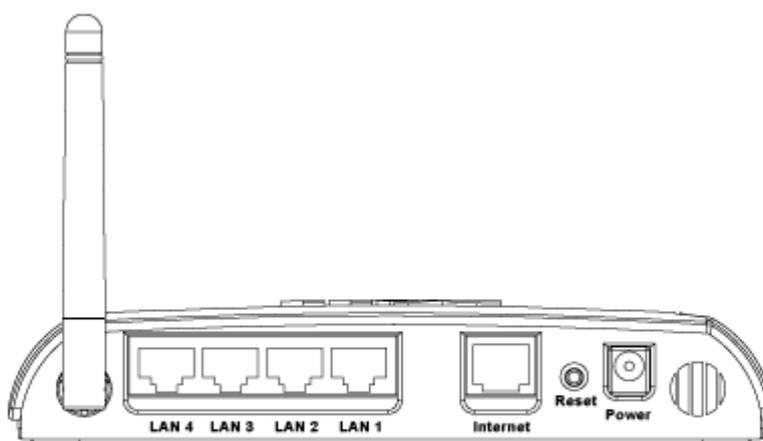
LED	Represents	Activity
Power	Power	The Power LED will light up green when the device is powered on. It will blink when the device is powering up or when it is reset.
Wireless	Wireless LAN	The LED alternates between on and off when wireless clients are attached. It will blink when there is data activity on the wireless network. The rate of blinking will vary with the rate of data transfer. It turns off when no wireless clients are associated with the

		Dell Wireless 2350 Broadband Router.
Internet	DSL or cable modem	A steady green light indicates the connection is active (i.e. the Dell Wireless 2350 Broadband Router is connected to a xDSL or cable modem) and blinks with data activity.
LAN 1 LAN 2 LAN 3 LAN 4	Local Area Network	A steady green light indicates the connection is active and blinks with data activity.

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## Back Panel

### Back Panel



Connector	Description
Power	Connect the power adapter to this power port, and then plug the other end of the power cable into a power outlet.
Reset	Use an object, such as a paper clip, to press the button for at least 5 seconds. The Power LED will be off for a short time and then light up again. You can then release the button to reset the device to its factory-default settings.
Internet	This accepts an RJ-45 connector for connecting the Dell Wireless 2350 Broadband Router to a xDSL or cable modem
LAN 1 LAN 2 LAN 3 LAN 4	This accepts RJ-45 connectors for connecting up to 4 computers to the Dell Wireless 2350 Broadband Router's 4-port switch. These are the Ethernet connections.

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## Installation and Configuration: Dell™ Wireless 2350 Broadband Router User's Guide

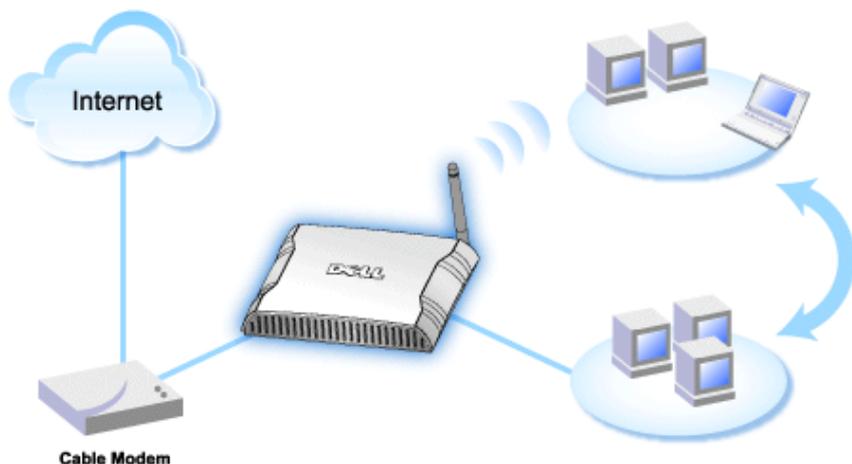
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## Cable Modem Connection



**NOTE:** It is recommended that you install the Dell Wireless 2350 Broadband Router using the Setup Wizard provided on the Dell Wireless 2350 Broadband Router CD. Perform the steps below only when you are unable to install the Dell Wireless 2350 Broadband Router with the Setup Wizard.

### [Cable Modem - Standard Setup](#)

Use this setup when your cable service provider does not require you to enter any information for your Internet broadband connection.

### [Cable Modem with Name Settings](#)

Use this setup when your cable service provider requires you to enter **Host Name** and **Domain Name** for your Internet broadband connection.

### [Cable Modem with Other Settings](#)

Use this setup when your cable service provider requires you to enter other information.

## Cable Modem - Standard Setup

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.

**NOTE:** If the installation is not successful, you can restore the default settings by pushing the **Reset** button on the back of the Dell Wireless 2350 Broadband Router for at least 5 seconds. The Dell Wireless 2350 Broadband Router will reboot with the default settings and the setup will continue.

**NOTE:** The Dell Wireless 2350 Broadband Router is configured by default with the following settings:

- The cable/DSL interface is configured with the DHCP client enabled. This means it will try and get its Internet IP address automatically from your ISP.
- The Local Area Network and Wireless interfaces are configured with the DHCP server enabled. This means that the Dell Wireless 2350 Broadband Router will allocate IP addresses to any connected computer automatically.
- Default user name and password is **admin**. Use this to access the Configuration Settings on the Dell Wireless 2350

Broadband Router when you browse to <http://my.router>

This configuration will work properly with a cable modem provider that does not require authentication.

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## Cable Modem with Name Settings

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. Open your web browser (for example Internet Explorer) and go to <http://my.router>, or the default IP address <http://192.168.2.1>.
5. Enter the default username and password **admin** when prompted to do so.
6. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
7. Click the **Internet Connection Settings** menu option on the pull down menu.
8. Click to select **Your ISP requires you to input Host Computer Name or Domain Name**.
9. Type the **Host Name** and **Domain Name** assigned to you into the appropriate boxes.
10. Click the **Next** button.
11. Click the **Save & Restart** button to store the new settings.

When your web browser returns to the main page of the Dell Wireless 2350 Broadband Router, the device will have successfully restarted with the new settings.

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## Cable Modem with Other Settings

If your cable service provider requires you to enter other settings for your Internet connection, select only the appropriate boxes in the **Internet Connection Settings** menu option (See Step 6 in **Cable Modem with Name Settings**) and type the required values provided by your ISP.

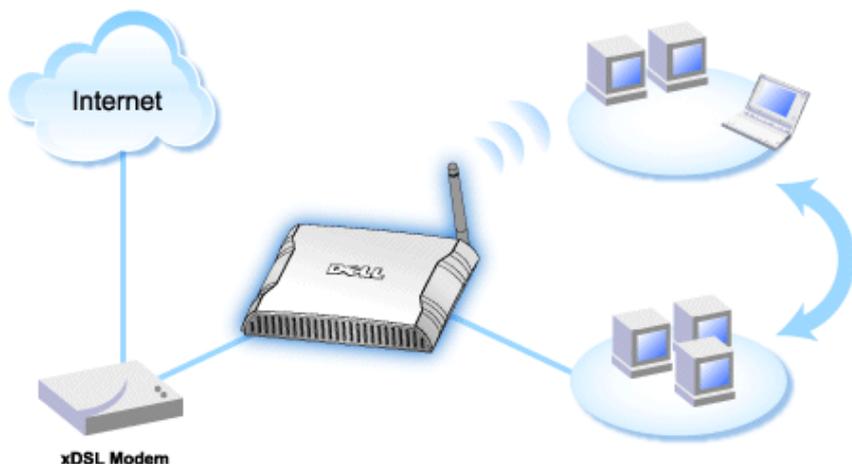
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## DSL Modem Connection



**NOTE:** It is recommended that you install the Dell Wireless 2350 Broadband Router using the Setup Wizard provided on the Dell Wireless 2350 Broadband Router CD. Perform the steps below only when you are unable to install the Dell Wireless 2350 Broadband Router with the Setup Wizard.

**NOTE:** PPPoE (Point to Point Protocol over Ethernet) is the methodology of authenticating or validating a user or equipment to an Internet service provider, usually via a username and/or password. It is a selection or action that reconfigures a device to the default parameters, as it was originally manufactured.

### [DSL without PPPoE - Standard Setup](#)

Use this setup when your DSL service provider does not ask you to enter any information for your Internet connection.

### [DSL with PPPoE](#)

Use this setup if your ISP has given you a username and password for your Internet connection.

## DSL without PPPoE - Standard Setup

1. Connect the **Ethernet** port on the DSL modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. The setup should work on the Dell Wireless 2350 Broadband Router with the factory default settings.

**NOTE:** If the installation is not successful because you have modified any setting or due to other factors, you can restore the default settings by pressing the **Reset** button on the back of the Dell Wireless 2350 Broadband Router for at least 5 seconds. The Dell Wireless 2350 Broadband Router will reboot with the default settings and the setup should complete at this point.

**NOTE:** The Dell Wireless 2350 Broadband Router is configured by default with the following settings:

- The cable/DSL interface is configured with the DHCP client enabled. This means it will try and get its Internet IP address automatically from your ISP.
- The Local Area Network and Wireless interfaces are configured with the DHCP server enabled. This means that the

Dell Wireless 2350 Broadband Router will allocated IP addresses to any connect computer automatically.

- Default user name and password is **admin**. Use this to access the Configuration Settings on the Dell Wireless 2350 Broadband Router when you browse to *http://my.router*

This configuration will work properly with a DSL provider that does not require authentication.

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## DSL with PPPoE

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. Open your web browser (for example Internet Explorer) and go to <http://my.router>, or the default IP address <http://192.168.2.1>.
5. Enter the default username and password **admin** when prompted to do so.
6. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
7. Click the **Internet Connection Settings** menu option on the pull down menu.
8. Select **Connection Type** from the drop down menu and select **DSL(PPPoE)**.
9. Type the user name provided to you by your ISP in the **User Name** box.
10. Type your password in the **Password** and **Retype Password** boxes.
11. If your ISP requires you to provide a **MAC** address, click to check the **Your ISP requires you to input WAN Ethernet Mac** box.
11. Type the address in the appropriate box.
12. Click the **Next** button.
13. Click the **Save & Restart** button.
14. When your web browser returns to the main page of the network, the Dell Wireless 2350 Broadband Router will have successfully restarted with the new settings.

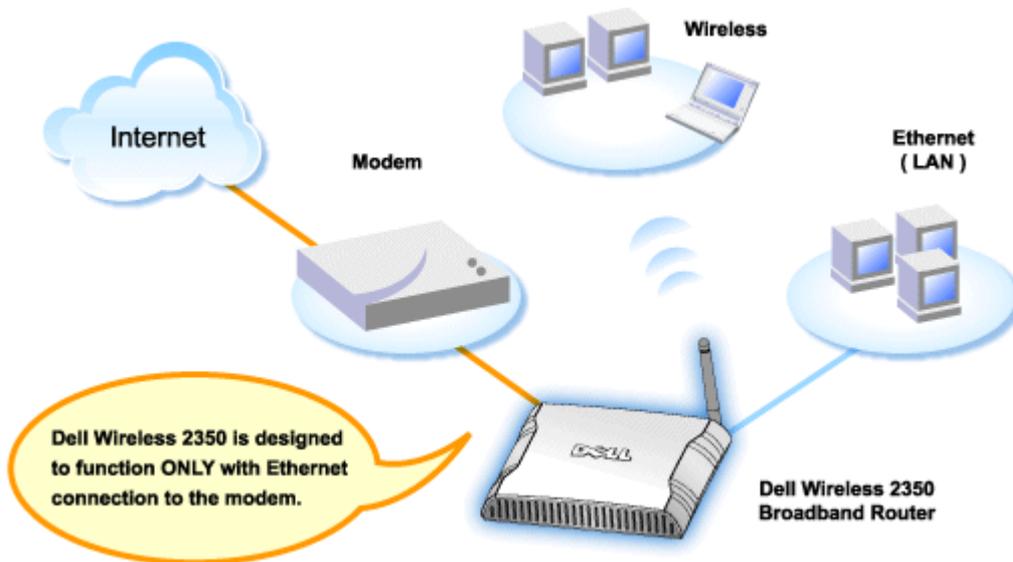
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## Cable Modem with USB Connection



A cable modem may support only Ethernet connection, only USB connection, or both types of connections.

### Cable Modem with only USB Connection

Your Dell Wireless 2350 Broadband Router is designed to function with Ethernet connection only on its broadband interface. If your cable modem supports only a USB connection, you need to replace it with a model with at least one Ethernet connection.

### Cable Modem with both USB and Ethernet Connections

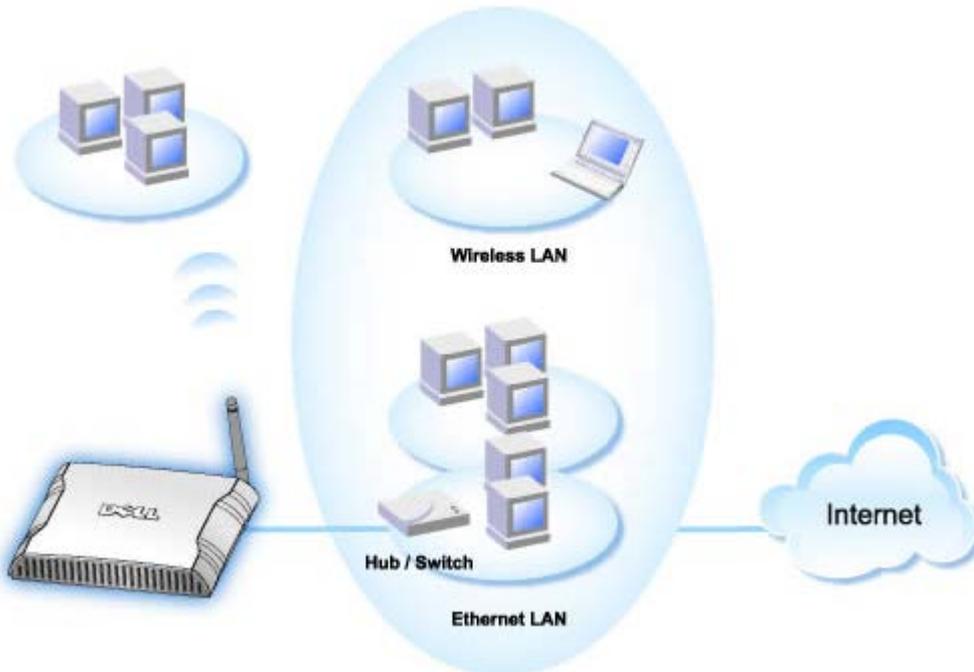
If your cable modem supports both USB and Ethernet connections, but is connected to your computer via USB cable, follow the instructions below to switch to the Ethernet connection.

1. Make sure that your cable modem is powered off.
2. Disconnect the USB cable from your computer and the cable modem.
3. Connect one end of a standard Ethernet cable into the **Ethernet** port of the Ethernet card on your computer
4. Insert the other end of the cable into the **Ethernet** port on your cable modem.
5. Turn on cable modem. The modem may need several minutes to initialize.
6. Insert the **Dell Wireless 2350 Broadband Router CD** into the CD drive on the computer to start the Setup Wizard, and then click the **Router Installation** button and follow the onscreen instructions.

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## Configuring Your Router as an Access Point for an Existing Network



If you have an existing network, you may want to use your new router as an Access Point to extend the range of your network by allowing connection of more wireless and wired computers. You **MUST** turn off the DHCP server on the router if there is a DHCP server already in your network running to avoid IP address conflicts. To disable the DHCP server functions, follow the steps below:

1. Open your web browser and go to <http://my.router>, or the default IP address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: **admin**
3. Click the **OK** button.
4. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
5. Click the **Router Mode** menu option in the drop down menu.
6. Click to select **Access Point Mode**.
7. Click the **Next** button.
8. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
9. Click the **DHCP Server Settings** menu option in the drop down menu.
10. Uncheck the box **Enable DHCP Server Functions**.
11. Click the **Submit** button.

You will also need to allocate and setup a static IP address on your Dell Wireless 2350 Broadband Router. Perform the following steps to configure a static IP address:

 **NOTE:** The IP address that you use should be reserved by the DHCP server in your existing network. The router cannot act as a DHCP client and therefore, it needs a static IP address for its LAN interface.

1. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
2. Click the **Advanced IP Settings** menu option in the drop down menu.
3. Make sure that the box **Automatically obtain an IP address from a DHCP server** is unchecked.
4. Assign an IP address to the router.
4. Click the **Submit** button.
5. A pop-up **Warning** window will appear. Click the **OK** button.
6. A **NOTE** page will appear with the instructions on how to refresh the IP address of your computer.
7. Click the **Continue** button.
8. When your web browser returns to the home page of the Dell Wireless 2350 Broadband Router, the device has successfully restarted with the new settings.
9. Plug an Ethernet cable from the existing local network into any **LAN** port on the router.

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# Configuring Your Dell™ Wireless 2350 Broadband Router for Gaming

This section will assist in configuring the Dell Wireless 2350 Broadband Router router for gaming. In some cases, the firewall feature of the router will cause a game to not function as intended. This document will not provide details for each game, but will discuss how to open TCP/IP ports for one or more computers.

 **NOTICE:** Operating any client computers on the Internet without firewall protection may allow unauthorized access to a computer. This may lead to data loss.

Follow the steps below to set up the router for gaming.

## Locate the MAC Address for the Computers You Want to Use for Gaming

1. Click the **Start** button.
2. Click **Run**.
3. In the **Open** box, type the following text:  
**cmd**
4. Click the **OK** button.  
The command prompt screen appears.
5. At the command prompt, type **ipconfig /all**
6. Write down the MAC (Physical) address of your computer to configure for gaming.

## Change Router Settings

1. Open a web browser, and type <http://my.router>, or <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "**admin**".
3. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **DHCP Server Settings** menu option in the drop down menu.
5. Click the **Add** button in the **IP Address Reservation** section.
  - a. Enter the MAC address of the computer you wish to use for gaming in **MAC Address** field.
  - b. Enter an **IP address** for the computer.
6. Click the **Submit** button.
7. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
8. Click the **Port Forwarding Settings** menu option in the drop down menu.
  - a. To set a single computer for gaming, click to select **Enable DMZ Host**.
  - b. Enter the IP address of the computer in the **DMZ IP Address** field.
  - c. Click the **Submit** button.

 **NOTE:** Only a single computer can be set for DMZ service. To set multiple computers for gaming, please refer to the [Custom Port Forwarding Settings](#) under **Port Forwarding Settings**.

9. Reboot the client computer. The client computer will use the newly assigned IP and will not have any TCP/IP ports blocked by the firewall feature of the router.
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## Setting Wireless Encryption in Your Dell Wireless 2350 Broadband Router

Without wireless security options configured in your network, an eavesdropper within your wireless range may be able to access the network and the data that is being transmitted over it. The Dell Wireless 2350 Broadband Router provides **Wired Equivalent Privacy** (WEP) and **Wi-Fi Protected Access** (WPA) encryption for wireless security.

WPA is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell Wireless client, you can check for the availability of a WPA-enabled software update for your wireless client at <http://support.dell.com>.

1. Log into the web configuration of your router at <http://my.router>, or the default address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "admin".
3. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **Wireless Security** menu option in the drop down menu.
5. Click to select **Enable Wireless Security**.
6. Click to select either **WEP** or **WPA** in the Network Authentication list.

### If WEP is selected

1. Select hexadecimal or ASCII characters as the **Key Format**. You can use either as a string of hexadecimal digits (characters 0 through 9 and A through F ) or as ASCII characters (any key on the keyboard).
2. Select an encryption level from the **Key Length** list.
3. Enter four different keys in the **Key1**, **Key2**, **Key3**, and **Key4** fields to store on your router. For 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP key. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key.
4. Select only one key out of the four keys as the **Default Key** for encryption.
5. Click the **NEXT** button, and then click **Save and Restart** to apply the changes.
6. Set up WEP encryption on your wireless clients. Refer to the documentation that accompanied your wireless clients, or your wireless clients' on-line help systems, for information on how to set up WEP encryption.

### If WPA is selected

1. Enter your pre-shared key. This key must match the key that is used by each wireless client computer associated to

your router.

2. Choose a key format. This can be hexadecimal digits (0-9 and A-F) or ASCII characters (any key on the keyboard).
3. **WPA Group Rekey Interval** specifies how often the key “rotates” or changes.
4. WPA Encryption allows you to select one of two possible encryption methods—**TKIP** and **AES**. Choose one that your wireless clients support.
5. Click the **NEXT** button, and then click **Save and Restart** to apply the changes.
6. Set up the WPA on your wireless clients. Refer to the documentation that accompanied your wireless clients, or your wireless clients' on-line help system, for information on how to setup WPA.

 **NOTE:** The Dell Wireless 2350 Broadband Router offers two ways to set the wireless encryption in your router. One is the Wireless Security feature in the web configuration tool mentioned here. The other is through the Windows-based [control utility](#).

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## Turning Off Broadcast SSID

1. Log into the web configuration of your router at <http://my.router>, or the default address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "admin".
3. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **Advanced Wireless** menu option in the drop down menu.
5. Check the **Hide my wireless network** checkbox.
6. Click **Submit**.

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## Setting Up File & Printer Sharing

▶ [Installing File and Printer Sharing](#)

▶ [Sharing a printer](#)

▶ [Sharing files](#)

---

### Installing the File & Printer Sharing

Follow the instructions below to install the file and printer sharing service.

#### **For Windows 2000 and XP**

1. Right-click the **My Network Places** icon (on the desktop in Windows 2000 and in the Start button menu in Windows XP) and left-click to select **Properties** in menu.
  2. Right-click the **Local Area Connection** icon and select **Properties** in the menu.
  3. If you can see the **File and Printer Sharing for Microsoft Networks** item, you can skip this section. The file and printer sharing service had already been installed.
  4. If the **File and Printer Sharing for Microsoft Networks** item is not present, click the **Install** button.
  5. Click to select **Service**, and then click the **Add** button.
  6. Click to select **File and printer sharing for Microsoft Networks**, and then click the **OK** button.
- 

### Sharing a Printer

To share a printer, perform the following steps on the computer that has the printer you wish to share.

1. Click the **Start** button, click **Settings**, and then click **Printers**.
2. Click the printer you want to share to highlight it.
3. On the **File** menu, click **Properties**.
4. Click the **Sharing** tab, and then click **Shared As**.
5. Follow the on-screen instructions to complete.

The printer is now available for the other computers to use.

Perform the following steps on the other computers:

1. Click the **Start** button, click **Settings**, and then click **Printers**.
2. Double-click the **Add Printer** icon.
3. Click **Next** on the first screen.
4. On the next screen, select **Network printer**, and then click the **Next** button.
5. Click the **Browse** button and click to select the shared printer.

6. Follow the on-screen instructions to complete.

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## Sharing files

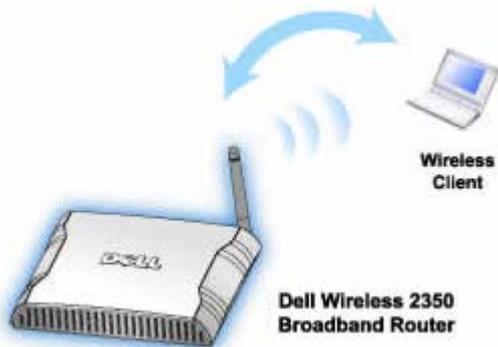
You can share files on your computer so that users on other computers on your network can view them.

1. In Microsoft Windows Explorer, right-click on the file, folder, or drive letter you wish to share and left-click **Sharing**.
  2. Click **Share As**.
  3. Type a name for the share and follow the on-screen instructions to complete.
- 

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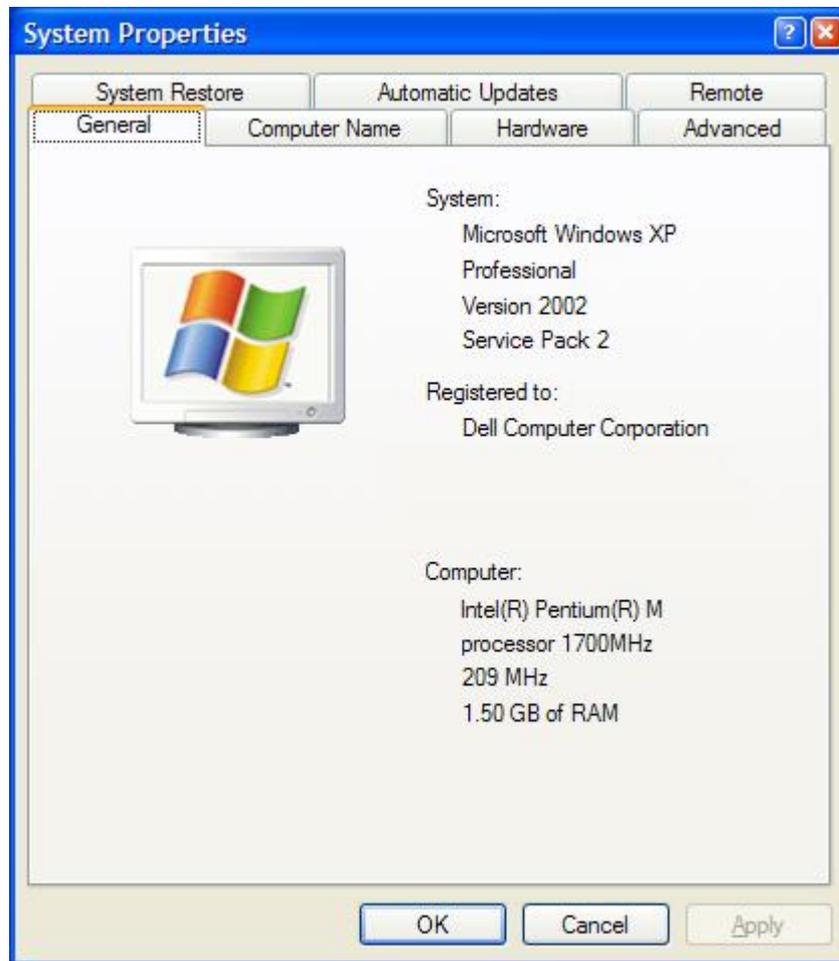
## How To Setup Microsoft Windows XP Clients Connecting To The Router



Depending on the service pack installed you have installed on your Windows XP operating the setup of the computer to connect to the Dell Wireless 2350 Broadband Router is different.

To check what service pack is installed, follow these steps:

1. Click the **Start** button, and then click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click **System**.
4. Click the **Wireless Networks** tab.  
The service pack installed should be displayed.



Once you have determined what service pack is installed then follow on of the below sections

▶ [How to Setup Microsoft Windows XP Clients without Service Pack 2 to Connect to the Router](#)

▶ [How to Setup Microsoft Windows XP Clients with Service Pack 2 to Connect to the Router](#)

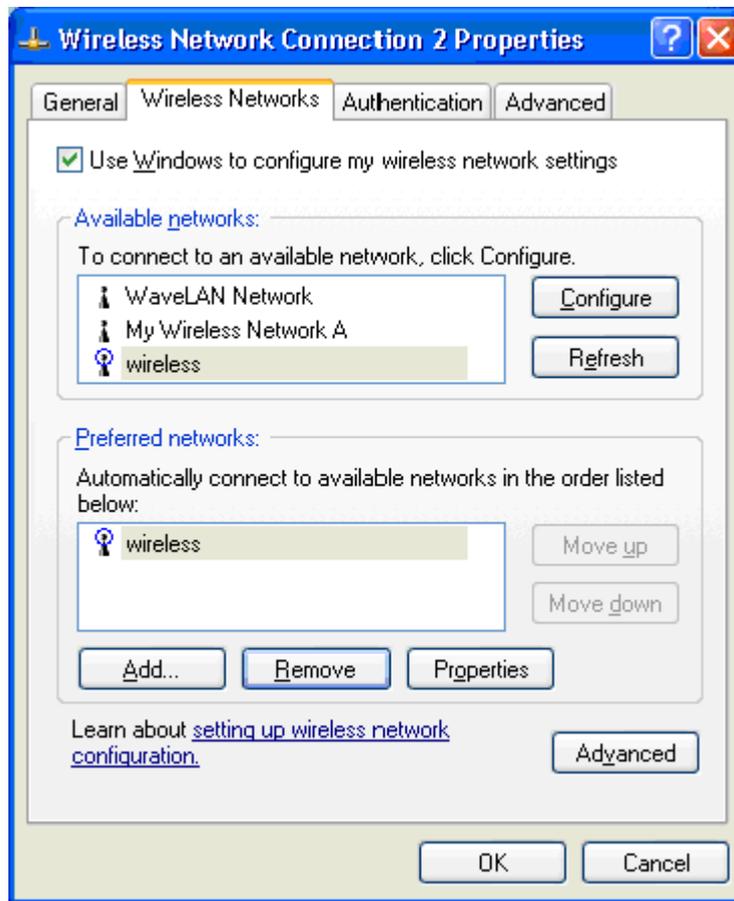
## How To Setup Microsoft Windows XP Clients with Service Pack 1 to Connect To The Router

### Configuring Automatic Network Connections

To configure one or more wireless networks for auto connection, follow these steps:

1. Click the **Start** button, and then click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click **Network Connections**.
4. Right-click the **Wireless Network Connection** icon, and then left-click **Properties**.
5. Click the **Wireless Networks** tab.  
The network name you set up should be present.

### Wireless Network Connection Properties



**NOTE:** For more information click [Learn about setting up wireless network configuration](#).

## Enabling Encryption

Because wireless networks transmit data using radio frequency transmission, other computers with wireless network adapters that are within range of your wireless broadband router can connect to your network. You can prevent unauthorized access to your wireless network by enabling encryption. When you enable encryption, you must specify a network encryption key. The network key can be a combination of numbers, letters, or numbers and letters. The network key must match the network key that you specified on your Dell Wireless 2350 Broadband Router.

1. From the desktop, click the **Start** button and click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click the **Network Connections** icon.
4. Right-click the **Wireless Network Connection** icon, and then left-click **Properties**.
5. Click the **Wireless Networks** tab.
6. Verify that the **Use Windows to configure my wireless network settings** box is selected. If it is not, click to select it.
7. Select your wireless network from the **Available networks** list, and click **Configure**. The **Wireless Network Properties** window appears.
8. Click to select **Data encryption (WEP enabled)**, under **Wireless network key (WEP)**, and click to deselect **The key is provided for me automatically**. This will allow you to enter an encryption key into the field marked **Network key**.
9. Type your network key into the **Network key** field.
10. Once you have entered your key, click the **OK** button.

**NOTE:** If the network encryption key on your wireless client does not match the key set on your Dell Wireless 2350 Broadband Router, your computer will fail to connect to the network.

# How To Setup Microsoft Windows XP Clients with Service Pack 2 to Connect To The Router

## Configuring Automatic Network Connections

Dell recommends using the Setup Wizard that is located on the Dell Wireless 2350 Broadband Router CD that came with your device.

To run the Setup Wizard, perform the following steps:

1. Insert the **Dell Wireless 2350 Broadband Router Setup CD** into the CD drive onto the computer you wish to connect wirelessly to the Dell Wireless 2350 Broadband Router.  
Your CD should automatically launch the Setup Wizard. If it does not, complete the following steps to start the Wizard.
  - a. Click the **Start** button, and then click **Run**.
  - b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.

Once the Setup Wizard has been launched, select the "**Connect Wireless Computer**" option and follow the on screen instructions.

**NOTE:** If the network encryption key on your wireless client does not match the key set on your Dell Wireless 2350 Broadband Router, your computer will fail to connect to the network.

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# Using Your Router:

## Dell™ Wireless 2350 Broadband Router User's Guide

- ▶ [Overview](#)
  - ▶ [Factory Default Settings](#)
  - ▶ [Setup Wizard](#)
  - ▶ [Control Utility](#)
  - ▶ [Web-Based Configuration Tool](#)
- 

### Overview

**Factory Default Settings:** Your Dell Wireless 2350 Broadband Router came with [factory default settings](#) that should work for the majority of the network usage scenarios. However, there are cases where your network environment may require a different router configuration.

**Setup Wizard:** The Setup Wizard is a Windows-based software program included on your Dell Wireless 2350 Broadband Router CD. You can use this program to 1) install the router on your network and create an environment for multiple computers to share Internet access, 2) add additional computers to the network, 3) install the Control Utility on your computer and 4) provide links to the user's guide and the [Dell support website](#). Refer to the section [Setup Wizard](#) for detailed information.

**Control Utility:** The Control Utility is a Windows-based software program included on your Dell Wireless 2350 Broadband Router CD. This utility can be installed on your computer by choosing the Install Control Utility option in the Setup Wizard. It provides you with a useful configuration tool to manage your Dell Wireless 2350 Broadband Router. Refer to the section [Control Utility](#) for detailed information.

**Web-Based Configuration Tool:** The web-based configuration tool is for advanced configuration of the Dell Wireless 2350 Broadband Router. It is a tool provided inside the router which can be accessed via the web browser on your computer. This tool includes every basic and advanced configuration option for the Dell Wireless 2350 Broadband Router. For instance, you can allow other Internet users to access a Web server hosted on your local private network, or disable your wireless network. Refer to the section [Web-Based Configuration Tool](#) for detailed information.

 **NOTE:** The **Setup Wizard** or **Control Utility** must be run on Windows 2000 and Windows XP computers. Microsoft Internet Explorer 4.0 or higher or Netscape 4.0 or higher must be used for the web-based configuration tool.

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## Factory Default Settings: Dell™ Wireless 2350 Broadband Router User's Guide

Dell pre-configures the Dell Wireless 2350 Broadband Router with the following settings:

**NOTE:** If you lose track of the device settings, you can reset the router by pushing the reset button to restore these settings back to your router.

Setting	Default
User Name	admin
Password	admin
Device Name	Dell Wireless 2350 BroadBand router
IP Address	192.168.2.1
Subnet Mask	255.255.255.0
10 Mbps Ethernet WAN IP	<obtain from ISP via DHCP>
WAN DHCP Client	Enabled
ESSID (wireless network name)	wireless
Channel	Auto
Encryption	No Encryption
DHCP Server	Enabled
NAT Routing	Enabled

**NOTE:** Your Dell Wireless 2350 Broadband Router came with factory default settings that should work for the majority of the network usage scenarios. However, there are cases where your network environment may require a different router configuration.

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# Setup Wizard: Dell™ Wireless 2350 Broadband Router User's Guide

▶ [Introduction](#)

▶ [Launching the Setup Wizard](#)

▶ [Setup Wizard Screens](#)

## Introduction

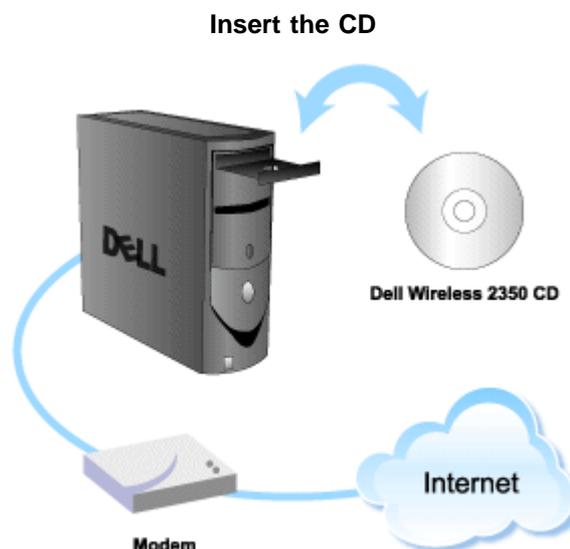
The Setup Wizard is an easy-to-use program included on your Dell Wireless 2350 Broadband Router CD. It provides simplified configuration procedures for establishing Internet connectivity on the Dell Wireless 2350 Broadband Router. The Setup Wizard first extracts the connection settings from your active ISP connection on your computer with a cable/DSL modem. It then displays a series of graphical illustrations on how to connect the router to the network. Finally it applies the extracted settings on your router and validates its installation. If the installation cannot be completed successfully, the Setup Wizard will display troubleshooting instructions to guide you through the installation process.

In addition, the Setup Wizard also supports the installation of the Control Utility and provides links to the user's guide on the Dell Wireless 2350 Broadband Router CD and the Dell support website. It also provides a wizard to help you connect additional computer to your Dell Wireless 2350 Broadband Router.

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## Launching the Setup Wizard

To run the Setup Wizard, perform the following steps:



1. Insert the **Dell Wireless 2350 Broadband Router Setup CD** into the CD drive on a computer that is connected directly to the Internet.

Your CD should automatically launch the Setup Wizard. If it does not, complete the following steps to start the Wizard.

- a. Click the **Start** button, and then click **Run**.
- b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.

Once the Setup Wizard has been launched, you will be guided through a series of windows. These windows are illustrated below along with an explanation on their functionalities.

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## Setup Wizard Screens

### Welcome Menu

This menu offers several options to select from.

- **Router Installation**  
Begin installing your router and configure it to connect to the Internet.
- **Connect Additional Computer**  
Configure a computer to connect to the Dell Wireless 2350 Broadband Router.
- **Install Control Utility**  
Install the Control Utility on a computer
- **User's Guide**  
View the user's guide (this document)
- **Exit**  
End the Setup Wizard

**Welcome**

## Welcome to the Dell Wireless 2350 Configuration



<b>Router Installation</b>	Setup and configure your Dell Wireless 2350 Broadband Router to access the Internet.
<b>Connect Additional Computer</b>	Setup a computer to connect to the Dell Wireless 2350 Broadband Router.
<b>Install Control Utility</b>	Install the Dell Wireless 2350 Broadband Router Control Utility and User's Guide on this computer.
<b>User's Guide</b>	View the User's Guide of the Dell Wireless 2350 Broadband Router in HTML format.
<b>Exit</b>	Exit the setup wizard.

- To begin Installing your Dell Wireless 2350 Broadband Router click **Router Installation**. The computer that is used to install the router should already be connected to the Internet via a cable or DSL modem.
- To connect additional computers to your network after you have successfully installed the router using the **Router Installation** option, place the Dell Wireless 2350 Broadband Router CD in each additional computer and run the Setup Wizard. Click **Connect Additional Computers** to add each additional computer to your network.

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### Verifying the Internet Connection on Your Computer with a Cable or DSL Modem

To install your Dell Wireless 2350 Broadband Router, please verify that this computer can directly access the Internet.

#### **Verifying the Internet Connection**

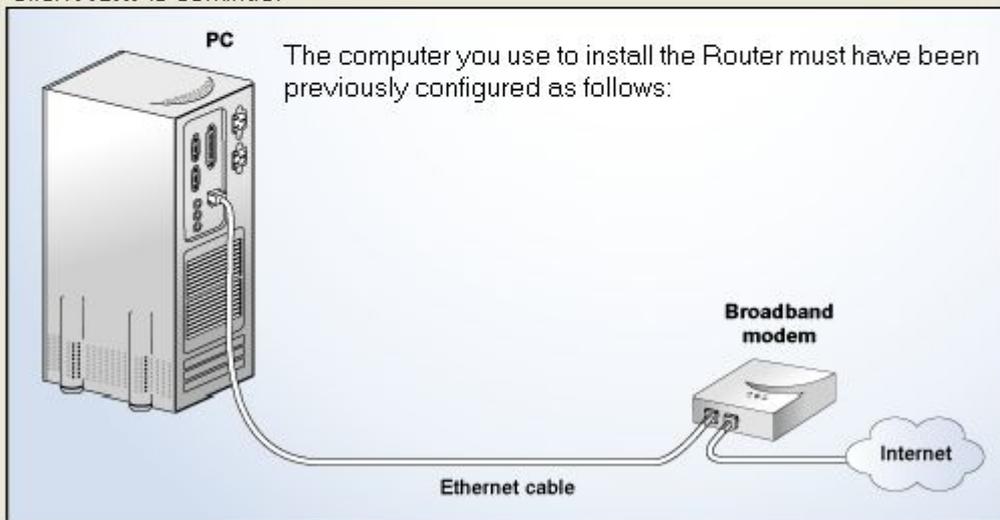
## Verify the Internet connection on your computer through a DSL/Cable modem



If you have not already verified that this computer can directly access the Internet through a DSL/Cable modem, then do so now by opening a web browser and browsing the internet.

**Note:** If you don't have Internet access or you do not know how to connect to the Internet from this computer, call your local Internet Service Provider for help.

Click **Next** to continue.



Exit to Main Menu

Next

### Confirming the Internet Connection

Verify the Internet connection on your  
computer through a DSL/Cable modem



The Setup Wizard is now verifying the Internet connection on your  
computer. Please wait....

Cancel

If you are using a [PPPoE \(Point to Point Protocol over Ethernet\)](#) connection, your computer will then need to reboot. After rebooting, the Setup Wizard will run and display the below message. Click next to continue.

**Successful Reboot**

Welcome to the Dell Wireless 2350  
Configuration



**Reboot was successful!**

Click **Next** to continue.

**Note:** Do not connect to any DSL login screen that may appear.

Exit to Main Menu

Next

The next step is to reboot your modem. After rebooting the modem, click next to continue.

## Connect the Dell Wireless 2350 Broadband Router to your network



### Important Note

Some ISP's require a reboot of the modem when installing a router. Most modem reboots can be accomplished by disconnecting power from the modem for a minimum of 30 seconds and then reconnecting power to the modem.

We suggest that you reboot your modem now to help ensure a successful connection.

Please wait until your modem has completed it's reboot cycle before clicking **Next** to continue.

Exit to Main Menu

Next

### Connecting the Dell Wireless 2350 Broadband Router to Your Network

Step 1 illustrates how to disconnect your cable/DSL modem from your computer.

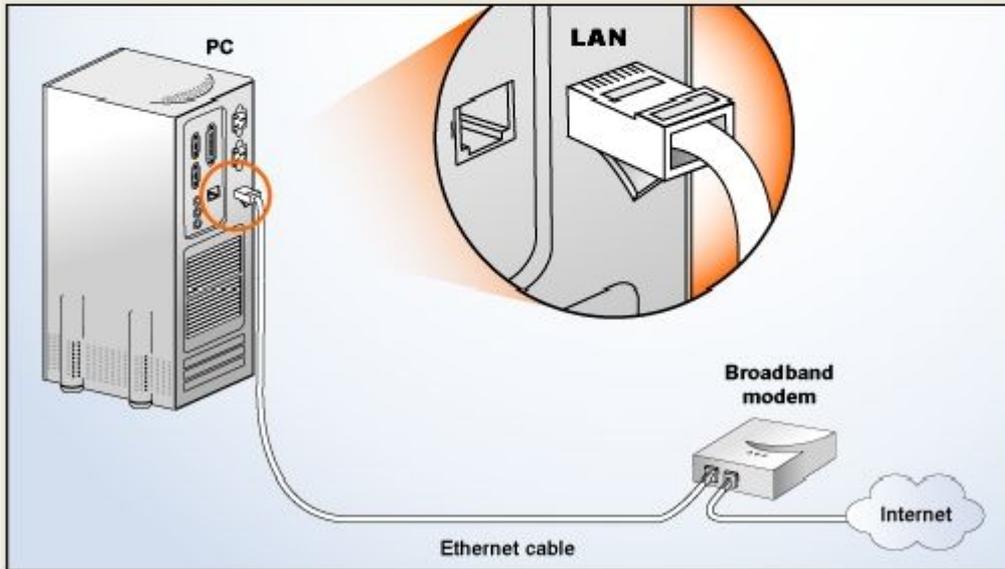
#### Disconnecting the Cable/DSL Modem: Step 1

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 1

Unplug the Ethernet cable that connects your modem to your computer. Click **Next** to continue.



Exit to Main Menu

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Step 2 illustrates how to connect the cable/DSL modem to the Dell Wireless 2350 Broadband Router.

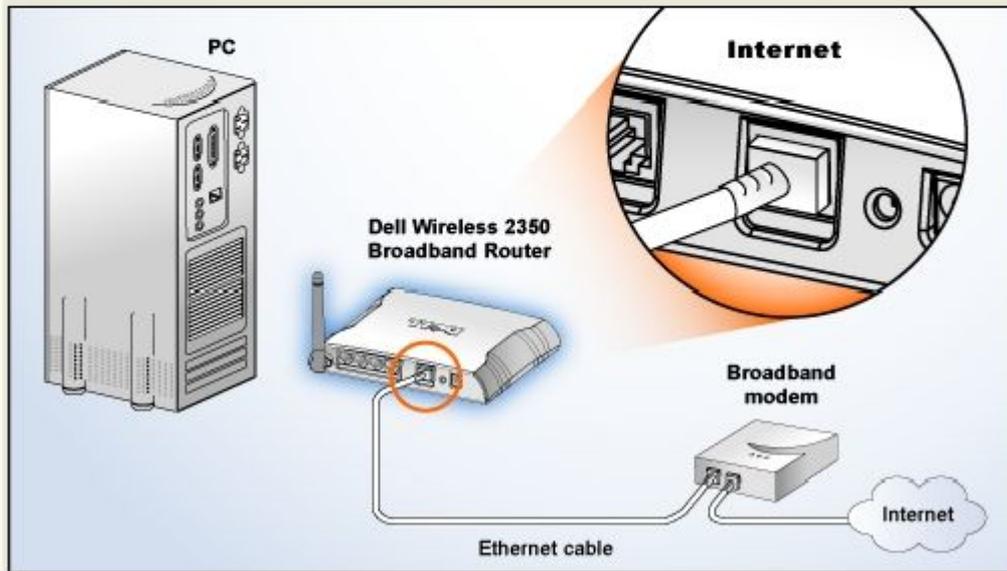
### Connecting the Modem to the Router: Step 2

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 2

Plug the Ethernet cable from the modem into the internet port of the Dell Wireless 2350 Broadband Router. This is the same cable that you have just disconnected from your computer. Click **Next** to continue.



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Step 3 illustrates how to connect the supplied Ethernet cable to your computer.

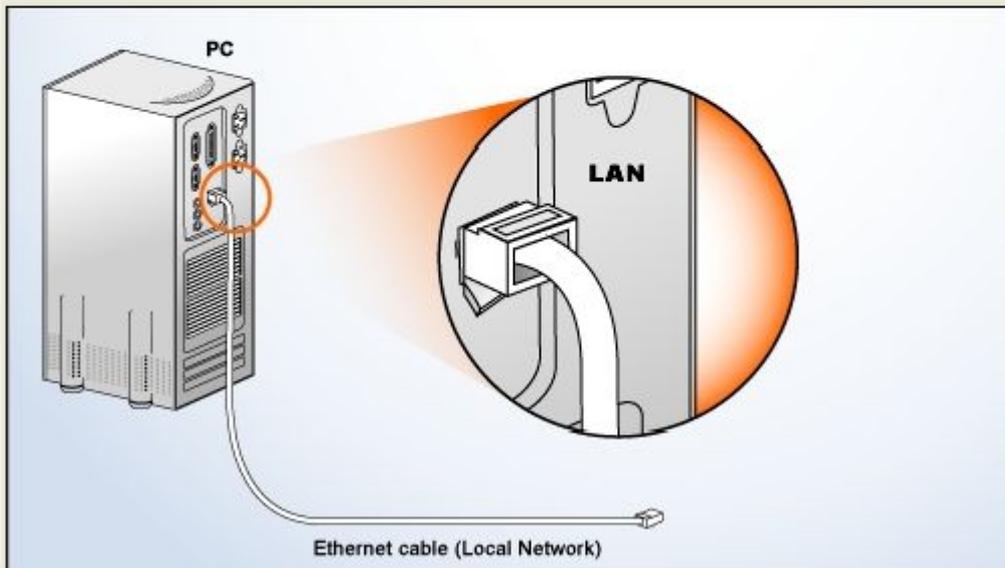
### Connect the Ethernet Cable to the Computer: Step 3

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 3

Plug the Ethernet cable that came with the Dell Wireless 2350 Broadband Router into the LAN port of your computer. Note: This is the same port that was previously connected to your modem. Click **Next** to continue.



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Step 4 illustrates how the Dell Wireless 2350 Broadband Router to your computer.

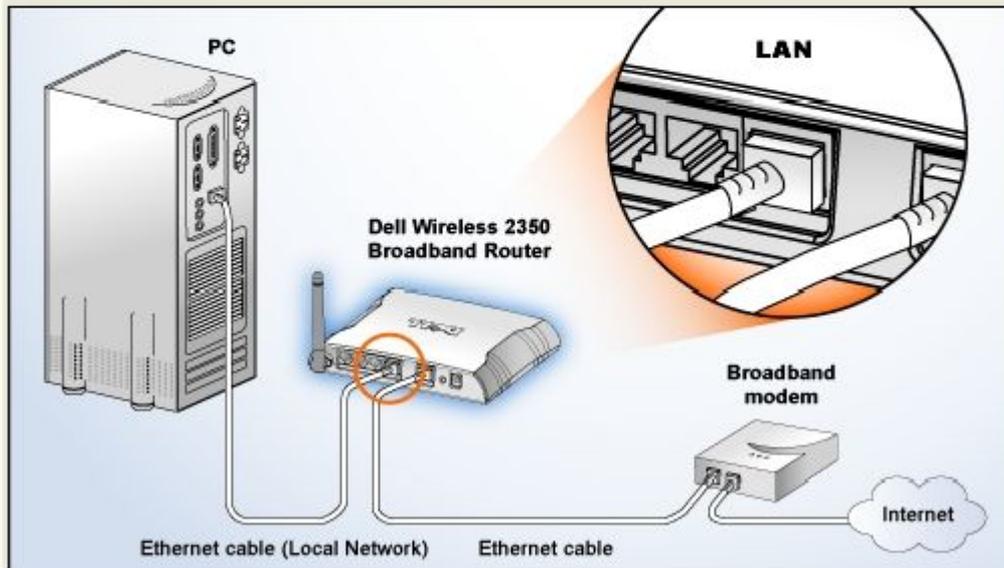
### Connecting the Router to the Computer: Step 4

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 4

Plug the other end of the Ethernet cable that came with the Dell Wireless 2350 Broadband Router into any of the four LAN ports of the router (numbered 1 to 4). Click **Next** to continue.



Exit to Main Menu

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Step 5 illustrates how the Dell Wireless 2350 Broadband Router is connected to the power supply.

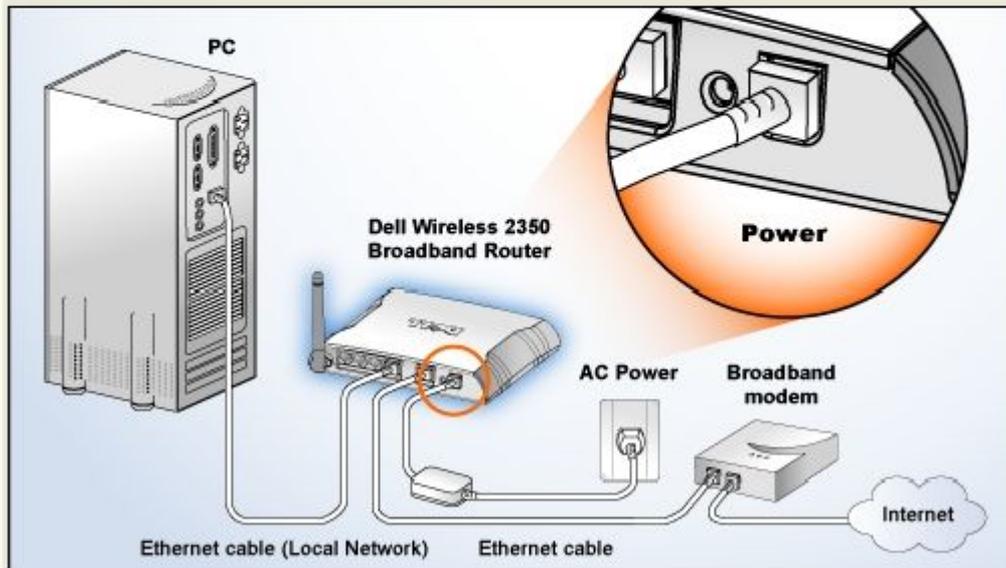
### Connecting the Power Supply to the Router: Step 5

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 5

Plug the Power Adapter into the Wall. Plug the other end into the Dell Wireless 2350 Broadband Router. Click **Next** to continue.



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Step 6 illustrates how to verify that you have connected everything as outlined..

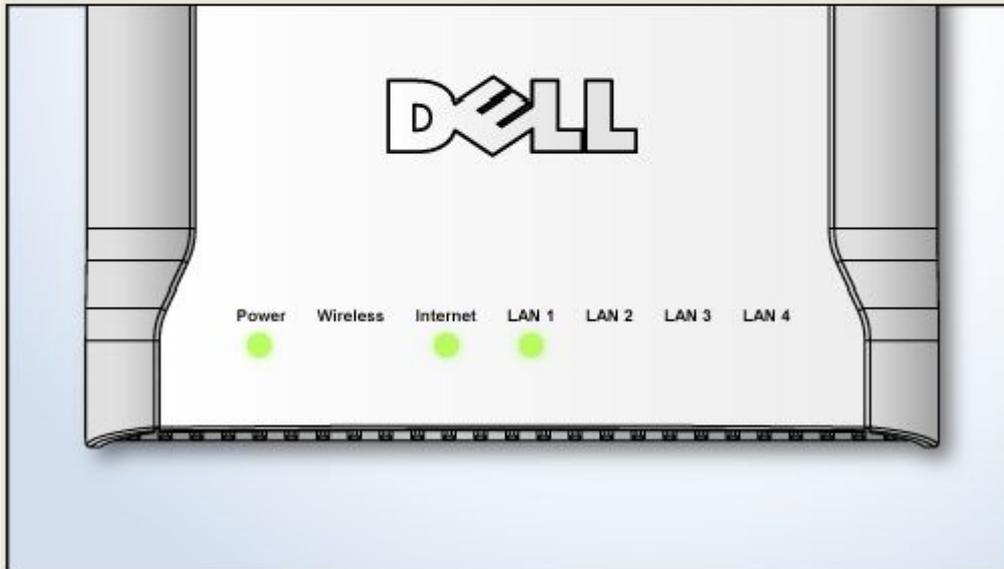
### Verifying your Connections: Step 6

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 6

Verify your setup by ensuring that the Power, Internet and at least one of the numbered LED's (1, 2, 3 or 4) on the front panel of the router are lit. If not, make sure all cables are properly connected to the router. Click **Next** to continue.



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### Configuring the Dell Wireless 2350 Broadband Router

If you are using a PPPoE connection, type your PPPoE username and password in the boxes provided.

#### PPPoE Settings

## Configure the Dell Wireless 2350 Broadband Router



The Setup Wizard has detected a DSL connection and will apply its settings to the Dell Wireless 2350 Broadband Router.

Enter your DSL User name and Password in the fields below. Then click **Next** to continue.

### DSL Dialup information

User name:

Password:

Confirm Password:

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Next

Select the type of Network your want to setup. Selecting the "Setup a Secure Router" will setup the Dell Wireless 2350 Broadband Router to use WEP to secure wireless connections. If you chose this option the your wireless clients will also need to use the same WEP settings. To setup a network that does not use encryption select "Setup a Non Secure Router" option. Follow the onscreen instruction for completing the settings..

### Setting up the Network

## Choose your security level



A secure Router will only allow valid wireless clients to connect to your wireless network.

A non-secure Router allows all wireless clients to connect to your wireless network.

Setup a Non Secure Router

Setup the Dell Wireless 2350 Broadband Router to support non-secure wireless connections only.

Setup a Secure Router

Setup the Dell Wireless 2350 Broadband Router to support secure wireless connections only.

Exit to Main Menu

The Setup Wizard will apply the Internet connection settings to your Dell Wireless 2350 Broadband Router when you have finished.

### Configuring the Router

Configure the Dell Wireless 2350  
Broadband Router



The Setup Wizard is now configuring the Dell Wireless 2350 Broadband Router. Please wait.

A progress bar is shown at the top of the message box, with a small blue segment on the left side. The message box has a light beige background and a thin border.

Cancel

**Congratulations**

You have successfully installed the Dell Wireless 2350 Broadband Router and configured the first computer for Internet access.

**Congratulations**

## Congratulations



You have successfully configured the Dell Wireless 2350 Broadband Router. Now you can access the Internet using your browser through a wired connection.

To setup another computer to connect to the Dell Wireless 2350 Broadband Router, run the Setup Wizard again from the CD on the other computer and choose **Connect Additional Computer**

Exit to Main Menu

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## Control Utility: Dell™ Wireless 2350 Broadband Router User's Guide

The Control Utility is Windows-based software that allows you to configure your router and monitor the status of the connection from your computer to the Dell Wireless 2350 Broadband Router and to the Internet.

▶ [Installing the Control Utility](#)

▶ [Uninstalling the Control Utility](#)

▶ [Starting the Control Utility](#)

▶ [Exiting the Control Utility](#)

▶ [How to Configure the Dell Wireless 2350 Broadband Router using the Control Utility](#)

---

### Installing the Control Utility

You can install the Control Utility on your computer from the Setup Wizard opening "**Welcome Screen**".

1. Insert the *Dell Wireless 2350 Broadband Router CD* into the CD drive. Your computer should automatically launch the **Setup Wizard** program. If it does not, complete the following steps to start the Wizard.
  - a. Click the **Start** button, and then click **Run**.
  - b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.
  - c. Click the **OK** button.
2. From the main menu, click the **Install Control Utility** button.
3. Follow the on-screen instructions.

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### Uninstalling the Control Utility

1. If the Dell Wireless 2350 Broadband Router icon is displayed in the system tray in the lower right corner of the screen, right-click this icon and click **Exit**.
2. Click the **Start** button.
3. Click **Control Panel**. The **Control Panel** window appears.
4. Click the **Add/Remove Programs** icon.
5. Click to select the **Control Utility** from the program list and remove it as instructed.

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### Starting the Control Utility

The control utility program will run automatically upon each computer start-up by default. If the utility does not start automatically, run the **Dell Wireless 2350 Broadband Router Dell Control Utility** from the **Start** menu.

Once running, a router icon is created in the system tray in the lower right corner of your screen. If you have a good connection to the Internet, the system tray icon looks gray and white . You can double-click the router icon to open the utility panel.

**NOTE:** If the icon is yellow , it indicates that the Internet connection is not active. If the icon is red , it indicates that the connection to the router failed.

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## Exiting the Control Utility

When you start the control utility program, it will place a small gray and white icon  in the system tray in the lower right corner of your screen. If you want to exit the program, right-click the icon, and then left-click **Exit** to quit the program.

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## Web-based Configuration Tool: Dell™ Wireless 2350 Broadband Router User's Guide

[Overview](#)

[Basic Settings](#)

[Advanced Settings](#)

[Device Status](#)

[System Tools](#)

[Log Off](#)

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### Overview

The web-based configuration tool enables you to set up advanced network configuration for your Dell Wireless 2350 Broadband Router. Follow the instructions below to gain access to the web tool.

 **NOTE:** Microsoft Internet Explorer 4.0 or higher or Netscape 4.0 or higher must be used for the web-based configuration tool.

 **NOTE:** The web-based configuration tool only allows access to one user at a time.

1. Click the **Start** button, and then click **Run**.
2. Type the following text in the **Open** box: <http://my.router>
3. If this is the first time configuring your Dell Wireless 2350 Broadband Router, or if the user name and password have not been changed from the default settings, type **admin** in the **User Name** field and **admin** in the **Password** field.
4. Click the **OK** button. The **Configuration** screen appears.

 **NOTE:** Dell technical support representatives do not support the configuration options in the **Advanced Settings** portion of the configuration program. These options are provided for your convenience only. However, the advanced settings are fully documented and explained in this guide.

**Main Menu**



## Dell Wireless 2350 Broadband Router

### Basic Settings

Use the basic settings to change the mode of your router, Wireless network name and channel, wireless security, and internet connection settings.

### Advanced Settings

Use the advanced settings to change the IP address of the router, DHCP server options, Time zone, Advanced wireless settings, Parental control options, Access control options, and Administration options.

### Device Status

Use the device status to check the status for each connection to your router.

### System Tools

Use System tools to check the intruder log, display the routing table, perform system diagnostics, load default settings, upgrade firmware, and reset the router.

### Help

Use the Help link to get on-screen help with the features of the router.

### Log Off

Exit the Dell Wireless 2350 Broadband router configuration.

## Log Off

Select this option to log out of the web-based configuration. Press the **Submit** button to confirm that you want to log off.

 **NOTE:** The web-based configuration tool only allows access to one user at a time.

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# Technical Specifications and Regulatory Information: Dell™ Wireless 2350 Broadband Router User's Guide

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## Wireless Interoperability

The Dell Wireless 2350 products are designed to be interoperable with any wireless LAN product that is based on direct sequence spread spectrum (DSSS) and orthogonal frequency division multiplexing (OFDM) radio technology and to comply with the following standards:

- IEEE 802.11b Standard on Wireless LAN
- IEEE 802.11g Standard on Wireless LAN
- Wireless Fidelity (WiFi) certification, as defined by the WECA (Wireless Ethernet Compatibility Alliance)

## Wireless 802.11 and Your Health

The Dell Wireless 2350 Broadband Router, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Dell Wireless 2350 device operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of the Dell Wireless 2350 devices may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations include the following:

- Using the Dell Wireless equipment on board airplanes, or
- Using the Dell Wireless equipment in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.

If you are uncertain of the policy that applies to the use of wireless devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the Dell Wireless 2350 Broadband Router device before you turn it on.

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## Technical Specifications

<b>Standards supported</b>	IEEE 802.3, IEEE 802.3u, IEEE 802.11b, IEEE 802.11g
<b>Protocols</b>	TCP/ IP, UDP, DHCP Client, DHCP Server
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Operating Humidity 10% to 85% (Non-Condensing)</li> <li>• Storage Humidity 5% to 90% (Non-Condensing)</li> <li>• Operating Temperature 0° to 40° C (32° F to 104° F)</li> </ul>

**Power specification**

- Storage Temperature 0° to 70° C (32° F to 158° F)

*Receive Sensitivity*

- 11Mbps: 10-5 BER @ -80 dBm, typical
- 54Mbps: 10-5 BER @ -65 dBm, typical

*Transmit Power*

- Up to 20 dBm

*DC power supply*

- Input: AC 100-250 50-60 Hz 1A
- Output: 12V DC 0.5A for Power Supply D7658  
5V DC 2A for Power Supply 2W850

**Radio specification** Range: "Up to 100m" indoors and "Up to 450m" outdoors (open range)

Frequency range: 2.4 - 2.4835 GHz, direct sequence spread spectrum

Number of Channels:

- Europe: 13 (1-13)
- US: 11 (1-11)
- France: 13 (1-13)
- Japan: 13 (1-13)
- Taiwan: 11 (1-11)

Supported bit rates:

*For 802.11g:*

- 54 Mbps
- 48 Mbps
- 36 Mbps
- 24 Mbps
- 18 Mbps
- 12 Mbps
- 9 Mbps
- 6 Mbps

*For 802.11b:*

- 11 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

**Specific features**

Data Encryption: WEP (64/128 bit) and WPA-PSK

## Utility Software

- Setup Wizard software
- Control Utility software

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## Regulatory Information

The Dell Wireless 2350 wireless network device must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. For country-specific approvals, see Radio approvals. Dell Inc is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Dell Wireless 2350 kit, or the substitution or attachment of connecting cables and equipment other than that specified by Dell Inc. The correction of interference caused by such unauthorized modification, substitution or attachment is the responsibility of the user. Dell Inc and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user failing to comply with these guidelines.

For the latest regulatory information, documentation, and other updates, please visit the Dell website at [support.dell.com](http://support.dell.com).

### Canada -- Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

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### Europe -- EU Declaration of Conformity



This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

Cet équipement est conforme aux principales caractéristiques définies dans la Directive européenne RTTE 1999/5/CE.

Die Geräte erfüllen die grundlegenden Anforderungen der RTTE-Richtlinie 1999/5/EG.

Questa apparecchiatura è conforme ai requisiti essenziali della Direttiva Europea R&TTE 1999/5/CE.

Este equipo cumple los requisitos principales de la Directiva 1999/5/CE de la UE, "Equipos de Terminales de Radio y Telecomunicaciones".

Este equipamento cumpre os requisitos essenciais da Directiva 1999/5/CE do Parlamento Europeu e do Conselho (Directiva RTT).

Deze apparatuur voldoet aan de noodzakelijke vereisten van EU-richtlijn betreffende radioapparatuur en telecommunicatie-eindapparatuur 1999/5/EG.

Deze udstyr opfylder de Væsentlige krav i EU's direktiv 1999/5/EC om Radio- og teleterminaludstyr.

Dette utstyret er i overensstemmelse med hovedkravene i R&TTE-direktivet (1999/5/EC) fra EU.

Utrustningen uppfyller kraven för EU-direktivet 1999/5/EC om ansluten teleutrustning och ömsesidigt erkännande av utrustningens överensstämmelse (R&TTE).

Tämä laite vastaa EU:n radio- ja telepäteläitedirektiivin (EU R&TTE Directive 1999/5/EC) vaatimuksia.

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### France

Some areas of France have a restricted frequency band. The worst-case maximum authorized power indoors is:

10 mW for the entire 2.4 GHz band (2400 MHz - 2483.5 MHz)

100 mW for frequencies between 2446.5 MHz and 2483.5 MHz (NOTE - Channels 10 through 13 inclusive operate in the band

2446.6 MHz - 2483.5 MHz)

There are few possibilities for outdoor use: On private property or on the private property of public persons, use is subject to a preliminary authorization procedure by the Ministry of Defence, with maximum authorized power of 100 mW in the 2446.5 - 2483.5 MHz band. Use outdoors on public property is not permitted.

In the departments listed below, for the entire 2.4 GHz band:

Maximum authorized power indoors is 100 mW

Maximum authorized power outdoors is 10 mW

Departements in which the use of the 2400 - 2483.5 MHz band is permitted with an EIRP of less than 100 mW indoors and less than 10 mW outdoors:

01	Ain Orientales	36	Indre	66	Pyrénées
02	Aisne	37	Indre et Loire	67	Bas Rhin
03	Allier	41	Loir et Cher	68	Haut Rhin
05	Hautes Alpes	42	Loire	70	Haute Saône
08	Ardennes	45	Loiret	71	Saône et Loire
09	Ariège	50	Manche	75	Paris
11	Aude	55	Meuse	82	Tarn et Garonne
12	Aveyron	58	Nièvre	84	Vaucluse
16	Charente	59	Nord	88	Vosges
24	Dordogne	60	Oise	89	Yonne
25	Doubs	61	Orne	90	Territoire de Belfort
26	Drôme	63	Puy du Dôme	94	Val de Marne
32	Gers	64	Pyrénées Atlantique		

This requirement is likely to change over time, allowing you to use your wireless LAN card in more areas within France. Please check with ART for the latest information ([www.art-telecom.fr](http://www.art-telecom.fr))

 **NOTE:** Your Dell Wireless 2350 Broadband Router transmits less than 100 mW, but more than 10 mW.

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## Italia

A license is required for indoor use. Outdoor use is prohibited.

E' necessaria la concessione ministeriale anche per l'uso interno. Verificare con i rivenditori la procedura da seguire. L'uso per installazione in esterni non e' permessa.

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## USA -- Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference that may cause undesired operation.

Dell declares that WRTA-108GD ( FCC ID: MXF-R930720G ) is limited in CH1~CH11 for 2.4GHz by specified firmware controlled in U.S.A.

## Interference statement

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. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such 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 taking one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the distance between the equipment and the receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

 **NOTE:** This Dell Wireless 2350 wireless network device must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations.

## IMPORTANT NOTE

### FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### Radio approvals

To determine whether you are allowed to use your wireless network device in a specific country, please check to see if the radio type number that is printed on the identification label of your device is listed on the radio approval list posted on the general Dell support site at [support.dell.com](http://support.dell.com).

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## Limited Warranties and Return Policy

Dell-branded hardware products purchased in the U.S. or Canada come with either a 90-day (U.S. only), one-year, two-year, three-year, or four-year limited warranty. To determine which warranty you purchased, see the invoice that accompanied your hardware product(s). The following sections describe the limited warranties and return policy for the U.S., the limited warranties and return policy for Canada, and the manufacturer guarantee for Latin America and the Caribbean.

### Limited Warranty for the U.S.

#### What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your - our end-user customer's - Dell-branded hardware products, including Dell-branded peripheral products.

**What is not covered by this limited warranty?**

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, third-party software, or the reloading of software
- Non-Dell-branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD REFLECTED ON YOUR INVOICE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.**

**WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

**How long does this limited warranty last?**

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

**What do I do if I need warranty service?**

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

<b>Individual Home Consumers:</b>	
Technical Support	1-800-624-9896
Customer Service	1-800-624-9897
<b>Individual Home Consumers who purchased through an Employee Purchase Program:</b>	
Technical Support and Customer Service	1-800-822-8965
<b>Home and Small Business Commercial Customers:</b>	
Technical Support and Customer Service	1-800-456-3355
<b>Medium, Large, or Global Commercial Customers, Healthcare Customers, and Value Added Resellers (VARs):</b>	

Technical Support and Customer Service	1-800-822-8965
<b>Government and Education Customers:</b>	
Technical Support and Customer Service	1-800-234-1490
<b>Dell-Branded Memory</b>	1-888-363-5150

### What will Dell do?

**During the first 90 days of the 90-day limited warranty and the first year of all other limited warranties:** For the first 90 days of the 90-day limited warranty and the first year of all other limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the product is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

 **NOTE:** Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary, or personal information and removable media such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary, or personal information; lost or corrupted data; or damaged or lost removable media.

**During the remaining years:** For the remaining period of the limited warranty, we will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

 **NOTE:** Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

### What if I purchased a service contract?

If your on-site service contract is with Dell, on-site service will be provided to you under the terms of the on-site service agreement. Please refer to that contract for details on how to obtain service.

If you purchased through us a service contract with one of our third-party service providers, please refer to that contract for details on how to obtain service.

### How will you fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality.

Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought.

### **What do I do if I am not satisfied?**

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT, OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach, termination, or validity thereof, the relationships which result from this limited warranty (including, to the full extent permitted by applicable law, relationships with third parties), Dell's advertising, or any related purchase **SHALL BE RESOLVED EXCLUSIVELY AND FINALLY BY BINDING ARBITRATION ADMINISTERED BY THE NATIONAL ARBITRATION FORUM (NAF)** under its Code of Procedure then in effect (available via the Internet at [www.arb-forum.com](http://www.arb-forum.com) or via telephone at 1-800-474-2371). The arbitration will be limited solely to the dispute or controversy between you and Dell. Any award of the arbitrator(s) shall be final and binding on each of the parties, and may be entered as a judgment in any court of competent jurisdiction. Information may be obtained and claims may be filed with the NAF at P.O. Box 50191, Minneapolis, MN 55405. This provision applies only to individual home consumers and consumers who purchased through an employee purchase program. It does not apply to small, medium, large, and global commercial customers or government, education, and healthcare customers.

### **May I transfer the limited warranty?**

Limited warranties on systems may be transferred if the current owner transfers ownership of the system and records the transfer with us. The limited warranty on Dell-branded memory may not be transferred. You may record your transfer by going to Dell's website:

- If you are an Individual Home Consumer, go to [www.dell.com/us/en/dhs/topics/sbtopic\\_015\\_ccare.htm](http://www.dell.com/us/en/dhs/topics/sbtopic_015_ccare.htm)
- If you are a Small, Medium, Large, or Global Commercial Customer, go to [www.dell.com/us/en/biz/topics/sbtopic\\_ccare\\_nav\\_015\\_ccare.htm](http://www.dell.com/us/en/biz/topics/sbtopic_ccare_nav_015_ccare.htm)
- If you are a Government, Education, or Healthcare Customer, or an Individual Consumer who purchased through an employee purchase program, go to [www.dell.com/us/en/pub/topics/sbtopic\\_015\\_ccare.htm](http://www.dell.com/us/en/pub/topics/sbtopic_015_ccare.htm)

If you do not have Internet access, call your customer care representative or call 1-800-624-9897.

### **"Total Satisfaction" Return Policy (U.S. Only)**

We value our relationship with you and want to make sure that you're satisfied with your purchases. That's why we offer a "Total Satisfaction" return policy for most products that you, the end-user customer, purchase directly from Dell. Under this policy, you may return to Dell products that you purchased directly from Dell for a credit or a refund of the purchase price paid, less shipping and handling and applicable return fees as follows:

**New Hardware Products and Accessories:** Unless you have a separate agreement with Dell, all hardware, accessories, peripherals, parts and unopened software still in its/their sealed package, excluding the products listed below, may be returned within twenty-one (21) days from the date on the packing slip or invoice.

Exclusions from the foregoing return policy:

- New PowerEdge™, PowerConnect™ and PowerVault™ products (excluding PowerVault 160T tape libraries) may be returned within thirty (30) days from the date on the packing slip or invoice, except that new PowerEdge™ SC servers and n series products purchased from the Small and Medium Business Sales Division may only be returned within fourteen (14) days from the date on the packing slip or invoice.

- Application software or an operating system that has been installed by Dell may not be returned unless you return the entire computer under the 21-day return policy, if applicable to your purchase (if not applicable to your purchase, you may not return application software or an operating system).
- Non-defective third party and Dell-branded software, peripheral, electronics and accessory products (for example: televisions, printers, projectors, MP3 players, PDAs, battery chargers, un-preinstalled third party software, wireless cards/access points/routers), including but not limited to those sold by or through Dell's "Software & Peripherals" or "Electronics & Accessories" groups, may be returned within twenty-one (21) days from the date on the packing slip or invoice, but a fifteen percent (15%) return fee may be deducted from any refund or credit.
- Dell | EMC storage products, EMC-branded products, Unisys-branded products, PowerVault™ 160T tape libraries, enterprise software, non-Dell branded enterprise products, software and/or software licenses, or any non-Dell customized hardware and/or software product(s) may not be returned at any time.

Reconditioned or Refurbished Dell - Branded Hardware Products and Parts - All reconditioned or refurbished PowerEdgeT , PowerConnectT and PowerVaultT products may be returned within thirty (30) days from the date on the packing slip or invoice. All other reconditioned or refurbished Dell-branded hardware products and parts may be returned within fourteen (14) days of the date on the packing slip or invoice.

How to Return: To return products, e-mail or call Dell customer service to receive a Credit Return Authorization Number within the return policy period applicable to the product you want to return. You must obtain a Credit Return Authorization Number in order to return the product. See "Contacting Dell" or "Getting Help" in your customer documentation (or [www.dell.com/us/en/gen/contact.htm](http://www.dell.com/us/en/gen/contact.htm)) to find the appropriate contact information for obtaining customer assistance.

You must ship the products to Dell within five (5) days of the date that Dell issues the Credit Return Authorization Number. You must also return the products to Dell in their original packaging, in as-new condition along with any media, documentation, and all other items that were included in the original shipment, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

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## Limited Warranty Terms for Canada

### What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your -- our end-user customer's -- Dell-branded hardware products, including Dell-branded peripheral products.

### What is not covered by this limited warranty?

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, or the reloading of the software
- Non-Dell branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM PROVINCE TO PROVINCE. DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN PRODUCT IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY**

**STATEMENT, FOR THE TERM OF THE WARRANTY PERIOD REFLECTED ON YOUR INVOICE. EXCEPT FOR THE EXPRESS WARRANTIES CONTAINED IN THIS WARRANTY STATEMENT, DELL DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. SOME PROVINCES DO NOT ALLOW THE EXCLUSION OF CERTAIN IMPLIED WARRANTIES OR CONDITIONS, OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY OR CONDITION LASTS. THEREFORE, THE FOREGOING EXCLUSIONS AND LIMITATIONS MAY NOT APPLY TO YOU.**

**WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS WARRANTY STATEMENT OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.**

**SOME PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

**How long does this limited warranty last?**

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the terms and availability of limited warranties, at its discretion, but any changes will not be retroactive (that is, the warranty terms in place at the time of purchase will apply to your purchase).

**What do I do if I need warranty service?**

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

<b>Individual Home Consumers; Home Office and Small Business Customers:</b>	
Technical Support and Customer Service	1-800-847-4096
<b>Medium, Large, and Global Commercial Customers; Government, Education, and Healthcare Customers; and Value Added Resellers (VARs):</b>	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463
<b>Government or Education Customers, or Individual Home Consumers who purchased through an Employee Purchase Program:</b>	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463 (Extension 8221 for Individual Consumers)
<b>Dell-Branded Memory</b>	1-888-363-5150

**What will Dell do?**

**During the first year of all limited warranties:** During the first year of all limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the

product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in Canada. Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis

**NOTE:** Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary or personal information, removable media, such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary or personal information; lost or corrupted data; or damaged or lost removable media.

**During the remaining years following the first year of all limited warranties :** We will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in Canada. Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

**NOTE:** Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

#### **What if I purchased an on-site service contract?**

If your service contract is with Dell, service will be provided to you under the terms of the service contract. Please refer to that contract for details on how to obtain service. Dell's service contracts can be found online at [www.dell.ca](http://www.dell.ca) or by calling Customer Care at 1-800-847-4096. If you purchased through us a service contract with one of our third-party service providers, please refer to that contract (mailed to you with your invoice) for details on how to obtain service.

#### **How will you fix my product?**

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality.

Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought. Dell owns all parts removed from repaired products.

#### **What do I do if I am not satisfied?**

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach, termination or validity thereof, the relationships which result from this limited warranty (including, to the full extent permitted by applicable law, relationships with third parties), Dell's advertising, or any related purchase **SHALL BE RESOLVED EXCLUSIVELY AND FINALLY BY BINDING ARBITRATION ADMINISTERED BY THE NATIONAL ARBITRATION FORUM**

(NAF) under its Code of Procedure then in effect (available via the Internet at [www.arb-forum.com](http://www.arb-forum.com), or via telephone at 1-800-474-2371). The arbitration will be limited solely to the dispute or controversy between you and Dell. Any award of the arbitrator(s) shall be final and binding on each of the parties, and may be entered as a judgment in any court of competent jurisdiction. Information may be obtained and claims may be filed with the NAF at P.O. Box 50191, Minneapolis, MN 55405.

#### **May I transfer the limited warranty?**

Limited warranties on systems may be transferred if the current owner transfers ownership of the system and records the transfer with us. The limited warranty on Dell-branded memory may not be transferred. You may record your transfer by going to our website:

- If you are an Individual Home Consumer, go to [www.dell.com/us/en/dhs/topics/sbtopic\\_016\\_ccare.htm](http://www.dell.com/us/en/dhs/topics/sbtopic_016_ccare.htm)
- If you are a Home Office, Small, Medium, Large, or Global Commercial Customer, go to [www.dell.com/us/en/biz/topics/sbtopic\\_ccare\\_nav\\_016\\_ccare.htm](http://www.dell.com/us/en/biz/topics/sbtopic_ccare_nav_016_ccare.htm)
- If you are a Government, Education, or Healthcare Customer, or an Individual Home Consumer who purchased through an Employee Purchase Program, go to [www.dell.com/us/en/pub/topics/sbtopic\\_016\\_ccare.htm](http://www.dell.com/us/en/pub/topics/sbtopic_016_ccare.htm)

If you do not have Internet access, please call Dell at 1-800-326-9463.

#### **"Total Satisfaction" Return Policy**

If you are an end-user customer who bought new products directly from Dell, you may return them to Dell up to 30 days after you receive them for a refund or credit of the product purchase price. If you are an end-user customer who bought reconditioned or refurbished products from Dell, you may return them to Dell within 14 days after the date of invoice for a refund or credit of the product purchase price. In either case, the refund or credit will not include any shipping and handling charges shown on your invoice and will be subject to a fifteen percent (15%) restocking fee, unless otherwise prohibited by law. If you are an organization that bought the products under a written agreement with Dell, the agreement may contain different terms for the return of products than specified by this policy.

To return products, you must call Dell Customer Service at 1-800-387-5759 to receive a Credit Return Authorization Number. To expedite the process of your refund or credit, Dell expects you to return the products to Dell in their original packaging within five days of the date that Dell issues the Credit Return Authorization Number. You must also prepay shipping charges and insure the shipment or accept the risk of loss or damage during shipment. You may return software for a refund or credit only if the sealed package containing the floppy disk(s) or CD(s) is unopened. Returned products must be in as-new condition, and all of the manuals, floppy disk(s), CD(s), power cables, and other items included with a product must be returned with it. For customers who want to return, for refund or credit only, either application or operating system software that has been installed by Dell, the whole system must be returned, along with any media and documentation that may have been included in the original shipment.

The "Total Satisfaction" Return Policy does not apply to Dell | EMC storage products. It also does not apply to products purchased through Dell's Software and Peripherals division. For those products, please instead refer to Dell's Software and Peripheral's then-current return policy (see the following section, "Dell Software and Peripherals (Canada Only)").

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#### **Dell Software and Peripherals (Canada Only)**

##### **Third-Party Software and Peripherals Products**

Similar to other resellers of software and peripherals, Dell does not warrant third-party products. Third-party software and peripheral products are covered by the warranties provided by the original manufacturer or publisher only. Third party manufacturer warranties vary from product to product. Consult your product documentation for specific warranty information. More information may also be available from the manufacturer or publisher.

While Dell offers a wide selection of software and peripheral products, we do not specifically test or guarantee that all of the products we offer work with any or all of the various models of Dell computers, nor do we test or guarantee all of the products we sell on the hundreds of different brands of computers available today. If you have questions about compatibility, we recommend and encourage you to contact the third-party software and peripheral product manufacturer or publisher directly.

### **Dell-Branded Peripheral Products**

Dell does provide a limited warranty for new Dell-branded peripheral products (products for which Dell is listed as the manufacturer) such as monitors, batteries, memory, docking stations, and projectors). To determine which limited warranty applies to the product you purchased, see the Dell invoice and/or the product documentation that accompanied your product. Descriptions of Dell's limited warranties are described in preceding sections.

### **Return Policy**

If you are an end-user customer who bought Dell Software and Peripherals products directly from a Dell company, you may return Dell Software and Peripherals products that are in as-new condition to Dell up to 30 days from the date of invoice for a refund of the product purchase price if already paid. This refund will not include any shipping and handling charges shown on your invoice; you are responsible for those.

To return products, you must call Dell Customer Service at 1-800-387-5759 to receive a Credit Return Authorization Number. You must ship the Dell Software and Peripherals products back to Dell in their original manufacturer's packaging (which must be in as-new condition), prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

To qualify for refund or replacement, returned products must be in as-new condition, software products must be unopened, and all of the manuals, floppy disk(s), CD(s), power cables, and other items included with a product must be returned with it.

---

### **One-Year End-User Manufacturer Guarantee (Latin America and the Caribbean Only)**

#### **Guarantee**

Dell Inc ("Dell") warrants to the end user in accordance with the following provisions that its branded hardware products, purchased by the end user from a Dell company or an authorized Dell distributor in Latin America or the Caribbean, will be free from defects in materials, workmanship, and design affecting normal use, for a period of one year from the original purchase date. Products for which proper claims are made will, at Dell's option, be repaired or replaced at Dell's expense. Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing repairs and building replacement products.

#### **Exclusions**

This Guarantee does not apply to defects resulting from: improper or inadequate installation, use, or maintenance; actions or modifications by unauthorized third parties or the end user; accidental or willful damage; or normal wear and tear.

#### **Making a Claim**

Claims must be made in Latin America or the Caribbean by contacting the Dell point of sale within the guarantee period. The end user must always supply proof of purchase, indicating name and address of the seller, date of purchase, model and serial number, name and address of the customer, and details of symptoms and configuration at the time of malfunction, including peripherals and software used. Otherwise, Dell may refuse the guarantee claim. Upon diagnosis of a warranted defect, Dell will make arrangements and pay for ground freight and insurance to and from Dell's repair/replacement center. The end user must ensure that the defective product is available for collection properly packed in original or equally protective packaging together with the details listed above and the return number provided to the end user by Dell.

#### **Limitation and Statutory Rights**

Dell makes no other warranty, guarantee or like statement other than as explicitly stated

above, and this Guarantee is given in place of all other guarantees whatsoever, to the fullest extent permitted by law. In the absence of applicable legislation, this Guarantee will be the end user's sole and exclusive remedy against Dell or any of its affiliates, and neither Dell nor any of its affiliates shall be liable for loss of profit or contracts, or any other indirect or consequential loss arising from negligence, breach of contract, or howsoever.

**This Guarantee does not impair or affect mandatory statutory rights of the end user against and/or any rights resulting from other contracts concluded by the end user with Dell and/or any other seller.**

**Dell World Trade LP**

One Dell Way, Round Rock, TX 78682, USA

**Dell Computadores do Brasil Ltda (CNPJ No. 72.381.189/0001-10) /**

**Dell Commercial do Brasil Ltda (CNPJ No. 03 405 822/0001-40)**

Avenida Industrial Belgraf, 400

92990-000 - Eldorado do Su - RS - Brasil

**Dell Computer de Chile Ltda**

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Providencia, Santiago - Chile

**Dell Computer de Colombia Corporation**

Carrera 7 #115-33 Oficina 603

Bogota, Colombia

**Dell Computer de Mexico SA de CV**

Paseo de la Reforma 2620 - 11° Piso

Col. Lomas Altas

11950 México, D.F.

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## Access Point

An Access Point is a device on the wireless network that receives and retransmits data. It allows computers with wireless network adapters to be connected, typically, to an Ethernet network.

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## Cable Modem

A cable modem is a device that enables you to hook up your computer to the Internet via a local cable TV line.

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## Client

A client is a computer on a network.

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## Domain Name System (or Service) (DNS)

DNS is an Internet service that translates domain names into [IP addresses](#). A DNS server keeps a database of host computers, their respective domain names, and IP addresses. When a domain name is requested, the DNS server uses this table to send the user to the proper IP address.

The DNS system is really its own network. If one DNS server doesn't know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

---

## Dynamic Host Configuration Protocol (DHCP)

DHCP is the process of automatically configuring the [TCP/IP](#) settings for every computer on a network.

---

## Encryption

Encryption is a common way of implementing security and protecting information. Encryption applies a set of instructions, called an *algorithm*, to information. The instructions combine the *plain* or *clear* text of information with a sequence of hexadecimal numbers, called an *encryption key*.

Before transmitting information over the airwaves, the wireless client or Access Point *encrypts* or scrambles the information. The Access Point or wireless client receiving the information uses the same key to *decrypt* or unscramble the information. The information is only readable to WLAN devices that have the correct encryption key. The longer the key is, the stronger the encryption. All wireless clients and Access Points in a WLAN must use the same encryption method and key. An 802.11-compliant wireless network has *Wired Equivalent Privacy* (WEP) and *Wi-Fi Protected Access* (WPA) technologies for wireless security.

---

## Ethernet

Ethernet is the most widely used local area networking technology. It is an industry-wide standard originally developed by Xerox and formalized in 1980 by DEC, Intel, and Xerox. Ethernet networks transmit data at 10/100 Mbps using a specified [protocol](#).

---

## Ethernet Address (MAC Address)

An Ethernet address is a unique, pre-programmed address, sometimes referred to as a *media access control* (MAC) address. Each computer on an Ethernet network has its own Ethernet address. This 12-digit hexadecimal address is encoded into the circuitry of the computer's network adapter when it is manufactured. Other devices on the network use this address to identify the computer. This address is not the same as the [IP address](#) that is assigned to computers on [TCP/IP](#) networks. On these networks, the IP address is associated with the MAC address to enable network communication.

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## Host

A host is any device that is connected to the network; for example, a computer, network printer, or router. Each host has a unique name (called "Host Name") or IP address (called "Host IP") for identification on the network.

---

## Internet Protocol (IP)

IP is the protocol used to send data from one computer to another over the Internet. The IP protocol describes how Internet computers keep track of the [IP address](#) of each computer on the network and route packets of data from one IP address to another.

---

## Internet Service Provider (ISP)

An ISP is a company that provides individuals and other companies access to the Internet and other related services such as website building and virtual hosting. An ISP has the equipment and the telecommunication line access required to have POP on the Internet for the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication providers and can provide better service to their customers.

---

## IP Address

An IP address provides unique identification for each computer on the Internet or on a local network. IP addresses are usually expressed as a group of four numbers separated by periods, for example, 169.254.10.2. None of the numbers can be greater than 255. Each Ethernet interface has an IP address. For the Dell Wireless 2350 Broadband Router, there is a [LAN](#) Ethernet interface and a [WAN](#) Ethernet interface; hence, there is a LAN IP address and a WAN IP address.

---

## Link Light

A link light is a light on a network device that indicates a good network connection. Hubs typically have a link light for each port; although, they may not be labelled as such, and the lights may show other information. These lights often blink for network activity. Some hubs display different colored lights for 10 Mbps and 100 Mbps. For more information, see the documentation accompanying your product.

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## Local Area Network (LAN)

A LAN is a network in one location. The network lets users at that location share files, printers and other services. [See WAN.](#)

---

## Network Adapter

A network adapter is a device expansion card that provides the physical connection between a computer and the network. There are many types of adapters. They include PC cards for laptops (a card that fits into a slot on your computer, like you might install a sound card or modem card) and embedded cards, embedded USB adapters, USB dongle adapters, and USB desktop adapters. Some newer computers have a network adapter already built into the system. PC cards or cards that fit into a slot in the desktop are sometimes referred to as network interface cards, or NICs.

---

## Network Address Translation (NAT)

NAT occurs when multiple [IP addresses](#) on a private [LAN](#) are converted to one public address. This public address is sent out to the Internet. NAT adds a level of security because the IP address for a computer connected to the private LAN is never transmitted to the Internet. NAT also allows xDSL/cable routers to be used with low-cost Internet accounts, where only one [TCP/IP](#) address is provided by the [Internet service provider](#). The user may have many private addresses masked by the single address provided by the ISP. NAT prevents denial of service (DoS) from external networks on internal hosts.

---

## Network Name (SSID)

[Access Points](#) are grouped together by an identifier called an ESSID. The ESSID is also referred to as a Net ID. This identifier is a combination of any letters or numbers that are appropriate for the network environment. ESSID is specifically for Access Points. When you talk about peer-to-peer networks, you cannot use the term ESSID.

Service Set Identifier (SSID) is more generic and is a 32-character name that uniquely identifies all the computers and equipments that make up a wireless network. A type of SSID is ESSID. Another type of SSID is Basic Service Set Identifier (BSSID). The BSSID is the [MAC address](#) of a wireless [adapter](#) or Access Point.

---

## Point to Point Protocol over Ethernet (PPPoE)

PPPoE is the methodology of authenticating or validating a user or equipment to an [Internet service provider](#), usually via a username and/or password. It is a selection or action that reconfigures a device to the default parameters, as it was originally manufactured.

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## Port

A port is a connector on a networking device used to attach the network cable. Hubs and switches have numerous ports that connect to computers on the network.

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## Protocol

Protocol refers to a set of rules for sending and receiving information on a network. The rules determine the format of the data that is transmitted and other aspects of networking, such as how errors are detected and corrected. The protocol driver in each computer is software that adheres to these rules when sending and receiving information. These drivers are also often called protocols.

---

## Transmission Control Protocol/Internet Protocol (TCP/IP)

TCP/IP refers to the [protocol](#) that computers use to communicate over the Internet. TCP determines how a computer breaks up data into small units, called "packets," to be sent to another computer and how the receiving computer reassembles the packets into a single file. IP determines how the packets are routed across the Internet. [See Internet Protocol.](#)

---

## Virtual Local Area Network (VLAN)

A VLAN is a network of computers that behave as if they are connected to the same wire, even though they may be physically located on different segments of a LAN. VLANs are configured through software rather than hardware, which makes them extremely flexible. When a computer on a VLAN is physically moved to another location, it can stay on the same VLAN without any hardware reconfigurations.

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## Virtual Server

A virtual server is a device that performs Internet protocol (IP) mapping. IP mapping allows remote client access to your network via the Internet.

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## Wide Area Network (WAN)

A WAN is a communications network that uses devices such as telephone lines, satellite dishes, or radio waves to span a larger geographic area than can be covered by a [LAN](#).

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## Wireless Local Area Network (WLAN)

A WLAN is a type of [Local Area Network \(LAN\)](#) that uses high frequency radio waves rather than wires to communicate and transmit data among the network clients and devices. It is a flexible data communication system implemented as an extension to, or as an alternative for, a wired LAN. Just like a LAN, the network lets users at that location share files, printers and other services.

---

## xDSL Modem

DSL is a type of service that allows people to access the Internet via their telephone lines. This service is typically available via a telephone company or service provider.

An xDSL connection is a high-speed digital connection to the Internet using standard copper twisted pair telephone wires. There are several kinds of DSL; the x refers to all of them.

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## Dell™ Wireless 2350 Broadband Router *User's Guide*

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## Wireless Networking Overview: Dell™ Wireless 2350 Broadband Router User's Guide

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### Wireless Local Area Network (WLAN)

A **Local Area Network** (LAN) is a network in one location. Computers at that location can share files, printers, and other services. In a LAN, a networked computer that requests services is called a client. A **Wireless Local Area Network** (WLAN) is a type of LAN that uses high frequency radio waves rather than wires to communicate and transmit data among the networked computers and devices. It is a flexible data communication system implemented as an extension to, or as an alternative for, a wired LAN.

In a WLAN, wireless adapters are installed in computers, also called wireless clients. The adapter allows the wireless client to communicate with the WLAN without cables. Instead, wireless clients send and receive information through a path in the air called a channel.

The standards for a WLAN are based on the IEEE 802.11b standard and IEEE 802.11g standard. All Dell 802.11b/g-compliant devices interoperate with other 802.11b/g-compliant wireless devices from other vendors. The WiFi certification logo indicates that the wireless device has been tested by an independent organization.

A wireless client operates in either infrastructure mode or peer-to-peer mode.

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### Identifying a WLAN

An ESSID and BSSID are both **Service Set Identifiers** (SSID) that identify and control the wireless client's access to a given WLAN. The SSID is sometimes referred to as the network name. The SSID indicates what WLAN you are referring to. In most cases, the user interface displays the SSID.

When installing an access point or wireless adapter in a wireless client, the installation program asks you to enter the SSID. Dell cannot provide you with this information, as it is specific to your network; but you may choose to use the default SSID, **wireless**, for your Dell Wireless 2350 Broadband Router. All wireless clients and access points in a WLAN must use the same network name.

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### Encryption

In a WLAN, wireless clients and access points send and receive information through the air. Without implementing security, it is possible for an unauthorized person to intercept the information.

A common way of implementing security and protecting information is encryption. Encryption applies a set of instructions, called an algorithm, to information. The instructions combine the plain or clear text of the information with a sequence of hexadecimal

numbers, called an encryption key.

Before transmitting information over the airwaves, the wireless client or access point encrypts or scrambles the information. The access point or wireless client receiving the information uses the same key to decrypt or unscramble the information. The information is only readable to WLAN devices that have the correct encryption key. The longer the key is, the stronger the encryption.

The Dell Wireless 2350 Broadband Router supports both **Wired Equivalent Privacy (WEP)** and **Wi-Fi Protected Access (WPA)**.

## **WEP**

WEP (Wired Equivalent Privacy) provides a way of creating an encrypted key that is shared between a wireless client (such as a notebook with a wireless PC card) and the router. In the Dell Wireless 2350 Broadband Router, WEP is an optional feature that can be enabled or disabled. When WEP encryption is enabled, you must set the WEP key in the client to match the WEP key used by the access point because you can **ONLY** connect to access points that have a matching WEP Key.

 **NOTE:** It is better to change keys frequently. The same algorithm is used for all the communications that should be protected. If the same key is used, the same message will give exactly the same cipher text. Then, it will be possible for an eavesdropper to break the encrypted data. For this reason, it is strongly recommended to change keys often.

There are two WEP encryption methods:

- 40(64)-bit Encryption
- 104(128)-bit Encryption

40-bit and 64-bit encryption are identical. Some vendors use the term 40-bit; others use 64-bit. A wireless device that claims to have 40-bit encryption interoperates with a device that claims to have 64-bit encryption; the same is true for the reverse. A 40(64)-bit key consists of 10 hexadecimal numbers, arrayed as follows:

Key #1: 1011121314

Key #2: 2021222324

Key #3: 3031323334

Key #4: 4041424344

A 104(128)-bit key has several trillion times as many possible combinations than a 40(64)-bit key. It consists of 26 hexadecimal numbers, arrayed as follows:

Key (#1): 101112131415161718191A1B1C

All wireless clients and access points in a WLAN must use the same encryption method and key. The following two examples stress how important this point is.

### **Example 1**

The encryption method for an access point is 40(64)-bit. The method for a wireless client is 104(128)-bit encryption. The client and access point cannot communicate with each other, even though the selected key is the same. To resolve this problem, set the access point to use 104(128)-bit encryption.

### **Example 2**

The encryption method is the same for the access point and wireless client. You select key 1 for the access point and key 2 for the wireless client. The wireless client cannot communicate with the WLAN. To resolve this problem, select key 1 for the wireless client.

 **NOTE:** Use the same key and encryption method for the wireless devices in the WLAN. Otherwise, they cannot communicate with each other.

The Dell Wireless 2350 Broadband Router uses either hexadecimal digits or ASCII characters to create encryption keys. Hexadecimal digits include the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system.

ASCII is the acronym for the American Standard Code for Information Interchange. Pronounced *ask-ee*, ASCII is a code for

representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase M is 77. Most computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another.

## **WPA**

WPA (Wi-Fi Protected Access) is an upgrade to the WEP standard for securing your wireless network. WPA is derived from and will be forward-compatible with the future IEEE 802.11i standard. It provides improved data encryption and user authentication.

To enhance the level of security, WPA uses **Temporal Key Integrity Protocol** (TKIP) encryption to address the vulnerabilities of the static keys used in WEP. TKIP includes four algorithms: **Message Integrity Check** (MIC), to protect packets from tampering; **Per-Packet Key** (PPK) hashing, to prevent weak key attacks; extended **Initialization Vector** (IV), to reduce IV reuse and the possibility that a hacker will collect sufficient packets to crack the encryption; and a re-keying mechanism, to change the temporal key dynamically. TKIP is the most commonly used encryption method; however, if your wireless clients do not support TKIP, the Dell Wireless 2350 Broadband Router also supports **Advanced Encryption Security** (AES) encryption. AES will replace 802.11's RC4-based encryption under the 802.11i specification. AES, the gold-standard encryption algorithm, provides maximum security for a wireless network.

For wireless client authentication, WPA adopts an authentication scheme through 802.1x. 802.1x provides a framework for user authentication and a key distribution management method. 802.1x consists of three main elements: an Authentication Server (typically a RADIUS server), WPA-enabled router or AP (called Authenticator), and a WPA-enabled client (called Supplicant). 802.1x ensures only authorized users can access the network.

In enterprises, WPA will be used in conjunction with both a wireless router and authentication server. In a **Small Office/Home Office** (SOHO) environment, where there is no authentication server, users can use **Pre-Shared Key** (PSK) mode in place of the authentication server. The Dell Wireless 2350 Broadband Router offers you WPA running in PSK mode. The mutual authentication and improved encryption technology of WPA allows wireless communication to achieve greater security.

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## **Automatic Rate Selection and Rate Scaling**

In 802.11g, wireless network adapters and access points can transmit data at one of the following rates: 54, 48, 36, 24, 18, 12, 9, or 6 Mbps. In 802.11b, the data can be transmitted at a rate of 11, 5.5, 2, or 1 Mbps. As the distance between an adapter and access point increases or decreases, the data rate automatically changes. Other factors, like interference, also affect the data rate. The Dell Wireless 2350 Broadband Router uses automatic rate selection and rate scaling to determine the most efficient rate of communication. Rate scaling maintains optimal communication between wireless clients and the Dell Wireless 2350 Broadband Router.

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# A Look at the Hardware: Dell™ Wireless 2350 Broadband Router User's Guide

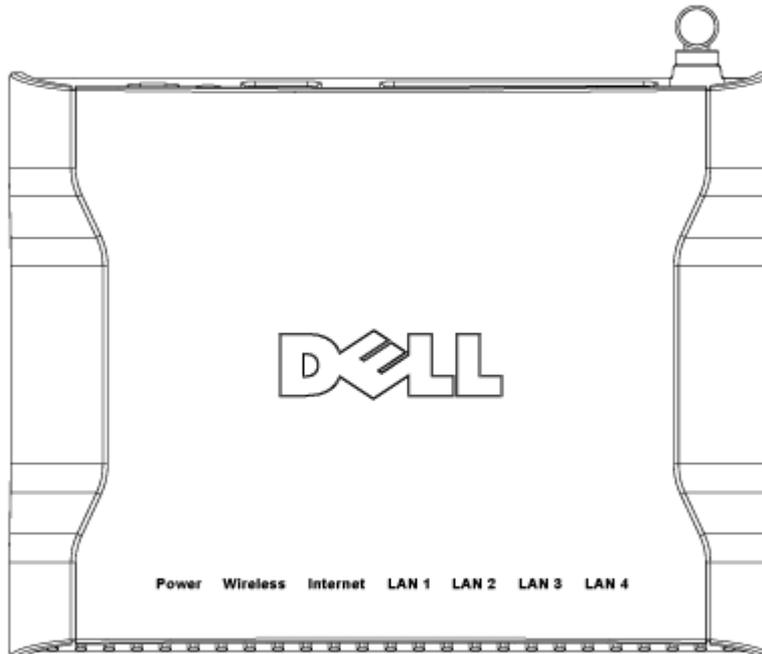
[▶ Front Panel](#)

[▶ Back Panel](#)

## Front Panel

The Dell Wireless 2350 Broadband Router has seven **Light Emitting Diodes** (LEDs), or link lights, on its front side. The following table defines the behaviour for each LED:

### Front Panel



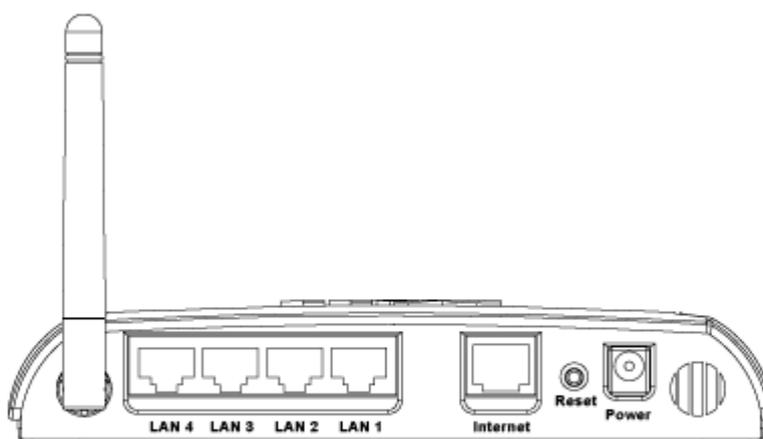
LED	Represents	Activity
Power	Power	The Power LED will light up green when the device is powered on. It will blink when the device is powering up or when it is reset.
Wireless	Wireless LAN	The LED alternates between on and off when wireless clients are attached. It will blink when there is data activity on the wireless network. The rate of blinking will vary with the rate of data transfer. It turns off when no wireless clients are associated with the

		Dell Wireless 2350 Broadband Router.
Internet	DSL or cable modem	A steady green light indicates the connection is active (i.e. the Dell Wireless 2350 Broadband Router is connected to a xDSL or cable modem) and blinks with data activity.
LAN 1 LAN 2 LAN 3 LAN 4	Local Area Network	A steady green light indicates the connection is active and blinks with data activity.

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## Back Panel

### Back Panel



Connector	Description
Power	Connect the power adapter to this power port, and then plug the other end of the power cable into a power outlet.
Reset	Use an object, such as a paper clip, to press the button for at least 5 seconds. The Power LED will be off for a short time and then light up again. You can then release the button to reset the device to its factory-default settings.
Internet	This accepts an RJ-45 connector for connecting the Dell Wireless 2350 Broadband Router to a xDSL or cable modem
LAN 1 LAN 2 LAN 3 LAN 4	This accepts RJ-45 connectors for connecting up to 4 computers to the Dell Wireless 2350 Broadband Router's 4-port switch. These are the Ethernet connections.

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# Introduction: Dell™ Wireless 2350 Broadband Router User's Guide

► [Overview](#)

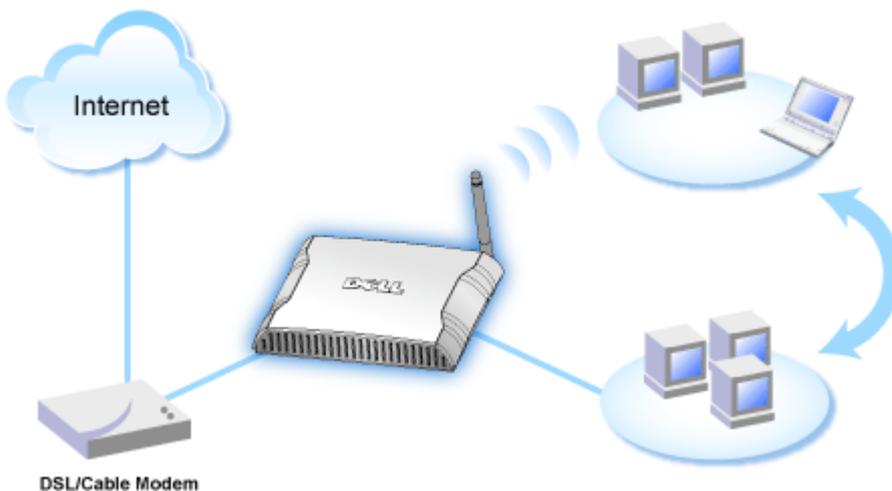
► [Wireless Networking Overview](#)

► [A Look at the Hardware](#)

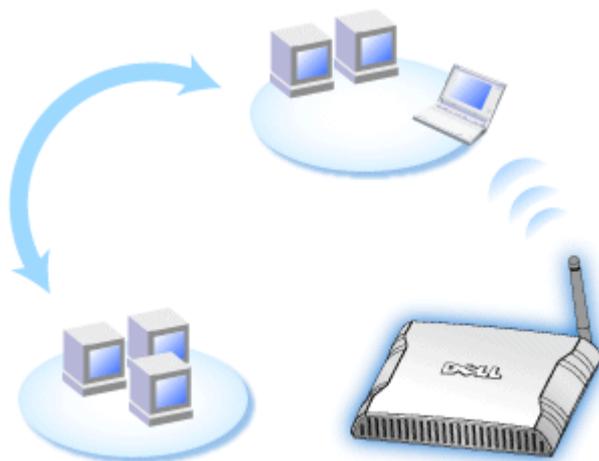
## Overview

The Dell Wireless 2350 Broadband Router is an 802.11b/g wireless access point with a built-in Internet router. Connecting to a DSL or cable modem, the Dell Wireless 2350 Broadband Router can offer both wired and wireless computers simultaneous access to the Internet. The Dell Wireless 2350 Broadband Router can be configured the following ways:

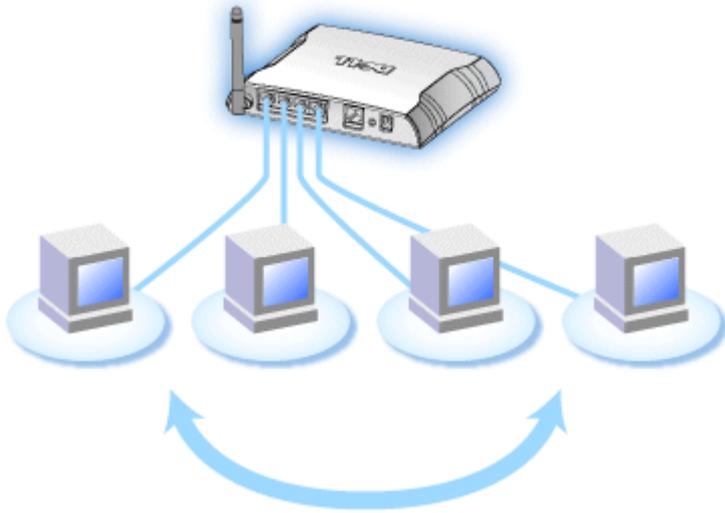
- **Internet router:** Connects to a cable or DSL modem providing Internet connectivity to both wired and wireless computers. The Dell Wireless 2350 Broadband Router includes a firewall feature to control Internet access and protect your network.



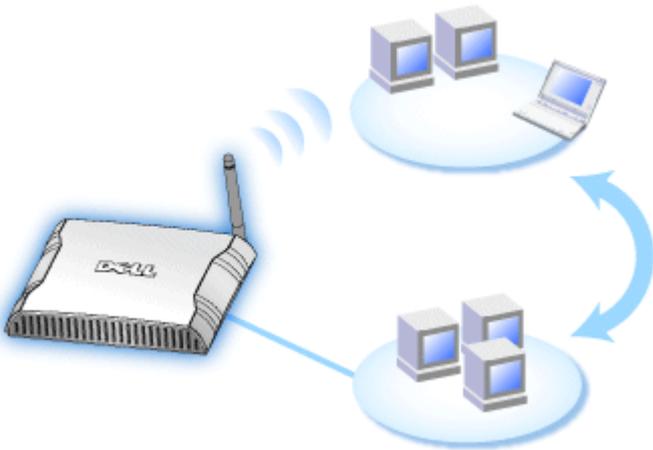
- **Wireless hub (Access Point):** Connects wireless computers for file and print sharing.



- **4-port Ethernet switch:** Connects four wired computers for file and print sharing.



- **Ethernet bridge:** Enables file and print sharing between wired and wireless computers. In addition, connects to an Ethernet hub, extending Internet connectivity and sharing to more wired computers.



The Dell Wireless 2350 Broadband Router supports up to 252 connect computers when used with additional router devices. Up to 16 of the 252 computers can be connected wirelessly. The **Network Address Translation** (NAT) feature allows 32 connected computers to simultaneously communicate out to the Internet. It can communicate at speeds up to 54 **Megabits per second** (Mbps) on the wireless network and at either 10 or 100 Mbps on the LAN (wired) port depending on the connected computer. The maximum distance between the Dell Wireless 2350 Broadband Router and each wirelessly connected computer is 300 feet. This distance may be less depending on your environment.

By default, you can use the Dell Wireless 2350 Broadband Router in the following ways:

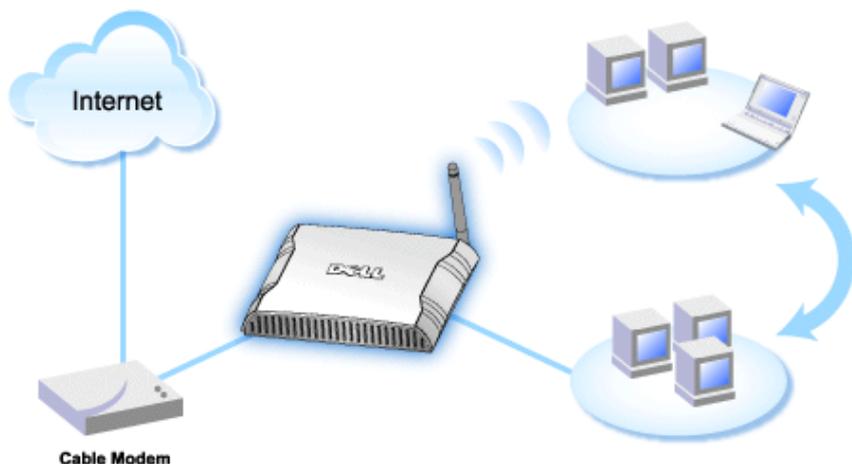
- A wireless access point using **wireless** as the wireless network name.
- A DHCP (Dynamic Host Configuration Protocol) server that provides IP addresses to wireless and wired clients.
- A bridge to an Ethernet hub.

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## Cable Modem Connection



**NOTE:** It is recommended that you install the Dell Wireless 2350 Broadband Router using the Setup Wizard provided on the Dell Wireless 2350 Broadband Router CD. Perform the steps below only when you are unable to install the Dell Wireless 2350 Broadband Router with the Setup Wizard.

### [Cable Modem - Standard Setup](#)

Use this setup when your cable service provider does not require you to enter any information for your Internet broadband connection.

### [Cable Modem with Name Settings](#)

Use this setup when your cable service provider requires you to enter **Host Name** and **Domain Name** for your Internet broadband connection.

### [Cable Modem with Other Settings](#)

Use this setup when your cable service provider requires you to enter other information.

## Cable Modem - Standard Setup

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.

**NOTE:** If the installation is not successful, you can restore the default settings by pushing the **Reset** button on the back of the Dell Wireless 2350 Broadband Router for at least 5 seconds. The Dell Wireless 2350 Broadband Router will reboot with the default settings and the setup will continue.

**NOTE:** The Dell Wireless 2350 Broadband Router is configured by default with the following settings:

- The cable/DSL interface is configured with the DHCP client enabled. This means it will try and get its Internet IP address automatically from your ISP.
- The Local Area Network and Wireless interfaces are configured with the DHCP server enabled. This means that the Dell Wireless 2350 Broadband Router will allocated IP addresses to any connect computer automatically.
- Default user name and password is **admin**. Use this to access the Configuration Settings on the Dell Wireless 2350

Broadband Router when you browse to <http://my.router>

This configuration will work properly with a cable modem provider that does not require authentication.

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## Cable Modem with Name Settings

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. Open your web browser (for example Internet Explorer) and go to <http://my.router>, or the default IP address <http://192.168.2.1>.
5. Enter the default username and password **admin** when prompted to do so.
6. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
7. Click the **Internet Connection Settings** menu option on the pull down menu.
8. Click to select **Your ISP requires you to input Host Computer Name or Domain Name**.
9. Type the **Host Name** and **Domain Name** assigned to you into the appropriate boxes.
10. Click the **Next** button.
11. Click the **Save & Restart** button to store the new settings.

When your web browser returns to the main page of the Dell Wireless 2350 Broadband Router, the device will have successfully restarted with the new settings.

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## Cable Modem with Other Settings

If your cable service provider requires you to enter other settings for your Internet connection, select only the appropriate boxes in the **Internet Connection Settings** menu option (See Step 6 in **Cable Modem with Name Settings**) and type the required values provided by your ISP.

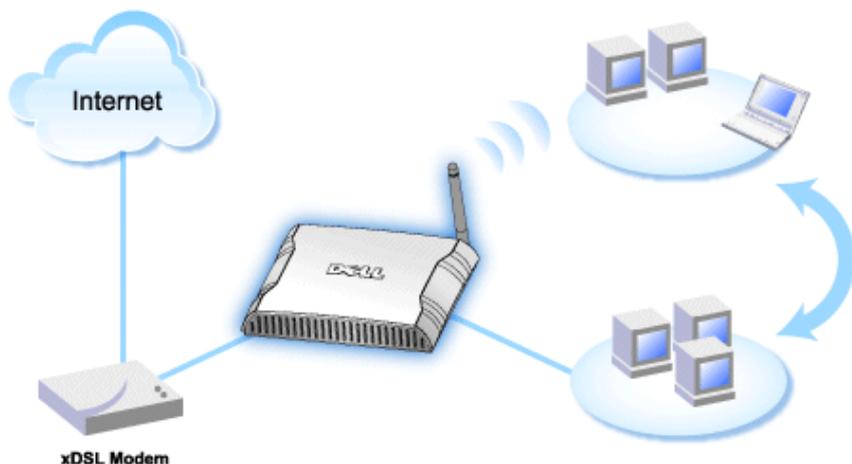
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## DSL Modem Connection



**NOTE:** It is recommended that you install the Dell Wireless 2350 Broadband Router using the Setup Wizard provided on the Dell Wireless 2350 Broadband Router CD. Perform the steps below only when you are unable to install the Dell Wireless 2350 Broadband Router with the Setup Wizard.

**NOTE:** PPPoE (Point to Point Protocol over Ethernet) is the methodology of authenticating or validating a user or equipment to an Internet service provider, usually via a username and/or password. It is a selection or action that reconfigures a device to the default parameters, as it was originally manufactured.

### [DSL without PPPoE - Standard Setup](#)

Use this setup when your DSL service provider does not ask you to enter any information for your Internet connection.

### [DSL with PPPoE](#)

Use this setup if your ISP has given you a username and password for your Internet connection.

## DSL without PPPoE - Standard Setup

1. Connect the **Ethernet** port on the DSL modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. The setup should work on the Dell Wireless 2350 Broadband Router with the factory default settings.

**NOTE:** If the installation is not successful because you have modified any setting or due to other factors, you can restore the default settings by pressing the **Reset** button on the back of the Dell Wireless 2350 Broadband Router for at least 5 seconds. The Dell Wireless 2350 Broadband Router will reboot with the default settings and the setup should complete at this point.

**NOTE:** The Dell Wireless 2350 Broadband Router is configured by default with the following settings:

- The cable/DSL interface is configured with the DHCP client enabled. This means it will try and get its Internet IP address automatically from your ISP.
- The Local Area Network and Wireless interfaces are configured with the DHCP server enabled. This means that the

Dell Wireless 2350 Broadband Router will allocated IP addresses to any connect computer automatically.

- Default user name and password is **admin**. Use this to access the Configuration Settings on the Dell Wireless 2350 Broadband Router when you browse to *http://my.router*

This configuration will work properly with a DSL provider that does not require authentication.

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## DSL with PPPoE

1. Connect the **Ethernet** port on the cable modem to the **Internet** port on the Dell Wireless 2350 Broadband Router through an Ethernet cable.
2. Connect any one of the four **LAN** ports on the Dell Wireless 2350 Broadband Router to the **Ethernet** port on your computer through another Ethernet cable.
3. Turn on the Dell Wireless 2350 Broadband Router.
4. Open your web browser (for example Internet Explorer) and go to <http://my.router>, or the default IP address <http://192.168.2.1>.
5. Enter the default username and password **admin** when prompted to do so.
6. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
7. Click the **Internet Connection Settings** menu option on the pull down menu.
8. Select **Connection Type** from the drop down menu and select **DSL(PPPoE)**.
9. Type the user name provided to you by your ISP in the **User Name** box.
10. Type your password in the **Password** and **Retype Password** boxes.
11. If your ISP requires you to provide a **MAC** address, click to check the **Your ISP requires you to input WAN Ethernet Mac** box.
11. Type the address in the appropriate box.
12. Click the **Next** button.
13. Click the **Save & Restart** button.
14. When your web browser returns to the main page of the network, the Dell Wireless 2350 Broadband Router will have successfully restarted with the new settings.

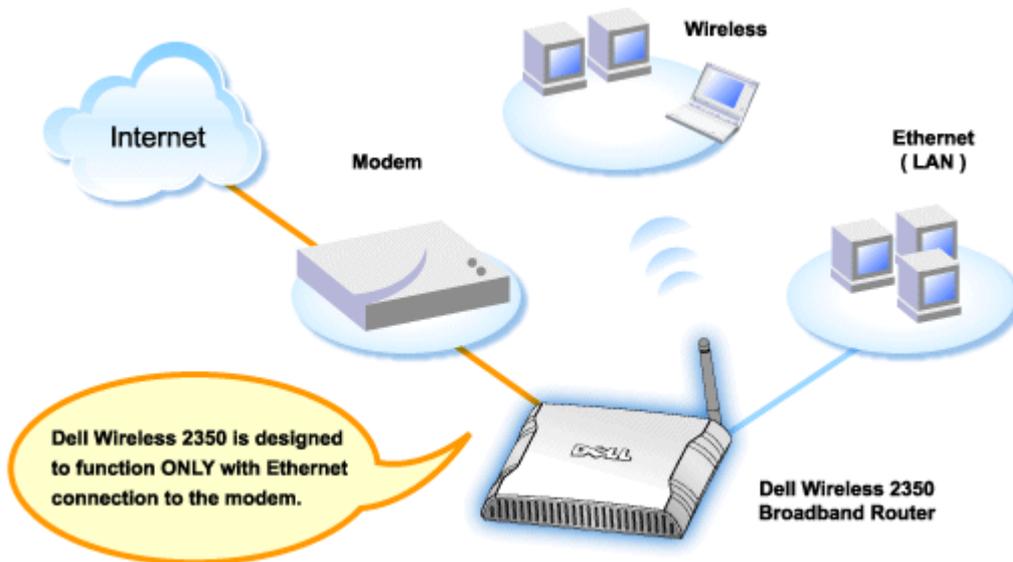
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## Cable Modem with USB Connection



A cable modem may support only Ethernet connection, only USB connection, or both types of connections.

### Cable Modem with only USB Connection

Your Dell Wireless 2350 Broadband Router is designed to function with Ethernet connection only on its broadband interface. If your cable modem supports only a USB connection, you need to replace it with a model with at least one Ethernet connection.

### Cable Modem with both USB and Ethernet Connections

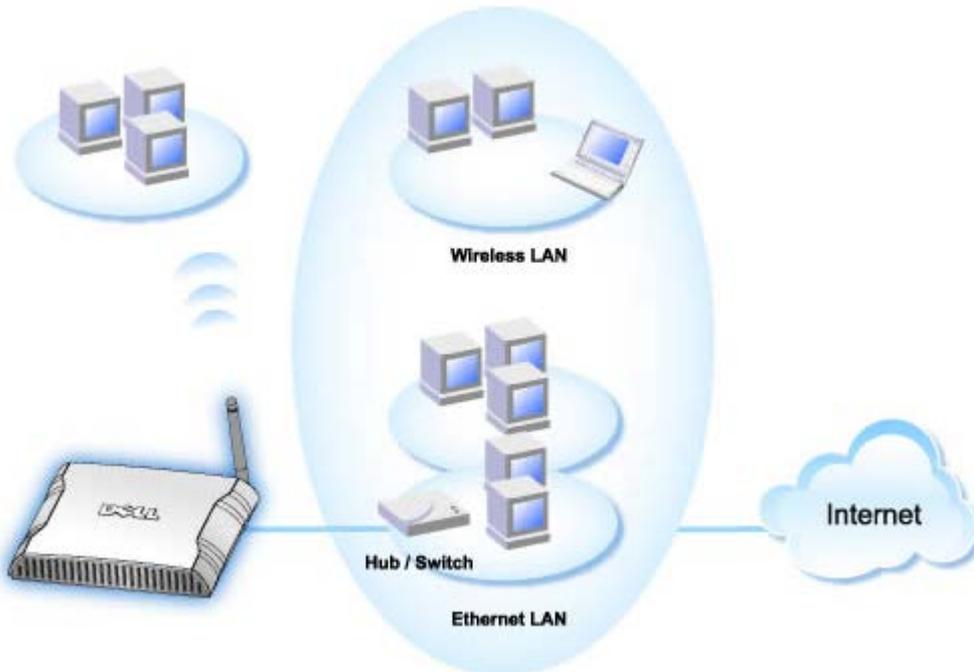
If your cable modem supports both USB and Ethernet connections, but is connected to your computer via USB cable, follow the instructions below to switch to the Ethernet connection.

1. Make sure that your cable modem is powered off.
2. Disconnect the USB cable from your computer and the cable modem.
3. Connect one end of a standard Ethernet cable into the **Ethernet** port of the Ethernet card on your computer
4. Insert the other end of the cable into the **Ethernet** port on your cable modem.
5. Turn on cable modem. The modem may need several minutes to initialize.
6. Insert the **Dell Wireless 2350 Broadband Router CD** into the CD drive on the computer to start the Setup Wizard, and then click the **Router Installation** button and follow the onscreen instructions.

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## Configuring Your Router as an Access Point for an Existing Network



If you have an existing network, you may want to use your new router as an Access Point to extend the range of your network by allowing connection of more wireless and wired computers. You **MUST** turn off the DHCP server on the router if there is a DHCP server already in your network running to avoid IP address conflicts. To disable the DHCP server functions, follow the steps below:

1. Open your web browser and go to <http://my.router>, or the default IP address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: **admin**
3. Click the **OK** button.
4. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
5. Click the **Router Mode** menu option in the drop down menu.
6. Click to select **Access Point Mode**.
7. Click the **Next** button.
8. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
9. Click the **DHCP Server Settings** menu option in the drop down menu.
10. Uncheck the box **Enable DHCP Server Functions**.
11. Click the **Submit** button.

You will also need to allocate and setup a static IP address on your Dell Wireless 2350 Broadband Router. Perform the following steps to configure a static IP address:

 **NOTE:** The IP address that you use should be reserved by the DHCP server in your existing network. The router cannot act as a DHCP client and therefore, it needs a static IP address for its LAN interface.

1. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
2. Click the **Advanced IP Settings** menu option in the drop down menu.
3. Make sure that the box **Automatically obtain an IP address from a DHCP server** is unchecked.
4. Assign an IP address to the router.
4. Click the **Submit** button.
5. A pop-up **Warning** window will appear. Click the **OK** button.
6. A **NOTE** page will appear with the instructions on how to refresh the IP address of your computer.
7. Click the **Continue** button.
8. When your web browser returns to the home page of the Dell Wireless 2350 Broadband Router, the device has successfully restarted with the new settings.
9. Plug an Ethernet cable from the existing local network into any **LAN** port on the router.

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# Configuring Your Dell™ Wireless 2350 Broadband Router for Gaming

This section will assist in configuring the Dell Wireless 2350 Broadband Router router for gaming. In some cases, the firewall feature of the router will cause a game to not function as intended. This document will not provide details for each game, but will discuss how to open TCP/IP ports for one or more computers.

 **NOTICE:** Operating any client computers on the Internet without firewall protection may allow unauthorized access to a computer. This may lead to data loss.

Follow the steps below to set up the router for gaming.

## Locate the MAC Address for the Computers You Want to Use for Gaming

1. Click the **Start** button.
2. Click **Run**.
3. In the **Open** box, type the following text:  
**cmd**
4. Click the **OK** button.  
The command prompt screen appears.
5. At the command prompt, type **ipconfig /all**
6. Write down the MAC (Physical) address of your computer to configure for gaming.

## Change Router Settings

1. Open a web browser, and type <http://my.router>, or <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "**admin**".
3. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **DHCP Server Settings** menu option in the drop down menu.
5. Click the **Add** button in the **IP Address Reservation** section.
  - a. Enter the MAC address of the computer you wish to use for gaming in **MAC Address** field.
  - b. Enter an **IP address** for the computer.
6. Click the **Submit** button.
7. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
8. Click the **Port Forwarding Settings** menu option in the drop down menu.
  - a. To set a single computer for gaming, click to select **Enable DMZ Host**.
  - b. Enter the IP address of the computer in the **DMZ IP Address** field.
  - c. Click the **Submit** button.

 **NOTE:** Only a single computer can be set for DMZ service. To set multiple computers for gaming, please refer to the [Custom Port Forwarding Settings](#) under **Port Forwarding Settings**.

9. Reboot the client computer. The client computer will use the newly assigned IP and will not have any TCP/IP ports blocked by the firewall feature of the router.
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## Setting Wireless Encryption in Your Dell Wireless 2350 Broadband Router

Without wireless security options configured in your network, an eavesdropper within your wireless range may be able to access the network and the data that is being transmitted over it. The Dell Wireless 2350 Broadband Router provides **Wired Equivalent Privacy** (WEP) and **Wi-Fi Protected Access** (WPA) encryption for wireless security.

WPA is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell Wireless client, you can check for the availability of a WPA-enabled software update for your wireless client at <http://support.dell.com>.

1. Log into the web configuration of your router at <http://my.router>, or the default address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "admin".
3. Go to the **Basic Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **Wireless Security** menu option in the drop down menu.
5. Click to select **Enable Wireless Security**.
6. Click to select either **WEP** or **WPA** in the Network Authentication list.

### If WEP is selected

1. Select hexadecimal or ASCII characters as the **Key Format**. You can use either as a string of hexadecimal digits (characters 0 through 9 and A through F ) or as ASCII characters (any key on the keyboard).
2. Select an encryption level from the **Key Length** list.
3. Enter four different keys in the **Key1**, **Key2**, **Key3**, and **Key4** fields to store on your router. For 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP key. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key.
4. Select only one key out of the four keys as the **Default Key** for encryption.
5. Click the **NEXT** button, and then click **Save and Restart** to apply the changes.
6. Set up WEP encryption on your wireless clients. Refer to the documentation that accompanied your wireless clients, or your wireless clients' on-line help systems, for information on how to set up WEP encryption.

### If WPA is selected

1. Enter your pre-shared key. This key must match the key that is used by each wireless client computer associated to

your router.

2. Choose a key format. This can be hexadecimal digits (0-9 and A-F) or ASCII characters (any key on the keyboard).
3. **WPA Group Rekey Interval** specifies how often the key “rotates” or changes.
4. WPA Encryption allows you to select one of two possible encryption methods—**TKIP** and **AES**. Choose one that your wireless clients support.
5. Click the **NEXT** button, and then click **Save and Restart** to apply the changes.
6. Set up the WPA on your wireless clients. Refer to the documentation that accompanied your wireless clients, or your wireless clients' on-line help system, for information on how to setup WPA.

 **NOTE:** The Dell Wireless 2350 Broadband Router offers two ways to set the wireless encryption in your router. One is the Wireless Security feature in the web configuration tool mentioned here. The other is through the Windows-based [control utility](#).

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## Turning Off Broadcast SSID

1. Log into the web configuration of your router at <http://my.router>, or the default address <http://192.168.2.1>. The **Enter Network Password** login prompt appears.
2. Type the following text in the **user name** and **password** fields: "admin".
3. Go to the **Advanced Settings** menu option tab on the top navigation bar and wait for the menu to appear.
4. Click the **Advanced Wireless** menu option in the drop down menu.
5. Check the **Hide my wireless network** checkbox.
6. Click **Submit**.

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## Setting Up File & Printer Sharing

▶ [Installing File and Printer Sharing](#)

▶ [Sharing a printer](#)

▶ [Sharing files](#)

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### Installing the File & Printer Sharing

Follow the instructions below to install the file and printer sharing service.

#### **For Windows 2000 and XP**

1. Right-click the **My Network Places** icon (on the desktop in Windows 2000 and in the Start button menu in Windows XP) and left-click to select **Properties** in menu.
  2. Right-click the **Local Area Connection** icon and select **Properties** in the menu.
  3. If you can see the **File and Printer Sharing for Microsoft Networks** item, you can skip this section. The file and printer sharing service had already been installed.
  4. If the **File and Printer Sharing for Microsoft Networks** item is not present, click the **Install** button.
  5. Click to select **Service**, and then click the **Add** button.
  6. Click to select **File and printer sharing for Microsoft Networks**, and then click the **OK** button.
- 

### Sharing a Printer

To share a printer, perform the following steps on the computer that has the printer you wish to share.

1. Click the **Start** button, click **Settings**, and then click **Printers**.
2. Click the printer you want to share to highlight it.
3. On the **File** menu, click **Properties**.
4. Click the **Sharing** tab, and then click **Shared As**.
5. Follow the on-screen instructions to complete.

The printer is now available for the other computers to use.

Perform the following steps on the other computers:

1. Click the **Start** button, click **Settings**, and then click **Printers**.
2. Double-click the **Add Printer** icon.
3. Click **Next** on the first screen.
4. On the next screen, select **Network printer**, and then click the **Next** button.
5. Click the **Browse** button and click to select the shared printer.

6. Follow the on-screen instructions to complete.

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## Sharing files

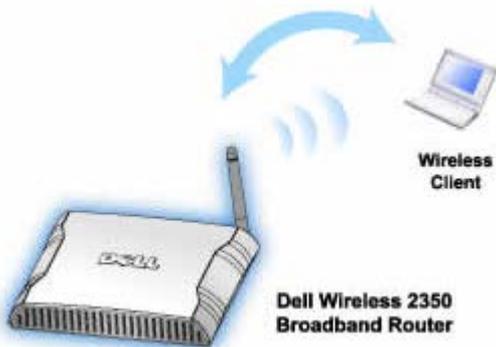
You can share files on your computer so that users on other computers on your network can view them.

1. In Microsoft Windows Explorer, right-click on the file, folder, or drive letter you wish to share and left-click **Sharing**.
  2. Click **Share As**.
  3. Type a name for the share and follow the on-screen instructions to complete.
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## How To Setup Microsoft Windows XP Clients Connecting To The Router



Depending on the service pack installed you have installed on your Windows XP operating the setup of the computer to connect to the Dell Wireless 2350 Broadband Router is different.

To check what service pack is installed, follow these steps:

1. Click the **Start** button, and then click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click **System**.
4. Click the **Wireless Networks** tab.  
The service pack installed should be displayed.



Once you have determined what service pack is installed then follow on of the below sections

▶ [How to Setup Microsoft Windows XP Clients without Service Pack 2 to Connect to the Router](#)

▶ [How to Setup Microsoft Windows XP Clients with Service Pack 2 to Connect to the Router](#)

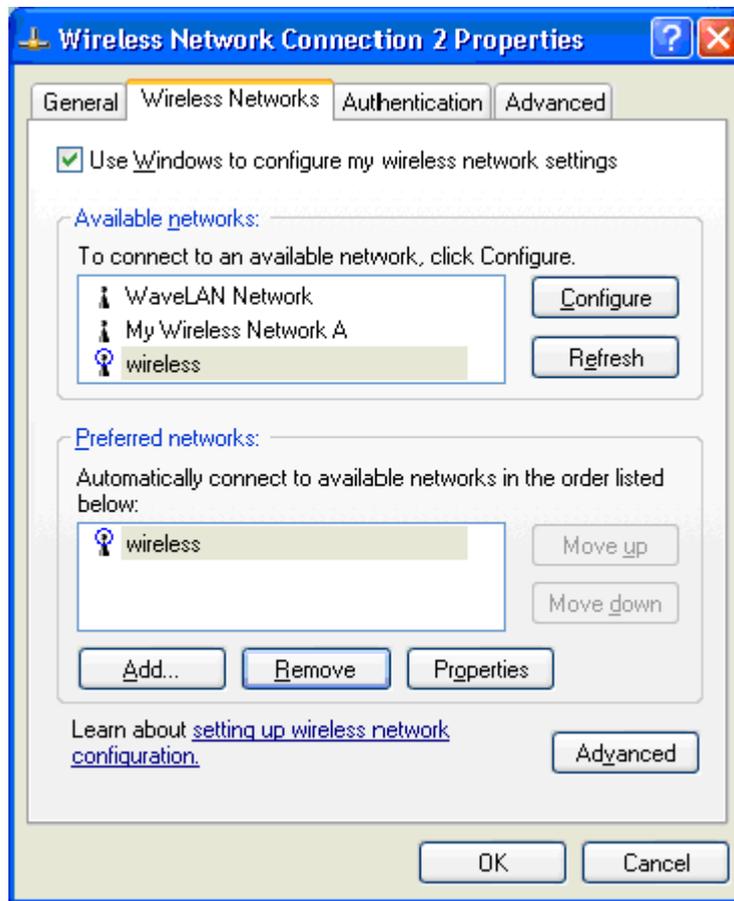
## How To Setup Microsoft Windows XP Clients with Service Pack 1 to Connect To The Router

### Configuring Automatic Network Connections

To configure one or more wireless networks for auto connection, follow these steps:

1. Click the **Start** button, and then click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click **Network Connections**.
4. Right-click the **Wireless Network Connection** icon, and then left-click **Properties**.
5. Click the **Wireless Networks** tab.  
The network name you set up should be present.

### Wireless Network Connection Properties



**NOTE:** For more information click [Learn about setting up wireless network configuration.](#)

## Enabling Encryption

Because wireless networks transmit data using radio frequency transmission, other computers with wireless network adapters that are within range of your wireless broadband router can connect to your network. You can prevent unauthorized access to your wireless network by enabling encryption. When you enable encryption, you must specify a network encryption key. The network key can be a combination of numbers, letters, or numbers and letters. The network key must match the network key that you specified on your Dell Wireless 2350 Broadband Router.

1. From the desktop, click the **Start** button and click **Control Panel**.
2. If you are looking at the **Category View of Control Panel**, click **Switch to Classic View**.
3. Double-click the **Network Connections** icon.
4. Right-click the **Wireless Network Connection** icon, and then left-click **Properties**.
5. Click the **Wireless Networks** tab.
6. Verify that the **Use Windows to configure my wireless network settings** box is selected. If it is not, click to select it.
7. Select your wireless network from the **Available networks** list, and click **Configure**. The **Wireless Network Properties** window appears.
8. Click to select **Data encryption (WEP enabled)**, under **Wireless network key (WEP)**, and click to deselect **The key is provided for me automatically**. This will allow you to enter an encryption key into the field marked **Network key**.
9. Type your network key into the **Network key** field.
10. Once you have entered your key, click the **OK** button.

**NOTE:** If the network encryption key on your wireless client does not match the key set on your Dell Wireless 2350 Broadband Router, your computer will fail to connect to the network.

# How To Setup Microsoft Windows XP Clients with Service Pack 2 to Connect To The Router

## Configuring Automatic Network Connections

Dell recommends using the Setup Wizard that is located on the Dell Wireless 2350 Broadband Router CD that came with your device.

To run the Setup Wizard, perform the following steps:

1. Insert the **Dell Wireless 2350 Broadband Router Setup CD** into the CD drive onto the computer you wish to connect wirelessly to the Dell Wireless 2350 Broadband Router.  
Your CD should automatically launch the Setup Wizard. If it does not, complete the following steps to start the Wizard.
  - a. Click the **Start** button, and then click **Run**.
  - b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.

Once the Setup Wizard has been launched, select the "**Connect Wireless Computer**" option and follow the on screen instructions.

**NOTE:** If the network encryption key on your wireless client does not match the key set on your Dell Wireless 2350 Broadband Router, your computer will fail to connect to the network.

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- ▶ [DSL Modem Connection](#)
- ▶ [Cable Modem with USB Connection](#)
- ▶ [Configuring Your Router as an Access Point for an Existing Network](#)
- ▶ [Configuring Your Dell Wireless 2350 Broadband Router for Gaming](#)
- ▶ [Setting Wireless Encryption in Your Dell Wireless 2350 Broadband Router](#)
- ▶ [Turning Off Broadcast SSID](#)
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## Advanced Settings: Dell™ Wireless 2350 Broadband Router User's Guide

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- ▶ [Advanced Wireless](#)
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- ▶ [Administration Settings](#)

**NOTE:** Dell technical support representatives do not support the configuration options in the Advanced Settings portion of the configuration program. These options are provided for your convenience only. However, the advanced settings are fully documented and explained in this guide.

The options **Port Forwarding Settings** and **Static Routing** are not displayed if you are in Access Point Mode.

### Advanced IP Settings

The Dell Wireless 2350 Broadband Router comes with an assigned IP address and IP subnet mask. These settings apply only to the local network portion of the router. If you are installing the unit on an existing network or simply want to change these values, make sure the IP subnet mask is the same for all devices on your network. The network portion of the IP address must also be the same for all devices on your network.

**NOTE:** Dell strongly suggests you do not change the IP address unless there is a specific reason for doing so.

While you are changing the IP address, be aware of the following:

- Changing the IP address of the Dell Wireless 2350 Broadband Router also changes the IP address pool for the DHCP server.
- If you are using the Dell Wireless 2350 Broadband Router with a cable modem or DSL line, you should assign a **private** IP address. Private IP addresses are in one of three ranges:
  - 10.0.0.1 to 10.254.254.254
  - 172.16.0.1 to 172.31.254.254
  - 192.168.0.1 to 192.168.254.254
- You must use the new IP address to access the web-based configuration tool once the changes have been saved.

**NOTE:** You should only change the IP address or IP subnet mask if you are installing the Dell Wireless 2350 Broadband Router on an existing wired network and the DHCP server function for your Dell Wireless 2350 Broadband Router is disabled in the **Advanced Settings**. For more information, contact your network administrator.

#### Advanced IP Settings

## DEVICE IP SETTINGS

### The device IP address and subnet mask settings

IP Address 192 . 168 . 2 . 1

IP Subnet Mask 255. 255. 255. 0 (253 Addresses)

NOTE: Please click **Submit** to save the settings.

---

## DHCP Server Settings

**Dynamic Host Configuration Protocol (DHCP)**, defines a way to automatically assign IP addresses to computers on a network. IP addresses are managed by a DHCP server. If a Windows computer is configured to obtain an IP address automatically, it automatically gets an address from the DHCP server.

### DHCP Server Settings

## DHCP SERVER SETTINGS

Enable DHCP Server Functions 

## IP Address Pool Range

From 192.168.2. To 192.168.2. 

## Lease Time

days hours minutes seconds 

## IP Address Reservations

IP ADDRESS

MAC ADDRESS

EDIT

 NOTE: Please click **Submit** to save the settings.**Enable DHCP Server Functions**

By default, the Dell Wireless 2350 Broadband Router is set to function as a DHCP server. If you are installing the unit on an existing network that already has a DHCP server or simply do not want the Dell Wireless 2350 Broadband Router to function as the network's DHCP server, click to deselect **Enable DHCP Server Functions** to disable the DHCP server function.

**IP Address Pool Range**

The IP Address Pool Range section provides a means of controlling a low and high value for the IP addresses on a network. Use the indicated fields to define the range of IP addresses you would like the Dell Wireless 2350 Broadband Router to provide to DHCP clients. The valid range of numbers you should enter is between 1 and 254.

The lease time is the amount of time a user will be allowed to use the IP address assigned by the DHCP server. You may specify the lease time that DHCP server offers for the client to use the IP address. This setting is especially useful on campuses or other environments where users change frequently.

**IP Address Reservation**

Specific IP addresses may also be reserved for particular devices in a network. The **IP Address Reservation** fields allow you to reserve up to 20 IP addresses for a specific system. The **MAC Address** field is the physical address of the network card on the client computer. Use the input fields under **IP Address** to indicate the IP address for those devices that should use a manually defined IP address.

[Back to Top](#)**Time Zone**

Time Zone



### TIME ZONE SELECTION

Current Day Wed

Current Date 1 Jan 2003

Current Time 00:12:42

Enable Daylight Saving  Enabled  Disabled

Please choose your local time zone (GMT) GMT

Submit Help

NOTE:Please click **Submit** to save the settings.

Use the **Time** Zone page to select your local time zone from the pull-down list. The Time Zone Settings affect the Intruder Detection Log. This setting overrides the time stamp on IP packets that are in Greenwich Mean Time (GMT).

During the summer months, the clock will move one or several hours ahead. Countries have different change dates. In most of the U.S and Canada, daylight saving time begins on the first Sunday of April. Time reverts to standard time on the last Sunday of October. To enable daylight saving click the box **Enable Daylight Saving**.

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## Advanced Wireless

### Advanced Wireless

## ADVANCED WIRELESS

Enable Wireless	<input checked="" type="radio"/> Yes <input type="radio"/> No
Hide my wireless network	<input type="radio"/> Yes <input checked="" type="radio"/> No
Mode	802.11b and g ▾
Network Name (SSID)	wireless
Transfer Rate	Auto ▾ (Default: Auto)
Channel	Auto ▾
Advanced options	<input checked="" type="checkbox"/>
Beacon interval	100 (1-65535)
RTS Threshold	2347 (1-2347)
Fragmentation threshold	2346 (256-2346)
DTIM Interval	1 (1-255)
CTS Protection Mode	auto ▾
CTS Protection Type	CTS-Self ▾
Enable this AP as a root AP	<input checked="" type="checkbox"/>
Enable this AP as a Wireless Repeater	<input type="checkbox"/>

NOTE: Please click **Submit** to save the settings.

**Enable Wireless**

This setting enables radio transmission and reception on the Dell Wireless 2350 Broadband Router.

**Hide my wireless network**

Checking this option disables the Dell Wireless 2350 Broadband Router sending out beacon packets to the wireless network. It is not selected by default and other users can easily find and make association to your Dell Wireless 2350 Broadband Router with the use of a site survey tool. If you want to increase wireless network security, you can enable this feature.

**Mode**

The Dell Wireless 2350 Broadband Router is 802.11g-compatible. You can select **both b & g** (dual mode), or just **802.11b** mode or just **802.11g** mode from the **Mode** list.

**SSID**

Service Set Identifier (SSID) is a 32-character name that uniquely identifies all the computers and equipment that make up the wireless network.

**Transfer Rate**

Transfer rate can be set to automatic or some other fixed value. It is recommended that you set the transfer rate to automatic (Auto) to allow the wireless network devices to transmit at a rate they deem optimum at any given point of time.

**Channel**

The channel settings let you set the channel for this router. The radio channel is the place over which a communication transmission occurs. The operating channel number depends on the regulatory domain.

**NOTE:** If you want to configure the settings of Beacon Interval, RTS Threshold, Fragmentation Threshold, and DTIM Interval, ensure that **Advanced Options** is selected first.

### **Beacon Interval**

The amount of time in Kusecs (one Kusec equals 1,024 microseconds) between radio beacons from the Dell Wireless 2350 Broadband Router to its client stations. The value range is from 1 to 65535.

### **RTS Threshold**

This is the packet size above which the Dell Wireless 2350 Broadband Router will issue a Request to Send before sending the packet.

RTS (Request to Send) mechanism prevents the **Hidden Node** problem. When two stations are within range of the same Access Point (AP) but are not within range of each other, they are hidden nodes for each other. The packets from these two stations may collide if they arrive at the AP at the same time. To prevent data collision with the hidden node, you can activate RTS mechanism. If RTS mechanism is activated, the station will send a RTS first to inform the AP that it is going to transmit the data. Then, the AP will reply with the CTS (Clear to Send) to all stations within its range to notify all other stations and reserve the bandwidth for your data.

The RTS threshold controls what size data packet would issue a RTS. Only when the packet exceeds the RTS threshold, the device will send a RTS before sending the packet. There is trade-off to consider what value you should set for the RTS threshold. Small values cause RTS to be sent more often, and it would waste the bandwidth. However, the more often RTS packets are sent, the sooner the system can recover from collisions. It is recommended to use the default value or only minor reductions of this default value. The value range is from 1 to 2347.

### **Fragmentation Threshold**

The fragmentation threshold, specified in bytes, determines whether data packets will be fragmented and at what size. Packets that are smaller than the specified fragmentation threshold value will not be fragmented. Packets that are larger than the fragmentation threshold will be fragmented into smaller packets and transmitted a piece at a time instead of all at once. Thus, it will reduce the need for retransmission and improve overall network performance. Fragmentation is activated usually when the system is in heavy traffic and interference environment. The setting must be within the range of 256 to 2346 bytes. It is recommended to use the default value or only minor reductions of this default value.

### **DTIM Interval**

DTIM (Delivery Traffic Indication Message) Interval, always a multiple of the beacon period, determines how often the beacon contains a traffic indicator map (TIM). The TIM alerts stations in sleep state to stay awake long enough to receive their data frames. The value range is from 1 to 255.

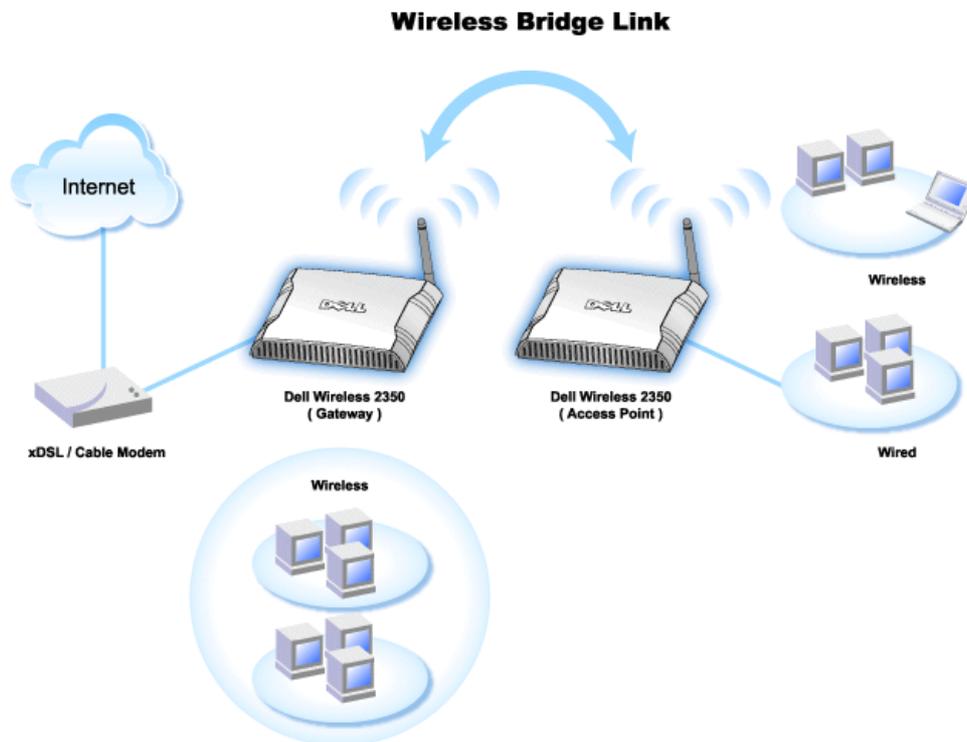
### **CTS Protection mode**

This option allows the user to enable or disable operation of '802.11g' clients in an environment where a '802.11b' AP is also broadcasting. Enabling this allows '802.11b' clients to perform better in this environment. Disabling allows maximum throughput for '802.11g' clients.

### **Wireless Repeater**

Wireless repeater can be used to increase the coverage of your wireless network and/or to provide wired access to remote computers. You need two or more Dell Wireless 2350 Broadband Routers to set up wireless repeater. The access point that is connected to the network is known as the "root AP", the access points that extend the coverage of this root AP are known as "repeater AP's".

To set up wireless repeater, configure the wireless settings for all of your Dell Wireless 2350 Broadband Routers to the same settings.



### **Configuring your router for Wireless Repeater:**

1. Click the option **Enable this AP as a Wireless Repeater**.
2. Type the wireless network name (SSID) of the root AP in the **SSID of root AP** field.
3. Set the "Network Encryption" mode as **None**, If the root AP does not provide wireless security.
4. Set the "Network Encryption" mode as **WEP**, If the wireless security mode of the root AP is WEP. Then, set the proper key value, key length, key format, and default key.

5. Click the **Submit** button.

The repeater AP must be located within the coverage of your root AP in order to associate with the root AP and extend it's coverage.

**NOTE:** Ensure all Dell Wireless 2350 Broadband Routers are set to same wireless settings.

**To Configure your Dell Wireless 2350 Broadband Router back as a root AP:**

1. Click the option **Enable this AP as a Root AP**
2. Click the **Submit** button.

**Restore Defaults**

If you have customized your wireless system configuration, you can restore the wireless settings to factory defaults by clicking the **Restore Defaults** button.

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## Parental Control

**Parental Control**

Parental Control Rules							Add
Internet Access	IP	Interval	WEB Access	web sites	web keywords	EDIT	

NOTE: Please click **Submit** to save the settings.

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IP filtering is a mechanism that the Dell Wireless 2350 Broadband Router to accept or deny certain types of IP datagrams based on the IP address, port number, protocol type, and other criteria.

1. Click the **Add** button. A pop-up **Parental Control Rule** window will appear.
2. Click to select the IP address of the particular computer you want to control (for example, your child's computer) in the **IP Address** list.
3. To block or grant access to the Internet during a period of time, specify the start and end time from the **Time Restriction** list.
4. Click to select **Allow** or **Deny** from the **Internet Access** list.
5. Enter the URL that you want to allow or deny the access in the **Web Site Restrictions** field.
6. Click to select **Allow** or **Deny** access to these web sites.
7. Enter the **web keywords** to deny traffic with the same keywords
8. Click the **Submit** button to store the changes.

The figure above shows DNS server status. User is able to see host name, IP address, and Source.

For user hosting service with a dynamic IP from ISP's DHCP server, Dynamic DNS allows server to match ever changing IP to work station which the service is provided. Check "Enable Dynamic DNS" box and enter User Name, Password, and Host Name to register with Server.

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---

## Advance Filtering

### Advance Filtering

### Advanced Filtering

Advanced Filtering Rules								Add
Direction	Source IP	Dest. IP	IP Protocol	Source Port	Destination Port	Action	EDIT	
<input type="button" value="Submit"/>								

NOTE: Please click **Submit** to save the settings.

Advanced Filtering allows user to setup a more complicated rule to filter out unwanted traffic. Click **ADD** button to setup source IP, Destination IP, IP protocol, TCP port, and UDP port. Once a rule has been setup then if there is a packet that is matched with the rules then it will be either accepted or dropped by Dell Wireless 2350 Broadband Router depending on the rule setting.

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## DNS Server Status

### DNS Server Status

### DNS Server Status

DNS Server Status		
Host Name	IP Address	Source
localhost	127.0.0.1	User-Defined
Wireless_Client	192.168.2.2	Automatic

DNS server status shows all DNS entries known by Dell Wireless 2350 Broadband Router. Host name is mapped to the IP address.

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## Dynamic DNS

### Dynamic DNS

## Dynamic DNS

Enable Dynamic DNS	<input checked="" type="checkbox"/>
Service_Provider	<input type="text" value="dyndns.org"/>
User Name	<input type="text"/>
Password	<input type="password" value="•••••"/>
Host Name	<input type="text"/>

NOTE:Please click'[Submit](#)'to save the settings.

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Users can register a domain name from dyndns.org. With this domain, it allows user enter the domain name instead of entering IP address. DDNS will map IP address to user's domain name.

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## Access Control Settings

The Access Control Settings feature allows you to control which local client computer can or can not access the network through the router. The Dell Wireless 2350 broadband Router by default allows any local client computer to access the network. There are two tables for Access Control Settings, The **Grant Access Table** and the **Deny Access Table**. Each table is able to support up to 32 entries. Only one table can be active at a time. Selecting the checkbox for Grant Access Table will disable the Deny Access Table and vice versa. The MAC Access control settings apply to wireless clients only and not to wired clients.

### Access Control Settings

## ACCESS CONTROL SETTINGS

Enable MAC Access Control  Yes  NoGrant Access Table  Yes  No

Grant Access Table	Add
Mac Address	EDIT

Deny Access Table  Yes  No

Deny Access Table	Add
Mac Address	EDIT

NOTE: Please click **Submit** to save the settings.

To enable access control in the router, perform the following steps:

1. Click to select **Enable MAC Access Control**.
2. Click the **Add** button, a pop-up window will open and then enter the MAC address of the network card on the computer on which you allow the access to the router.
3. Click **Submit** to enter the rule to the router.
4. To remove an existing rule, click to select **edit** beside **MAC address**.
5. A pop-up window will open and click the **Delete** button to remove it.

 **NOTE:** The Access Control Settings apply to wireless client computers and not to wired client computers.

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## Port Forwarding Settings

### Port Forwarding Settings

## PORT FORWARDING SETTINGS

Enable DMZ Host

### Custom Port Forward Settings

Service	Enable	Incoming Ports	Destination IP Address	Destination Port	type	EDIT

### Port Triggering Settings

Enable	Application Name	Trigger Port	Port Type	Public Ports	Public Port Type




NOTE: Please click **Submit** to save the settings.

## DMZ

The DMZ (demilitarized zone) feature allows access to all ports. (For example, if you have problems hosting a game server, you can choose this option. This will open all ports to your game server.)

1. Click to select **Enable DMZ Host**.
2. Type the IP address of the computer that you want to run the gaming application in the **DMZ IP Address** field.
3. Click the **Submit** button to activate the setting.

**NOTE:** Configuring the Dell Wireless 2350 Broadband Router in DMZ mode is useful if you want to play certain games through the Dell Wireless 2350 Broadband Router but the ports cannot be opened with all other existing configuration tools.

**NOTICE:** Opening a service to the Internet causes security concerns. Pay careful attention to security alerts, and make sure that strong access controls and authentication are in place before allowing access to any services.

## Custom Port Forwarding Settings

Port Forwarding may be more difficult than DMZ to configure. However, it provides a relatively safe way of running an Internet application or providing an Internet service from behind a firewall since only a single port (or a range of ports) is exposed to the Internet. You can configure this port forwarding setting to create a custom rule that defines a specific port and protocol for data traffic to pass through to the specific computer on your LAN.

An example is an HTTP server running on your LAN, which you want to be available to the Internet. Your public IP address (that your ISP gives you) is X.X.X.X (The X is a number), and you have a computer hosting the HTTP server at LAN address 192.168.2.2 on your Dell Wireless 2350 Broadband Router (192.168.2.1) controlled LAN. You can configure 192.168.2.2 to have port forwarding for port 80 (HTTP), then users on the Internet can go to http://X.X.X.X and get the HTTP server (192.168.2.2). The data traffic entering service port 80 will be directed to the computer (192.168.2.2), and other computers on your LAN will not see this data traffic.

For some Internet applications (such as Internet messaging and gaming applications), you can configure this port forwarding setting so that these applications can function correctly behind the firewall. These applications are required to have specific TCP/UDP ports. The ports for these applications and the protocol type will depend on what Internet services you are using. Check with your service provider or application's user manual to have the information first.

Make sure you have the following ports set up as described below.

1. Click the **ADD** button first to add entries.
2. Enter the desired name or description in the **Service Name** field.
3. In the **Incoming Ports** field, enter a range of ports. If you want to specify only a single port number, enter the same number in both fields.
4. In the **Destination IP Address** field, enter the IP address of the computer you want to receive the connection request.
5. In the **Destination Port** field, enter a port number or a range of ports of the machine to which you are mapping.

7. In the **Port type** field, select TCP, UDP, or both protocols. The protocol could be specified in your application's documentation.
8. Click the **Submit** button to activate the setting.

For example, if you want to play the game Fighter Ace II on a computer with an IP address of 192.168.2.3, enter **3** for the **Destination IP Address**. Select **TCP** as the **Port type**. Enter **50000** and **51000** for two fields of **Incoming Ports** and also for the **Destination Port**. Click **Submit** button to activate the setting. For other games or services, consult the application's user manual.

#### Commonly Used Ports

Services	Protocol Type	Ports
HTTP (WEB Server)	TCP	80
FTP	TCP	20, 21
TELNET	TCP	23
SMTP (Mail Server)	TCP	25
POP3 (Mail Server)	TCP	110
IRC	TCP	6667
NNTP (News Server)	TCP	119

#### **Port Triggering**

Port triggering allows the router to watch outgoing data for a specific port number. The IP address of the computer that sends the data is remembered by the router, so that when the requested data returns through the router, the data will be passed to the specific computer by way of IP address and port mapping rules. The router opens the port when the Port Triggering happens. When the computer running the application stops sending the data through this port, the router will close the port.

1. Click the **PORT TRIGGERING** button first.
2. Enter the desired name or description in the **Application Name** field.
3. In the **Trigger Port** field, enter a port number. Check with your Internet application provider for more information on what Trigger Port it is using.
4. Select TCP (Transmission Control Protocol), or UDP (User Datagram Protocol), or both protocols as the **Trigger Port Type**.
5. Specify the range of the **Public Ports** by typing the start and end port numbers in the required fields.
6. Select TCP (Transmission Control Protocol), or UDP (User Datagram Protocol), or both (TCP and UDP) as the **Public Port Type**.
7. Click the **Submit** button to activate the setting.

Click the **Submit** button to store the changes.

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## Static Routing

### Static Routing

## STATIC ROUTING TABLE

Destination IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Subnet Mask	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Gateway IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="Add"/>				
Del	Destination IP Address	Subnet Mask	Gateway IP Address	
<input type="button" value="Submit"/> <input type="button" value="Help"/>				

NOTE: Please click 'Submit' to save the settings.

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Static routes are manually configured routes to remote networks. That is, the route is predefined and is not discovered by the **Routing Information Protocol (RIP)**, as in dynamic routing. Static routing allows you to assign a gateway to an IP address or network. If there are routers on your internal network that do not function with RIP 1 or 2, you can set up a static route to those routers.

The advantage to using static routing is that network traffic is reduced; thus, static routing is beneficial for slow Internet connections. Routing using static routes is practical for small networks. For larger networks, the router needs to dynamically keep track of changes in the physical wiring of the network, and the use of dynamic routing (RIP) is recommended.

**NOTICE:** The Static Routing settings are intended for advanced network administrators only. Do not change these settings unless you are certain of the correct values. You may not be able to access the configuration tool if invalid information is entered.

To use static routing, manually add the Destination IP Address, Subnet Mask, and Gateway IP Address for each route you are adding to the Static Routing Table, and click **Add**. Then click **Submit**. If you are routing to an entire network, the last number in the destination IP address should be a zero (0); for example, 192.168.0.0.

**NOTE:** In static routing, the Dell Wireless 2350 Broadband Router does **NOT** dynamically discover routing information and does **NOT** use RIP. The Dell Wireless 2350 Broadband Router currently does **NOT** support RIP.

Use the fields beside each route and the **Delete** button to remove static routes from the Static Routing Table.

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## Administration Settings

### Password Settings

The Dell Wireless 2350 Broadband Router uses a password to authenticate the user before allowing changes to be made to any network settings. If you would like to change the current password, click to select **Change Your Password** and enter the new password in both **New Password** and **Retype Password** fields. Write down the password and keep it in a secure location for future reference.

### System Administration

- HTTP Port No.**  
 Do not change the **HTTP Port** value unless you have reason to do so. Typically, web servers listen for incoming web requests on port 80.
- Allow remote user to configure the device**  
 If you would like a remote user to be able to administer your Dell Wireless 2350 Broadband Router over the Internet, click to select titled **Allow remote user to configure the device**. Enter the IP address for the remote administration host computer.
- Allow remote user to ping the device**  
 Click to select **Allow remote user to ping the device** to enable your Dell Wireless 2350 Broadband Router to be pinged by any user on the Internet. This feature is helpful if you want to allow other Internet users to check the status of your Dell Wireless 2350 Broadband Router.
- Enable UPnP function** UPnP stands for Universal Plug and Play, a protocol which allows UPnP-enabled client computers, such as Windows XP, to discover and configure the Dell Wireless 2350 Broadband Router. One of most common use of UPnP on the router is to open ports to allow application-specific data to be forwarded through the router for various Internet services or gaming applications. The router detection and the router configuration process can be carried out automatically by the UPnP-enabled client applications such as **MSN Messenger** so you won't have to do it manually. Click to select **Enable UPnP function** to enable this service.

If you have an Windows XP system, you can use it to access and control the router while the router's UPnP function is enabled. Here are some examples of what you can do with UPnP from your Windows XP system.

**Example 1:** Access the router's web configuration tool without knowing its IP address.

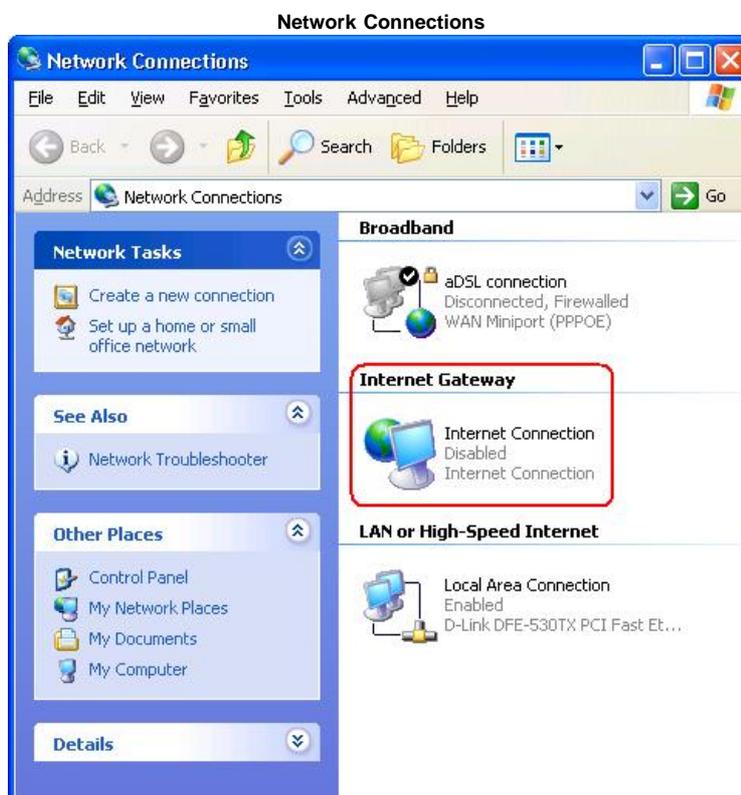
1. Double-click the **My Network Neighborhood** icon from the desktop.
2. Double-click the **Broadband Router** icon that is created for your router.  
This will bring up the authentication screen of the router's Web configuration tool.
3. Type the correct password and click the **OK** button to access the web configuration tool.



**Example 2:** Manage the router's port forwarding rules from the Windows XP interface.

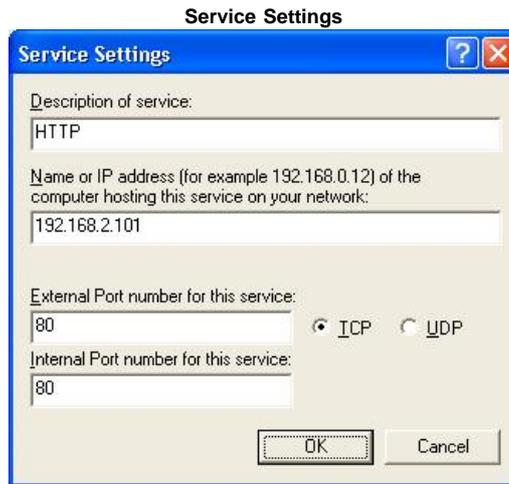
**NOTE:** If you have already configured a port forwarding rule for the service through the web configuration tool, you don't need to perform the following steps for the same service again.

4. Right-click the **My Network Neighborhood** icon on the desktop.
5. Right-click the **Internet Connection** icon created for the router.



6. Right-click the icon and left-click **Properties**.
7. Click **Settings**.

8. Click **Add**.
9. Type Description of service, IP address of the service host, External Port number for this service, Internal Port number for this service, and click to select either TCP or UDP. For example, the graph below shows an example of how to enable a computer with an IP address 192.168.2.101 to host a public HTTP server.



The image shows a 'Service Settings' dialog box with a blue title bar and standard window controls. It contains the following fields and options:

- Description of service:** A text box containing 'HTTP'.
- Name or IP address (for example 192.168.0.12) of the computer hosting this service on your network:** A text box containing '192.168.2.101'.
- External Port number for this service:** A text box containing '80'.
- Protocol:** Two radio buttons, 'TCP' (which is selected) and 'UDP'.
- Internal Port number for this service:** A text box containing '80'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

10. Click the **OK** button to save the changes.

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# How to Configure the Dell Wireless 2350 Broadband Router using the Control Utility: Dell™ Wireless 2350 Broadband Router User's Guide

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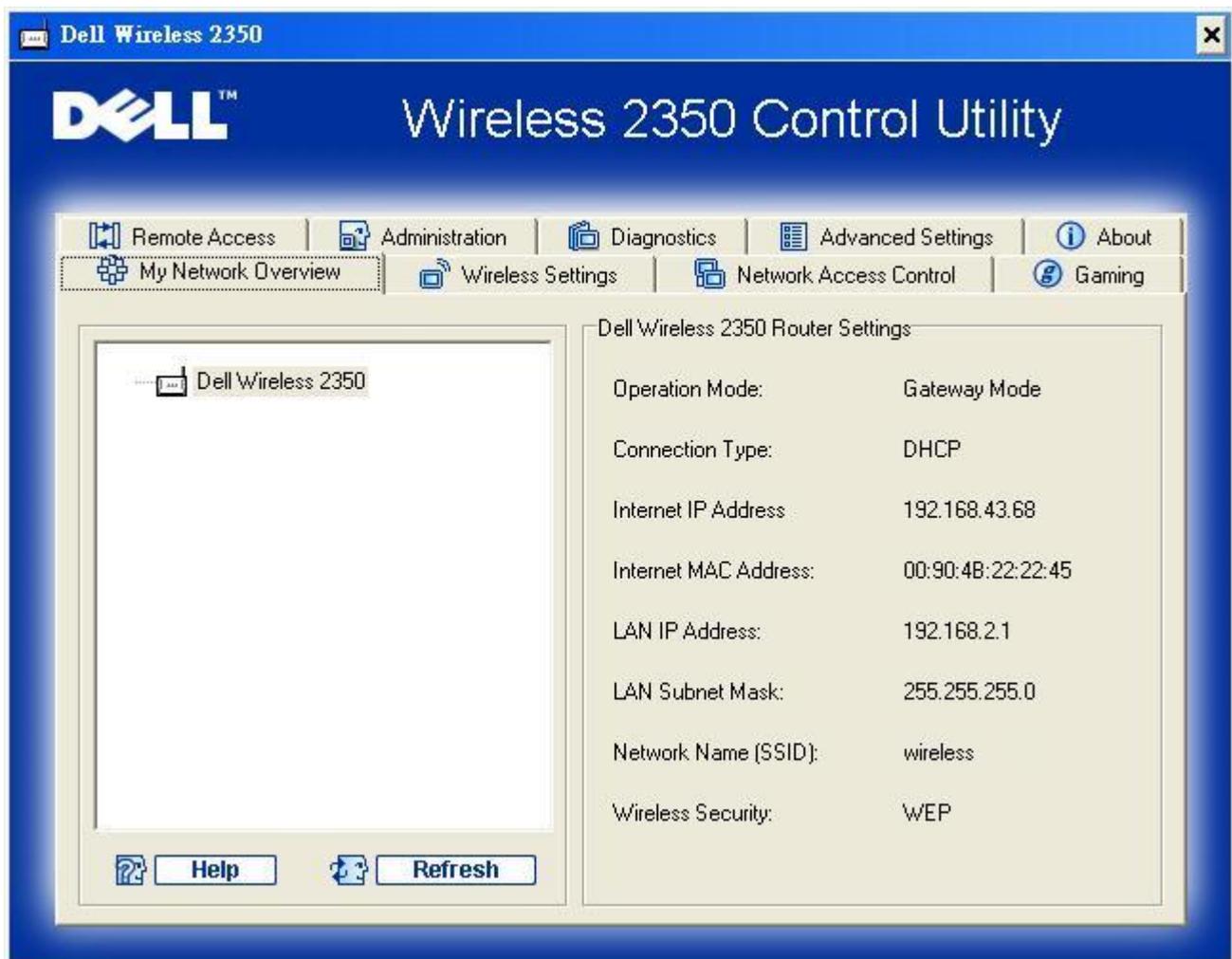
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## My Network Overview

This screen provides information about your network connection and settings. The left pane displays your connection status. The right pane displays the following network settings:

- Operation Mode
- Connection Type
- Internet IP Address
- Internet MAC Address
- LAN IP Address
- LAN Subnet Mask
- Network Name (SSID)
- Wireless Security

### My Network Overview



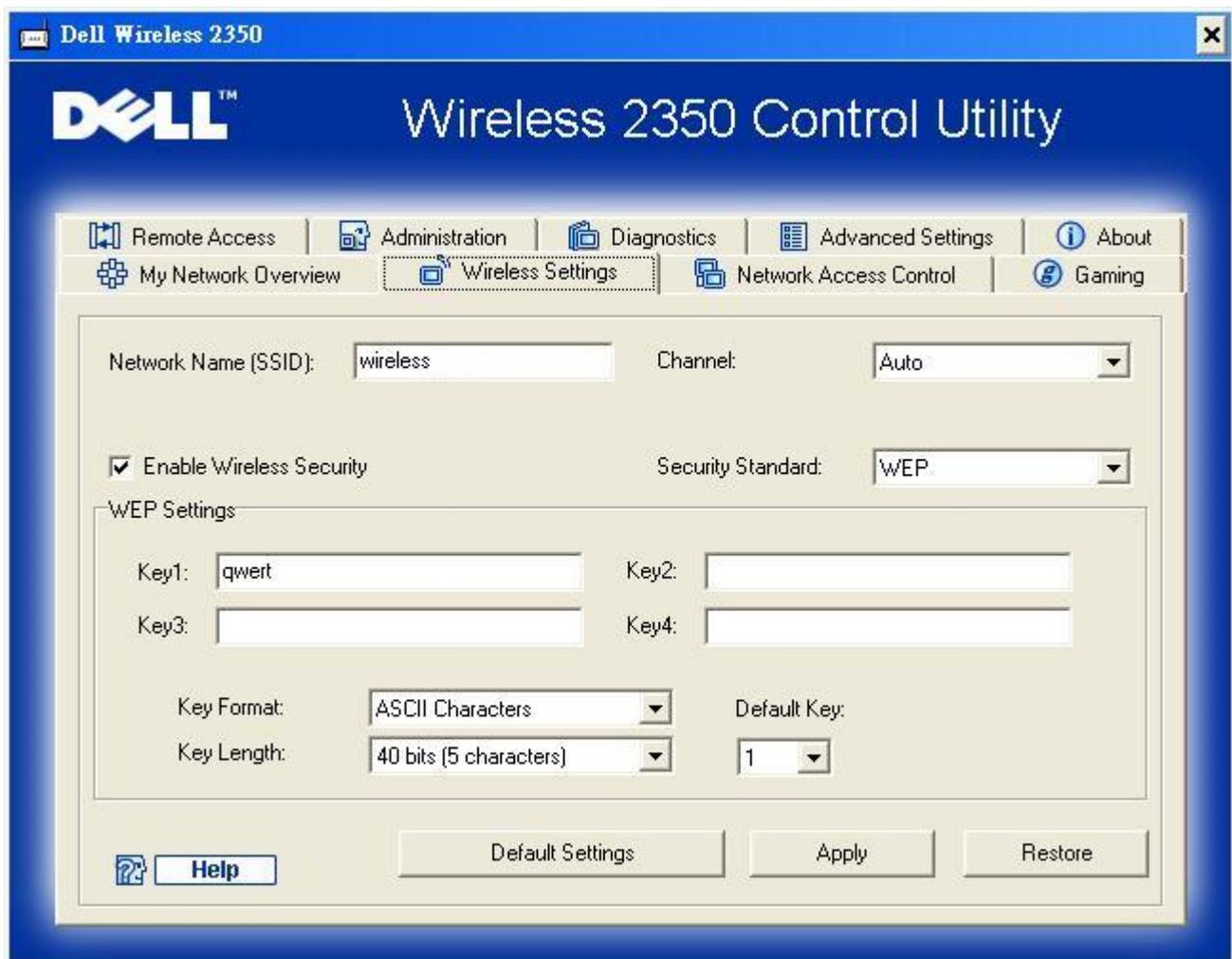
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## Wireless Settings

- **Network Name (SSID)**  
The SSID is a unique network name. It is used to identify the WLAN. This name is used when connecting additional computers to your wireless router.
- **Channel**  
This is the radio channel over which a communication transmission occurs.
- **Default Settings**  
Resets the Dell Wireless 2350 Broadband Router to its factory defaults.
- **Apply**  
Saves current settings.
- **Restore**  
Restores previous settings.

Your router has an advanced security mechanism. It ensures the confidentiality of data, and also guards data against being modified. If you want to enable the security mechanism, click to select **Enable Wireless Security**. You will then be able to choose whether you wish to use WEP or WPA security mechanisms.

### Wireless Settings WEP

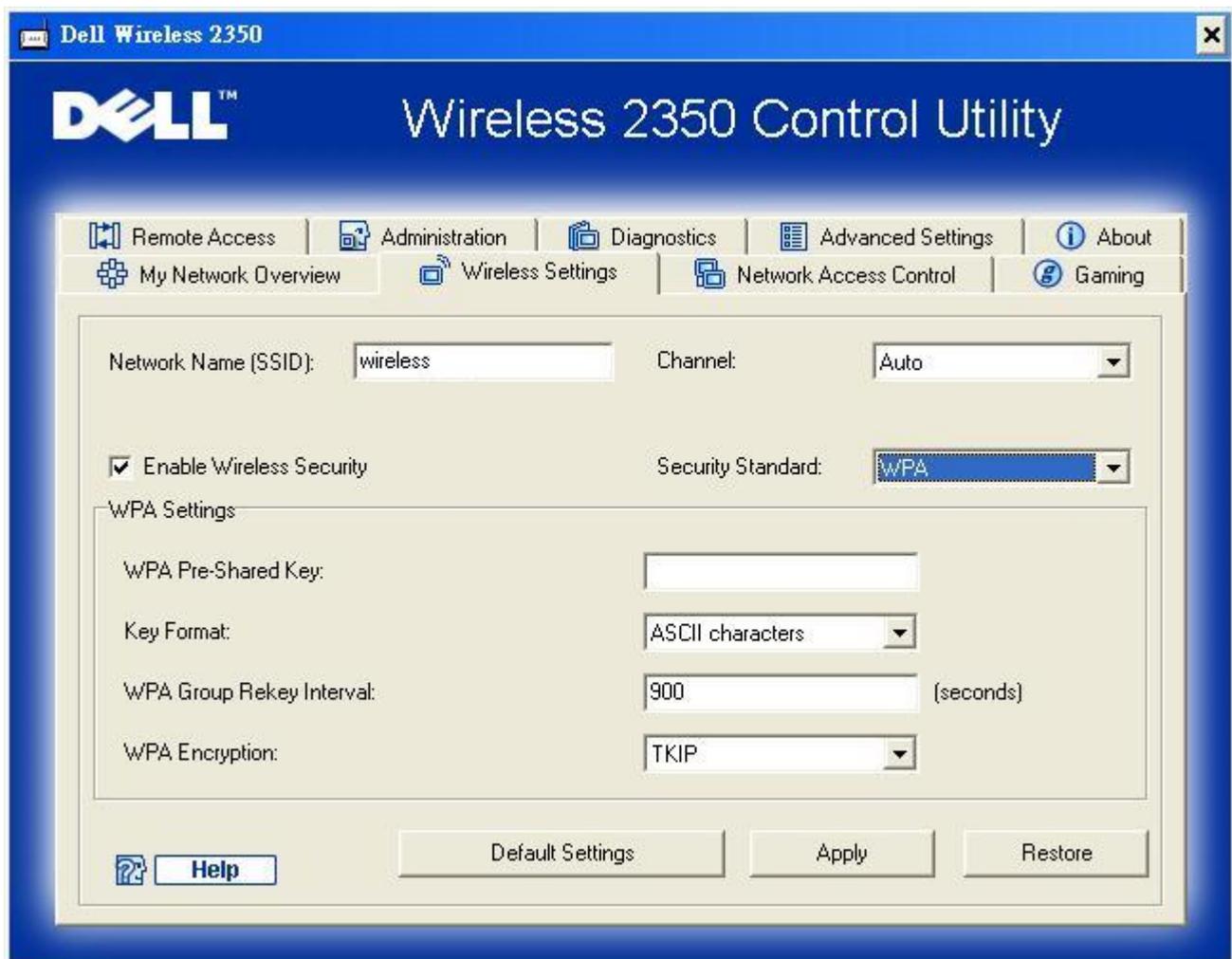


## WEP Settings

**Wired Equivalent Privacy (WEP)** encryption is used in the 802.11 standard is to protect wireless communication from eavesdropping. WEP provides a way of creating an encrypted key that is shared between a wireless client (such as a notebook with a wireless PC card) and the router. This key encrypts data before it is transmitted. WEP can be implemented with a 40(64)-bit or 104(128)-bit key. For added security, change your key often. When you change the key on one wireless device, it must be changed for all wireless devices in the network.

- **Key Format**  
This can be ASCII or hexadecimal format. Hexadecimal format includes the numbers 0 through 9 and the letters A through F. ASCII format includes all alphanumeric characters.
- **Key Length**  
This can be either 40(64)-bit or 104(128)-bit key length. Some wireless network cards are only able to use 40(64)-bit encryption. If all your clients are able to communicate at 104(128)-bit, then choose 104(128)-bit. If any client is only able to communicate at 40(64)-bit, then choose 40(64)-bit.
- **Key1, Key2, Key3, and Key4**  
You can type up to four different keys in the **Key** fields provided to store on the Dell Wireless 2350 Broadband Router. If you choose 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP key. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key.
- **Default Key**  
Select only one key out of the four provided in the **Default Key** field.

## **Wireless Settings WPA**



## **WPA Settings**

**Wi-Fi Protected Access (WPA)** is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell wireless client, you can check for the availability of WPA-enabled software updates for your wireless client at <http://support.dell.com>.

- **WPA Pre-shared Key**  
All wireless clients must use this key to gain access to the network. Note that the Key format must also match the setting used for the wireless clients.
- **Key Format**  
This can be ASCII or hexadecimal format. Hexadecimal format includes the numbers 0 through 9 and the letters A through F. ASCII format includes all alphanumeric characters.
- **WPA Group Rekey Interval**  
WPA Group Rekey Interval is used to specify the frequency of encryption key rotations. The lower the number, the faster your encryption key will rotate. However, setting this number too low may cause your wireless network to slow down.
- **WPA Encryption**  
**TKIP** (Temporal Key Integrity Protocol) is the most commonly used encryption method. **AES** (Advanced Encryption Standard) can be used if your wireless clients do not support TKIP.

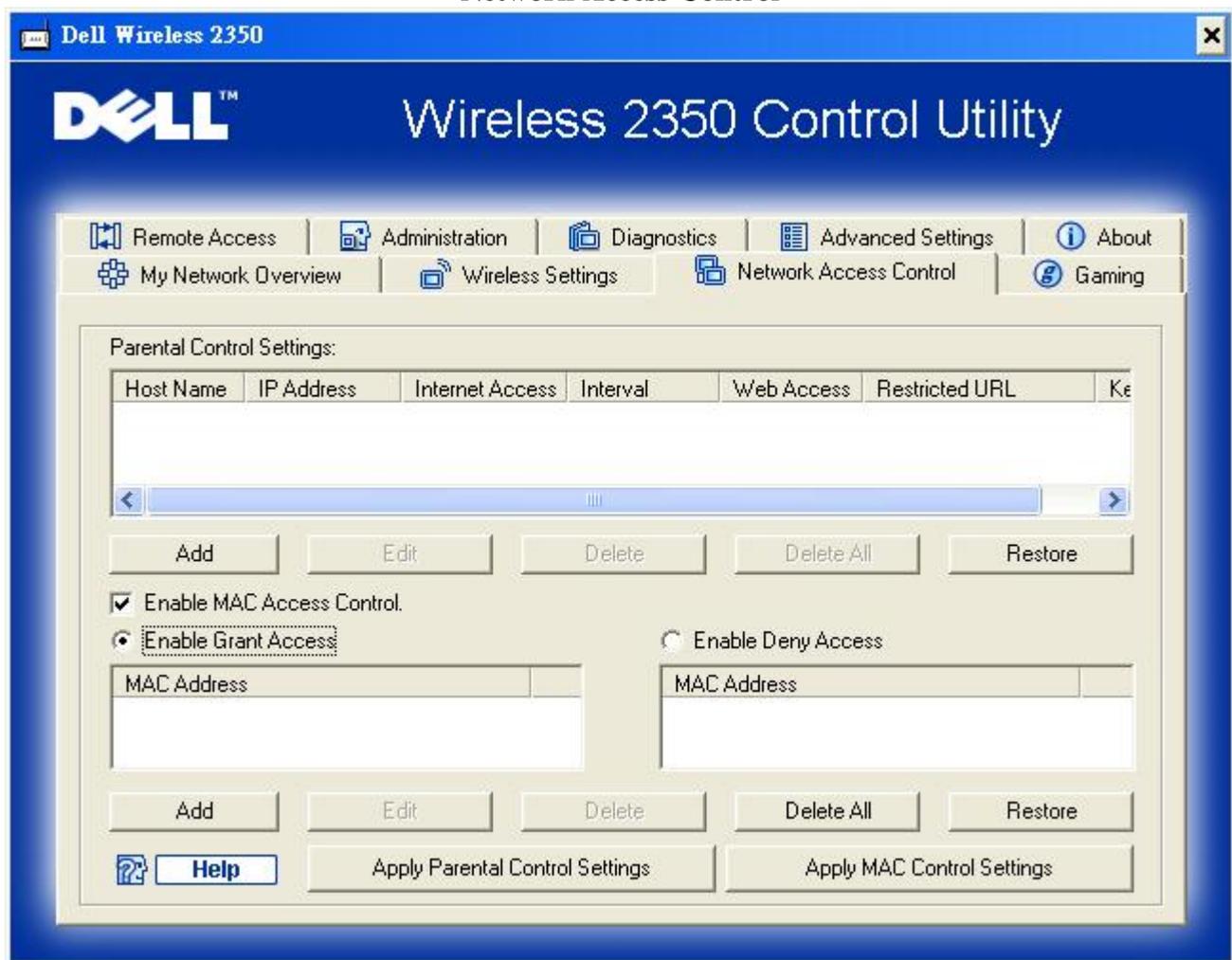
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## **Network Access Control**

- **Add**  
This adds a new Parental Control entry to the list.
- **Edit**  
Allows you to edit any current entry.
- **Delete**  
Deletes an entry from the Parental Control list.
- **Delete All**  
Deletes all records from the Parental Control list.
- **Restore**  
Restores previous settings.

## Network Access Control



### Parental Control

Parental Control allows you to determine what type of websites are accessible through your wireless network. It also allows you to specify what time of day the Internet can be accessed.

To enable parental control, perform the following steps:

1. Click the **Add** button. The **Parental Control** window appears.
2. Enter the IP address of the computer you want to control (for example, your child's computer).
3. Select **Allow** or **Deny** from the **Internet Access** list.
4. Select a time interval by choosing a start time in the **From** list and an end time in the **To** list.

5. Select **Allow** or **Deny** for web access.
6. Specify which websites may be accessed or may not be accessed by entering their URLs in the **Website URL** field.
7. Click the **OK** button to apply you settings, or click the **Cancel** button to exit without making any changes.
8. Click the **Apply Parental Control Settings** button on the bottom of the screen to activate the new settings.

### **MAC (Media Access Control)**

This feature prevents specific computers within the wireless local area network (WLAN) from accessing the Internet.

To enable MAC, perform the following steps:

1. Click to select **Enable MAC Access Control**.
2. Click the **Add** button. The **MAC Access Control: Add a Record** window appears.
3. Enter the hexadecimal MAC address (for example, 00:11:22:33:44:55) that you want to grant or deny access in the **MAC Address** box.
4. Click the **OK** button to apply, or click the **Cancel** button to exit without making any changes.
5. Click the **Apply MAC Control Settings** button on the bottom of the screen to activate the new settings.

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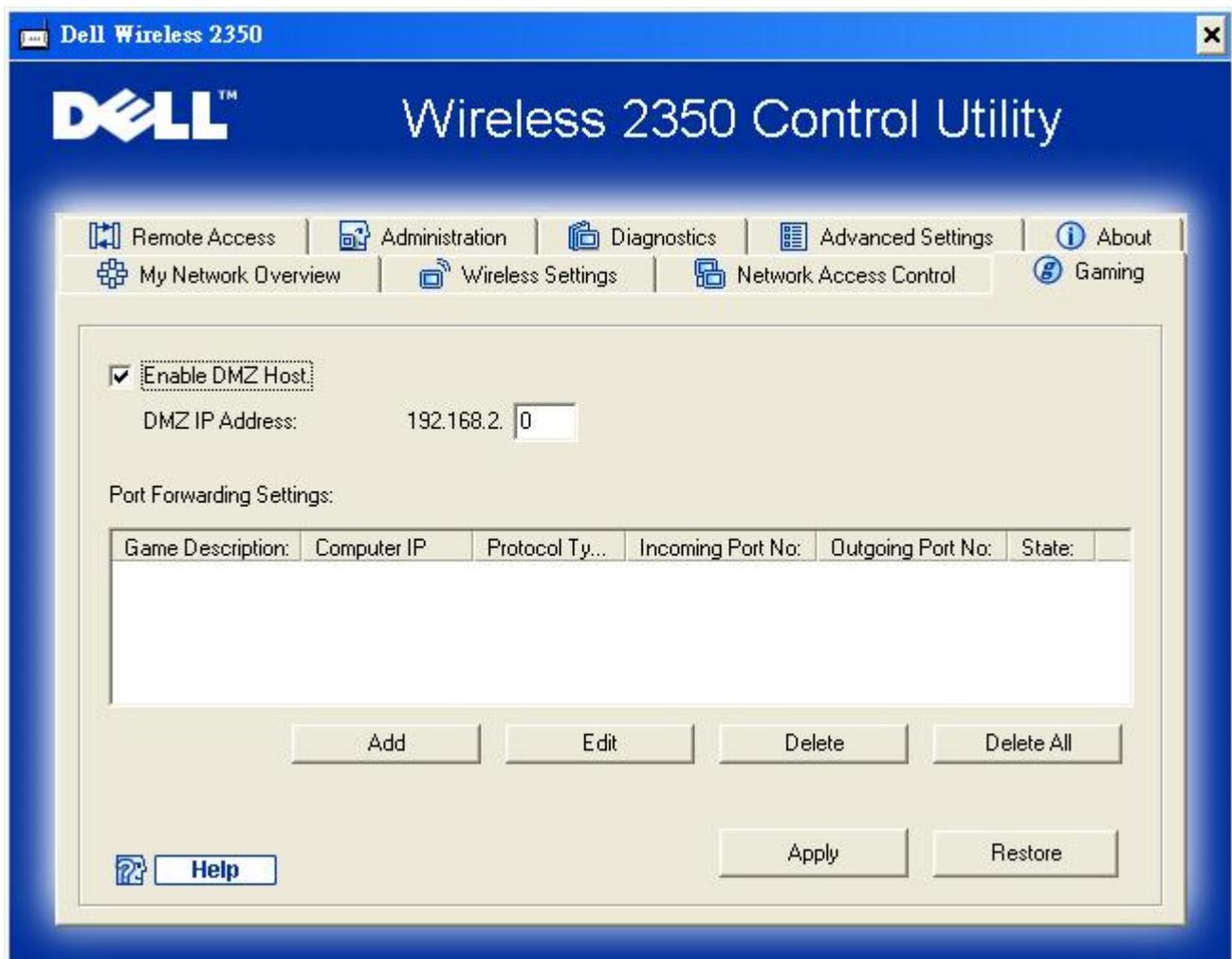
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## **Gaming**

In some cases, the firewall feature of the router will cause a game not to function as intended. The settings listed on the **Gaming** menu can solve these problems.

Your Dell Wireless 2350 Broadband Router has an integrated **Network Address Translation** (NAT) firewall that rejects any unsolicited data from the Internet to access the computer on your LAN. Applications like e-mail and web browsing are unaffected by NAT. However, some applications (such as Internet messaging and gaming applications) will not function correctly.

### **Gaming**



## **DMZ**

Some applications experience problems when working behind a firewall. To solve this problem you can put computers outside of the firewall via the router's **DMZ** (demilitarized zone) feature. The DMZ feature disables the NAT firewall and allows all data to pass through all ports to this computer.

Follow the instructions below to enable the DMZ feature.

1. Click to select **Enable DMZ Host**.
2. Type the IP address of the computer that will run the gaming application in the **DMZ IP Address** field.
3. Click the **Apply** button to apply the new settings.

## **Port Forwarding Settings**

Port forwarding allows you to configure your router to accept unsolicited data through a specific port. The ports and protocol type (TCP, UDP, or both) will depend on what gaming service you are using.

**NOTE:** This information should be available from your gaming service or your the documentation that came with your game.

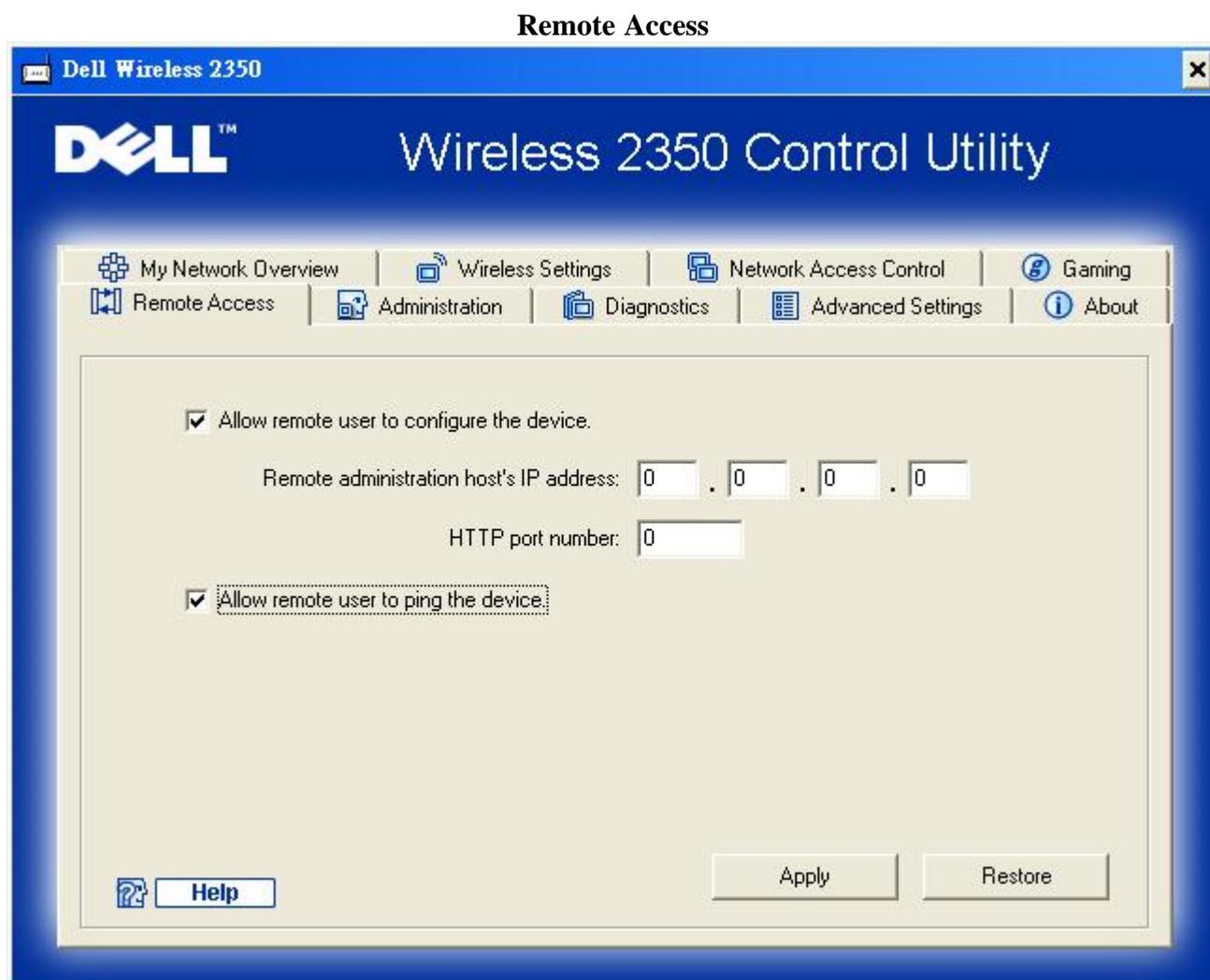
To enable Port Forwarding, perform the following steps:

1. Click the **Add** button. The **Gaming: Add a Record** window appears.
2. Type the desired name or description in the **Game Description** field. This cannot be more than 31 characters in length.
3. Type the IP address of the device (for example, desktop computer) for gaming in the **Computer IP for gaming** field.
4. Select a transport layer protocol from the **Protocol Type** list. The options listed here are TCP (Transmission Control Protocol), UDP (User Datagram Protocol), and both.

5. Enter the incoming port number in the **Incoming Port No.** field and the outgoing port number in the **Outgoing Port No.** (also called **Destination Port**) field.
6. Select **Enable** or **Disable** the gaming from the **State** list.
7. Click the **OK** button to apply, or click the **Cancel** button to exit without making any changes.

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## Remote Access



### Allow Remote User to Configure the Device

This option allows you to configure the device from a remote location via the network.

1. Click to select **Allow remote user to configure the device.**
2. Enter the IP address of the remote administration host in the required field.
3. Enter the HTTP port number that will be used on the router in the **HTTP port number** field.
4. Click the **Apply** button to save the settings, or click the **Restore** button to restore to its previous settings.

### Allow Remote User to Ping the Device

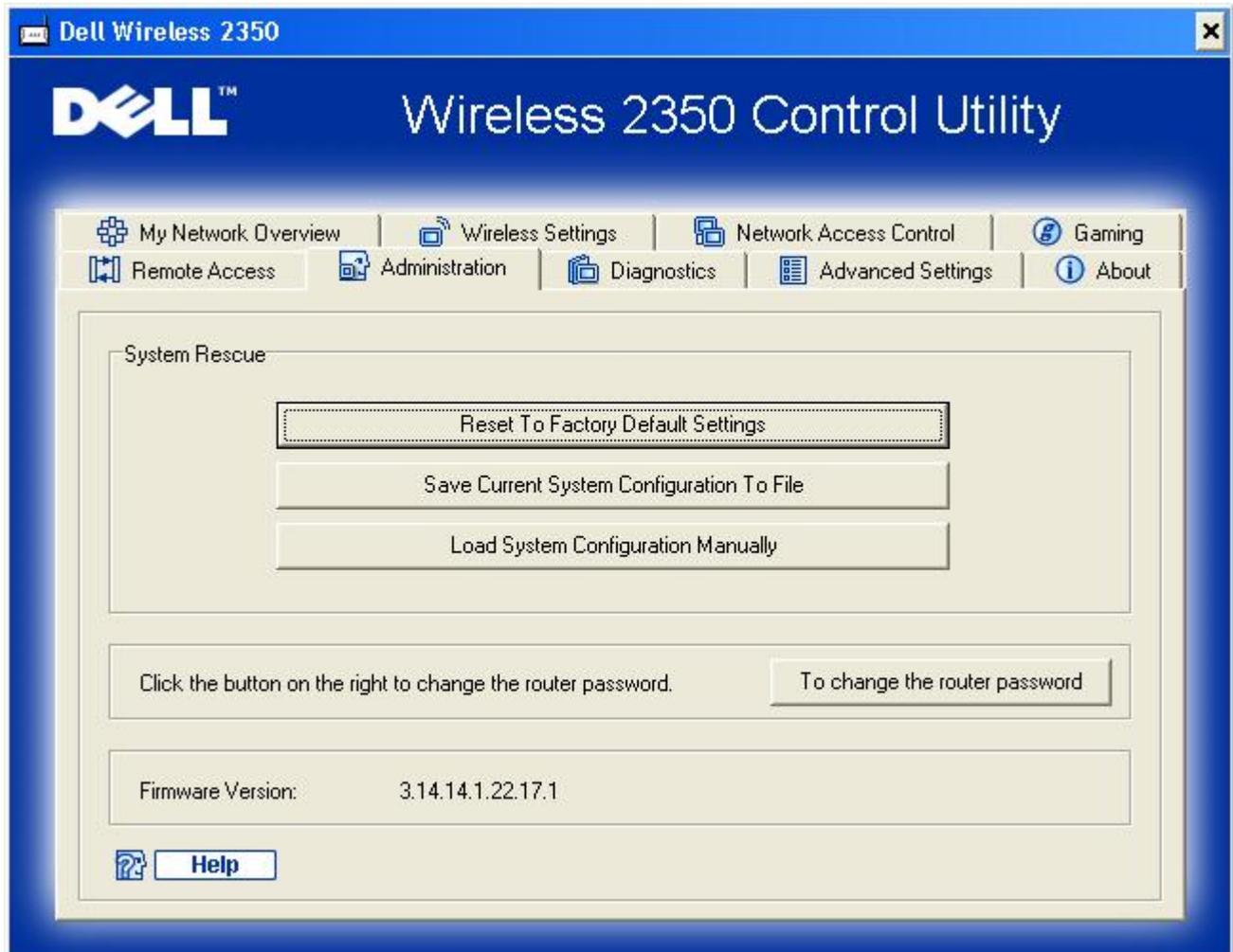
This option allows you to configure the WAN ping capability. The default setting is **disabled**. The router will not answer ping requests, so your WAN port is invisible to port scanners, which can make your network safer.

1. If you want your WAN port to be visible on the Internet, click to select **Allow remote user to ping the device**.
2. Click the **Apply** button to save the settings, or click the **Restore** button to restore to its previous settings.

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## Administration

### Administration



### System Rescue

System Rescue allows you to reset your Dell Wireless 2350 Broadband Router. You can also save or load a backup of your configuration settings.

- **Reset to Factory Default Settings**  
Resets the Dell Wireless 2350 Broadband Router to its default factory configuration.
- **Save Current System Configuration To File**  
Saves the current settings of the Dell Wireless 2350 Broadband Router to a **.pro** file.
- **Load System Configuration Manually**  
Loads settings onto the Dell Wireless 2350 Broadband Router from a backed up **.pro** file to restore previously saved settings.

### Change Password

To prevent unauthorized changes to the router settings, the router is password protected. It is strongly recommended that you change the factory default password which is **admin**

1. Click the **Change the Router Password** button. The **Password Settings** window appears.
2. Type the original password in the **Original Password** field.
3. Type the new password in the **New Password** field, and then retype it in the **Confirm Password** field to verify.
4. Type the password hint message in the **Password Hint Message** field.
5. Click the **Submit** button when you finish the setting. If you want to clear any values you have entered in any field, click the **Cancel** button.

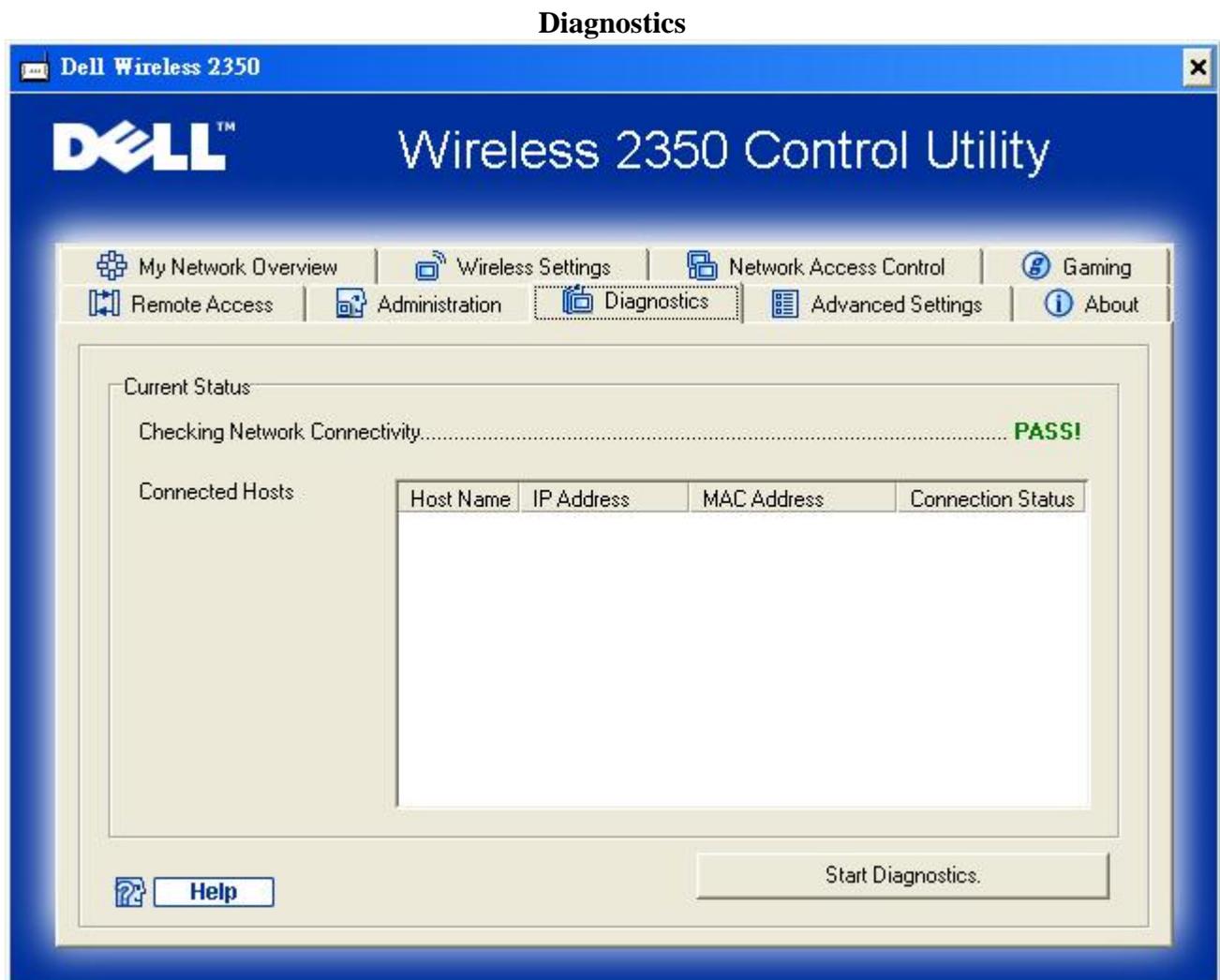
### Upgrade to New Firmware

If you are instructed to upgrade the firmware, click the **Upgrade to New Firmware** button. It will connect to the Dell website to upgrade to the latest firmware release. It is unnecessary to upgrade the firmware if your router is working properly.

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## Diagnostics



You can monitor the current status of your network connection in the **Diagnostics** menu. The network detection can be activated by clicking the **Start Diagnostics** button on the bottom of the screen.

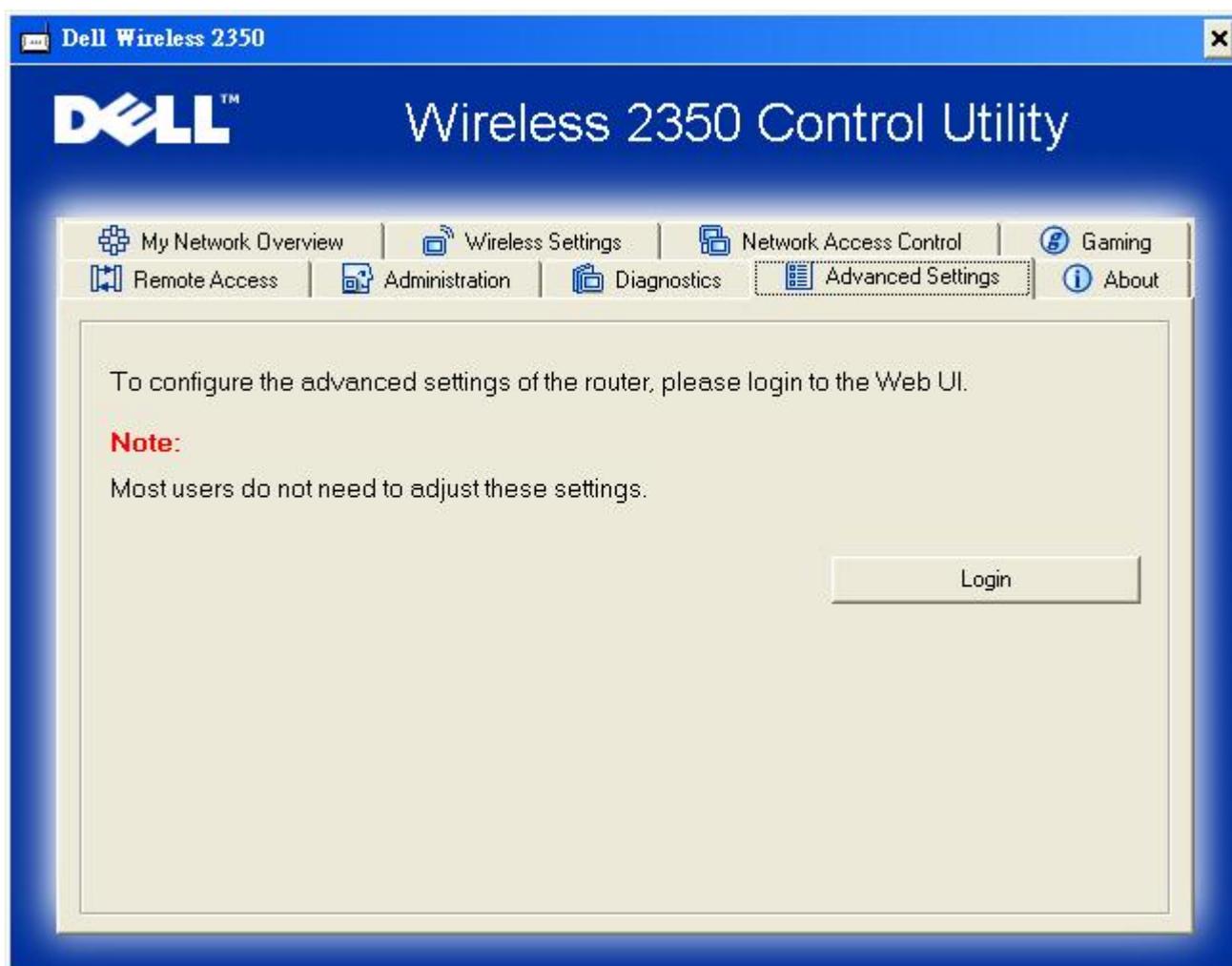
When the detection is done, the screen will display a summary of your network connectivity.

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## Advanced Settings

### Advanced Settings



To configure the advanced settings of the router, click the **Login** button to log in to the web-based configuration tool. Your Internet browser will open and you will be logged into the Dell Wireless 2350 Broadband Router's web-based configuration tool. The web-based configuration tool allows you to set up advanced network configurations for your Dell Wireless 2350 Broadband Router. Refer to the section [Web-Based Configuration Tool](#) for detailed information.

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## Factory Default Settings: Dell™ Wireless 2350 Broadband Router User's Guide

Dell pre-configures the Dell Wireless 2350 Broadband Router with the following settings:

**NOTE:** If you lose track of the device settings, you can reset the router by pushing the reset button to restore these settings back to your router.

Setting	Default
User Name	admin
Password	admin
Device Name	Dell Wireless 2350 BroadBand router
IP Address	192.168.2.1
Subnet Mask	255.255.255.0
10 Mbps Ethernet WAN IP	<obtain from ISP via DHCP>
WAN DHCP Client	Enabled
ESSID (wireless network name)	wireless
Channel	Auto
Encryption	No Encryption
DHCP Server	Enabled
NAT Routing	Enabled

**NOTE:** Your Dell Wireless 2350 Broadband Router came with factory default settings that should work for the majority of the network usage scenarios. However, there are cases where your network environment may require a different router configuration.

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# Setup Wizard: Dell™ Wireless 2350 Broadband Router User's Guide

▶ [Introduction](#)

▶ [Launching the Setup Wizard](#)

▶ [Setup Wizard Screens](#)

## Introduction

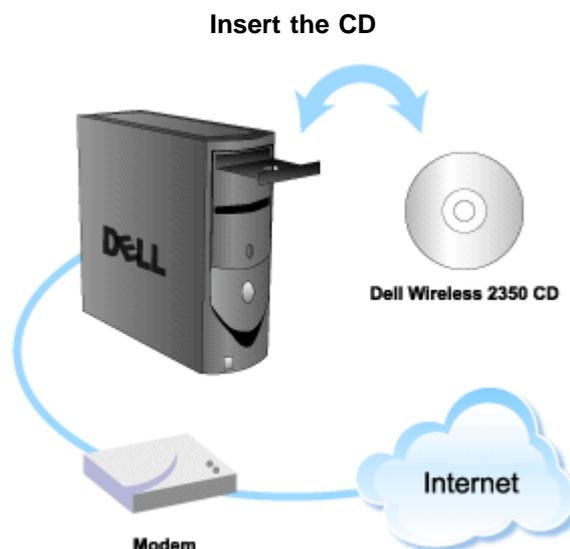
The Setup Wizard is an easy-to-use program included on your Dell Wireless 2350 Broadband Router CD. It provides simplified configuration procedures for establishing Internet connectivity on the Dell Wireless 2350 Broadband Router. The Setup Wizard first extracts the connection settings from your active ISP connection on your computer with a cable/DSL modem. It then displays a series of graphical illustrations on how to connect the router to the network. Finally it applies the extracted settings on your router and validates its installation. If the installation cannot be completed successfully, the Setup Wizard will display troubleshooting instructions to guide you through the installation process.

In addition, the Setup Wizard also supports the installation of the Control Utility and provides links to the user's guide on the Dell Wireless 2350 Broadband Router CD and the Dell support website. It also provides a wizard to help you connect additional computer to your Dell Wireless 2350 Broadband Router.

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## Launching the Setup Wizard

To run the Setup Wizard, perform the following steps:



1. Insert the **Dell Wireless 2350 Broadband Router Setup CD** into the CD drive on a computer that is connected directly to the Internet.

Your CD should automatically launch the Setup Wizard. If it does not, complete the following steps to start the Wizard.

- a. Click the **Start** button, and then click **Run**.
- b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.

Once the Setup Wizard has been launched, you will be guided through a series of windows. These windows are illustrated below along with an explanation on their functionalities.

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## Setup Wizard Screens

### Welcome Menu

This menu offers several options to select from.

- **Router Installation**  
Begin installing your router and configure it to connect to the Internet.
- **Connect Additional Computer**  
Configure a computer to connect to the Dell Wireless 2350 Broadband Router.
- **Install Control Utility**  
Install the Control Utility on a computer
- **User's Guide**  
View the user's guide (this document)
- **Exit**  
End the Setup Wizard

**Welcome**

## Welcome to the Dell Wireless 2350 Configuration



<b>Router Installation</b>	Setup and configure your Dell Wireless 2350 Broadband Router to access the Internet.
<b>Connect Additional Computer</b>	Setup a computer to connect to the Dell Wireless 2350 Broadband Router.
<b>Install Control Utility</b>	Install the Dell Wireless 2350 Broadband Router Control Utility and User's Guide on this computer.
<b>User's Guide</b>	View the User's Guide of the Dell Wireless 2350 Broadband Router in HTML format.
<b>Exit</b>	Exit the setup wizard.

- To begin Installing your Dell Wireless 2350 Broadband Router click **Router Installation**. The computer that is used to install the router should already be connected to the Internet via a cable or DSL modem.
- To connect additional computers to your network after you have successfully installed the router using the **Router Installation** option, place the Dell Wireless 2350 Broadband Router CD in each additional computer and run the Setup Wizard. Click **Connect Additional Computers** to add each additional computer to your network.

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### Verifying the Internet Connection on Your Computer with a Cable or DSL Modem

To install your Dell Wireless 2350 Broadband Router, please verify that this computer can directly access the Internet.

#### **Verifying the Internet Connection**

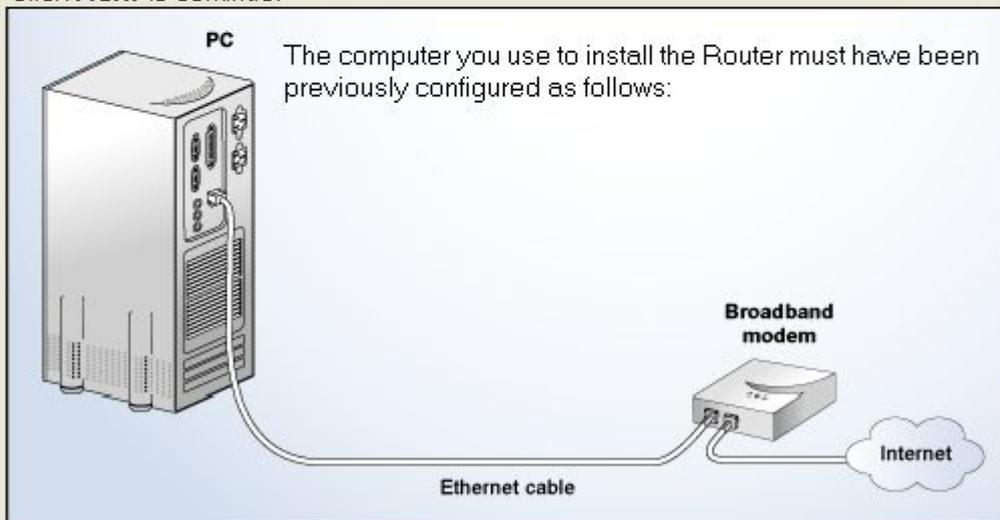
## Verify the Internet connection on your computer through a DSL/Cable modem



If you have not already verified that this computer can directly access the Internet through a DSL/Cable modem, then do so now by opening a web browser and browsing the internet.

**Note:** If you don't have Internet access or you do not know how to connect to the Internet from this computer, call your local Internet Service Provider for help.

Click **Next** to continue.



Exit to Main Menu

Next

### Confirming the Internet Connection

Verify the Internet connection on your  
computer through a DSL/Cable modem



The Setup Wizard is now verifying the Internet connection on your  
computer. Please wait....

Cancel

If you are using a [PPPoE \(Point to Point Protocol over Ethernet\)](#) connection, your computer will then need to reboot. After rebooting, the Setup Wizard will run and display the below message. Click next to continue.

### Successful Reboot

Welcome to the Dell Wireless 2350  
Configuration



**Reboot was successful!**

Click **Next** to continue.

**Note:** Do not connect to any DSL login screen that may appear.

Exit to Main Menu

Next

The next step is to reboot your modem. After rebooting the modem, click next to continue.

## Connect the Dell Wireless 2350 Broadband Router to your network



### Important Note

Some ISP's require a reboot of the modem when installing a router. Most modem reboots can be accomplished by disconnecting power from the modem for a minimum of 30 seconds and then reconnecting power to the modem.

We suggest that you reboot your modem now to help ensure a successful connection.

Please wait until your modem has completed it's reboot cycle before clicking **Next** to continue.

Exit to Main Menu

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### Connecting the Dell Wireless 2350 Broadband Router to Your Network

Step 1 illustrates how to disconnect your cable/DSL modem from your computer.

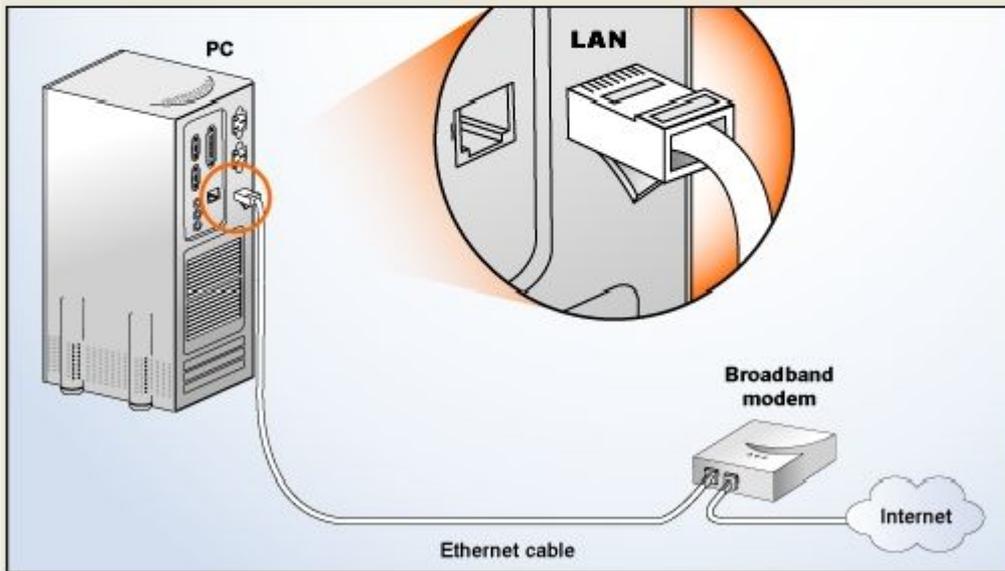
#### Disconnecting the Cable/DSL Modem: Step 1

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 1

Unplug the Ethernet cable that connects your modem to your computer. Click **Next** to continue.



Exit to Main Menu

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Step 2 illustrates how to connect the cable/DSL modem to the Dell Wireless 2350 Broadband Router.

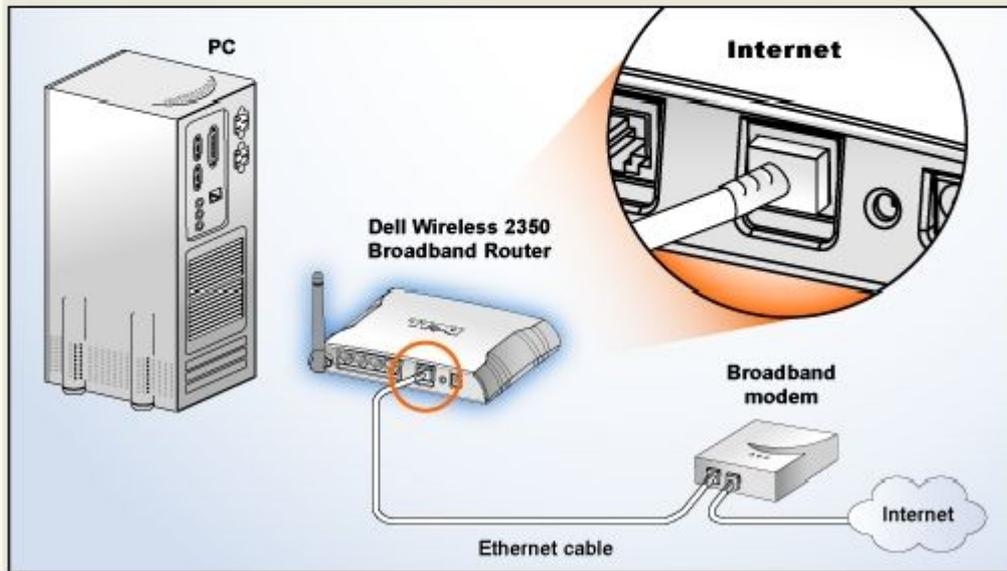
### Connecting the Modem to the Router: Step 2

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 2

Plug the Ethernet cable from the modem into the internet port of the Dell Wireless 2350 Broadband Router. This is the same cable that you have just disconnected from your computer. Click **Next** to continue.



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Step 3 illustrates how to connect the supplied Ethernet cable to your computer.

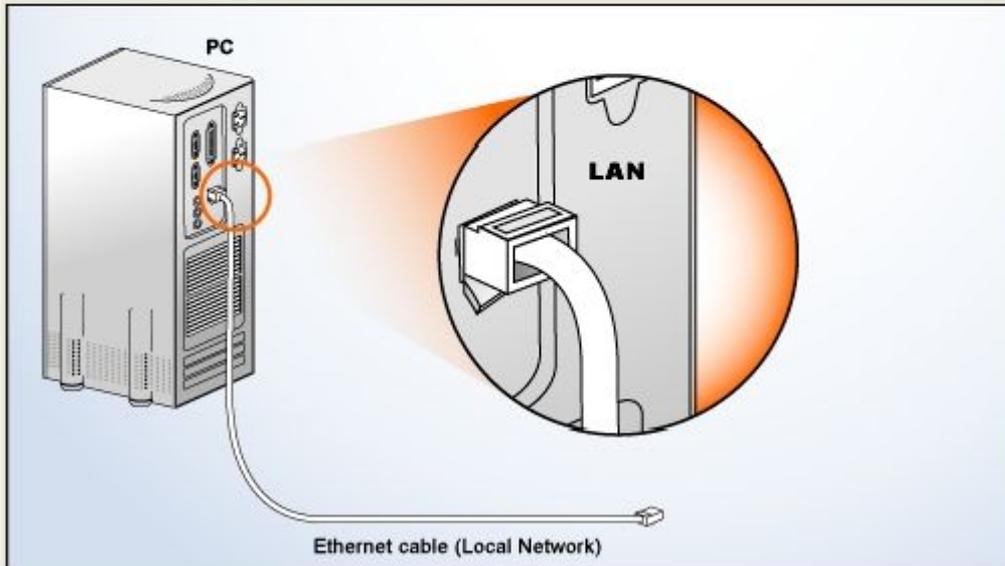
### Connect the Ethernet Cable to the Computer: Step 3

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 3

Plug the Ethernet cable that came with the Dell Wireless 2350 Broadband Router into the LAN port of your computer. Note: This is the same port that was previously connected to your modem. Click **Next** to continue.



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Step 4 illustrates how the Dell Wireless 2350 Broadband Router to your computer.

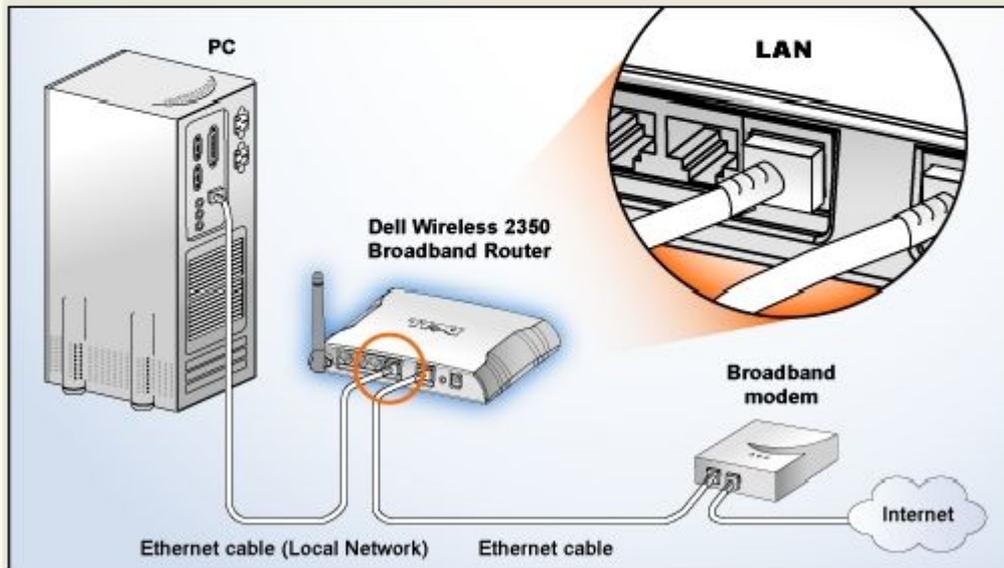
### Connecting the Router to the Computer: Step 4

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 4

Plug the other end of the Ethernet cable that came with the Dell Wireless 2350 Broadband Router into any of the four LAN ports of the router (numbered 1 to 4). Click **Next** to continue.



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Step 5 illustrates how the Dell Wireless 2350 Broadband Router is connected to the power supply.

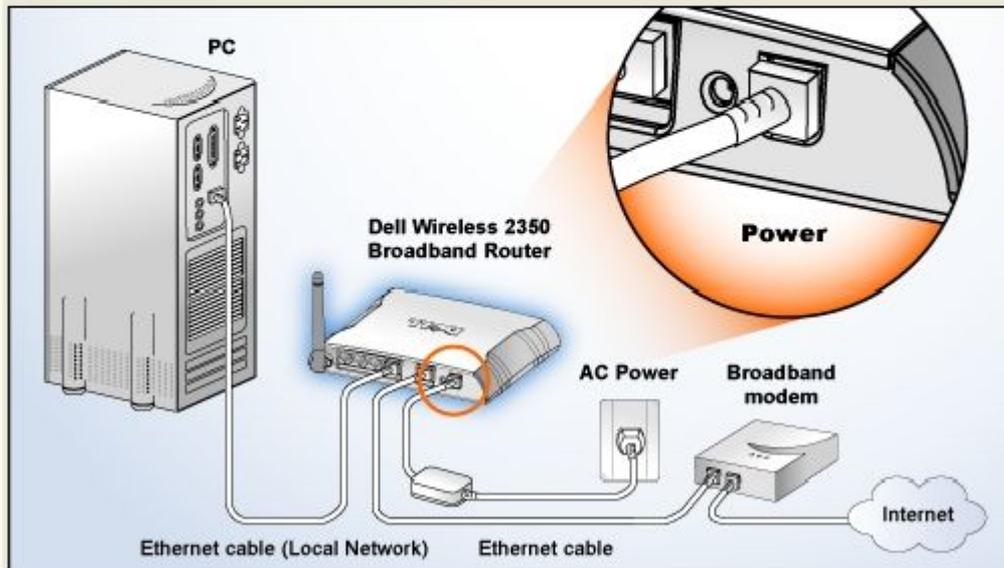
### Connecting the Power Supply to the Router: Step 5

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 5

Plug the Power Adapter into the Wall. Plug the other end into the Dell Wireless 2350 Broadband Router. Click **Next** to continue.



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Step 6 illustrates how to verify that you have connected everything as outlined..

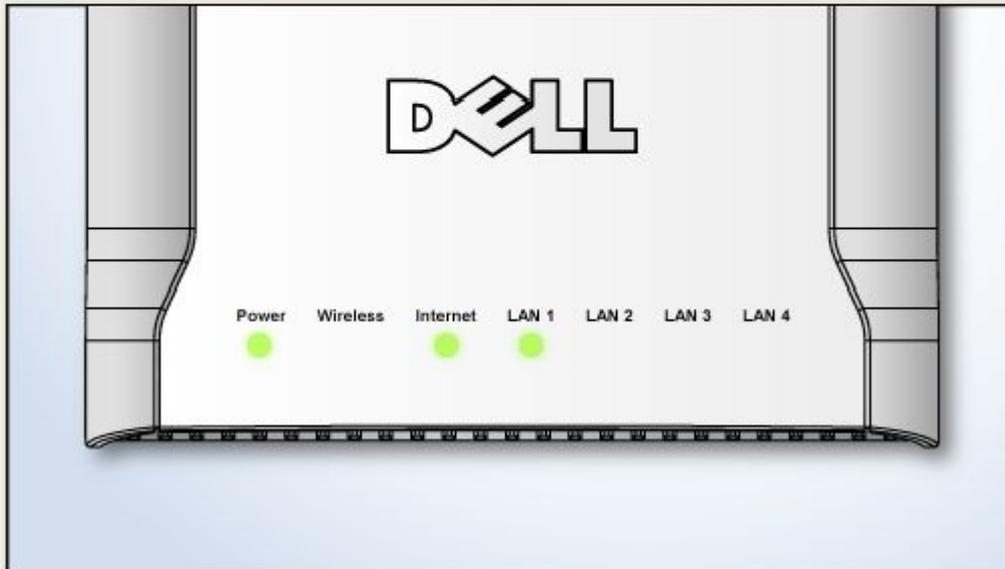
### Verifying your Connections: Step 6

## Connect the Dell Wireless 2350 Broadband Router to your network



### Step 6

Verify your setup by ensuring that the Power, Internet and at least one of the numbered LED's (1, 2, 3 or 4) on the front panel of the router are lit. If not, make sure all cables are properly connected to the router. Click **Next** to continue.



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### Configuring the Dell Wireless 2350 Broadband Router

If you are using a PPPoE connection, type your PPPoE username and password in the boxes provided.

#### PPPoE Settings

## Configure the Dell Wireless 2350 Broadband Router



The Setup Wizard has detected a DSL connection and will apply its settings to the Dell Wireless 2350 Broadband Router.

Enter your DSL User name and Password in the fields below. Then click **Next** to continue.

### DSL Dialup information

User name:

Password:

Confirm Password:

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Select the type of Network your want to setup. Selecting the "Setup a Secure Router" will setup the Dell Wireless 2350 Broadband Router to use WEP to secure wireless connections. If you chose this option the your wireless clients will also need to use the same WEP settings. To setup a network that does not use encryption select "Setup a Non Secure Router" option. Follow the onscreen instruction for completing the settings..

### Setting up the Network

## Choose your security level



A secure Router will only allow valid wireless clients to connect to your wireless network.

A non-secure Router allows all wireless clients to connect to your wireless network.

Setup a Non Secure Router

Setup the Dell Wireless 2350 Broadband Router to support non-secure wireless connections only.

Setup a Secure Router

Setup the Dell Wireless 2350 Broadband Router to support secure wireless connections only.

Exit to Main Menu

The Setup Wizard will apply the Internet connection settings to your Dell Wireless 2350 Broadband Router when you have finished.

### Configuring the Router

Configure the Dell Wireless 2350  
Broadband Router



The Setup Wizard is now configuring the Dell Wireless 2350  
Broadband Router. Please wait.

Cancel

**Congratulations**

You have successfully installed the Dell Wireless 2350 Broadband Router and configured the first computer for Internet access.

**Congratulations**

## Congratulations



You have successfully configured the Dell Wireless 2350 Broadband Router. Now you can access the Internet using your browser through a wired connection.

To setup another computer to connect to the Dell Wireless 2350 Broadband Router, run the Setup Wizard again from the CD on the other computer and choose **Connect Additional Computer**

Exit to Main Menu

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## Control Utility: Dell™ Wireless 2350 Broadband Router User's Guide

The Control Utility is Windows-based software that allows you to configure your router and monitor the status of the connection from your computer to the Dell Wireless 2350 Broadband Router and to the Internet.

▶ [Installing the Control Utility](#)

▶ [Uninstalling the Control Utility](#)

▶ [Starting the Control Utility](#)

▶ [Exiting the Control Utility](#)

▶ [How to Configure the Dell Wireless 2350 Broadband Router using the Control Utility](#)

---

### Installing the Control Utility

You can install the Control Utility on your computer from the Setup Wizard opening "**Welcome Screen**".

1. Insert the *Dell Wireless 2350 Broadband Router CD* into the CD drive. Your computer should automatically launch the **Setup Wizard** program. If it does not, complete the following steps to start the Wizard.
  - a. Click the **Start** button, and then click **Run**.
  - b. Type the following text in the **Open:** field:  
**X:\setup.exe**  
where **X** is the drive letter of your CD drive.
  - c. Click the **OK** button.
2. From the main menu, click the **Install Control Utility** button.
3. Follow the on-screen instructions.

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### Uninstalling the Control Utility

1. If the Dell Wireless 2350 Broadband Router icon is displayed in the system tray in the lower right corner of the screen, right-click this icon and click **Exit**.
2. Click the **Start** button.
3. Click **Control Panel**. The **Control Panel** window appears.
4. Click the **Add/Remove Programs** icon.
5. Click to select the **Control Utility** from the program list and remove it as instructed.

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### Starting the Control Utility

The control utility program will run automatically upon each computer start-up by default. If the utility does not start automatically, run the **Dell Wireless 2350 Broadband Router Dell Control Utility** from the **Start** menu.

Once running, a router icon is created in the system tray in the lower right corner of your screen. If you have a good connection to the Internet, the system tray icon looks gray and white . You can double-click the router icon to open the utility panel.

**NOTE:** If the icon is yellow , it indicates that the Internet connection is not active. If the icon is red , it indicates that the connection to the router failed.

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## Exiting the Control Utility

When you start the control utility program, it will place a small gray and white icon  in the system tray in the lower right corner of your screen. If you want to exit the program, right-click the icon, and then left-click **Exit** to quit the program.

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# Web-based Configuration Tool: Dell™ Wireless 2350 Broadband Router User's Guide

[Overview](#)

[Basic Settings](#)

[Advanced Settings](#)

[Device Status](#)

[System Tools](#)

[Log Off](#)

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## Overview

The web-based configuration tool enables you to set up advanced network configuration for your Dell Wireless 2350 Broadband Router. Follow the instructions below to gain access to the web tool.

 **NOTE:** Microsoft Internet Explorer 4.0 or higher or Netscape 4.0 or higher must be used for the web-based configuration tool.

 **NOTE:** The web-based configuration tool only allows access to one user at a time.

1. Click the **Start** button, and then click **Run**.
2. Type the following text in the **Open** box: <http://my.router>
3. If this is the first time configuring your Dell Wireless 2350 Broadband Router, or if the user name and password have not been changed from the default settings, type **admin** in the **User Name** field and **admin** in the **Password** field.
4. Click the **OK** button. The **Configuration** screen appears.

 **NOTE:** Dell technical support representatives do not support the configuration options in the **Advanced Settings** portion of the configuration program. These options are provided for your convenience only. However, the advanced settings are fully documented and explained in this guide.

**Main Menu**



## Dell Wireless 2350 Broadband Router

### Basic Settings

Use the basic settings to change the mode of your router, Wireless network name and channel, wireless security, and internet connection settings.

### Advanced Settings

Use the advanced settings to change the IP address of the router, DHCP server options, Time zone, Advanced wireless settings, Parental control options, Access control options, and Administration options.

### Device Status

Use the device status to check the status for each connection to your router.

### System Tools

Use System tools to check the intruder log, display the routing table, perform system diagnostics, load default settings, upgrade firmware, and reset the router.

### Help

Use the Help link to get on-screen help with the features of the router.

### Log Off

Exit the Dell Wireless 2350 Broadband router configuration.

## Log Off

Select this option to log out of the web-based configuration. Press the **Submit** button to confirm that you want to log off.

**NOTE:** The web-based configuration tool only allows access to one user at a time.

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# Using Your Router:

## Dell™ Wireless 2350 Broadband Router User's Guide

- ▶ [Overview](#)
  - ▶ [Factory Default Settings](#)
  - ▶ [Setup Wizard](#)
  - ▶ [Control Utility](#)
  - ▶ [Web-Based Configuration Tool](#)
- 

### Overview

**Factory Default Settings:** Your Dell Wireless 2350 Broadband Router came with [factory default settings](#) that should work for the majority of the network usage scenarios. However, there are cases where your network environment may require a different router configuration.

**Setup Wizard:** The Setup Wizard is a Windows-based software program included on your Dell Wireless 2350 Broadband Router CD. You can use this program to 1) install the router on your network and create an environment for multiple computers to share Internet access, 2) add additional computers to the network, 3) install the Control Utility on your computer and 4) provide links to the user's guide and the [Dell support website](#). Refer to the section [Setup Wizard](#) for detailed information.

**Control Utility:** The Control Utility is a Windows-based software program included on your Dell Wireless 2350 Broadband Router CD. This utility can be installed on your computer by choosing the Install Control Utility option in the Setup Wizard. It provides you with a useful configuration tool to manage your Dell Wireless 2350 Broadband Router. Refer to the section [Control Utility](#) for detailed information.

**Web-Based Configuration Tool:** The web-based configuration tool is for advanced configuration of the Dell Wireless 2350 Broadband Router. It is a tool provided inside the router which can be accessed via the web browser on your computer. This tool includes every basic and advanced configuration option for the Dell Wireless 2350 Broadband Router. For instance, you can allow other Internet users to access a Web server hosted on your local private network, or disable your wireless network. Refer to the section [Web-Based Configuration Tool](#) for detailed information.

 **NOTE:** The **Setup Wizard** or **Control Utility** must be run on Windows 2000 and Windows XP computers. Microsoft Internet Explorer 4.0 or higher or Netscape 4.0 or higher must be used for the web-based configuration tool.

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# Basic Settings: Dell™ Wireless 2350 Broadband Router User's Guide

The following configuration options are included in **Basic Settings**:

- ▶ [Router Mode](#)
- ▶ [Wireless Settings](#)
- ▶ [Wireless Security](#)
- ▶ [Internet Connection Settings](#)
- ▶ [Save & Apply](#)

**NOTE:** To implement the changes you make to the settings, you must save your settings and restart the router. Otherwise, the router uses the previous settings. If you are using the **BACK/NEXT** links to step through each screen in the **Basic Settings** portion of the web-configuration tool, you ultimately reach the **Save & Apply** page. Click **Save & Restart** button to commit the changes, and the router will reboot automatically with the new settings in effect.

## Router Mode

The Dell Wireless 2350 Broadband Router has two operating modes: **Gateway** mode and **Access Point** mode.

### Router Mode



### ROUTER MODE

Gateway Mode  
 Access Point Mode

**NOTE:** Please click **Next** to save the settings.

**Gateway** mode allows your router to create a wireless network to access the broadband router. Wired and wireless network devices share the same Internet connection through the **Internet** port on the Dell Wireless 2350 Broadband Router when in Gateway mode. However, some ISPs may request you to do additional setup, such as PPPoE, before using your Dell Wireless 2350 Broadband Router to access the Internet.

**Access Point (AP)** mode allows your Dell Wireless 2350 Broadband Router to act as a bridge between wireless devices and Ethernet

devices in an existing network. All wired and wireless devices are located in the same Class C IP subnet (e.g. 255.255.255.0). The Internet port on the Dell Wireless 2350 Broadband Router is not used in this mode.

**NOTE:** If the device is put in AP mode, the **Internet Connection Settings** will not be available.

The **Gateway** mode is the default setting in Dell Wireless 2350 Broadband Router.

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## Wireless Settings

**Wireless Settings**

Dell Wireless 2350 Broadband Router

Basic SettingsAdvanced SettingsDevice StatusSystem ToolsHelpLog Off

**WIRELESS SETTINGS**

Network Name (SSID)

Channel

**NOTE:** Please click **Next** to save the settings.

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Setting	Default Values
Network Name (SSID)	wireless
Channel	Auto

### **Network Name (SSID)**

The network name is a value that identifies a collection of wireless devices found in a particular network. The default value for the Dell Wireless 2350 Broadband Router is **wireless**. All workstations and access points must use the same SSID to be able to communicate with one another.

The SSID can be up to 32 characters in length and the value is case sensitive.

**NOTE:** If you change the SSID on the Dell Wireless 2350 Broadband Router you must change each client's wireless adapter settings to match the Dell Wireless 2350 Broadband Router setting. If you do change the SSID, note the change and use the new setting for each wireless network card. For assistance configuring a wireless network card, see the documentation that came with your wireless network card.

### **Channel**

The Dell Wireless 2350 Broadband Router can operate on a variety of channels. Routers within close proximity to one another must be on different channels. If you have just one router, then the default, channel 6, is probably adequate. If you have multiple access points in your network, it is suggested to stagger the channels for each router. It is advisable to use the default unless there is a specific reason for changing the channel, such as interference from microwaves, cellular phone towers, or other access points in the area.

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## Wireless Security

Data encryption provides added security by encoding network communications using an encryption key. Your Dell Wireless 2350 Broadband Router, in conjunction with wireless network adapters that support encryption, can scramble your transmitted data to make it difficult for someone to eavesdrop or intercept your information. Two methods of data encryption are available: **Wired Equivalent Privacy** (WEP) and **Wi-Fi Protected Access** (WPA). If you wish to enable wireless security, click to select **Enable Wireless Security**.

### Wireless Security

Dell Wireless 2350 Broadband Router

Basic SettingsAdvanced SettingsDevice StatusSystem ToolsHelpLog Off

### WIRELESS SECURITY

Data encryption provides added security by encoding network communications using an encryption key. The longer the wep key is, the stronger the encryption.

Enable Wireless Security

[Back](#) [Next](#) [Help](#)

NOTE: Please click **Next** to save the settings.

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### WEP

If you wish to enable WEP encryption, click to select **WEP** in the **Network Authentication** list.

Setting	Possible Values
Key Format	Hexadecimal Digits / ASCII Characters
Key Length	40 bits (5 characters) / 104 bits (13 characters)
Key1, Key2, Key3, Key4	<user-defined>

There are two levels of WEP encryption: 40(64)-bit and 104(128)-bit, with 104(128)-bit being the more secure of the two. The WEP encryption keys are simply a set of hexadecimal numbers or ASCII characters that you choose. Each Dell Wireless 2350 Broadband Router and every wireless workstation must use the same WEP encryption key to communicate. For more information on encryption, see the [Wireless Networking Overview - Encryption](#) section of this user's guide.

- **Key Format**  
Key format can be in ASCII or hexadecimal format. Hexadecimal digits include the numbers 0 through 9 and the letters A through F. If you select ASCII format, you can enter any character.
- **Key Length**  
Key length can be either **40(64)-bit** or **104(128)-bit**. Larger key lengths are more secure. Some wireless network cards are only able to use 40(64)-bit encryption. If all your clients are able to communicate at 104(128)-bit, choose 104(128)-bit.
- **Key**

If you choose 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP encryption **Key** in the fields provided. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key in the fields provided. You have the option of entering four different keys to store on the Dell Wireless 2350 Broadband Router. Select only one key out of the four provided in the **Default Key** drop-down list. For added security, change your key often. When you change the key on one wireless device, remember that it must be changed for all wireless devices and access points in the network.

 **NOTE:** If you are adding the Dell Wireless 2350 Broadband Router to an existing network and will be using an existing encryption key for the wireless clients, contact the person in charge of the network. The same key must be used when configuring the encryption for the Dell Wireless 2350 Broadband Router. The administrator must make any changes to all access points and wireless clients on a network. Changing the key on just one access point or wireless client disconnects it from the rest of the network.

## WPA

If you wish to enable WPA encryption, select **WPA** from the **Network Authentication** list.

WPA is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell Wireless wireless client, you can check for the availability of WPA-enabled software update for your wireless client at <http://support.dell.com>.

- **WPA Pre-shared Key**  
WPA Pre-Shared Key (PSK) is a field where the password is entered. All wireless clients must also use this password to gain access to the network. Note that the Key format must also match the setting for the wireless clients.
- **Key Format**  
Key Format is a box that lists 2 items: **Hexadecimal** Digits (numbers 0 through 9 and letters A through F) and **ASCII** Characters (any letter, number, or symbol). Select the proper format for your key. If your wireless client(s) only support one of the two formats, be sure to specify the correct one.
- **WPA Group Rekey Interval**  
WPA Group Rekey Interval is used to specify the frequency of encryption key rotations. The lower the number, the faster your encryption key will rotate, however, setting this number too low may cause your wireless network to slow down.
- **WPA Encryption**  
WPA Encryption has 2 choices: **TKIP** (Temporal Key Integrity Protocol) is the most commonly used encryption method. **AES** (Advanced Encryption Standard) can be used if your wireless clients do not support TKIP.

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## Internet Connection Settings

 **NOTE:** The Setup Wizard enters the required cable/DSL ISP settings into the router after you have completed the Router Installation successfully. These settings should only be changed manually if the Setup Wizard is unsuccessful.

 **NOTE:** If the device is put in AP mode, the **Internet Connection Settings** will not be available.

### Your ISP Requires You to Input Host Computer Name or Domain Name

If your ISP requires that you input a host computer name or domain name, click to select **Your ISP requires you to input Host Computer Name or Domain Name**. Type the appropriate values in the fields provided.

 **NOTE:** Host computer names and domain names are only used by cable modem ISPs.

## Internet Connection Settings

## Internet Connection Settings

Your ISP requires you to input Host  
Computer Name or Domain Name

Your ISP requires you to input WAN  
Ethernet Mac

Connection Type

Cable Modem ▾

### Cable Modem Settings

Please setup the above settings for your cable modem if needed .

NOTE: Please click **Next** to save the settings.

### Your ISP Requires You to Input WAN Ethernet MAC

If your ISP requires that you input a WAN Ethernet MAC address, click to select **Your ISP requires you to input WAN Ethernet MAC**. In the field provided, type the public WAN (cable/DSL) MAC address assigned to your Dell Wireless 2350 Broadband Router. You can find the WAN MAC address on the back panel of the Dell Wireless 2350 Broadband Router or on the Device Information page in the web-based configuration tool.

### Connection Type

Select the connection type from the list. Three options are available.

- Cable Modem
- DSL (Static)
- DSL (PPPoE)

### Cable Modem Settings

No additional settings are required. Make sure that the settings listed are correct.

### DSL Static IP Settings

In the fields provided, type the IP address, IP subnet mask, ISP gateway address, and *Domain Name Server* (DNS) IP address provided by your ISP.

### DSL PPPoE Settings

**Point to Point Protocol over Ethernet** (PPPoE) is a standard specifying how a host computer interacts with a broadband modem (for example, DSL, cable, or wireless) to access the network. In many respects PPPoE is similar to the **Dialup Networking** approach. If you have a DSL (PPPoE) Internet connection, enter the PPPoE user name and password provided by your ISP.



**NOTICE:** If you are charged for your Internet Connection by the minute, unplug the network cable from the Internet port on the Dell Wireless 2350 Broadband Router when Internet access is no longer desired.

---

## Save & Apply

Use the **Save & Apply** page to submit all the network setting changes you have made. Click the **Save & Restart** button to update the network configurations for your Dell Wireless 2350 Broadband Router.

New settings are written to the firmware, and the Dell Wireless 2350 Broadband Router reboots automatically.

 **NOTE:** If you have wireless clients in your network, you must configure the clients' wireless network cards to match the settings for the Dell Wireless 2350 Broadband Router.

### Save and Apply

		Dell Wireless 2350 Broadband Router			
Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off

### SAVE & APPLY

You have successfully configured the settings for the device.

**NOTE:** After you have finished making all the changes on the various pages, please click Save & Apply to save the settings and restart the device. After the apply, the device will function according to the saved settings.

Click Save & Apply to save the settings and restart the device!

Save & Restart

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## Advanced Settings: Dell™ Wireless 2350 Broadband Router User's Guide

- ▶ [Advanced IP Settings](#)
- ▶ [DHCP Server Settings](#)
- ▶ [Time Zone](#)
- ▶ [Advanced Wireless](#)
- ▶ [Parental Control](#)
- ▶ [Advance Filtering](#)
- ▶ [DNS Server Status](#)
- ▶ [Dynamic DNS](#)
- ▶ [Access Control Settings](#)
- ▶ [Port Forwarding Settings](#)
- ▶ [Static Routing](#)
- ▶ [Administration Settings](#)

**NOTE:** Dell technical support representatives do not support the configuration options in the Advanced Settings portion of the configuration program. These options are provided for your convenience only. However, the advanced settings are fully documented and explained in this guide.

The options **Port Forwarding Settings** and **Static Routing** are not displayed if you are in Access Point Mode.

### Advanced IP Settings

The Dell Wireless 2350 Broadband Router comes with an assigned IP address and IP subnet mask. These settings apply only to the local network portion of the router. If you are installing the unit on an existing network or simply want to change these values, make sure the IP subnet mask is the same for all devices on your network. The network portion of the IP address must also be the same for all devices on your network.

**NOTE:** Dell strongly suggests you do not change the IP address unless there is a specific reason for doing so.

While you are changing the IP address, be aware of the following:

- Changing the IP address of the Dell Wireless 2350 Broadband Router also changes the IP address pool for the DHCP server.
- If you are using the Dell Wireless 2350 Broadband Router with a cable modem or DSL line, you should assign a **private** IP address. Private IP addresses are in one of three ranges:
  - 10.0.0.1 to 10.254.254.254
  - 172.16.0.1 to 172.31.254.254
  - 192.168.0.1 to 192.168.254.254
- You must use the new IP address to access the web-based configuration tool once the changes have been saved.

**NOTE:** You should only change the IP address or IP subnet mask if you are installing the Dell Wireless 2350 Broadband Router on an existing wired network and the DHCP server function for your Dell Wireless 2350 Broadband Router is disabled in the **Advanced Settings**. For more information, contact your network administrator.

#### Advanced IP Settings

## DEVICE IP SETTINGS

### The device IP address and subnet mask settings

IP Address 192 . 168 . 2 .1

IP Subnet Mask 255. 255. 255. 0 (253 Addresses)

NOTE: Please click **Submit** to save the settings.

---

## DHCP Server Settings

**Dynamic Host Configuration Protocol (DHCP)**, defines a way to automatically assign IP addresses to computers on a network. IP addresses are managed by a DHCP server. If a Windows computer is configured to obtain an IP address automatically, it automatically gets an address from the DHCP server.

### DHCP Server Settings

## DHCP SERVER SETTINGS

Enable DHCP Server Functions 

## IP Address Pool Range

From 192.168.2. To 192.168.2. 

## Lease Time

days hours minutes seconds 

## IP Address Reservations

IP ADDRESS

MAC ADDRESS

EDIT

 NOTE: Please click **Submit** to save the settings.**Enable DHCP Server Functions**

By default, the Dell Wireless 2350 Broadband Router is set to function as a DHCP server. If you are installing the unit on an existing network that already has a DHCP server or simply do not want the Dell Wireless 2350 Broadband Router to function as the network's DHCP server, click to deselect **Enable DHCP Server Functions** to disable the DHCP server function.

**IP Address Pool Range**

The IP Address Pool Range section provides a means of controlling a low and high value for the IP addresses on a network. Use the indicated fields to define the range of IP addresses you would like the Dell Wireless 2350 Broadband Router to provide to DHCP clients. The valid range of numbers you should enter is between 1 and 254.

The lease time is the amount of time a user will be allowed to use the IP address assigned by the DHCP server. You may specify the lease time that DHCP server offers for the client to use the IP address. This setting is especially useful on campuses or other environments where users change frequently.

**IP Address Reservation**

Specific IP addresses may also be reserved for particular devices in a network. The **IP Address Reservation** fields allow you to reserve up to 20 IP addresses for a specific system. The **MAC Address** field is the physical address of the network card on the client computer. Use the input fields under **IP Address** to indicate the IP address for those devices that should use a manually defined IP address.

[Back to Top](#)**Time Zone**

Time Zone



### TIME ZONE SELECTION

Current Day Wed

Current Date 1 Jan 2003

Current Time 00:12:42

Enable Daylight Saving  Enabled  Disabled

Please choose your local time zone (GMT) GMT

Submit Help

NOTE:Please click **Submit** to save the settings.

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Use the **Time** Zone page to select your local time zone from the pull-down list. The Time Zone Settings affect the Intruder Detection Log. This setting overrides the time stamp on IP packets that are in Greenwich Mean Time (GMT).

During the summer months, the clock will move one or several hours ahead. Countries have different change dates. In most of the U.S and Canada, daylight saving time begins on the first Sunday of April. Time reverts to standard time on the last Sunday of October. To enable daylight saving click the box **Enable Daylight Saving**.

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## Advanced Wireless

### Advanced Wireless

## ADVANCED WIRELESS

Enable Wireless	<input checked="" type="radio"/> Yes <input type="radio"/> No
Hide my wireless network	<input type="radio"/> Yes <input checked="" type="radio"/> No
Mode	802.11b and g ▾
Network Name (SSID)	wireless
Transfer Rate	Auto ▾ (Default: Auto)
Channel	Auto ▾
Advanced options	<input checked="" type="checkbox"/>
Beacon interval	100 (1-65535)
RTS Threshold	2347 (1-2347)
Fragmentation threshold	2346 (256-2346)
DTIM Interval	1 (1-255)
CTS Protection Mode	auto ▾
CTS Protection Type	CTS-Self ▾
Enable this AP as a root AP	<input checked="" type="checkbox"/>
Enable this AP as a Wireless Repeater	<input type="checkbox"/>

Submit Restore Defaults Help

NOTE: Please click **Submit** to save the settings.

**Enable Wireless**

This setting enables radio transmission and reception on the Dell Wireless 2350 Broadband Router.

**Hide my wireless network**

Checking this option disables the Dell Wireless 2350 Broadband Router sending out beacon packets to the wireless network. It is not selected by default and other users can easily find and make association to your Dell Wireless 2350 Broadband Router with the use of a site survey tool. If you want to increase wireless network security, you can enable this feature.

**Mode**

The Dell Wireless 2350 Broadband Router is 802.11g-compatible. You can select **both b & g** (dual mode), or just **802.11b** mode or just **802.11g** mode from the **Mode** list.

**SSID**

Service Set Identifier (SSID) is a 32-character name that uniquely identifies all the computers and equipment that make up the wireless network.

**Transfer Rate**

Transfer rate can be set to automatic or some other fixed value. It is recommended that you set the transfer rate to automatic (Auto) to allow the wireless network devices to transmit at a rate they deem optimum at any given point of time.

**Channel**

The channel settings let you set the channel for this router. The radio channel is the place over which a communication transmission occurs. The operating channel number depends on the regulatory domain.

**NOTE:** If you want to configure the settings of Beacon Interval, RTS Threshold, Fragmentation Threshold, and DTIM Interval, ensure that **Advanced Options** is selected first.

### **Beacon Interval**

The amount of time in Kusecs (one Kusec equals 1,024 microseconds) between radio beacons from the Dell Wireless 2350 Broadband Router to its client stations. The value range is from 1 to 65535.

### **RTS Threshold**

This is the packet size above which the Dell Wireless 2350 Broadband Router will issue a Request to Send before sending the packet.

RTS (Request to Send) mechanism prevents the **Hidden Node** problem. When two stations are within range of the same Access Point (AP) but are not within range of each other, they are hidden nodes for each other. The packets from these two stations may collide if they arrive at the AP at the same time. To prevent data collision with the hidden node, you can activate RTS mechanism. If RTS mechanism is activated, the station will send a RTS first to inform the AP that it is going to transmit the data. Then, the AP will reply with the CTS (Clear to Send) to all stations within its range to notify all other stations and reserve the bandwidth for your data.

The RTS threshold controls what size data packet would issue a RTS. Only when the packet exceeds the RTS threshold, the device will send a RTS before sending the packet. There is trade-off to consider what value you should set for the RTS threshold. Small values cause RTS to be sent more often, and it would waste the bandwidth. However, the more often RTS packets are sent, the sooner the system can recover from collisions. It is recommended to use the default value or only minor reductions of this default value. The value range is from 1 to 2347.

### **Fragmentation Threshold**

The fragmentation threshold, specified in bytes, determines whether data packets will be fragmented and at what size. Packets that are smaller than the specified fragmentation threshold value will not be fragmented. Packets that are larger than the fragmentation threshold will be fragmented into smaller packets and transmitted a piece at a time instead of all at once. Thus, it will reduce the need for retransmission and improve overall network performance. Fragmentation is activated usually when the system is in heavy traffic and interference environment. The setting must be within the range of 256 to 2346 bytes. It is recommended to use the default value or only minor reductions of this default value.

### **DTIM Interval**

DTIM (Delivery Traffic Indication Message) Interval, always a multiple of the beacon period, determines how often the beacon contains a traffic indicator map (TIM). The TIM alerts stations in sleep state to stay awake long enough to receive their data frames. The value range is from 1 to 255.

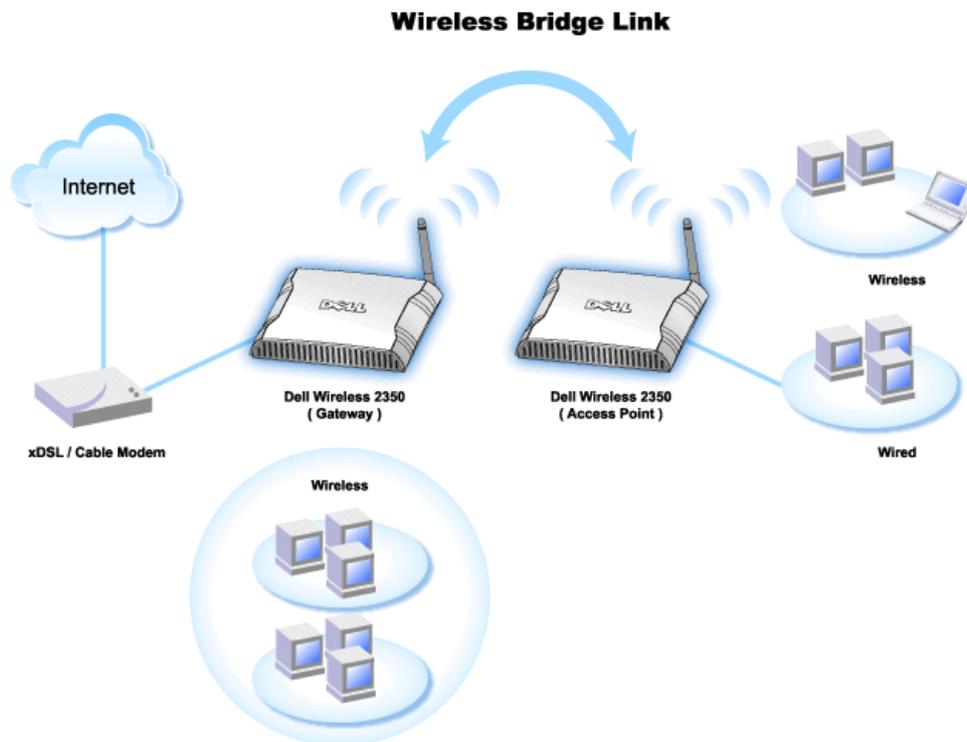
### **CTS Protection mode**

This option allows the user to enable or disable operation of '802.11g' clients in an environment where a '802.11b' AP is also broadcasting. Enabling this allows '802.11b' clients to perform better in this environment. Disabling allows maximum throughput for '802.11g' clients.

### **Wireless Repeater**

Wireless repeater can be used to increase the coverage of your wireless network and/or to provide wired access to remote computers. You need two or more Dell Wireless 2350 Broadband Routers to set up wireless repeater. The access point that is connected to the network is known as the "root AP", the access points that extend the coverage of this root AP are known as "repeater AP's".

To set up wireless repeater, configure the wireless settings for all of your Dell Wireless 2350 Broadband Routers to the same settings.



### **Configuring your router for Wireless Repeater:**

1. Click the option **Enable this AP as a Wireless Repeater**.
2. Type the wireless network name (SSID) of the root AP in the **SSID of root AP** field.
3. Set the "Network Encryption" mode as **None**, If the root AP does not provide wireless security.
4. Set the "Network Encryption" mode as **WEP**, If the wireless security mode of the root AP is WEP. Then, set the proper key value, key length, key format, and default key.

5. Click the **Submit** button.

The repeater AP must be located within the coverage of your root AP in order to associate with the root AP and extend it's coverage.

**NOTE:** Ensure all Dell Wireless 2350 Broadband Routers are set to same wireless settings.

**To Configure your Dell Wireless 2350 Broadband Router back as a root AP:**

1. Click the option **Enable this AP as a Root AP**
2. Click the **Submit** button.

**Restore Defaults**

If you have customized your wireless system configuration, you can restore the wireless settings to factory defaults by clicking the **Restore Defaults** button.

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## Parental Control

**Parental Control**

**PARENTAL CONTROL**

Parental Control Rules							Add
Internet Access	IP	Interval	WEB Access	web sites	web keywords	EDIT	

NOTE: Please click **Submit** to save the settings.

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IP filtering is a mechanism that the Dell Wireless 2350 Broadband Router to accept or deny certain types of IP datagrams based on the IP address, port number, protocol type, and other criteria.

1. Click the **Add** button. A pop-up **Parental Control Rule** window will appear.
2. Click to select the IP address of the particular computer you want to control (for example, your child's computer) in the **IP Address** list.
3. To block or grant access to the Internet during a period of time, specify the start and end time from the **Time Restriction** list.
4. Click to select **Allow** or **Deny** from the **Internet Access** list.
5. Enter the URL that you want to allow or deny the access in the **Web Site Restrictions** field.
6. Click to select **Allow** or **Deny** access to these web sites.
7. Enter the **web keywords** to deny traffic with the same keywords
8. Click the **Submit** button to store the changes.

The figure above shows DNS server status. User is able to see host name, IP address, and Source.

For user hosting service with a dynamic IP from ISP's DHCP server, Dynamic DNS allows server to match ever changing IP to work station which the service is provided. Check "Enable Dynamic DNS" box and enter User Name, Password, and Host Name to register with Server.

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## Advance Filtering

### Advance Filtering

### Advanced Filtering

Advanced Filtering Rules								Add
Direction	Source IP	Dest. IP	IP Protocol	Source Port	Destination Port	Action	EDIT	
								Submit

NOTE: Please click **Submit** to save the settings.

Advanced Filtering allows user to setup a more complicated rule to filter out unwanted traffic. Click **ADD** button to setup source IP, Destination IP, IP protocol, TCP port, and UDP port. Once a rule has been setup then if there is a packet that is matched with the rules then it will be either accepted or dropped by Dell Wireless 2350 Broadband Router depending on the rule setting.

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## DNS Server Status

### DNS Server Status

### DNS Server Status

DNS Server Status		
Host Name	IP Address	Source
localhost	127.0.0.1	User-Defined
Wireless_Client	192.168.2.2	Automatic

DNS server status shows all DNS entries known by Dell Wireless 2350 Broadband Router. Host name is mapped to the IP address.

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## Dynamic DNS

### Dynamic DNS

## Dynamic DNS

Enable Dynamic DNS	<input checked="" type="checkbox"/>
Service_Provider	<input type="text" value="dyndns.org"/>
User Name	<input type="text"/>
Password	<input type="password" value="•••••"/>
Host Name	<input type="text"/>

NOTE:Please click'[Submit](#)'to save the settings.

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Users can register a domain name from dyndns.org. With this domain, it allows user enter the domain name instead of entering IP address. DDNS will map IP address to user's domain name.

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## Access Control Settings

The Access Control Settings feature allows you to control which local client computer can or can not access the network through the router. The Dell Wireless 2350 broadband Router by default allows any local client computer to access the network. There are two tables for Access Control Settings, The **Grant Access Table** and the **Deny Access Table**. Each table is able to support up to 32 entries. Only one table can be active at a time. Selecting the checkbox for Grant Access Table will disable the Deny Access Table and vice versa. The MAC Access control settings apply to wireless clients only and not to wired clients.

### Access Control Settings

## ACCESS CONTROL SETTINGS

Enable MAC Access Control  Yes  NoGrant Access Table  Yes  No

Grant Access Table	Add
Mac Address	EDIT

Deny Access Table  Yes  No

Deny Access Table	Add
Mac Address	EDIT

NOTE: Please click **Submit** to save the settings.

To enable access control in the router, perform the following steps:

1. Click to select **Enable MAC Access Control**.
2. Click the **Add** button, a pop-up window will open and then enter the MAC address of the network card on the computer on which you allow the access to the router.
3. Click **Submit** to enter the rule to the router.
4. To remove an existing rule, click to select **edit** beside **MAC address**.
5. A pop-up window will open and click the **Delete** button to remove it.

 **NOTE:** The Access Control Settings apply to wireless client computers and not to wired client computers.

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## Port Forwarding Settings

### Port Forwarding Settings

## PORT FORWARDING SETTINGS

Enable DMZ Host

### Custom Port Forward Settings

Service	Enable	Incoming Ports	Destination IP Address	Destination Port	type	EDIT

### Port Triggering Settings

Enable	Application Name	Trigger Port	Port Type	Public Ports	Public Port Type




NOTE: Please click **Submit** to save the settings.

### DMZ

The DMZ (demilitarized zone) feature allows access to all ports. (For example, if you have problems hosting a game server, you can choose this option. This will open all ports to your game server.)

1. Click to select **Enable DMZ Host**.
2. Type the IP address of the computer that you want to run the gaming application in the **DMZ IP Address** field.
3. Click the **Submit** button to activate the setting.

**NOTE:** Configuring the Dell Wireless 2350 Broadband Router in DMZ mode is useful if you want to play certain games through the Dell Wireless 2350 Broadband Router but the ports cannot be opened with all other existing configuration tools.

**NOTICE:** Opening a service to the Internet causes security concerns. Pay careful attention to security alerts, and make sure that strong access controls and authentication are in place before allowing access to any services.

### Custom Port Forwarding Settings

Port Forwarding may be more difficult than DMZ to configure. However, it provides a relatively safe way of running an Internet application or providing an Internet service from behind a firewall since only a single port (or a range of ports) is exposed to the Internet. You can configure this port forwarding setting to create a custom rule that defines a specific port and protocol for data traffic to pass through to the specific computer on your LAN.

An example is an HTTP server running on your LAN, which you want to be available to the Internet. Your public IP address (that your ISP gives you) is X.X.X.X (The X is a number), and you have a computer hosting the HTTP server at LAN address 192.168.2.2 on your Dell Wireless 2350 Broadband Router (192.168.2.1) controlled LAN. You can configure 192.168.2.2 to have port forwarding for port 80 (HTTP), then users on the Internet can go to http://X.X.X.X and get the HTTP server (192.168.2.2). The data traffic entering service port 80 will be directed to the computer (192.168.2.2), and other computers on your LAN will not see this data traffic.

For some Internet applications (such as Internet messaging and gaming applications), you can configure this port forwarding setting so that these applications can function correctly behind the firewall. These applications are required to have specific TCP/UDP ports. The ports for these applications and the protocol type will depend on what Internet services you are using. Check with your service provider or application's user manual to have the information first.

Make sure you have the following ports set up as described below.

1. Click the **ADD** button first to add entries.
2. Enter the desired name or description in the **Service Name** field.
3. In the **Incoming Ports** field, enter a range of ports. If you want to specify only a single port number, enter the same number in both fields.
4. In the **Destination IP Address** field, enter the IP address of the computer you want to receive the connection request.
5. In the **Destination Port** field, enter a port number or a range of ports of the machine to which you are mapping.

7. In the **Port type** field, select TCP, UDP, or both protocols. The protocol could be specified in your application's documentation.
8. Click the **Submit** button to activate the setting.

For example, if you want to play the game Fighter Ace II on a computer with an IP address of 192.168.2.3, enter **3** for the **Destination IP Address**. Select **TCP** as the **Port type**. Enter **50000** and **51000** for two fields of **Incoming Ports** and also for the **Destination Port**. Click **Submit** button to activate the setting. For other games or services, consult the application's user manual.

#### Commonly Used Ports

Services	Protocol Type	Ports
HTTP (WEB Server)	TCP	80
FTP	TCP	20, 21
TELNET	TCP	23
SMTP (Mail Server)	TCP	25
POP3 (Mail Server)	TCP	110
IRC	TCP	6667
NNTP (News Server)	TCP	119

#### **Port Triggering**

Port triggering allows the router to watch outgoing data for a specific port number. The IP address of the computer that sends the data is remembered by the router, so that when the requested data returns through the router, the data will be passed to the specific computer by way of IP address and port mapping rules. The router opens the port when the Port Triggering happens. When the computer running the application stops sending the data through this port, the router will close the port.

1. Click the **PORT TRIGGERING** button first.
2. Enter the desired name or description in the **Application Name** field.
3. In the **Trigger Port** field, enter a port number. Check with your Internet application provider for more information on what Trigger Port it is using.
4. Select TCP (Transmission Control Protocol), or UDP (User Datagram Protocol), or both protocols as the **Trigger Port Type**.
5. Specify the range of the **Public Ports** by typing the start and end port numbers in the required fields.
6. Select TCP (Transmission Control Protocol), or UDP (User Datagram Protocol), or both (TCP and UDP) as the **Public Port Type**.
7. Click the **Submit** button to activate the setting.

Click the **Submit** button to store the changes.

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## Static Routing

### Static Routing

## STATIC ROUTING TABLE

Destination IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Subnet Mask	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Gateway IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="Add"/>				
Del	Destination IP Address	Subnet Mask	Gateway IP Address	
<input type="button" value="Submit"/> <input type="button" value="Help"/>				

NOTE: Please click 'Submit' to save the settings.

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Static routes are manually configured routes to remote networks. That is, the route is predefined and is not discovered by the **Routing Information Protocol (RIP)**, as in dynamic routing. Static routing allows you to assign a gateway to an IP address or network. If there are routers on your internal network that do not function with RIP 1 or 2, you can set up a static route to those routers.

The advantage to using static routing is that network traffic is reduced; thus, static routing is beneficial for slow Internet connections. Routing using static routes is practical for small networks. For larger networks, the router needs to dynamically keep track of changes in the physical wiring of the network, and the use of dynamic routing (RIP) is recommended.

**NOTICE:** The Static Routing settings are intended for advanced network administrators only. Do not change these settings unless you are certain of the correct values. You may not be able to access the configuration tool if invalid information is entered.

To use static routing, manually add the Destination IP Address, Subnet Mask, and Gateway IP Address for each route you are adding to the Static Routing Table, and click **Add**. Then click **Submit**. If you are routing to an entire network, the last number in the destination IP address should be a zero (0); for example, 192.168.0.0.

**NOTE:** In static routing, the Dell Wireless 2350 Broadband Router does **NOT** dynamically discover routing information and does **NOT** use RIP. The Dell Wireless 2350 Broadband Router currently does **NOT** support RIP.

Use the fields beside each route and the **Delete** button to remove static routes from the Static Routing Table.

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## Administration Settings

### Password Settings

The Dell Wireless 2350 Broadband Router uses a password to authenticate the user before allowing changes to be made to any network settings. If you would like to change the current password, click to select **Change Your Password** and enter the new password in both **New Password** and **Retype Password** fields. Write down the password and keep it in a secure location for future reference.

### System Administration

- HTTP Port No.**  
 Do not change the **HTTP Port** value unless you have reason to do so. Typically, web servers listen for incoming web requests on port 80.
- Allow remote user to configure the device**  
 If you would like a remote user to be able to administer your Dell Wireless 2350 Broadband Router over the Internet, click to select titled **Allow remote user to configure the device**. Enter the IP address for the remote administration host computer.
- Allow remote user to ping the device**  
 Click to select **Allow remote user to ping the device** to enable your Dell Wireless 2350 Broadband Router to be pinged by any user on the Internet. This feature is helpful if you want to allow other Internet users to check the status of your Dell Wireless 2350 Broadband Router.
- Enable UPnP function** UPnP stands for Universal Plug and Play, a protocol which allows UPnP-enabled client computers, such as Windows XP, to discover and configure the Dell Wireless 2350 Broadband Router. One of most common use of UPnP on the router is to open ports to allow application-specific data to be forwarded through the router for various Internet services or gaming applications. The router detection and the router configuration process can be carried out automatically by the UPnP-enabled client applications such as **MSN Messenger** so you won't have to do it manually. Click to select **Enable UPnP function** to enable this service.

If you have an Windows XP system, you can use it to access and control the router while the router's UPnP function is enabled. Here are some examples of what you can do with UPnP from your Windows XP system.

**Example 1:** Access the router's web configuration tool without knowing its IP address.

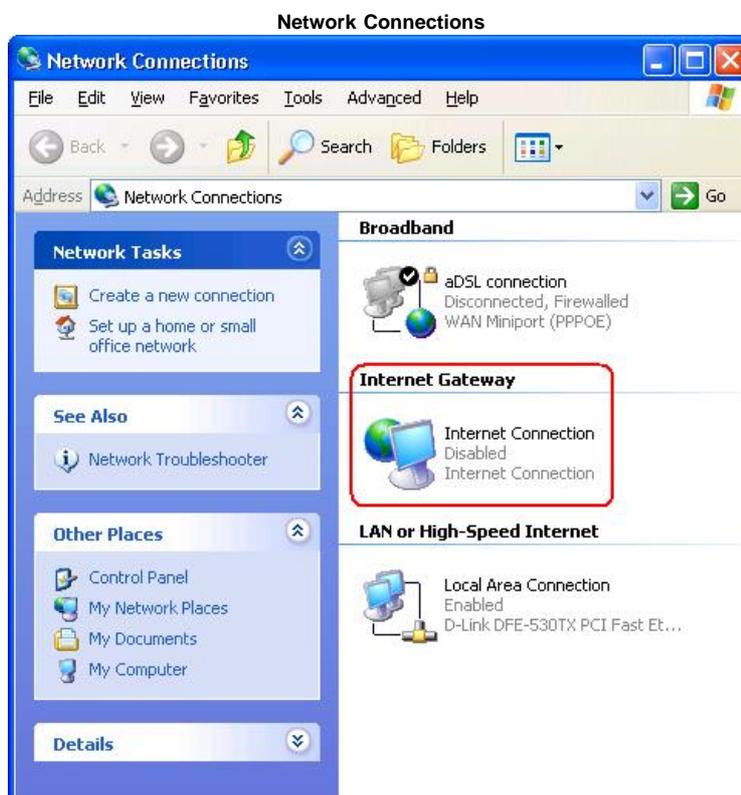
1. Double-click the **My Network Neighborhood** icon from the desktop.
2. Double-click the **Broadband Router** icon that is created for your router.  
This will bring up the authentication screen of the router's Web configuration tool.
3. Type the correct password and click the **OK** button to access the web configuration tool.



**Example 2:** Manage the router's port forwarding rules from the Windows XP interface.

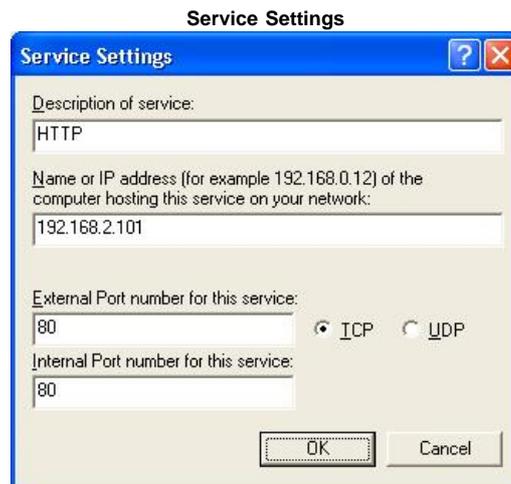
**NOTE:** If you have already configured a port forwarding rule for the service through the web configuration tool, you don't need to perform the following steps for the same service again.

4. Right-click the **My Network Neighborhood** icon on the desktop.
5. Right-click the **Internet Connection** icon created for the router.



6. Right-click the icon and left-click **Properties**.
7. Click **Settings**.

8. Click **Add**.
9. Type Description of service, IP address of the service host, External Port number for this service, Internal Port number for this service, and click to select either TCP or UDP. For example, the graph below shows an example of how to enable a computer with an IP address 192.168.2.101 to host a public HTTP server.



The image shows a 'Service Settings' dialog box with a blue title bar and standard window controls. It contains the following fields and options:

- Description of service:** A text box containing 'HTTP'.
- Name or IP address (for example 192.168.0.12) of the computer hosting this service on your network:** A text box containing '192.168.2.101'.
- External Port number for this service:** A text box containing '80'.
- Protocol:** Two radio buttons, 'TCP' (which is selected) and 'UDP'.
- Internal Port number for this service:** A text box containing '80'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

10. Click the **OK** button to save the changes.

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## Device Status: Dell™ Wireless 2350 Broadband Router User's Guide

The Device Status screen displays the basic network settings for your Dell Wireless 2350 Wireless Broadband Router. When changes are made to the network settings, those changes are updated on this screen. In addition, it graphically displays the current connection status for the Dell Wireless 2350 Broadband Router and other devices in your network. Connections between network devices are shown with a yellow arrow. Inoperative connections are represented by a red X through the yellow connection line.

**NOTE:** The Dell Wireless 2350 Broadband Router offers two ways to check the status of your network. One is the **Device Status** feature in the web configuration tool mentioned here. The other is through the Windows-based [Control Utility](#).

### Status

**Device Status**

GMT Wed, 1 Jan 2003 06:37:24

**Current DHCP Lease**

Host Name	MAC	IP	Lease Time
Wireless_Client	00:10:4b:e1:4f:c5	192.168.2.2	0 days 0 hours 33 minutes 28 seconds
emf1nbnrheelan1	00:90:4b:64:0c:9e	192.168.2.3	0 days 0 hours 34 minutes 9 seconds

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### Device Status

The following connections are displayed on the Device Status page:

Device	Indication
Internet	An inactive cable/DSL connection indicates that either the cable is unplugged or the Dell Wireless 2350 Broadband Router has not received an IP address.

	An active connection indicates the WAN interface of the router has a valid IP address and your computers can connect to the Internet via the router.
Wired Client (LAN)	Shown as an active connection when a wired client is configured and physically connected to your network, and inactive when the Ethernet cable is disconnected from the computer.
Wireless Client	Shown as an active connection when a wireless client is configured for your network, and inactive when there is no wireless client connected to your router.

When the Dell Wireless 2350 Broadband Router acts as a DHCP server, it assigns IP addresses to the clients on the network. These IP addresses are displayed in the **DHCP Log** below the Device Status figure.

### **WAN Ethernet Settings**

Refer to the left side of the screen for the following WAN Ethernet settings and the Internet protocol (IP) settings for the Wireless 2350:

<b>Setting/Device</b>	<b>Information Displayed</b>
Internet	The connection to the Internet is Active/Not Active
Router IP	IP address assigned to the Dell Wireless 2350 Broadband Router
LAN MAC	MAC address for the LAN and Wireless interfaces
WAN MAC	MAC address for the WAN interface
Router Name	The name for the Dell Wireless 2350 Broadband Router (the default is Wireless 2350 Broadband Router)
Firmware Version	Version number of the firmware currently installed on the Dell Wireless 2350 Broadband Router
GUI Version	Version number of the Web Based configuration tool currently installed on the Dell Wireless 2350 Broadband Router
Wireless Channel	Radio channel on which the Dell Wireless 2350 Broadband Router is communicating on the air
Network Name	A unique network name that identifies the network. It is also known as SSID (Service Set Identifier). When a client station tries to connect to the router, the user must know the router's SSID first.

The following buttons appear on the left navigation bar:

<b>Button</b>	<b>Action</b>
RELEASE	Releases the IP address that the Dell Wireless 2350 Broadband Router has been assigned from your ISP. If the Dell Wireless 2350 Broadband Router has been configured to receive a static IP address, clicking <b>Release</b> does not release this IP address.
RENEW	Renews the IP address with a DHCP server provided by your ISP. If the Dell Wireless 2350 Broadband Router has been configured to receive a static IP address, clicking <b>Renew</b> does not renew the IP address.

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## System Tools: Dell™ Wireless 2350 Broadband Router User's Guide

Use the System Tools section to view the intruder detection log, routing tables, and system diagnostics regarding the device settings and status. The System Tools section also includes features to restore the default settings, upgrade the firmware for the Dell Wireless 2350 Broadband Router and reset the unit.

Use the following pages in the web-based configuration tool to access the System Tools:

- ▶ [Intruder Detection Log](#)
- ▶ [Internet Activity Log](#)
- ▶ [Import/Export Settings](#)
- ▶ [System Statistics](#)
- ▶ [Display Routing Table](#)
- ▶ [System Diagnostic](#)
- ▶ [Load Default Settings](#)
- ▶ [Upgrade Firmware](#)
- ▶ [Reset Device](#)

### Intruder Detection Log

#### Intrusion

Dell Wireless 2350 Broadband Router

Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off
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#### INTRUDER DETECTION LOG

Email Alert Enable

Intruder Log

Time	Event	Event-Type	Details

Click clear button to clear the intruder log buffer

Indicator	Description

Time	Based on the timestamp of the IP packet, plus or minus the time offset
Event	Type of attack that the router detects
Event Type	Type of attack that the router detects
Details	Details about the detected attack

The system can alert you via e-mail to any attempted intrusion.

1. Click to select **Email Alert Enable**.
2. Type the e-mail address that you want the alert sent to in the **Email Address** field.
3. Click the **Submit** button.

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## Internet Activity Log

### Internet Activity Log


Dell Wireless 2350 Broadband Router

Basic Settings
Advanced Settings
Device Status
System Tools
Help
Log Off

#### Internet Active Log

Enable Internet Active Log  Yes  No

#### Internet Receive Traffic

Connection Type	Status	Packets	Bytes	Errors	Dropped Packets	Timespan
DHCP	Disconnect	0	0	0	0	3848

#### Internet Transmit Traffic

Connection Type	Status	Packets	Bytes	Timespan
DHCP	Disconnect	314	107088	3848

Reset

To enable logging information click on Yes. This will allow user to record internet transmit and receive traffic information which will be displayed on this page.

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## Import/Export Settings

### Import/Export Settings

					Dell Wireless 2350 Broadband Router				
Basic Settings		Advanced Settings		Device Status		System Tools		Help	Log Off

### Import & Export Settings

<b>Import &amp; Export Settings</b>	
Export Current Settings File	<input type="button" value="Export"/>
Import New Settings File	<input type="button" value="Import"/> <input type="text"/> <input type="button" value="Browse..."/>
Restart Now	<input type="button" value="Restart"/>

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The Dell Wireless 2350 Broadband Router allows the user to save the current settings onto storage devices and to load previous saved settings back into the router. Click the **Export** button to export the current settings to a .pro file. Click the **Import** button to input previously saved settings. Click **Restart** button to implement these new settings.

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## System Statistics

### System Statistics



### System Statistics

#### Wireless Stations

MAC Address	Authentication Type	Encryption	Client Status	Transmit			Receive		
				Packets	Bytes	Errors	Packets	Bytes	Errors

#### Wired Stations

Transmit		Receive			
Packets	Bytes	Packets	Bytes	Errors	Dropped Packets
2743	1076475	1294	245523	0	0

The figure above shows system statistics for all wired and wireless stations.

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## Display Routing Table

### Routing Table



### DISPLAY ROUTING TABLE

Type	Destination IP Address	Subnet Mask	Gateway IP Address	Hop Count
INF	192.168.2.0	255.255.255.0	0.0.0.0	4

Indicator	Description
-----------	-------------

Type	The type of routing. This can be either of the following: LAN or WAN interface (INTF) Static routing
Destination LAN IP Address	Either an entire network or a specific IP address. An IP address ending in .0 refers to a network.
Subnet Mask	Must follow the IP subnet mask rules
Gateway IP Address	To communicate with an IP address matching the destination IP Address, the Dell Wireless 2350 Broadband Router sends all traffic through the gateway IP address listed here.
Hop Count	The number of routers the packet has passed through to its destination. Hop count is used to measure the distance between a source and a destination. If there are 3 routers between the source and the destination nodes, the hop count for the packet will be 3 when it arrives at its destination node.

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## System Diagnostic

### System Diagnostic

## SYSTEM DIAGNOSTIC

### Configuration

Firmware version	3.14.14.1.22
<b>ISP Settings</b>	dhcp
IP Address	
Gateway IP Address	
Domain Name Server(DNS) IP Address	
Host Name	my.router
PPPoE Enable	No
PPPoE Username	
<b>Device Settings</b>	
Device IP address as	192.168.2.1
Device Network Mask	255.255.255.0
DHCP Server	Enabled
Pool from	192.168.2.1
Pool to	192.168.2.254
<b>Diagnosis</b>	
<b>Link Status</b>	
Cable/xDSL	Disconnected
LAN	Connected
<b>Current WAN connection</b>	
Cable/xDSL	Disconnected
<b>LAN MAC Table</b>	
IP : 192.168.2.2	MAC : 00:10:4b:e1:4f:c5

The Systems Diagnostic page is for your information only. This page displays both the configuration settings and diagnostics for the Dell Wireless 2350 Broadband Router. Configuration settings include firmware version, the ISP and device settings that have been configured for your network.

The Diagnostic section shows the current connections for your network. Diagnostic settings include the ISP status, link status, current WAN connection, LAN MAC table, and WAN MAC table.

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## Load Default Settings

### Load Default Settings

## LOAD DEFAULT SETTINGS

Load Default Settings will load the factory default settings for the device. Please click on the START button to proceed.

**Note.** The Device IP Address will be reset to 192.168.2.1 after Load Default.

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The Load Default Settings page allows you to reload the factory default configurations that came with the device. When this option is used, the default IP address is reset to the factory default value (192.168.2.1). This is equivalent to pressing and holding the **Reset** button on the back panel of the device for more than 5 seconds (for more details, refer to [A Look at the Hardware](#)).

**NOTICE:** Loading the default settings option will cause the current settings for your Dell Wireless 2350 Broadband Router to be lost and replaced with the default settings. This includes the security settings you may have set up..

Click the **Start** button to reload the default settings.

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## Upgrade Firmware

Upgrade the Firmware

## FIRMWARE UPGRADE

Enter the firmware file path into the box and click START to proceed with the new firmware upgrade.

Firmware Upgrade Status

Browse...

Start

**WARNING: Dell does not recommend upgrading the Dell Wireless 2350 Broadband Router from a wireless client. Dell recommends connecting to your Dell 2350 router with a LAN cable connection to perform your firmware upgrades.**

Upgrade From the Internet

Automatically Check for New Versions ▾

Check every

24 hours

At URL

ftp://ftp1.us.dell.com/network/RT108ENG.RM

Check Internet Now

Firmware Upgrade Status

Internet Version: No new version available

Start

Dell periodically releases firmware updates to provide improved performance or capabilities. There are two methods to upgrade your firmware.

The first method is to check the Dell support website, <http://support.dell.com>, to see if there are any new upgrades. Download the new firmware first before upgrading and save it to one of the clients in your network. To upgrade the firmware, type the firmware file path into the box, or click the **Browse** button to choose a firmware file to upgrade to. Click the **Start** button when you have chosen a file. After the firmware is written to the Dell Wireless 2350 Broadband Router, the home page will be loaded automatically. While the Dell Wireless 2350 Broadband Router resets, the **Power** light on the front panel of the router blinks.

**NOTE:** Make sure the file you choose is an actual Dell Wireless 2350 Broadband Router firmware file.

The second method is to use the firmware upgrade feature to easily upgrade the firmware on your Dell Wireless 2350 Broadband Router. To do this press the **Check Internet Now** button. The Dell Wireless 2350 Broadband Router will check the Dell ftp website and look for an updated firmware. If a new firmware exists you will be notified in the **Firmware Upgrade Status** section. To upgrade, press the **Start** button. After the firmware is written to the Dell Wireless 2350 Broadband Router, the home page will be loaded automatically. While the Dell Wireless 2350 Broadband Router resets, the **Power** light on the front panel of the router blinks.

You can automate the process of checking the Dell ftp website for an updated firmware. To do this select **Automatically Check for New Versions** from the **Upgrade From the Internet** section. Then select how often you want this check to run in the **Check every** section. The results of the last check will be shown in the **Firmware Upgrade Status**. After the firmware is written to the Dell Wireless 2350

Broadband Router, the home page will be loaded automatically. While the Wireless 2350 resets, the **Power** light on the front panel of the router blinks.

 **NOTE:** You must be connected to the Internet to check for firmware updates

 **NOTE:** Dell does not recommend upgrading the Dell Wireless 2350 Broadband Router from a wireless client. Dell recommends connecting to your Dell Wireless Router with a LAN cable connection to perform your firmware upgrades.

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## Reset Device

### Reset the Device

		Dell Wireless 2350 Broadband Router			
Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off

### RESET THE DEVICE

Resetting the device will restart it. Please click on the **START** button to proceed.

Start

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Use the Reset Device function if a system failure occurs. This feature does **not** reload the factory default settings. It simply resets the device to the network settings that existed on the device before the system failure occurred. This is equivalent to unplugging the device and plugging it back in or pressing the reset button for less than 3 seconds until the **Power** light starts to blink. No settings are lost.

 **NOTICE:** If you were in the process of updating the network settings, those changes are lost when the device is reset.

Click the **Start** button to reset the Dell Wireless 2350 Broadband Router to its **current firmware settings**. While the Dell Wireless 2350 Broadband Router is reset, the **Power** light on the front of the router blinks.

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# How to Configure the Dell Wireless 2350 Broadband Router using the Control Utility: Dell™ Wireless 2350 Broadband Router User's Guide

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▶ [Wireless Settings](#)

▶ [Network Access Control](#)

▶ [Gaming](#)

▶ [Remote Access](#)

▶ [Administration](#)

▶ [Diagnostics](#)

▶ [Advanced Settings](#)

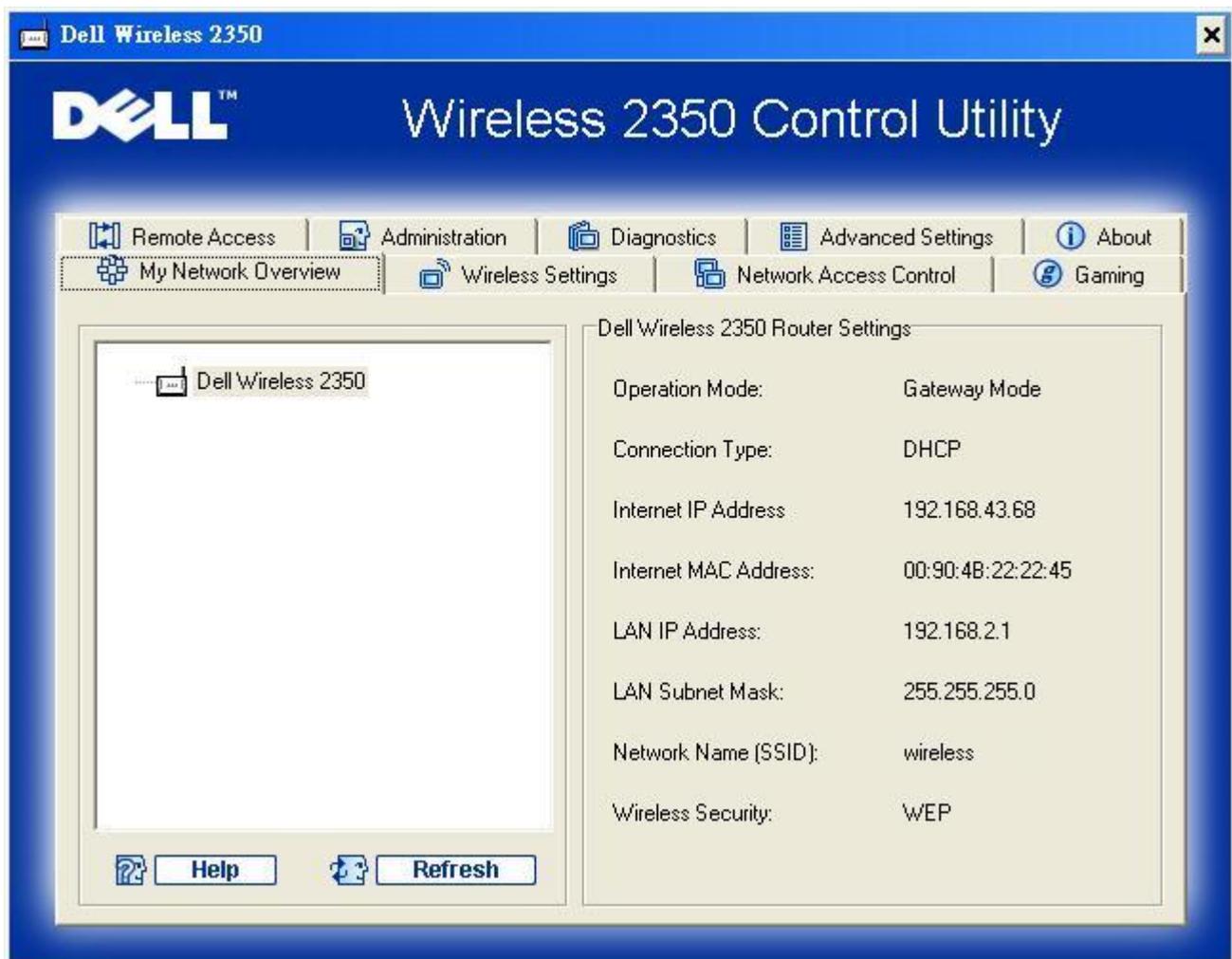
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## My Network Overview

This screen provides information about your network connection and settings. The left pane displays your connection status. The right pane displays the following network settings:

- Operation Mode
- Connection Type
- Internet IP Address
- Internet MAC Address
- LAN IP Address
- LAN Subnet Mask
- Network Name (SSID)
- Wireless Security

### My Network Overview



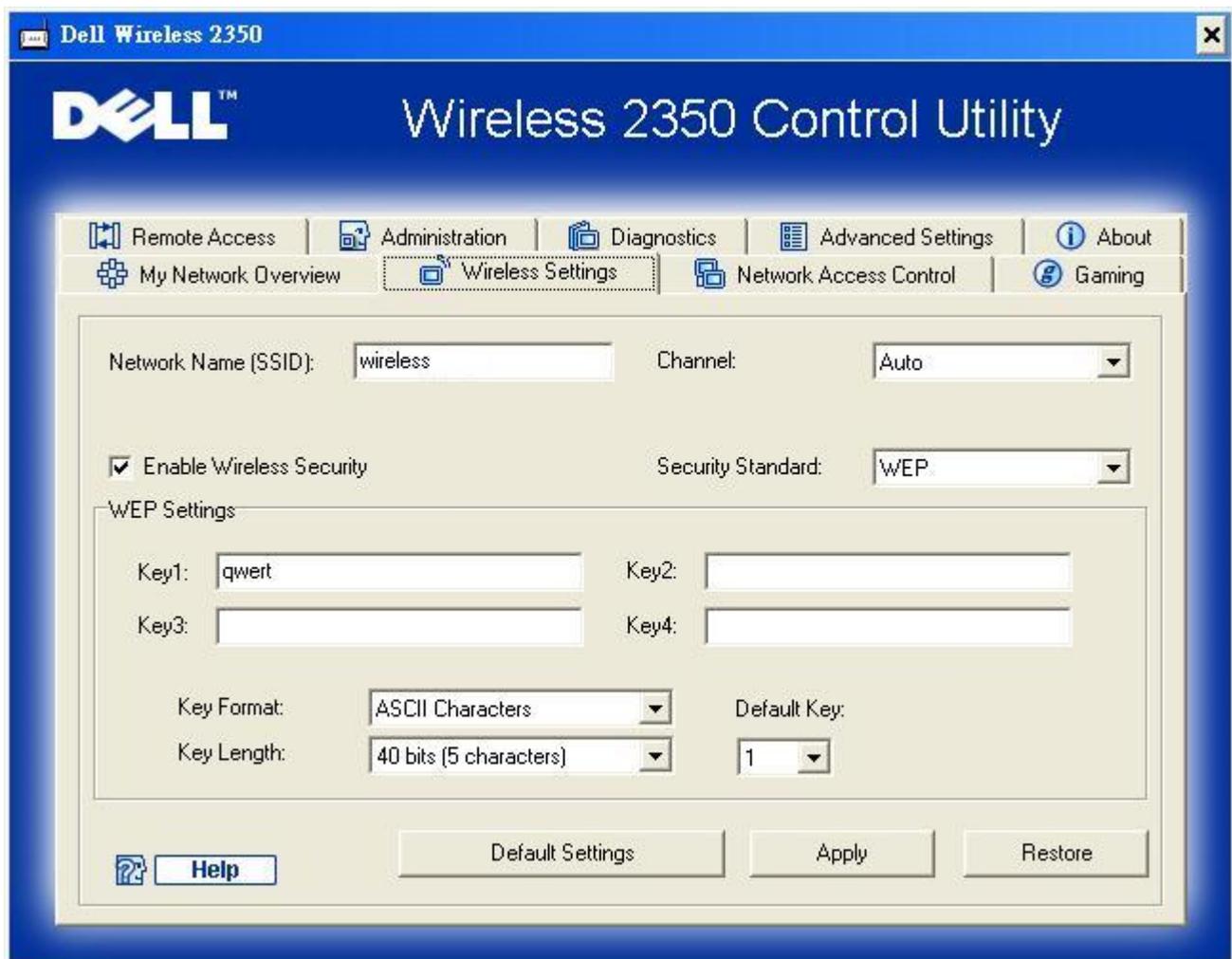
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## Wireless Settings

- **Network Name (SSID)**  
The SSID is a unique network name. It is used to identify the WLAN. This name is used when connecting additional computers to your wireless router.
- **Channel**  
This is the radio channel over which a communication transmission occurs.
- **Default Settings**  
Resets the Dell Wireless 2350 Broadband Router to its factory defaults.
- **Apply**  
Saves current settings.
- **Restore**  
Restores previous settings.

Your router has an advanced security mechanism. It ensures the confidentiality of data, and also guards data against being modified. If you want to enable the security mechanism, click to select **Enable Wireless Security**. You will then be able to choose whether you wish to use WEP or WPA security mechanisms.

### Wireless Settings WEP

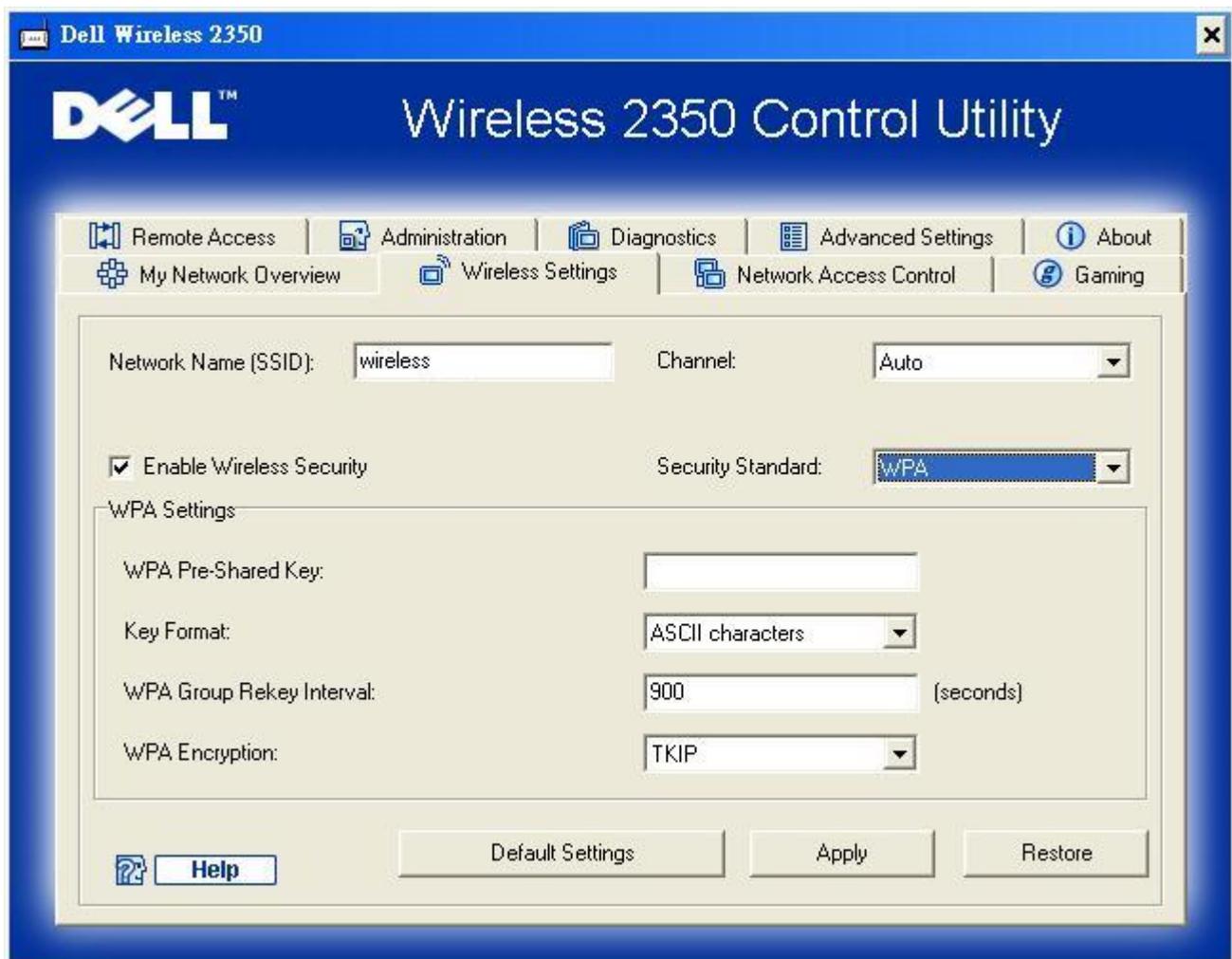


## WEP Settings

**Wired Equivalent Privacy (WEP)** encryption is used in the 802.11 standard is to protect wireless communication from eavesdropping. WEP provides a way of creating an encrypted key that is shared between a wireless client (such as a notebook with a wireless PC card) and the router. This key encrypts data before it is transmitted. WEP can be implemented with a 40(64)-bit or 104(128)-bit key. For added security, change your key often. When you change the key on one wireless device, it must be changed for all wireless devices in the network.

- **Key Format**  
This can be ASCII or hexadecimal format. Hexadecimal format includes the numbers 0 through 9 and the letters A through F. ASCII format includes all alphanumeric characters.
- **Key Length**  
This can be either 40(64)-bit or 104(128)-bit key length. Some wireless network cards are only able to use 40(64)-bit encryption. If all your clients are able to communicate at 104(128)-bit, then choose 104(128)-bit. If any client is only able to communicate at 40(64)-bit, then choose 40(64)-bit.
- **Key1, Key2, Key3, and Key4**  
You can type up to four different keys in the **Key** fields provided to store on the Dell Wireless 2350 Broadband Router. If you choose 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP key. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key.
- **Default Key**  
Select only one key out of the four provided in the **Default Key** field.

## **Wireless Settings WPA**



## **WPA Settings**

**Wi-Fi Protected Access (WPA)** is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell wireless client, you can check for the availability of WPA-enabled software updates for your wireless client at <http://support.dell.com>.

- **WPA Pre-shared Key**  
All wireless clients must use this key to gain access to the network. Note that the Key format must also match the setting used for the wireless clients.
- **Key Format**  
This can be ASCII or hexadecimal format. Hexadecimal format includes the numbers 0 through 9 and the letters A through F. ASCII format includes all alphanumeric characters.
- **WPA Group Rekey Interval**  
WPA Group Rekey Interval is used to specify the frequency of encryption key rotations. The lower the number, the faster your encryption key will rotate. However, setting this number too low may cause your wireless network to slow down.
- **WPA Encryption**  
**TKIP** (Temporal Key Integrity Protocol) is the most commonly used encryption method. **AES** (Advanced Encryption Standard) can be used if your wireless clients do not support TKIP.

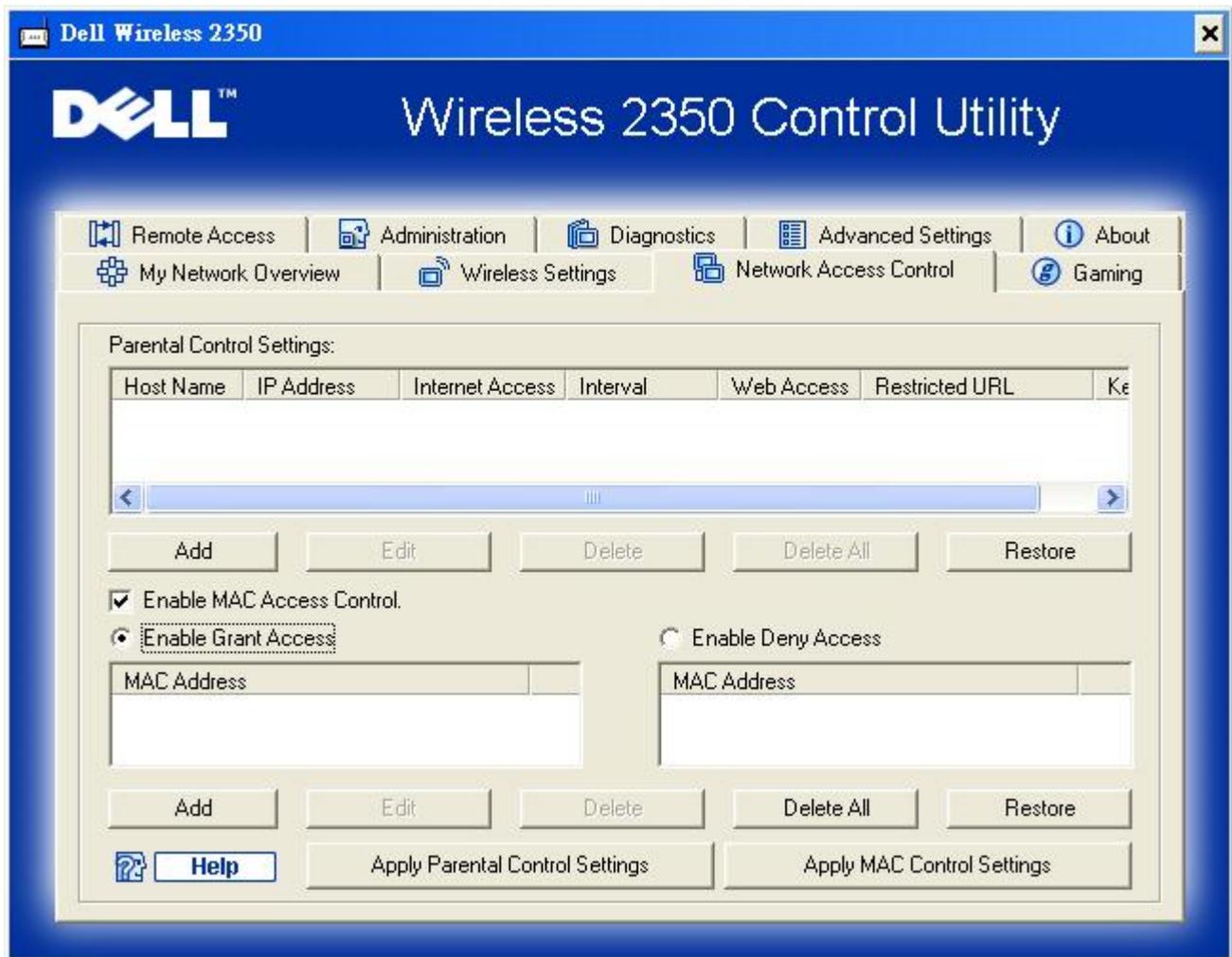
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## **Network Access Control**

- **Add**  
This adds a new Parental Control entry to the list.
- **Edit**  
Allows you to edit any current entry.
- **Delete**  
Deletes an entry from the Parental Control list.
- **Delete All**  
Deletes all records from the Parental Control list.
- **Restore**  
Restores previous settings.

## Network Access Control



### Parental Control

Parental Control allows you to determine what type of websites are accessible through your wireless network. It also allows you to specify what time of day the Internet can be accessed.

To enable parental control, perform the following steps:

1. Click the **Add** button. The **Parental Control** window appears.
2. Enter the IP address of the computer you want to control (for example, your child's computer).
3. Select **Allow** or **Deny** from the **Internet Access** list.
4. Select a time interval by choosing a start time in the **From** list and an end time in the **To** list.

5. Select **Allow** or **Deny** for web access.
6. Specify which websites may be accessed or may not be accessed by entering their URLs in the **Website URL** field.
7. Click the **OK** button to apply you settings, or click the **Cancel** button to exit without making any changes.
8. Click the **Apply Parental Control Settings** button on the bottom of the screen to activate the new settings.

### **MAC (Media Access Control)**

This feature prevents specific computers within the wireless local area network (WLAN) from accessing the Internet.

To enable MAC, perform the following steps:

1. Click to select **Enable MAC Access Control**.
2. Click the **Add** button. The **MAC Access Control: Add a Record** window appears.
3. Enter the hexadecimal MAC address (for example, 00:11:22:33:44:55) that you want to grant or deny access in the **MAC Address** box.
4. Click the **OK** button to apply, or click the **Cancel** button to exit without making any changes.
5. Click the **Apply MAC Control Settings** button on the bottom of the screen to activate the new settings.

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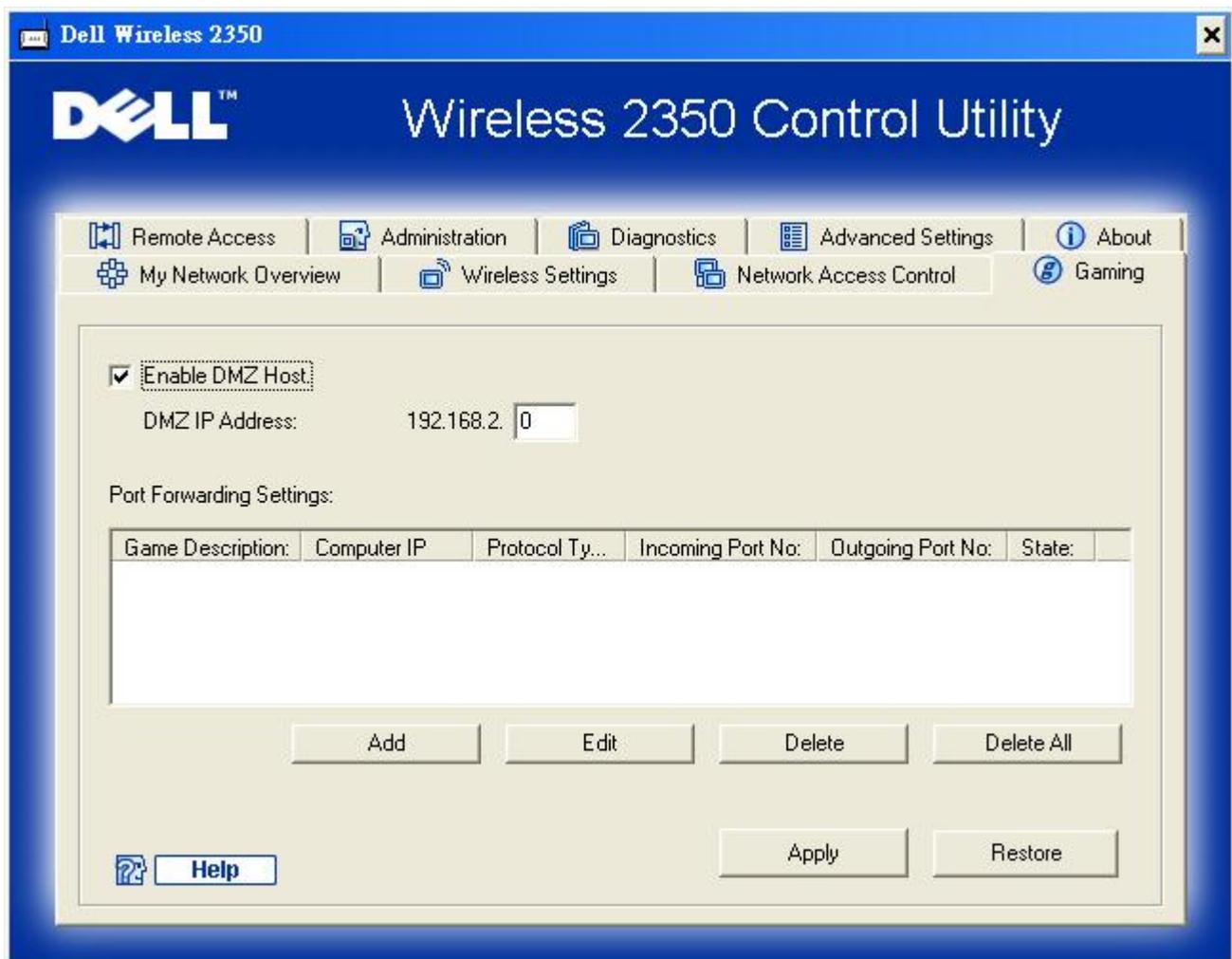
---

## **Gaming**

In some cases, the firewall feature of the router will cause a game not to function as intended. The settings listed on the **Gaming** menu can solve these problems.

Your Dell Wireless 2350 Broadband Router has an integrated **Network Address Translation** (NAT) firewall that rejects any unsolicited data from the Internet to access the computer on your LAN. Applications like e-mail and web browsing are unaffected by NAT. However, some applications (such as Internet messaging and gaming applications) will not function correctly.

### **Gaming**



## **DMZ**

Some applications experience problems when working behind a firewall. To solve this problem you can put computers outside of the firewall via the router's **DMZ** (demilitarized zone) feature. The DMZ feature disables the NAT firewall and allows all data to pass through all ports to this computer.

Follow the instructions below to enable the DMZ feature.

1. Click to select **Enable DMZ Host**.
2. Type the IP address of the computer that will run the gaming application in the **DMZ IP Address** field.
3. Click the **Apply** button to apply the new settings.

## **Port Forwarding Settings**

Port forwarding allows you to configure your router to accept unsolicited data through a specific port. The ports and protocol type (TCP, UDP, or both) will depend on what gaming service you are using.

**NOTE:** This information should be available from your gaming service or your the documentation that came with your game.

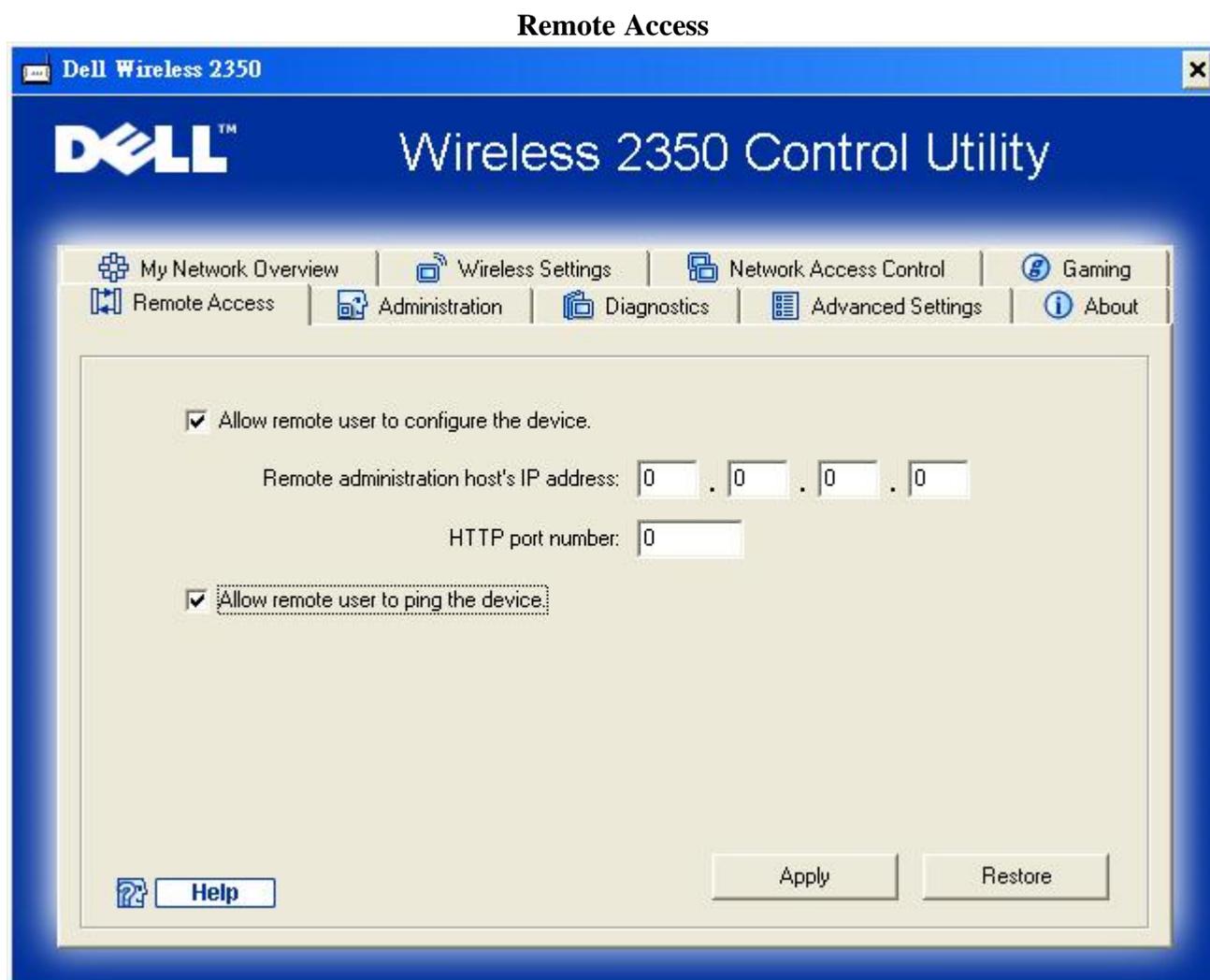
To enable Port Forwarding, perform the following steps:

1. Click the **Add** button. The **Gaming: Add a Record** window appears.
2. Type the desired name or description in the **Game Description** field. This cannot be more than 31 characters in length.
3. Type the IP address of the device (for example, desktop computer) for gaming in the **Computer IP for gaming** field.
4. Select a transport layer protocol from the **Protocol Type** list. The options listed here are TCP (Transmission Control Protocol), UDP (User Datagram Protocol), and both.

5. Enter the incoming port number in the **Incoming Port No.** field and the outgoing port number in the **Outgoing Port No.** (also called **Destination Port**) field.
6. Select **Enable** or **Disable** the gaming from the **State** list.
7. Click the **OK** button to apply, or click the **Cancel** button to exit without making any changes.

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## Remote Access



### Allow Remote User to Configure the Device

This option allows you to configure the device from a remote location via the network.

1. Click to select **Allow remote user to configure the device.**
2. Enter the IP address of the remote administration host in the required field.
3. Enter the HTTP port number that will be used on the router in the **HTTP port number** field.
4. Click the **Apply** button to save the settings, or click the **Restore** button to restore to its previous settings.

### Allow Remote User to Ping the Device

This option allows you to configure the WAN ping capability. The default setting is **disabled**. The router will not answer ping requests, so your WAN port is invisible to port scanners, which can make your network safer.

1. If you want your WAN port to be visible on the Internet, click to select **Allow remote user to ping the device**.
2. Click the **Apply** button to save the settings, or click the **Restore** button to restore to its previous settings.

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## Administration



### System Rescue

System Rescue allows you to reset your Dell Wireless 2350 Broadband Router. You can also save or load a backup of your configuration settings.

- **Reset to Factory Default Settings**  
Resets the Dell Wireless 2350 Broadband Router to its default factory configuration.
- **Save Current System Configuration To File**  
Saves the current settings of the Dell Wireless 2350 Broadband Router to a **.pro** file.
- **Load System Configuration Manually**  
Loads settings onto the Dell Wireless 2350 Broadband Router from a backed up **.pro** file to restore previously saved settings.

### Change Password

To prevent unauthorized changes to the router settings, the router is password protected. It is strongly recommended that you change the factory default password which is **admin**

1. Click the **Change the Router Password** button. The **Password Settings** window appears.
2. Type the original password in the **Original Password** field.
3. Type the new password in the **New Password** field, and then retype it in the **Confirm Password** field to verify.
4. Type the password hint message in the **Password Hint Message** field.
5. Click the **Submit** button when you finish the setting. If you want to clear any values you have entered in any field, click the **Cancel** button.

### Upgrade to New Firmware

If you are instructed to upgrade the firmware, click the **Upgrade to New Firmware** button. It will connect to the Dell website to upgrade to the latest firmware release. It is unnecessary to upgrade the firmware if your router is working properly.

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## Diagnostics



You can monitor the current status of your network connection in the **Diagnostics** menu. The network detection can be activated by clicking the **Start Diagnostics** button on the bottom of the screen.

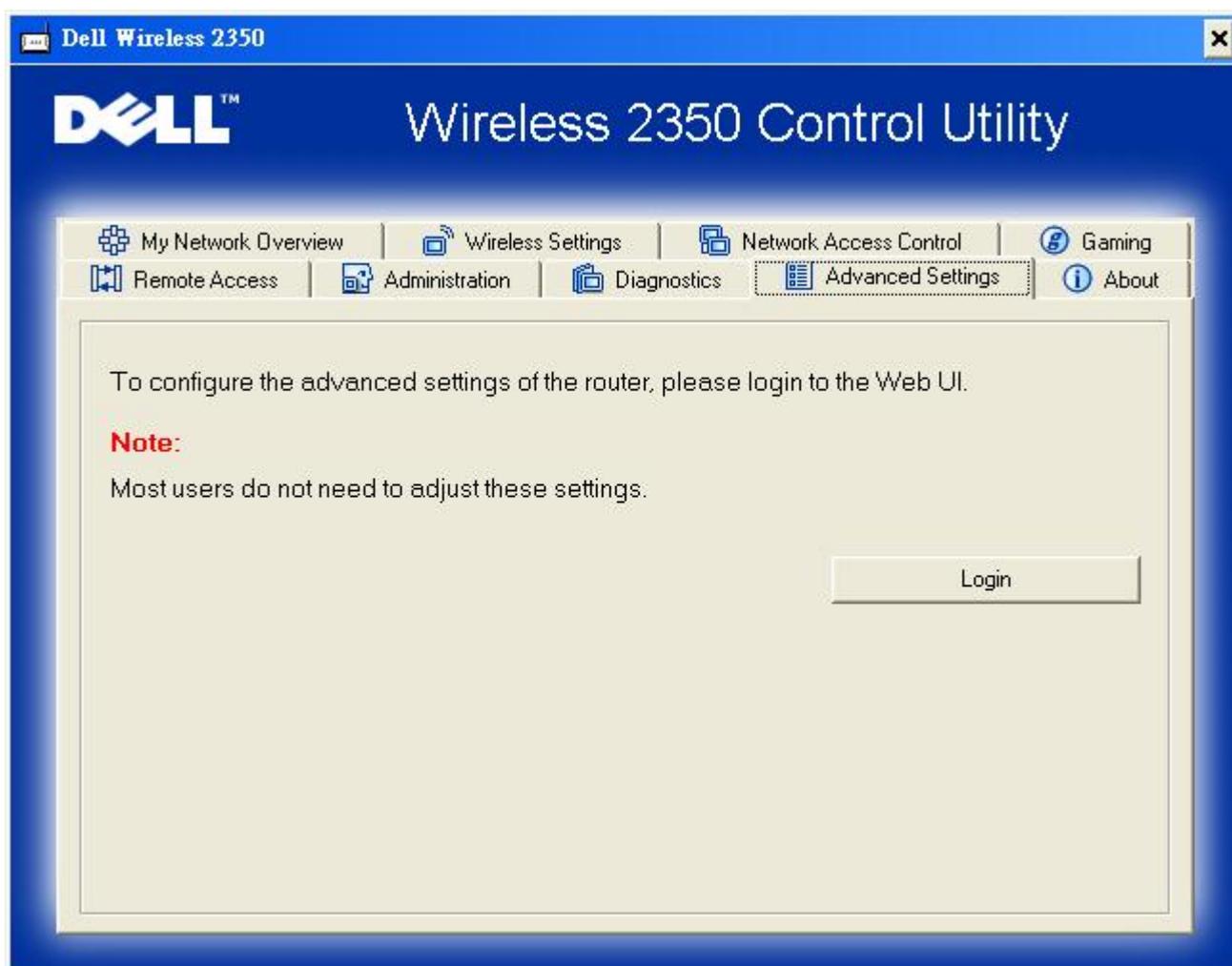
When the detection is done, the screen will display a summary of your network connectivity.

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## Advanced Settings

### Advanced Settings



To configure the advanced settings of the router, click the **Login** button to log in to the web-based configuration tool. Your Internet browser will open and you will be logged into the Dell Wireless 2350 Broadband Router's web-based configuration tool. The web-based configuration tool allows you to set up advanced network configurations for your Dell Wireless 2350 Broadband Router. Refer to the section [Web-Based Configuration Tool](#) for detailed information.

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# Basic Settings: Dell™ Wireless 2350 Broadband Router User's Guide

The following configuration options are included in **Basic Settings**:

- ▶ [Router Mode](#)
- ▶ [Wireless Settings](#)
- ▶ [Wireless Security](#)
- ▶ [Internet Connection Settings](#)
- ▶ [Save & Apply](#)

**NOTE:** To implement the changes you make to the settings, you must save your settings and restart the router. Otherwise, the router uses the previous settings. If you are using the **BACK/NEXT** links to step through each screen in the **Basic Settings** portion of the web-configuration tool, you ultimately reach the **Save & Apply** page. Click **Save & Restart** button to commit the changes, and the router will reboot automatically with the new settings in effect.

## Router Mode

The Dell Wireless 2350 Broadband Router has two operating modes: **Gateway** mode and **Access Point** mode.

### Router Mode



### ROUTER MODE

Gateway Mode
   
 Access Point Mode

**NOTE:** Please click **Next** to save the settings.

**Gateway** mode allows your router to create a wireless network to access the broadband router. Wired and wireless network devices share the same Internet connection through the **Internet** port on the Dell Wireless 2350 Broadband Router when in Gateway mode. However, some ISPs may request you to do additional setup, such as PPPoE, before using your Dell Wireless 2350 Broadband Router to access the Internet.

**Access Point** (AP) mode allows your Dell Wireless 2350 Broadband Router to act as a bridge between wireless devices and Ethernet

devices in an existing network. All wired and wireless devices are located in the same Class C IP subnet (e.g. 255.255.255.0). The Internet port on the Dell Wireless 2350 Broadband Router is not used in this mode.

**NOTE:** If the device is put in AP mode, the **Internet Connection Settings** will not be available.

The **Gateway** mode is the default setting in Dell Wireless 2350 Broadband Router.

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## Wireless Settings

**Wireless Settings**

Dell Wireless 2350 Broadband Router

Basic SettingsAdvanced SettingsDevice StatusSystem ToolsHelpLog Off

**WIRELESS SETTINGS**

Network Name (SSID)

Channel

**NOTE:** Please click **Next** to save the settings.

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Setting	Default Values
Network Name (SSID)	wireless
Channel	Auto

### **Network Name (SSID)**

The network name is a value that identifies a collection of wireless devices found in a particular network. The default value for the Dell Wireless 2350 Broadband Router is **wireless**. All workstations and access points must use the same SSID to be able to communicate with one another.

The SSID can be up to 32 characters in length and the value is case sensitive.

**NOTE:** If you change the SSID on the Dell Wireless 2350 Broadband Router you must change each client's wireless adapter settings to match the Dell Wireless 2350 Broadband Router setting. If you do change the SSID, note the change and use the new setting for each wireless network card. For assistance configuring a wireless network card, see the documentation that came with your wireless network card.

### **Channel**

The Dell Wireless 2350 Broadband Router can operate on a variety of channels. Routers within close proximity to one another must be on different channels. If you have just one router, then the default, channel 6, is probably adequate. If you have multiple access points in your network, it is suggested to stagger the channels for each router. It is advisable to use the default unless there is a specific reason for changing the channel, such as interference from microwaves, cellular phone towers, or other access points in the area.

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## Wireless Security

Data encryption provides added security by encoding network communications using an encryption key. Your Dell Wireless 2350 Broadband Router, in conjunction with wireless network adapters that support encryption, can scramble your transmitted data to make it difficult for someone to eavesdrop or intercept your information. Two methods of data encryption are available: **Wired Equivalent Privacy** (WEP) and **Wi-Fi Protected Access** (WPA). If you wish to enable wireless security, click to select **Enable Wireless Security**.

### Wireless Security

Dell Wireless 2350 Broadband Router

Basic SettingsAdvanced SettingsDevice StatusSystem ToolsHelpLog Off

### WIRELESS SECURITY

Data encryption provides added security by encoding network communications using an encryption key. The longer the wep key is, the stronger the encryption.

Enable Wireless Security

[Back](#) [Next](#) [Help](#)

NOTE: Please click **Next** to save the settings.

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### WEP

If you wish to enable WEP encryption, click to select **WEP** in the **Network Authentication** list.

Setting	Possible Values
Key Format	Hexadecimal Digits / ASCII Characters
Key Length	40 bits (5 characters) / 104 bits (13 characters)
Key1, Key2, Key3, Key4	<user-defined>

There are two levels of WEP encryption: 40(64)-bit and 104(128)-bit, with 104(128)-bit being the more secure of the two. The WEP encryption keys are simply a set of hexadecimal numbers or ASCII characters that you choose. Each Dell Wireless 2350 Broadband Router and every wireless workstation must use the same WEP encryption key to communicate. For more information on encryption, see the [Wireless Networking Overview - Encryption](#) section of this user's guide.

- **Key Format**  
Key format can be in ASCII or hexadecimal format. Hexadecimal digits include the numbers 0 through 9 and the letters A through F. If you select ASCII format, you can enter any character.
- **Key Length**  
Key length can be either **40(64)-bit** or **104(128)-bit**. Larger key lengths are more secure. Some wireless network cards are only able to use 40(64)-bit encryption. If all your clients are able to communicate at 104(128)-bit, choose 104(128)-bit.
- **Key**

If you choose 40(64)-bit encryption, enter a 5-character (or 10 hexadecimal digits) WEP encryption **Key** in the fields provided. For 104(128)-bit encryption, enter a 13-character (or 26 hexadecimal digits) WEP key in the fields provided. You have the option of entering four different keys to store on the Dell Wireless 2350 Broadband Router. Select only one key out of the four provided in the **Default Key** drop-down list. For added security, change your key often. When you change the key on one wireless device, remember that it must be changed for all wireless devices and access points in the network.

 **NOTE:** If you are adding the Dell Wireless 2350 Broadband Router to an existing network and will be using an existing encryption key for the wireless clients, contact the person in charge of the network. The same key must be used when configuring the encryption for the Dell Wireless 2350 Broadband Router. The administrator must make any changes to all access points and wireless clients on a network. Changing the key on just one access point or wireless client disconnects it from the rest of the network.

## WPA

If you wish to enable WPA encryption, select **WPA** from the **Network Authentication** list.

WPA is an upgrade to the WEP standard for securing your wireless network.

If you would like to secure your wireless network using WPA, you must have WPA support for your wireless clients. If you are using a Dell Wireless wireless client, you can check for the availability of WPA-enabled software update for your wireless client at <http://support.dell.com>.

- **WPA Pre-shared Key**  
WPA Pre-Shared Key (PSK) is a field where the password is entered. All wireless clients must also use this password to gain access to the network. Note that the Key format must also match the setting for the wireless clients.
- **Key Format**  
Key Format is a box that lists 2 items: **Hexadecimal** Digits (numbers 0 through 9 and letters A through F) and **ASCII** Characters (any letter, number, or symbol). Select the proper format for your key. If your wireless client(s) only support one of the two formats, be sure to specify the correct one.
- **WPA Group Rekey Interval**  
WPA Group Rekey Interval is used to specify the frequency of encryption key rotations. The lower the number, the faster your encryption key will rotate, however, setting this number too low may cause your wireless network to slow down.
- **WPA Encryption**  
WPA Encryption has 2 choices: **TKIP** (Temporal Key Integrity Protocol) is the most commonly used encryption method. **AES** (Advanced Encryption Standard) can be used if your wireless clients do not support TKIP.

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## Internet Connection Settings

 **NOTE:** The Setup Wizard enters the required cable/DSL ISP settings into the router after you have completed the Router Installation successfully. These settings should only be changed manually if the Setup Wizard is unsuccessful.

 **NOTE:** If the device is put in AP mode, the **Internet Connection Settings** will not be available.

### Your ISP Requires You to Input Host Computer Name or Domain Name

If your ISP requires that you input a host computer name or domain name, click to select **Your ISP requires you to input Host Computer Name or Domain Name**. Type the appropriate values in the fields provided.

 **NOTE:** Host computer names and domain names are only used by cable modem ISPs.

## Internet Connection Settings

## Internet Connection Settings

Your ISP requires you to input Host  
Computer Name or Domain Name

Your ISP requires you to input WAN  
Ethernet Mac

Connection Type

Cable Modem ▾

### Cable Modem Settings

Please setup the above settings for your cable modem if needed .

NOTE: Please click **Next** to save the settings.

### Your ISP Requires You to Input WAN Ethernet MAC

If your ISP requires that you input a WAN Ethernet MAC address, click to select **Your ISP requires you to input WAN Ethernet MAC**. In the field provided, type the public WAN (cable/DSL) MAC address assigned to your Dell Wireless 2350 Broadband Router. You can find the WAN MAC address on the back panel of the Dell Wireless 2350 Broadband Router or on the Device Information page in the web-based configuration tool.

### Connection Type

Select the connection type from the list. Three options are available.

- Cable Modem
- DSL (Static)
- DSL (PPPoE)

### Cable Modem Settings

No additional settings are required. Make sure that the settings listed are correct.

### DSL Static IP Settings

In the fields provided, type the IP address, IP subnet mask, ISP gateway address, and *Domain Name Server* (DNS) IP address provided by your ISP.

### DSL PPPoE Settings

**Point to Point Protocol over Ethernet** (PPPoE) is a standard specifying how a host computer interacts with a broadband modem (for example, DSL, cable, or wireless) to access the network. In many respects PPPoE is similar to the **Dialup Networking** approach. If you have a DSL (PPPoE) Internet connection, enter the PPPoE user name and password provided by your ISP.



**NOTICE:** If you are charged for your Internet Connection by the minute, unplug the network cable from the Internet port on the Dell Wireless 2350 Broadband Router when Internet access is no longer desired.

---

## Save & Apply

Use the **Save & Apply** page to submit all the network setting changes you have made. Click the **Save & Restart** button to update the network configurations for your Dell Wireless 2350 Broadband Router.

New settings are written to the firmware, and the Dell Wireless 2350 Broadband Router reboots automatically.

 **NOTE:** If you have wireless clients in your network, you must configure the clients' wireless network cards to match the settings for the Dell Wireless 2350 Broadband Router.

### Save and Apply

		Dell Wireless 2350 Broadband Router			
Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off

### SAVE & APPLY

You have successfully configured the settings for the device.

**NOTE:** After you have finished making all the changes on the various pages, please click Save & Apply to save the settings and restart the device. After the apply, the device will function according to the saved settings.

Click Save & Apply to save the settings and restart the device!

Save & Restart

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## Device Status: Dell™ Wireless 2350 Broadband Router User's Guide

The Device Status screen displays the basic network settings for your Dell Wireless 2350 Wireless Broadband Router. When changes are made to the network settings, those changes are updated on this screen. In addition, it graphically displays the current connection status for the Dell Wireless 2350 Broadband Router and other devices in your network. Connections between network devices are shown with a yellow arrow. Inoperative connections are represented by a red X through the yellow connection line.

**NOTE:** The Dell Wireless 2350 Broadband Router offers two ways to check the status of your network. One is the **Device Status** feature in the web configuration tool mentioned here. The other is through the Windows-based [Control Utility](#).

### Status

**Device Status**

GMT Wed, 1 Jan 2003 06:37:24

**Current DHCP Lease**

Host Name	MAC	IP	Lease Time
Wireless_Client	00:10:4b:e1:4f:c5	192.168.2.2	0 days 0 hours 33 minutes 28 seconds
emf1nbnrheelan1	00:90:4b:64:0c:9e	192.168.2.3	0 days 0 hours 34 minutes 9 seconds

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### Device Status

The following connections are displayed on the Device Status page:

Device	Indication
Internet	An inactive cable/DSL connection indicates that either the cable is unplugged or the Dell Wireless 2350 Broadband Router has not received an IP address.

	An active connection indicates the WAN interface of the router has a valid IP address and your computers can connect to the Internet via the router.
Wired Client (LAN)	Shown as an active connection when a wired client is configured and physically connected to your network, and inactive when the Ethernet cable is disconnected from the computer.
Wireless Client	Shown as an active connection when a wireless client is configured for your network, and inactive when there is no wireless client connected to your router.

When the Dell Wireless 2350 Broadband Router acts as a DHCP server, it assigns IP addresses to the clients on the network. These IP addresses are displayed in the **DHCP Log** below the Device Status figure.

### **WAN Ethernet Settings**

Refer to the left side of the screen for the following WAN Ethernet settings and the Internet protocol (IP) settings for the Wireless 2350:

<b>Setting/Device</b>	<b>Information Displayed</b>
Internet	The connection to the Internet is Active/Not Active
Router IP	IP address assigned to the Dell Wireless 2350 Broadband Router
LAN MAC	MAC address for the LAN and Wireless interfaces
WAN MAC	MAC address for the WAN interface
Router Name	The name for the Dell Wireless 2350 Broadband Router (the default is Wireless 2350 Broadband Router)
Firmware Version	Version number of the firmware currently installed on the Dell Wireless 2350 Broadband Router
GUI Version	Version number of the Web Based configuration tool currently installed on the Dell Wireless 2350 Broadband Router
Wireless Channel	Radio channel on which the Dell Wireless 2350 Broadband Router is communicating on the air
Network Name	A unique network name that identifies the network. It is also known as SSID (Service Set Identifier). When a client station tries to connect to the router, the user must know the router's SSID first.

The following buttons appear on the left navigation bar:

<b>Button</b>	<b>Action</b>
RELEASE	Releases the IP address that the Dell Wireless 2350 Broadband Router has been assigned from your ISP. If the Dell Wireless 2350 Broadband Router has been configured to receive a static IP address, clicking <b>Release</b> does not release this IP address.
RENEW	Renews the IP address with a DHCP server provided by your ISP. If the Dell Wireless 2350 Broadband Router has been configured to receive a static IP address, clicking <b>Renew</b> does not renew the IP address.

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## System Tools: Dell™ Wireless 2350 Broadband Router User's Guide

Use the System Tools section to view the intruder detection log, routing tables, and system diagnostics regarding the device settings and status. The System Tools section also includes features to restore the default settings, upgrade the firmware for the Dell Wireless 2350 Broadband Router and reset the unit.

Use the following pages in the web-based configuration tool to access the System Tools:

- ▶ [Intruder Detection Log](#)
- ▶ [Internet Activity Log](#)
- ▶ [Import/Export Settings](#)
- ▶ [System Statistics](#)
- ▶ [Display Routing Table](#)
- ▶ [System Diagnostic](#)
- ▶ [Load Default Settings](#)
- ▶ [Upgrade Firmware](#)
- ▶ [Reset Device](#)

### Intruder Detection Log

#### Intrusion

Dell Wireless 2350 Broadband Router

Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off
----------------	-------------------	---------------	--------------	------	---------

#### INTRUDER DETECTION LOG

Email Alert Enable

---

Intruder Log

Time	Event	Event-Type	Details

Click clear button to clear the intruder log buffer

Indicator	Description

Time	Based on the timestamp of the IP packet, plus or minus the time offset
Event	Type of attack that the router detects
Event Type	Type of attack that the router detects
Details	Details about the detected attack

The system can alert you via e-mail to any attempted intrusion.

1. Click to select **Email Alert Enable**.
2. Type the e-mail address that you want the alert sent to in the **Email Address** field.
3. Click the **Submit** button.

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## Internet Activity Log

### Internet Activity Log


Dell Wireless 2350 Broadband Router

Basic Settings
Advanced Settings
Device Status
System Tools
Help
Log Off

#### Internet Active Log

Enable Internet Active Log  Yes  No

#### Internet Receive Traffic

Connection Type	Status	Packets	Bytes	Errors	Dropped Packets	Timespan
DHCP	Disconnect	0	0	0	0	3848

#### Internet Transmit Traffic

Connection Type	Status	Packets	Bytes	Timespan
DHCP	Disconnect	314	107088	3848

Reset

To enable logging information click on Yes. This will allow user to record internet transmit and receive traffic information which will be displayed on this page.

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## Import/Export Settings

### Import/Export Settings

					Dell Wireless 2350 Broadband Router				
Basic Settings		Advanced Settings		Device Status		System Tools		Help	Log Off

### Import & Export Settings

<b>Import &amp; Export Settings</b>	
Export Current Settings File	<input type="button" value="Export"/>
Import New Settings File	<input type="button" value="Import"/> <input type="text"/> <input type="button" value="Browse..."/>
Restart Now	<input type="button" value="Restart"/>

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The Dell Wireless 2350 Broadband Router allows the user to save the current settings onto storage devices and to load previous saved settings back into the router. Click the **Export** button to export the current settings to a .pro file. Click the **Import** button to input previously saved settings. Click **Restart** button to implement these new settings.

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## System Statistics

### System Statistics



### System Statistics

#### Wireless Stations

MAC Address	Authentication Type	Encryption	Client Status	Transmit			Receive		
				Packets	Bytes	Errors	Packets	Bytes	Errors

#### Wired Stations

Transmit		Receive			
Packets	Bytes	Packets	Bytes	Errors	Dropped Packets
2743	1076475	1294	245523	0	0

The figure above shows system statistics for all wired and wireless stations.

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## Display Routing Table

### Routing Table



### DISPLAY ROUTING TABLE

Type	Destination IP Address	Subnet Mask	Gateway IP Address	Hop Count
INF	192.168.2.0	255.255.255.0	0.0.0.0	4

Indicator	Description

Type	The type of routing. This can be either of the following: LAN or WAN interface (INTF) Static routing
Destination LAN IP Address	Either an entire network or a specific IP address. An IP address ending in .0 refers to a network.
Subnet Mask	Must follow the IP subnet mask rules
Gateway IP Address	To communicate with an IP address matching the destination IP Address, the Dell Wireless 2350 Broadband Router sends all traffic through the gateway IP address listed here.
Hop Count	The number of routers the packet has passed through to its destination. Hop count is used to measure the distance between a source and a destination. If there are 3 routers between the source and the destination nodes, the hop count for the packet will be 3 when it arrives at its destination node.

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## System Diagnostic

### System Diagnostic



## SYSTEM DIAGNOSTIC

## Configuration

Firmware version	3.14.14.1.22
<b>ISP Settings</b>	dhcp
IP Address	
Gateway IP Address	
Domain Name Server(DNS) IP Address	
Host Name	my.router
PPPoE Enable	No
PPPoE Username	
<b>Device Settings</b>	
Device IP address as	192.168.2.1
Device Network Mask	255.255.255.0
DHCP Server	Enabled
Pool from	192.168.2.1
Pool to	192.168.2.254
<b>Diagnosis</b>	
<b>Link Status</b>	
Cable/xDSL	Disconnected
LAN	Connected
<b>Current WAN connection</b>	
Cable/xDSL	Disconnected
<b>LAN MAC Table</b>	
IP : 192.168.2.2	MAC : 00:10:4b:e1:4f:c5

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The Systems Diagnostic page is for your information only. This page displays both the configuration settings and diagnostics for the Dell Wireless 2350 Broadband Router. Configuration settings include firmware version, the ISP and device settings that have been configured for your network.

The Diagnostic section shows the current connections for your network. Diagnostic settings include the ISP status, link status, current WAN connection, LAN MAC table, and WAN MAC table.

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## Load Default Settings

### Load Default Settings

## LOAD DEFAULT SETTINGS

Load Default Settings will load the factory default settings for the device. Please click on the START button to proceed.

**Note.** The Device IP Address will be reset to 192.168.2.1 after Load Default.

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The Load Default Settings page allows you to reload the factory default configurations that came with the device. When this option is used, the default IP address is reset to the factory default value (192.168.2.1). This is equivalent to pressing and holding the **Reset** button on the back panel of the device for more than 5 seconds (for more details, refer to [A Look at the Hardware](#)).

**NOTICE:** Loading the default settings option will cause the current settings for your Dell Wireless 2350 Broadband Router to be lost and replaced with the default settings. This includes the security settings you may have set up..

Click the **Start** button to reload the default settings.

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## Upgrade Firmware

Upgrade the Firmware

## FIRMWARE UPGRADE

Enter the firmware file path into the box and click START to proceed with the new firmware upgrade.

Firmware Upgrade Status

Browse...

Start

**WARNING: Dell does not recommend upgrading the Dell Wireless 2350 Broadband Router from a wireless client. Dell recommends connecting to your Dell 2350 router with a LAN cable connection to perform your firmware upgrades.**

Upgrade From the Internet

Automatically Check for New Versions ▾

Check every

24 hours

At URL

ftp://ftp1.us.dell.com/network/RT108ENG.RM

Check Internet Now

Firmware Upgrade Status

Internet Version: No new version available

Start

Dell periodically releases firmware updates to provide improved performance or capabilities. There are two methods to upgrade your firmware.

The first method is to check the Dell support website, <http://support.dell.com>, to see if there are any new upgrades. Download the new firmware first before upgrading and save it to one of the clients in your network. To upgrade the firmware, type the firmware file path into the box, or click the **Browse** button to choose a firmware file to upgrade to. Click the **Start** button when you have chosen a file. After the firmware is written to the Dell Wireless 2350 Broadband Router, the home page will be loaded automatically. While the Dell Wireless 2350 Broadband Router resets, the **Power** light on the front panel of the router blinks.

**NOTE:** Make sure the file you choose is an actual Dell Wireless 2350 Broadband Router firmware file.

The second method is to use the firmware upgrade feature to easily upgrade the firmware on your Dell Wireless 2350 Broadband Router. To do this press the **Check Internet Now** button. The Dell Wireless 2350 Broadband Router will check the Dell ftp website and look for an updated firmware. If a new firmware exists you will be notified in the **Firmware Upgrade Status** section. To upgrade, press the **Start** button. After the firmware is written to the Dell Wireless 2350 Broadband Router, the home page will be loaded automatically. While the Dell Wireless 2350 Broadband Router resets, the **Power** light on the front panel of the router blinks.

You can automate the process of checking the Dell ftp website for an updated firmware. To do this select **Automatically Check for New Versions** from the **Upgrade From the Internet** section. Then select how often you want this check to run in the **Check every** section. The results of the last check will be shown in the **Firmware Upgrade Status**. After the firmware is written to the Dell Wireless 2350

Broadband Router, the home page will be loaded automatically. While the Wireless 2350 resets, the **Power** light on the front panel of the router blinks.

 **NOTE:** You must be connected to the Internet to check for firmware updates

 **NOTE:** Dell does not recommend upgrading the Dell Wireless 2350 Broadband Router from a wireless client. Dell recommends connecting to your Dell Wireless Router with a LAN cable connection to perform your firmware upgrades.

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## Reset Device

### Reset the Device

		Dell Wireless 2350 Broadband Router			
Basic Settings	Advanced Settings	Device Status	System Tools	Help	Log Off

### RESET THE DEVICE

Resetting the device will restart it. Please click on the **START** button to proceed.

Start

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Use the Reset Device function if a system failure occurs. This feature does **not** reload the factory default settings. It simply resets the device to the network settings that existed on the device before the system failure occurred. This is equivalent to unplugging the device and plugging it back in or pressing the reset button for less than 3 seconds until the **Power** light starts to blink. No settings are lost.

 **NOTICE:** If you were in the process of updating the network settings, those changes are lost when the device is reset.

Click the **Start** button to reset the Dell Wireless 2350 Broadband Router to its **current firmware settings**. While the Dell Wireless 2350 Broadband Router is reset, the **Power** light on the front of the router blinks.

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# A Look at the Hardware: Dell™ Wireless 2350 Broadband Router User's Guide

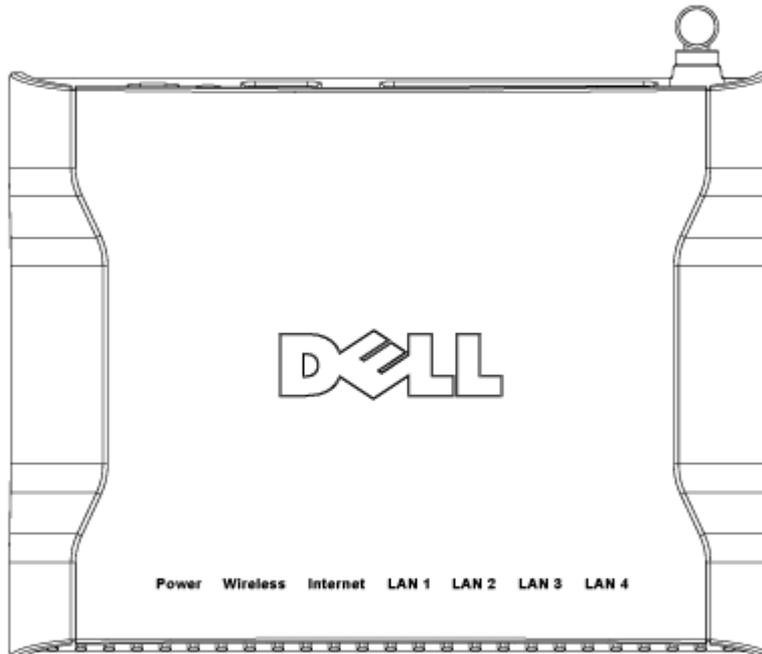
[▶ Front Panel](#)

[▶ Back Panel](#)

## Front Panel

The Dell Wireless 2350 Broadband Router has seven **Light Emitting Diodes** (LEDs), or link lights, on its front side. The following table defines the behaviour for each LED:

### Front Panel



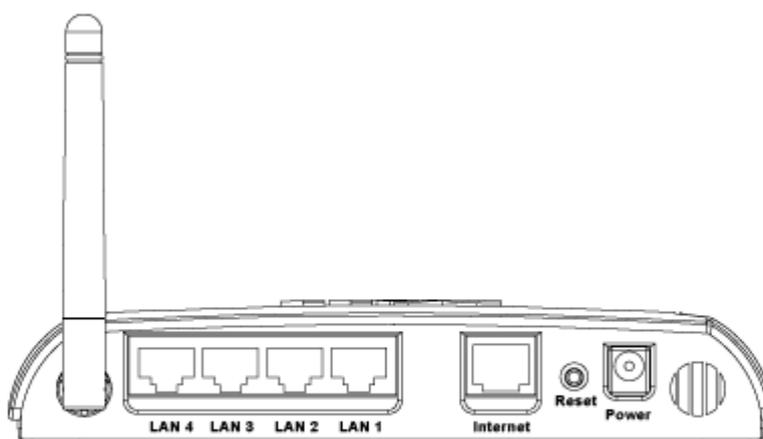
LED	Represents	Activity
Power	Power	The Power LED will light up green when the device is powered on. It will blink when the device is powering up or when it is reset.
Wireless	Wireless LAN	The LED alternates between on and off when wireless clients are attached. It will blink when there is data activity on the wireless network. The rate of blinking will vary with the rate of data transfer. It turns off when no wireless clients are associated with the

		Dell Wireless 2350 Broadband Router.
Internet	DSL or cable modem	A steady green light indicates the connection is active (i.e. the Dell Wireless 2350 Broadband Router is connected to a xDSL or cable modem) and blinks with data activity.
LAN 1 LAN 2 LAN 3 LAN 4	Local Area Network	A steady green light indicates the connection is active and blinks with data activity.

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## Back Panel

### Back Panel



Connector	Description
Power	Connect the power adapter to this power port, and then plug the other end of the power cable into a power outlet.
Reset	Use an object, such as a paper clip, to press the button for at least 5 seconds. The Power LED will be off for a short time and then light up again. You can then release the button to reset the device to its factory-default settings.
Internet	This accepts an RJ-45 connector for connecting the Dell Wireless 2350 Broadband Router to a xDSL or cable modem
LAN 1 LAN 2 LAN 3 LAN 4	This accepts RJ-45 connectors for connecting up to 4 computers to the Dell Wireless 2350 Broadband Router's 4-port switch. These are the Ethernet connections.

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