

RangePlus Wireless PCI Adapter



About This Guide

Icon Descriptions

While reading through the User Guide you may see various icons that call attention to specific items. Below is a description of these icons:



NOTE: This check mark indicates that there is a note of interest and is something that you should pay special attention to while using the product.



WARNING: This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.



WEB: This globe icon indicates a noteworthy website address or e-mail address.

Online Resources

Website addresses in this document are listed without **http://** in front of the address because most current web browsers do not require it. If you use an older web browser, you may have to add **http://** in front of the web address.

Resource	Website
Linksys	www.linksys.com
Linksys International	www.linksys.com/international
Glossary	www.linksys.com/glossary
Network Security	www.linksys.com/security

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Chapter 1:

Product Overview

Thank you for choosing the Linksys RangePlus Wireless PCI Adapter. Using the latest wireless networking technology, the Adapter adds or upgrades wireless connectivity on your notebook computer. To help protect your data and privacy, you can use industrial-strength WPA2 encryption to protect your wireless connection. The included Setup Wizard will walk you through configuring the Adapter to your network's settings, step by step.

LED



Link (Green) The LED flashes when there is wireless network activity.

Chapter 2: Wireless Security Checklist

Wireless networks are convenient and easy to install, so homes with high-speed Internet access are adopting them at a rapid pace. Because wireless networking operates by sending information over radio waves, it can be more vulnerable to intruders than a traditional wired network. Like signals from your cellular or cordless phones, signals from your wireless network can also be intercepted. Since you cannot physically prevent someone from connecting to your wireless network, you need to take some additional steps to keep your network secure.

1. Change the default wireless network name or SSID

Wireless devices have a default wireless network name or Service Set Identifier (SSID) set by the factory. This is the name of your wireless network, and can be up to 32 characters in length. Linksys wireless products use **linksys** as the default wireless network name. You should change the wireless network name to something unique to distinguish your wireless network from other wireless networks that may exist around you, but do not use personal information (such as your Social Security number) because this information may be available for anyone to see when browsing for wireless networks.

2. Change the default password

For wireless products such as access points and routers, you will be asked for a password when you want to change their settings. These devices have a default password set by the factory. The Linksys default password is **admin**. Hackers know these defaults and may try to use them to access your wireless device and change your network settings. To thwart any unauthorized changes, customize the device's password so it will be hard to guess.

3. Enable MAC address filtering

Linksys routers give you the ability to enable Media Access Control (MAC) address filtering. The MAC address is a unique series of numbers and letters assigned to every networking device. With MAC address filtering enabled, wireless network access is provided solely for wireless devices with specific MAC addresses. For example, you can specify the MAC address of each computer in your home so that only those computers can access your wireless network.

4. Enable encryption

Encryption protects data transmitted over a wireless network. Wi-Fi Protected Access (WPA/WPA2) and Wired Equivalency Privacy (WEP) offer different levels of security for wireless communication.

A network encrypted with WPA/WPA2 is more secure than a network encrypted with WEP, because WPA/WPA2 uses dynamic key encryption. To protect the information as it passes over the airwaves, you should enable the highest level of encryption supported by your network equipment.

WEP is an older encryption standard and may be the only option available on some older devices that do not support WPA.

General Network Security Guidelines

Wireless network security is useless if the underlying network is not secure.

- Password protect all computers on the network and individually password protect sensitive files.
- Change passwords on a regular basis.
- Install anti-virus software and personal firewall software.
- Disable file sharing (peer-to-peer). Some applications may open file sharing without your consent and/or knowledge.

Additional Security Tips

- Keep wireless routers, access points, or gateways away from exterior walls and windows.
- Turn wireless routers, access points, or gateways off when they are not being used (at night, during vacations).
- Use strong passphrases that are at least eight characters in length. Combine letters and numbers to avoid using standard words that can be found in the dictionary.



WEB: For more information on wireless security, visit www.linksys.com/security

Chapter 3: Advanced Configuration

Advanced configuration is performed through the Wireless Network Monitor (the Monitor). Use it to check the status information, search for available wireless networks, or create profiles that hold different configuration settings.

Diagnostics is performed through the Diagnostic utility. Use it to detect the Adapter, test the driver and Monitor, and troubleshoot if needed.

How to Access the Wireless Network Monitor


After installing the Adapter, the Monitor icon appears in the system tray of your computer. If the Monitor is enabled, the icon is green. If the Monitor is disabled or the Adapter is not inserted, the icon is gray.



Wireless Network Monitor Icon

Double-click the icon to open the Monitor.

How to Use the Wireless Network Monitor

The opening screen of the Monitor is the *Status* screen. From this screen, you can find out how strong the current wireless signal is and how good the connection's quality is. You can also click the Wi-Fi Protected Setup button  to connect to a router that supports Wi-Fi Protected Setup.



NOTE: The Adapter supports Wi-Fi Protected Setup, which is a feature that makes it easy to set up your wireless network.

Click **More Information** to view additional status information about the current connection. To search for available wireless networks, click the **Connect** tab. To perform configuration changes or create connection profiles, click the **Profiles** tab.

Status

The *Status* screen displays network mode, signal strength, and link quality information about the current connection. It also displays the Wi-Fi Protected Setup button. Click **More Information** for additional status information.



Wi-Fi Protected Setup Button




Status

Signal Strength The Signal Strength bar indicates signal strength.

Link Quality The Link Quality bar indicates the quality of the wireless network connection.

More Information Click **More Information** to view additional information about the wireless network connection on the *Wireless Network Status* screen.

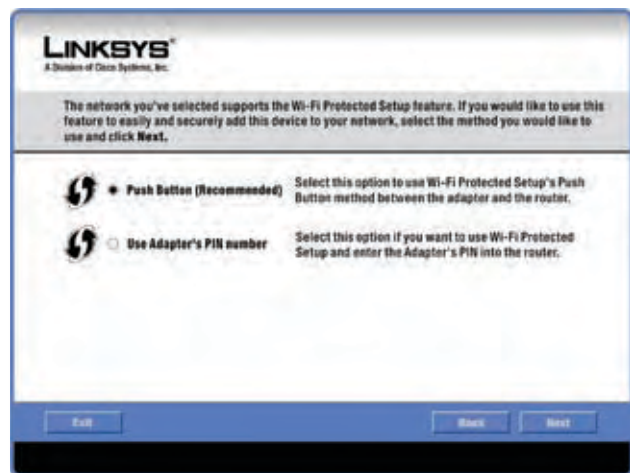
Wi-Fi Protected Setup Click the **Wi-Fi Protected Setup** button  to connect to a router that supports Wi-Fi Protected Setup. Proceed to the "Wi-Fi Protected Setup" section.

Wi-Fi Protected Setup



NOTE: Make sure the router supports Wi-Fi Protected Setup.

Before you begin, make sure the router and the computer with the Adapter are in the same room. Then select the method that is most convenient for you.



Select a Method

Push Button (Recommended) Select this option to use the push button method.

Use Adapter's PIN number Select this option to enter the Adapter's PIN number on the router.


Click **Next** to continue, or click **Back** to return to the previous screen.

Proceed to the instructions for the method you selected.

Use the Push Button



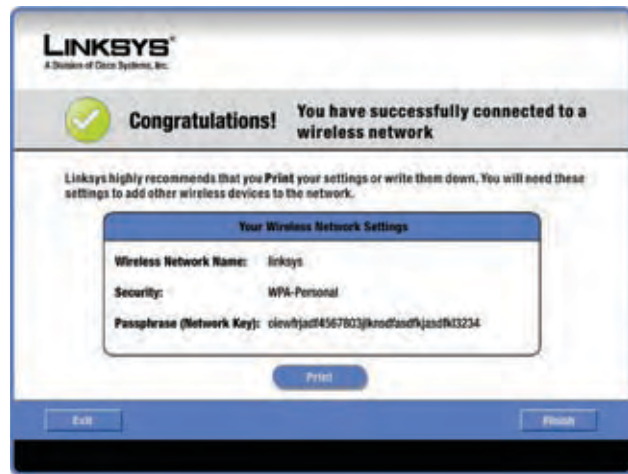
Use the Push Button

1. Press the **Wi-Fi Protected Setup** button on the router.
2. Within two minutes, click the **Wi-Fi Protected Setup** button  on this screen.
3. The Adapter connects to the network.



Connecting to the Network

4. Click **Print** to print out your wireless network settings. Then click **Finish** to return to the *Status* screen, or click **Exit** to exit the Monitor.



Congratulations

Congratulations! The Adapter is connected to the network.

Enter the Adapter's PIN Number



Enter the PIN Number

1. Access the web-based utility of the router. (Refer to the router's documentation for instructions.)
2. On the router's *Wi-Fi Protected Setup* screen, enter the Adapter's PIN number in the *PIN* field. Then click **Register**.

3. On the Adapter's PIN number screen, click **Next**.



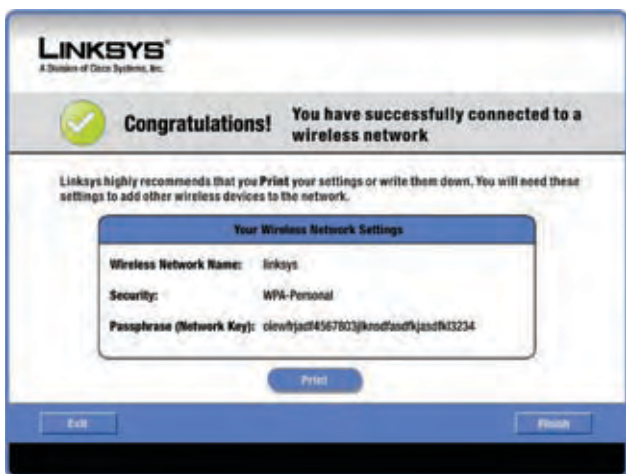
Enter the PIN Number

4. The Adapter connects to the network.



Connecting to the Network

5. Click **Print** to print out your wireless network settings. Then click **Finish** to return to the *Status* screen, or click **Exit** to exit the Monitor.



Congratulations

Congratulations! The Adapter is connected to the network.

Wireless Network Status

The *Wireless Network Status* screen provides information on your current network settings.



Wireless Network Status

- Radio Band** This is the radio band used on the network.
- Wireless Network Name** This is the unique name (SSID) of the wireless network.
- Wireless Mode** This is the mode of the wireless network currently in use.
- Wide Channel** This is the Wireless-N primary channel used with a 40 MHz radio band network.
- Standard Channel** This is the channel used by your wireless network.
- Security** This is the status of the wireless security feature.
- Authentication** This is your wireless network's authentication method.

- Network Type** This is the wireless network type.
- IP Address** This is the IP Address of the Adapter.
- Subnet Mask** This is the Adapter's Subnet Mask.
- Default Gateway** This is the Default Gateway address.
- DNS1** This is the DNS address of the Adapter.
- MAC Address** This is the MAC address of the wireless network's wireless router or access point.
- Signal Strength** The Signal Strength bar indicates the signal strength.
- Link Quality** The Link Quality bar indicates the quality of the wireless network connection.

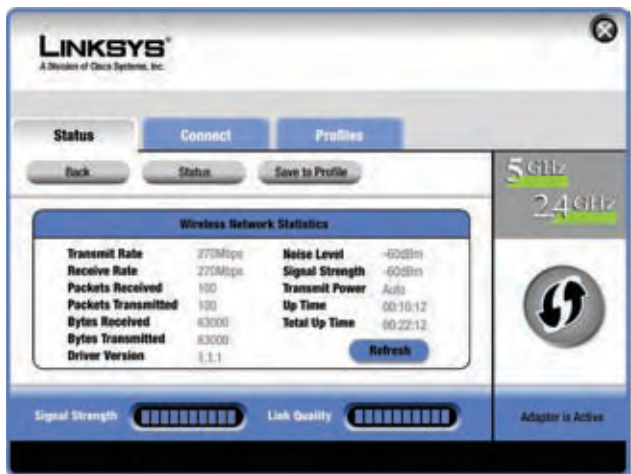
Statistics Click **Statistics** to go to the *Wireless Network Statistics* screen.

Back Click **Back** to return to the initial *Status* screen.

Save to Profile Click **Save to Profile** to save the currently active connection settings to a profile.

Wireless Network Statistics

The *Wireless Networks Statistics* screen provides statistics on your current network settings.



Wireless Network Statistics

Transmit Rate This is the data transmission rate of the current connection. (In Auto mode, the Adapter dynamically shifts to the fastest data transmission rate at any given time.)

Receive Rate This is the rate that the Adapter receives data.

Packets Received This shows the packets that the Adapter receives, in real time, after connecting to the wireless network or after clicking Refresh.

Packets Transmitted This shows the packets that the Adapter transmits, in real time, after connecting to the wireless network or after clicking Refresh.

Bytes Received This shows the bytes that the Adapter receives, in real time, after connecting to the wireless network or after clicking Refresh.

Bytes Transmitted This shows the bytes that the Adapter transmits, in real time, after connecting to the wireless network or after clicking Refresh.

Driver Version This shows the Adapter's driver version.

Noise Level This shows the level of background noise that affects the wireless signal. A lower reading translates into a higher quality signal.

Signal Strength This is the intensity of the wireless signal that the Adapter receives.

Transmit Power This is the power output at which the Adapter transmits.

Up Time This indicates the length of the most recent connection to a wireless network.

Total Up Time This indicates the cumulative total of the Adapter's connection time.

Signal Strength The Signal Strength bar indicates the signal strength.

Link Quality The Link Quality bar indicates the quality of the wireless network connection.

Back Click **Back** to return to the initial *Status* screen.

Status Click **Status** to go to the *Wireless Network Status* screen.

Save to Profile Click **Save to Profile** to save the currently active connection settings to a profile.

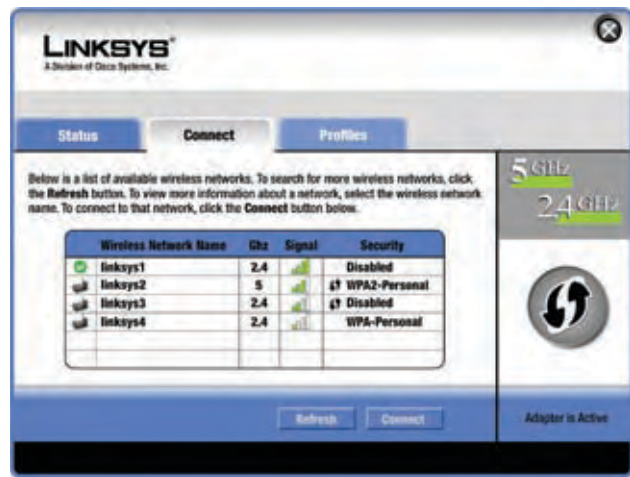
Refresh Click **Refresh** to reset the statistics.

Connect

The *Connect* screen displays a list of available networks in the table. The table shows each network's wireless network name, radio band, signal strength, and security method. You may click the column heading (Wireless Network Name, GHz, Signal strength, or Security method) to sort by that field.



NOTE: The icon  indicates that the router supports Wi-Fi Protected Setup.




Connect

Wireless Network Name This is the SSID or unique name of the wireless network.

GHz This is the radio band used on the network. The number 2.4 indicates Wireless-B, -G, or -N (2.4 GHz). The number 5 indicates Wireless-A or -N (5 GHz).


Signal This is the percentage of signal strength, from 0 to 100%.

Security This is the security method used by the network.

Wi-Fi Protected Setup Click the **Wi-Fi Protected Setup** button  to connect to a router that supports Wi-Fi Protected Setup. Refer to the “Wi-Fi Protected Setup” instructions in the “Status” section at the beginning of this chapter.

Refresh Click **Refresh** to perform a new search for wireless devices.

Connect To connect to one of the networks on the list, select the wireless network, and click **Connect**.

If the router does not support Wi-Fi Protected Setup, proceed to the section, “No Wi-Fi Protected Setup”. If the router supports Wi-Fi Protected Setup , proceed to the section, “Wi-Fi Protected Setup”.

No Wi-Fi Protected Setup

If the router does not use Wi-Fi Protected Setup, proceed to the appropriate section, “Wireless Security Disabled” or “Wireless Security Enabled”.

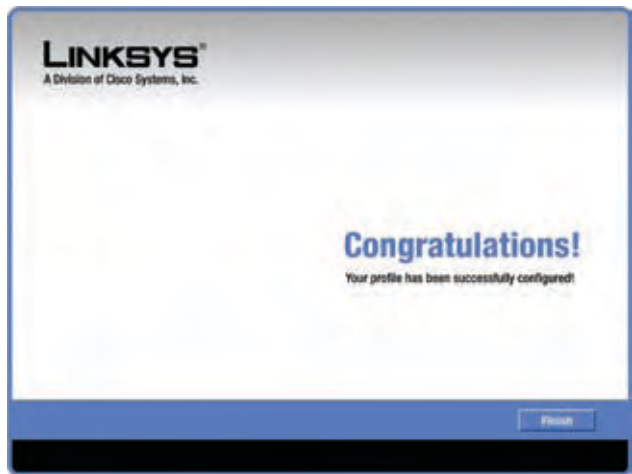
Wireless Security Disabled

If you connect to a network whose wireless security is disabled, then you will view this screen:



Click Connect Anyway

1. Click **Connect Anyway**.
2. Click **Finish**.



Congratulations

Congratulations! The Adapter is connected to the network.

Wireless Security Enabled

If you connect to a network whose wireless security is enabled, then you will view one of three screens.

1. Proceed to the appropriate instructions.

WPA2 (Wi-Fi Protected Access 2)

If the network uses WPA2 Personal security, then the *WPA2-Personal Key Needed for Connection* screen appears.



WPA2-Personal Security

Passphrase Enter the network’s Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WPA (Wi-Fi Protected Access)

If the network uses WPA Personal security, then the *WPA-Personal Key Needed for Connection* screen appears.



WPA-Personal Security

Passphrase Enter the network's Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WEP (Wired Equivalent Privacy)

If the network uses WEP encryption, then the *WEP Key or Passphrase Needed for Connection* screen appears.



WEP Security

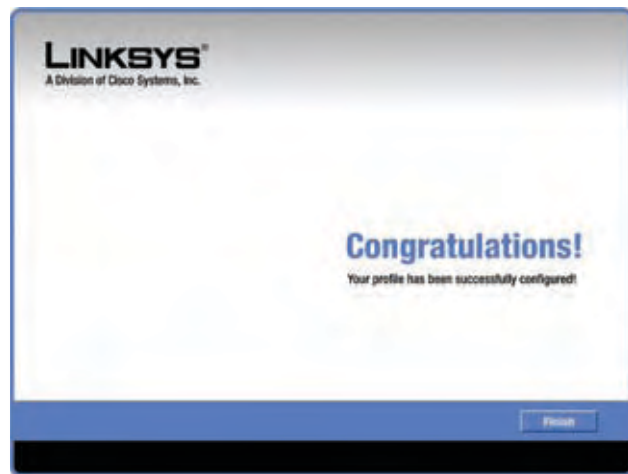
Passphrase Enter the Passphrase or WEP key.

The passphrase is case-sensitive and must be 16 or fewer alphanumeric characters. It must match the passphrase of your other wireless network devices and is compatible with Linksys wireless products only. (For non-Linksys wireless products, enter the WEP key manually.)

If you enter the network's WEP key, enter the appropriate number of hexadecimal characters ("0" to "9" and "A" to "F"). For 64-bit encryption, enter exactly 10 hexadecimal characters. For 128-bit encryption, enter exactly 26 hexadecimal characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

2. Click **Finish**.



Congratulations

Congratulations! The Adapter is connected to the network.

Wi-Fi Protected Setup

If you connect to a router that supports Wi-Fi Protected Setup, then you will view this screen:



Select a Method

Before you begin, make sure the router and the computer with the Adapter are in the same room. Then select the method that is most convenient for you.

Push Button (Recommended) Select this option to use the push button method.

Use Adapter's PIN number Select this option to enter the Adapter's PIN number on the router.

Enter Key Manually Select this option to manually enter the security key.


Click **Next** to continue, or click **Back** to return to the previous screen.

Proceed to the instructions for the method you selected.

Use the Push Button



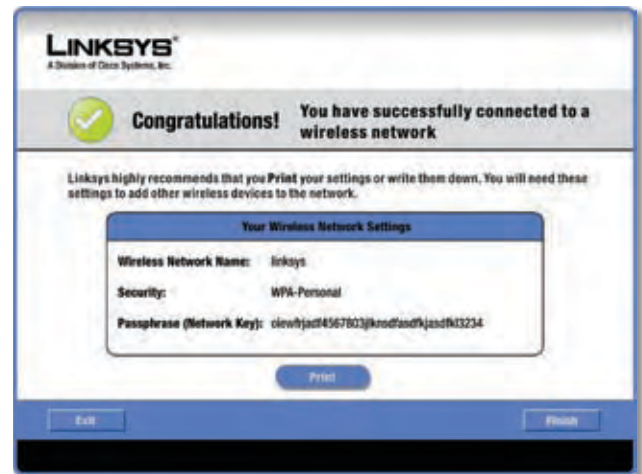
Use the Push Button

1. Press the **Wi-Fi Protected Setup** button on the router.
2. Within two minutes, click the **Wi-Fi Protected Setup** button  on this screen.
3. The Adapter connects to the network.



Connecting to the Network

4. Click **Print** to print out your wireless network settings. Then click **Finish** to return to the *Status* screen, or click **Exit** to exit the Monitor.



Congratulations

Congratulations! The Adapter is connected to the network.

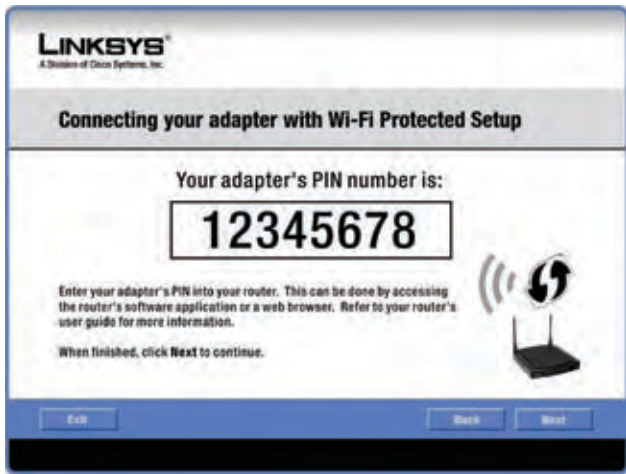
Enter the Adapter's PIN Number



Enter the PIN Number

1. Access the web-based utility of the router. (Refer to the router's documentation for instructions.)
2. On the router's *Wi-Fi Protected Setup* screen, enter the Adapter's PIN number in the *PIN* field. Then click **Register**.

3. On the Adapter's PIN number screen, click **Next**.



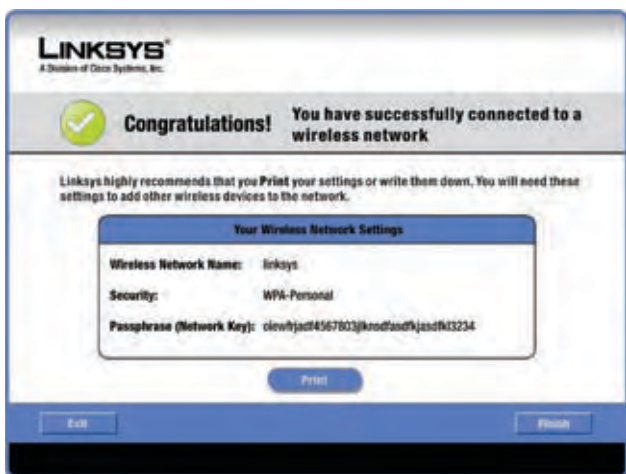
Enter the PIN Number

4. The Adapter connects to the network.



Connecting to the Network

5. Click **Print** to print out your wireless network settings. Then click **Finish** to return to the *Status* screen, or click **Exit** to exit the Monitor.



Congratulations

Congratulations! The Adapter is connected to the network.

Enter Key Manually

Proceed to the appropriate section, "Wireless Security Disabled" or "Wireless Security Enabled".

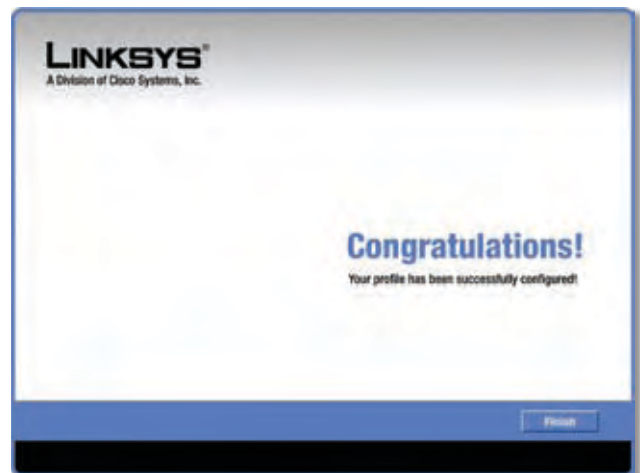
Wireless Security Disabled

If you connect to a network whose wireless security is disabled, then you will view this screen:



Click Connect Anyway

1. Click **Connect Anyway**.
2. Click **Finish**.



Congratulations

Congratulations! The Adapter is connected to the network.

Wireless Security Enabled

If you connect to a network whose wireless security is enabled, then you will view one of three screens.

1. Proceed to the appropriate instructions.

WPA2 (Wi-Fi Protected Access 2)

If the network uses WPA2 Personal security, then the *WPA2-Personal Key Needed for Connection* screen appears.



WPA2-Personal Security

Passphrase Enter the network's Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WPA (Wi-Fi Protected Access)

If the network uses WPA Personal security, then the *WPA-Personal Key Needed for Connection* screen.



WPA-Personal Security

Passphrase Enter the network's Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WEP (Wired Equivalent Privacy)

If the network uses WEP encryption, then the *WEP Key or Passphrase Needed for Connection* screen appears.



WEP Security

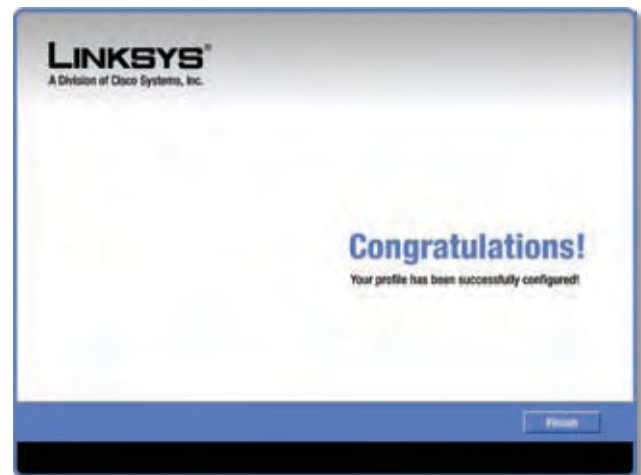
Passphrase Enter the Passphrase or WEP key.

The passphrase is case-sensitive and must be 16 or fewer alphanumeric characters. It must match the passphrase of your other wireless network devices and is compatible with Linksys wireless products only. (For non-Linksys wireless products, enter the WEP key manually.)

If you enter the network's WEP key, enter the appropriate number of hexadecimal characters ("0" to "9" and "A" to "F"). For 64-bit encryption, enter exactly 10 hexadecimal characters. For 128-bit encryption, enter exactly 26 hexadecimal characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

2. Click **Finish**.

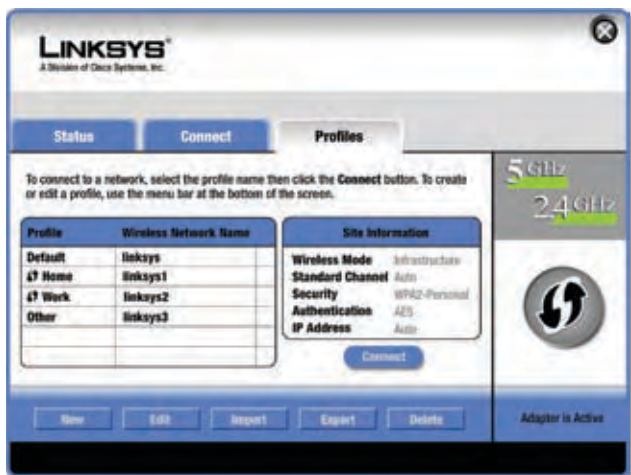


Congratulations

Congratulations! The Adapter is connected to the network.

Profiles

The *Profiles* screen lets you save different configuration profiles for different network setups. The table on the left displays a list of available profiles with their profile names and wireless network names.



Profiles

Profile This is the name of the profile.

Wireless Network Name This is the SSID or unique name of the wireless network.

Profile Information

For each profile selected, the following are listed:

Wireless Mode This is the mode of the wireless network currently in use.


Standard Channel This is the channel used by your wireless network.

Security This is the status of the wireless security.

Authentication This is the authentication setting for the network.

IP Address This is the method used by the network to assign IP addresses.

Connect To connect to a wireless network using a specific profile, select the profile, and click **Connect**.

Wi-Fi Protected Setup Click the **Wi-Fi Protected Setup** button  to connect to a router that supports Wi-Fi Protected Setup. Refer to the "Wi-Fi Protected Setup" instructions in the "Status" section at the beginning of this chapter.

New Click **New** to create a new profile. See the next section, "Create a New Profile," for instructions.

Edit Select the profile you want to change and click **Edit**.

Import Click **Import** to import a profile that is saved in another location. Select the appropriate file, and click **Open**.

RangePlus Wireless PCI Adapter

Export Select the profile you want to save in a different location, and click **Export**. Direct Windows to the appropriate folder, and click **Save**.

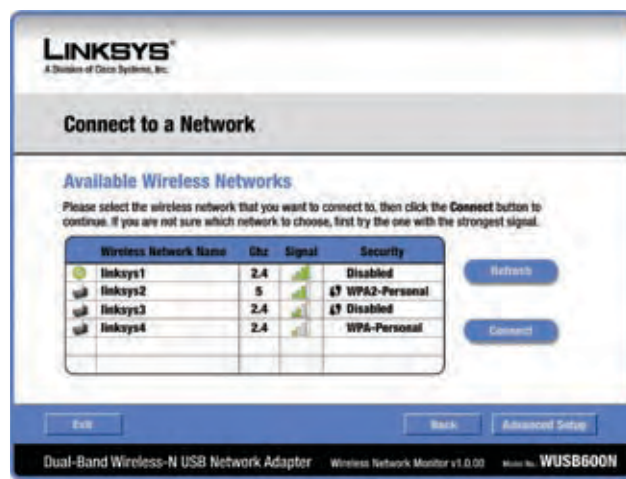
Delete Select the profile you want to delete and click **Delete**.



NOTE: If you want to export more than one profile, you must export them one at a time.

Create a New Profile

The next screen is the *Available Wireless Networks* screen.



Available Wireless Networks

This screen provides two options for setting up the Adapter.


Available Wireless Networks (For most users) Use this option if you already have a network set up. The networks available to this Adapter are listed on this screen. You can choose one of these networks and click **Connect** to connect to it. Click **Refresh** to update the Available Wireless Networks list.

Advanced Setup If your network is not listed on this screen, select **Advanced Setup** to set up the Adapter manually. This method is for advanced users only.

The setup for each option is described, step by step, under the appropriate heading on the following pages.

Available Wireless Networks

The available networks are listed in the table on the center of the screen by Wireless Network Name. Select the wireless network you wish to connect to and click **Connect**. (If you do not see your network listed, click **Refresh** to bring the list up again.)

If the router does not support Wi-Fi Protected Setup, proceed to the section, "No Wi-Fi Protected Setup". If the router supports Wi-Fi Protected Setup , proceed to the section, "Wi-Fi Protected Setup".

No Wi-Fi Protected Setup

If the router does not use Wi-Fi Protected Setup, proceed to the appropriate section, “Wireless Security Disabled” or “Wireless Security Enabled”.

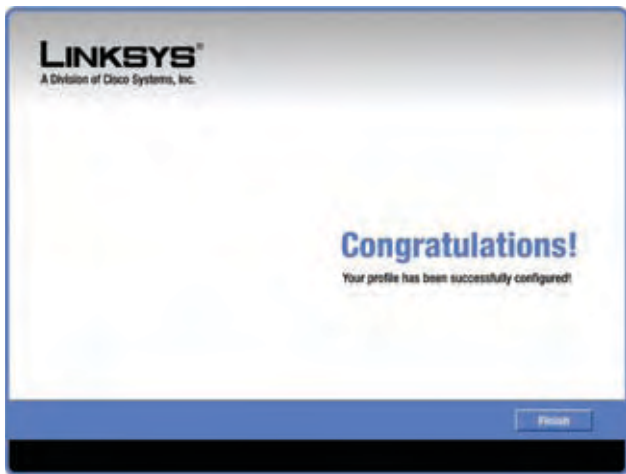
Wireless Security Disabled

If you connect to a network whose wireless security is disabled, then you will view this screen:



Click Connect Anyway

1. Click **Connect Anyway**.
2. Click **Finish**.



Congratulations

Congratulations! The Adapter is connected to the network.

Wireless Security Enabled

If you connect to a network whose wireless security is enabled, then you will view one of three screens.

1. Proceed to the appropriate instructions.

WPA2 (Wi-Fi Protected Access 2)

If the network uses WPA2 Personal security, then the *WPA2-Personal Key Needed for Connection* screen appears.



WPA2-Personal Security

Passphrase Enter the network’s Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WPA (Wi-Fi Protected Access)

If the network uses WPA Personal security, then the *WPA-Personal Key Needed for Connection* screen appears.



WPA-Personal Security

Passphrase Enter the network’s Passphrase (also called a pre-shared key) of 8-63 characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

WEP (Wired Equivalent Privacy)

If the network uses WEP encryption, then the *WEP Key or Passphrase Needed for Connection* screen appears.



WEP Security

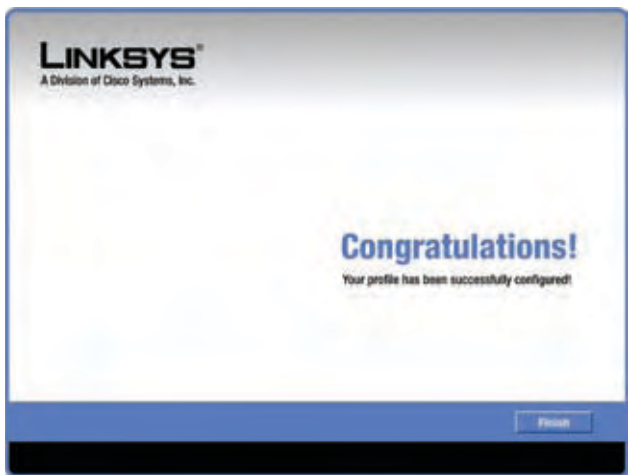
Passphrase Enter the Passphrase or WEP key.

The passphrase is case-sensitive and must be 16 or fewer alphanumeric characters. It must match the passphrase of your other wireless network devices and is compatible with Linksys wireless products only. (For non-Linksys wireless products, enter the WEP key manually.)

If you enter the network's WEP key, enter the appropriate number of hexadecimal characters ("0" to "9" and "A" to "F"). For 64-bit encryption, enter exactly 10 hexadecimal characters. For 128-bit encryption, enter exactly 26 hexadecimal characters.

To connect to the network, click **Connect**. To cancel the connection, click **Cancel**.

2. Click **Finish**.

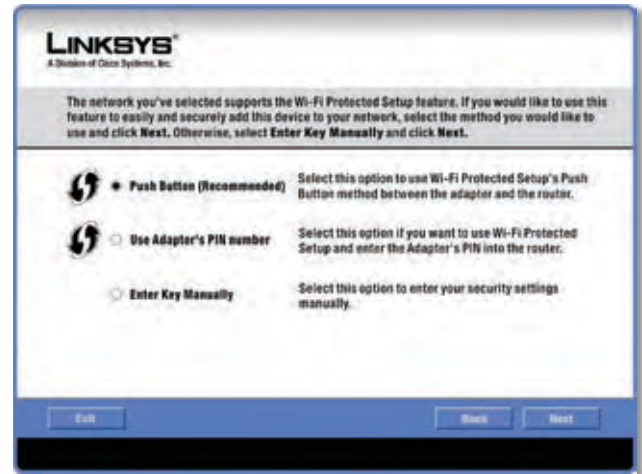


Congratulations

Congratulations! The Adapter is connected to the network.

Wi-Fi Protected Setup

If you connect to a router that supports Wi-Fi Protected Setup, then you will view this screen:



Select a Method

Before you begin, make sure the router and the computer with the Adapter are in the same room. Then select the method that is most convenient for you.

Push Button (Recommended) Select this option to use the push button method.

Use Adapter's PIN number Select this option to enter the Adapter's PIN number on the router.

Enter Key Manually Select this option to manually enter the security key.


Click **Next** to continue, or click **Back** to return to the previous screen.

Proceed to the instructions for the method you selected.

Use the Push Button



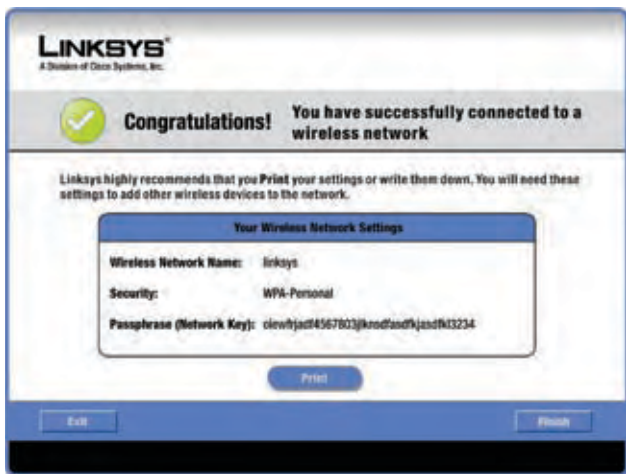
Use the Push Button

1. Press the **Wi-Fi Protected Setup** button on the router.
2. Within two minutes, click the **Wi-Fi Protected Setup** button  on this screen.
3. The Adapter connects to the network.



Connecting to the Network

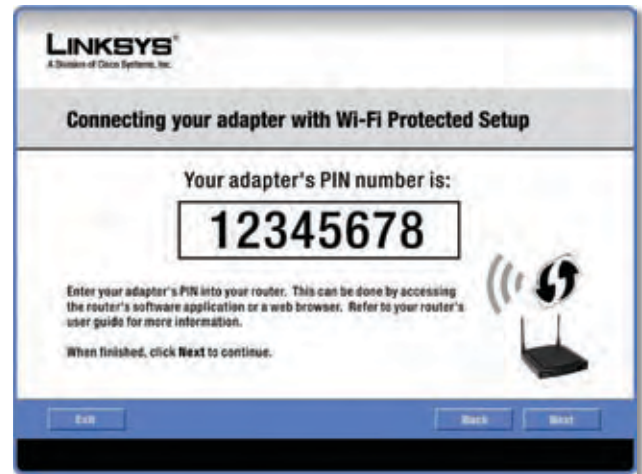
4. Click **Print** to print out your wireless network settings. Then click **Finish** to return to the *Status* screen, or click **Exit** to exit the Monitor.



Congratulations

Congratulations! The Adapter is connected to the network.

Enter the Adapter's PIN Number



Enter the PIN Number

1. Access the web-based utility of the router. (Refer to the router's documentation for instructions.)
2. On the router's *Wi-Fi Protected Setup* screen, enter the Adapter's PIN number in the *PIN* field. Then click **Register**.
3. On the Adapter's PIN number screen, click **Next**.



Enter the PIN Number