

# Packet Tracer - Configuring a Linksys Router

## Topology



### Objectives

**Part 1: Connect to Linksys router**

**Part 2: Enable Wireless Connectivity**

**Part 3: Configure and Verify Wireless Client Access**

**Part 4: Configure Wireless MAC Filter**

**Part 5: Access Restriction Policies**

### Background

In this activity, you will configure a Linksys wireless router, allowing remote access to wireless clients as well as connectivity with WPA security.

### Part 1: Connect to Linksys Router

#### Step 1: Establish and verify connectivity to the Linksys router.

- Connect the appropriate cable from **Host-A** to the Ethernet 1 port on **Linksys**.
- Wait for the link light to turn green. Then open the command prompt for **Host-A**. Use the **ipconfig** command to verify **Host-received** IP addressing information.
- Enter the command **ping 192.168.0.1** to verify **Host-A** can access the default gateway.

#### Step 2: Access the Linksys graphical user interface (GUI) using a web browser.

- To configure the **Linksys** router using the GUI, you will need to access it using the **Host-A** web browser. Open the web browser and access **Linksys** by entering the default gateway address in the URL field.
- Enter **admin** as the default username and password to access the **Linksys** router.

**Note:** You will not see your score change when configuring the **Linksys** router until you click **Save Settings**.

## Part 2: Enable Wireless Connectivity

### Step 1: Configure the Linksys router for Internet connectivity.

There is no Internet connectivity in this scenario, but you will still configure the settings for the Internet-facing interface. For **Internet Connection Type**, choose **Static IP** from the drop down list. Then enter the following static IP information:

- Internet IP Address - **198.133.219.1**
- Subnet Mask - **255.255.255.0**
- Default Gateway - **198.133.219.254**
- DNS 1 - **198.133.219.10**

### Step 2: Configure the inside network parameters.

Scroll down to the **Network Setup** section and configure the following information:

- IP Address - **172.31.1.1**
- Subnet Mask - **255.255.255.224**
- Starting IP Address - Enter **5** for the last octet.
- Maximum number of Users – **25**

**Note:** The IP address range of the DHCP pool will only reflect the changes once you click '**Save Settings**'

### Step 3: Save the settings and reconnect to the Linksys router.

- a. Scroll to the bottom of the page and click **Save Settings**. If you move from one tab to another without saving, your configurations will be lost.
- b. You lose your connection when you click **Save Settings**. This occurred because you changed the IP address of the router.
- c. Return to the command prompt of **Host-A**. Enter the command **ipconfig /renew** to renew the IP address.
- d. Use the **Host-A** web browser to reconnect to the **Linksys**. You will need to use the new default gateway address. Verify the **Internet Connection** settings in the **Status** tab. The settings should match the values you configured in Part 2, Step 1. If not, repeat Part 2, Step 1 and Step 2.

### Step 4: Configure wireless connectivity for wireless devices.

- a. Click the **Wireless** tab and investigate the options in the dropdown list for **Network Mode**.  
When would you choose to the **Disable** option?  
When would you choose the **Mixed** option?  
Set the network mode for **Wireless-N Only**.
- b. Change the SSID to **MyHomeNetwork**.  
What are two characteristics of the SSID?  
When a wireless client surveys the area searching for wireless networks, it detects any SSID broadcasts. SSID broadcasts are enabled by default.  
If the SSID of an access point is not being broadcast, how will devices connect to it?  
For best performance in a network using Wireless-N, set the radio band to **Wide-40MHz**.
- c. Click **Save Settings** and then click **Continue**.

### Step 5: Configure wireless security so that clients must authenticate to connect to the wireless network.

- a. Click the **Wireless Security** option under the **Wireless** tab.
- b. Set the **Security Mode** to **WPA2 Personal**.

What is the difference between personal and enterprise? Enterprise uses a Radius server to authenticate users, whereas personal mode uses the Linksys router to authenticate users.

- c. Leave the encryption mode to AES and set the passphrase to **itsasecret**.
- d. Click **Save Settings** and then click **Continue**.

### Step 6: Change the default password to access the Linksys for configuration.

- a. You should always change the default password. Click the **Administration** tab and change the **Router Access** password to **letmein**.
- b. Click **Save Settings**. Enter the username **admin** and the new password.

## Part 3: Configure and Verify Wireless Client Access

### Step 1: Configure Laptop to access the wireless network.

- a. Click **Laptop** and click **Desktop > PC Wireless**. The window that opens in the client Linksys GUI.
- b. Click the **Connect** tab and click **Refresh**, if necessary. You should see **MyHomeNetwork** listed under Wireless Network Name.
- c. Click **MyHomeNetwork** and click **Connect**.
- d. You should now see **MyHomeNetwork**. Click it and then **Connect**.
- e. The **Pre-shared Key** is the password you configured in Part 2, Step 5c. Enter the password and click **Connect**.
- f. Close the Linksys GUI and click **Command Prompt**. Enter the command **ipconfig** to verify **Laptop** received IP addressing.

### Step 2: Verify connectivity between Laptop and Host-A.

- a. Ping the **Linksys** router from the **Laptop**.
- b. Ping **Host-A** from the **Laptop**.

## Part 4: Configure a Wireless MAC Filter to only permit listed devices connect to the Access Point

### Part 5:

When you have finished save your file and open up Linksys\_Access\_Restrictions Packettracer file which has preconfigured Access Restrictions. Test the policies as detailed in this file.

How might such functionality be useful in a home network?