

# Packet Tracer - Configuring an Integrated Router (Instructor Version)

**Instructor Note:** Red font color or gray highlights indicate text that appears in the instructor copy only.

## Topology



## Objectives

**Part 1: Connect to an Integrated Router**

**Part 2: Enable Wireless Connectivity**

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

## Background

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

## Part 1: Connect to an Integrated Router

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

- Connect the appropriate cable from Host-A to the Ethernet 1 port on IR.
- Wait for the link light to turn green. 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 IR graphical user interface (GUI) using a web browser.

- Open the web browser on Host-A to access the GUI on IR for configuration. Enter the default gateway address of Host-A in the URL field.
- Enter **admin** as the default username and password to access IR.

## Part 2: Enable Wireless Connectivity

### Step 1: Configure IR 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 after you click **Save Settings**.

### Step 3: Save the settings and reconnect to IR.

- 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 lost your connection when you click **Save Settings** 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 IR. 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 you do not have wireless devices.**  
When would you choose the **Mixed** option? **When you have wireless devices that consist of B, G or N.**
- b. Set the network mode for **Wireless-N Only**.
- c. Change the SSID to **MyHomeNetwork**.
- d. 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? **The client must be configured with the name and correct spelling in order to make a connection.**
- e. For best performance in a network using Wireless-N, set the radio band to **Wide-40MHz**.
- f. 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 wireless 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 IR 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 IR 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 IR 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 IR from the Laptop.
- b. Ping Host-A from the Laptop.

**Suggested Scoring Rubric**

Activity Section	Question Location	Possible Points	Earned Points
Part 2: Enable Wireless Connectivity	Step 4	4	
	Step 5	1	
<b>Part 2 Total</b>		<b>5</b>	
<b>Packet Tracer Score</b>		<b>95</b>	
<b>Total Score</b>		<b>100</b>	