Packet Tracer - Configure a Wireless Router and Clients

Background / Scenario

Your friend, Natsumi, heard that you are studying networking. She asked you to come over and help her connect her new home to the cable TV network. You need to connect the correct cables to the correct devices, connect devices to a home wireless router, and configure the router to provide IP addresses to network clients. Natsumi also wants you to setup a wireless LAN for her home network, so you will configure that as well.

Part 1: Connect the Devices

Step 1: Connect the coaxial cables.

a. In Network Components, click **Connections** (the lightning bolt).

b. Locate and click the icon for the **Coaxial** cable. It is the blue zigzag icon.

c. Click the **Cable Splitter** and select the **Coaxial1** port.

d. Click the **Cable Modem** and select **Port 0**.

e. Repeat the previous steps to connect **Coaxial2** on the **Cable Splitter** to **Port 0** on the **TV**.

f. Click the **TV**, and then click **ON** for **Status**. If your connections are correct, you should see an image appear that represents a TV program.

Step 2: Connect the network cables.

a. Click **Connections**, and then **Copper Straight-Through** cable. It looks like a solid black line.

b. Connect **Port 1** on the **Cable Modem** to the **Internet** port of the **Home Wireless Router**.

c. Click the **Office PC** and connect the cable to the **FastEthernet0** port. Locate the **Home Wireless Router** and click it. Connect the other end of the cable to the **GigabitEthernet 1** port to complete the connection.

d. Repeat the previous steps to connect the **Bedroom PC** to the **GigabitEthernet 2** port on the **Home Wireless Router**.

Part 2: Configure the Wireless Router

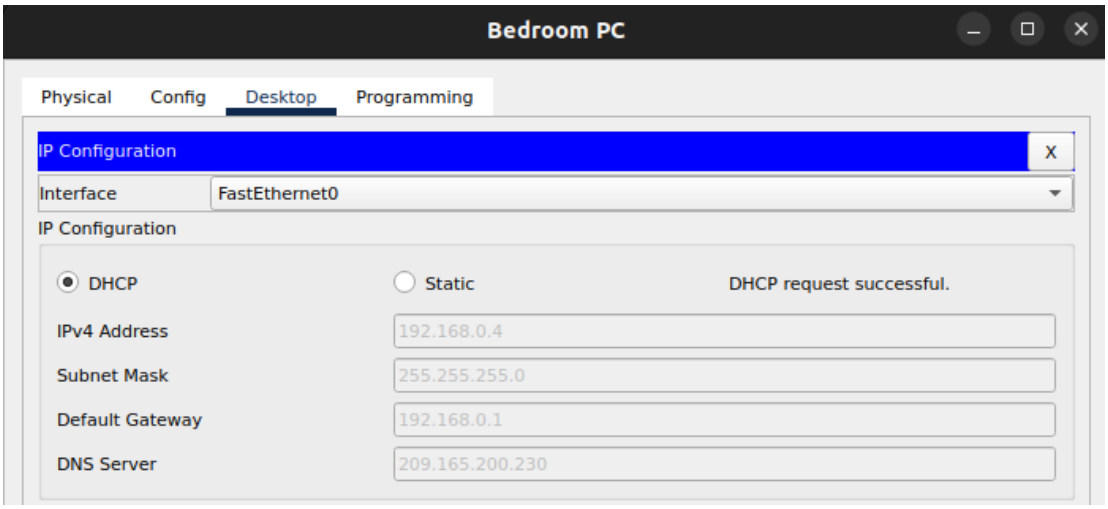
Step 1: Access the home wireless router GUI.

a. Click **Office PC** > **Desktop** tab, and then **IP Configuration**.

b. Click **DHCP**. DHCP will automatically configure the **Office PC** to be on the same IP network as the **Home Wireless Router**.

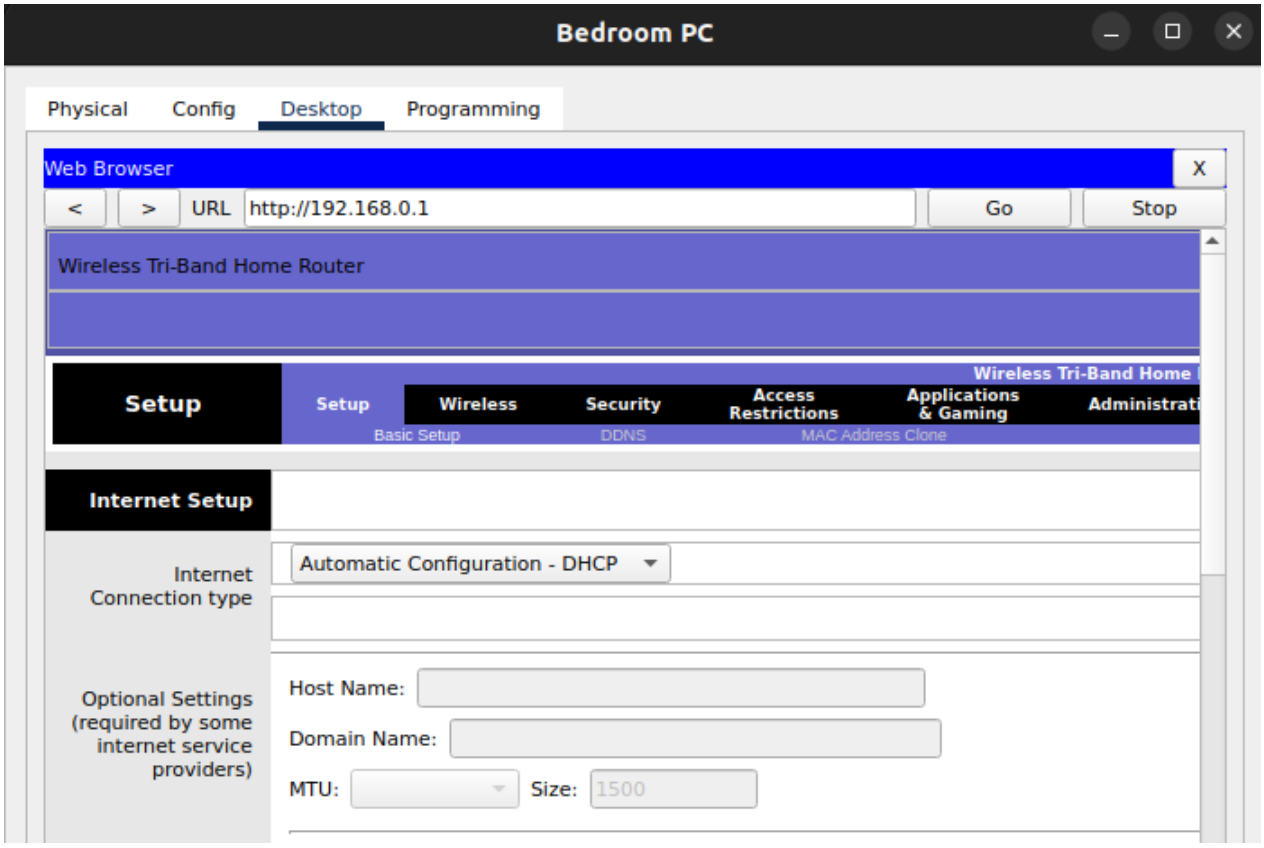
c. After a brief delay, the values for the **IP Configuration** should automatically update. The IPv4 address should start with the number 192. If it does not, click **Fast Forward Time**, which is just below the network topology in the lower left-hand corner. This will speed up the simulation of DHCP.

d. Make note of the address for the default gateway. The default gateway is the device that provides devices on the home network with access to outside networks, such as the internet. In this case, the default gateway address is the address of the **Home Wireless Router**.



e. Keeping the **Office PC** window open, close the **IP Configuration** window, and then click **Web Browser**. Enter the IP address of the **Home Wireless Router** (the default gateway address) into the **URL** box and click **Go**.

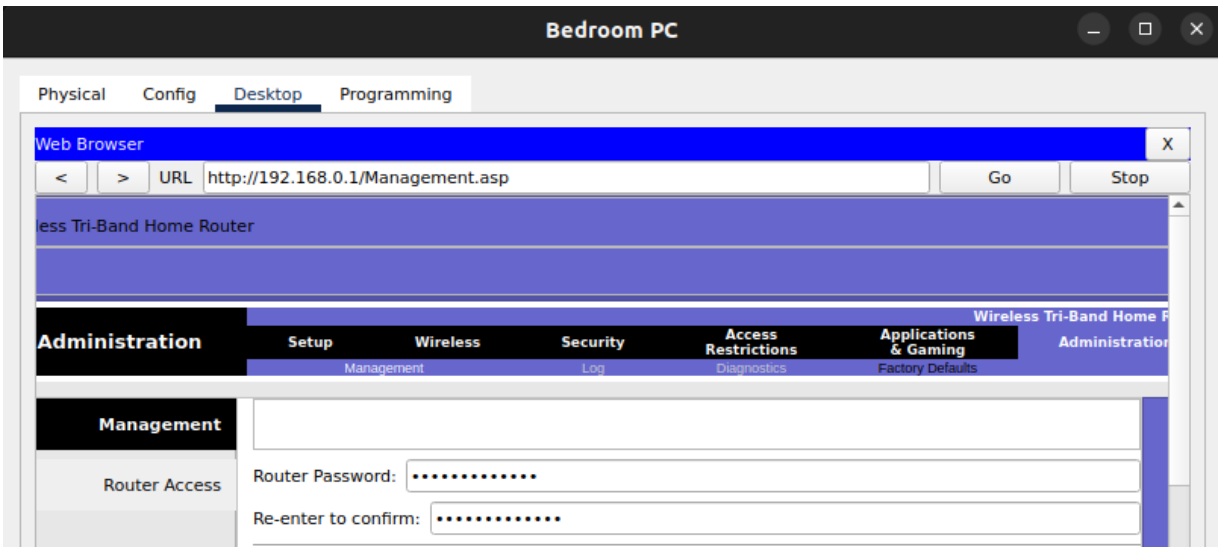
f. Newly installed home routers are configured with default credentials. Enter **admin** for both the **User Name** and **Password**. You should now see the GUI for the **Home Wireless Router** appear and are ready to configure Natsumi's network. Adjust the window size, as necessary, to see more of the interface.



Step 2: Configure basic settings.

a. You are currently viewing configuration options under the **Setup** tab. Locate the **Network Setup** area. This is where you can configure the router's DHCP server settings. Locate the **Maximum Number of Users** field, enter **10**. Scroll down to the bottom of the page and click **Save Settings**. You must save settings on every page of the GUI that you make changes.

b. Click the **Administration** tab. Here, you can change the default **admin** password. Enter and confirm **MyPassword1!** as the new password. Scroll to the bottom of the page and click **Save Settings**.



Step 3: Configure a wireless LAN.

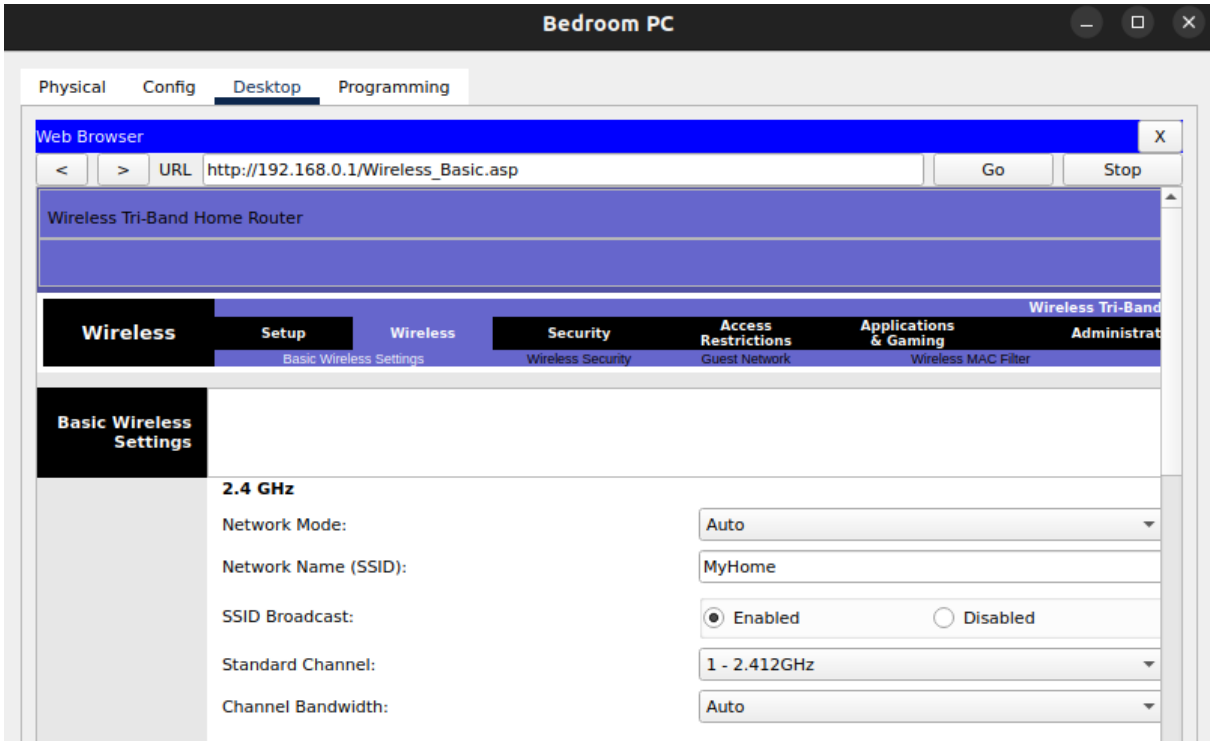
a. Scroll back to the top of the window, and then click the **Wireless** tab.

b. For the **2.4 GHz** network, click **Enable** to activate the network radio.

c. Change the **Network Name (SSID)** from **Default** to **MyHome**. When people look for Wi-Fi networks to connect to, they will see this network name. The network name can be hidden, but this can make it a little harder for guests to connect to the network. Scroll to the bottom of the page and click **Save Settings**.

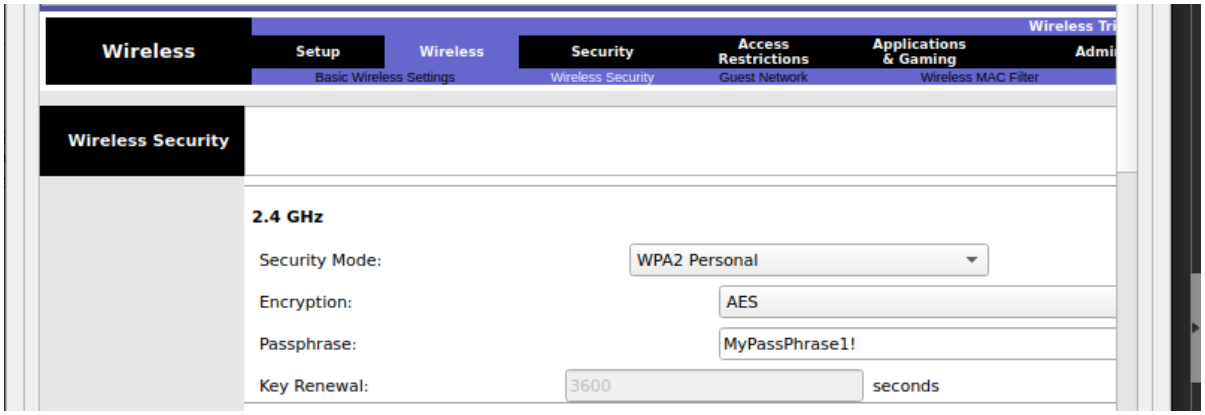
d. Now you will configure security on the **MyHome** network. This will prevent unauthorized people from connecting to the wireless network. Scroll back to the top of the window, and then click the **Wireless Security** under the **Wireless** tab.

e. Notice that security is currently disabled on all three wireless networks. You are only using the **2.4 GHz** network. Click the dropdown menu for the **2.4 GHz** network and select **WPA2 Personal**. This is the strongest security that this router offers for wireless networks.



f. More settings are revealed. WPA2 Personal requires a passphrase that must be entered by anyone who wants to connect to the wireless network. Enter **MyPassPhrase1!** as the **Passphrase**. Note that capitalization is important.

g. Scroll to the bottom of the page and click **Save Settings**, and then close the **Web Browser** for the Office PC.



Part 3: Configure IP Addressing and Test Connectivity

Step 1: Connect the laptop to the wireless network.

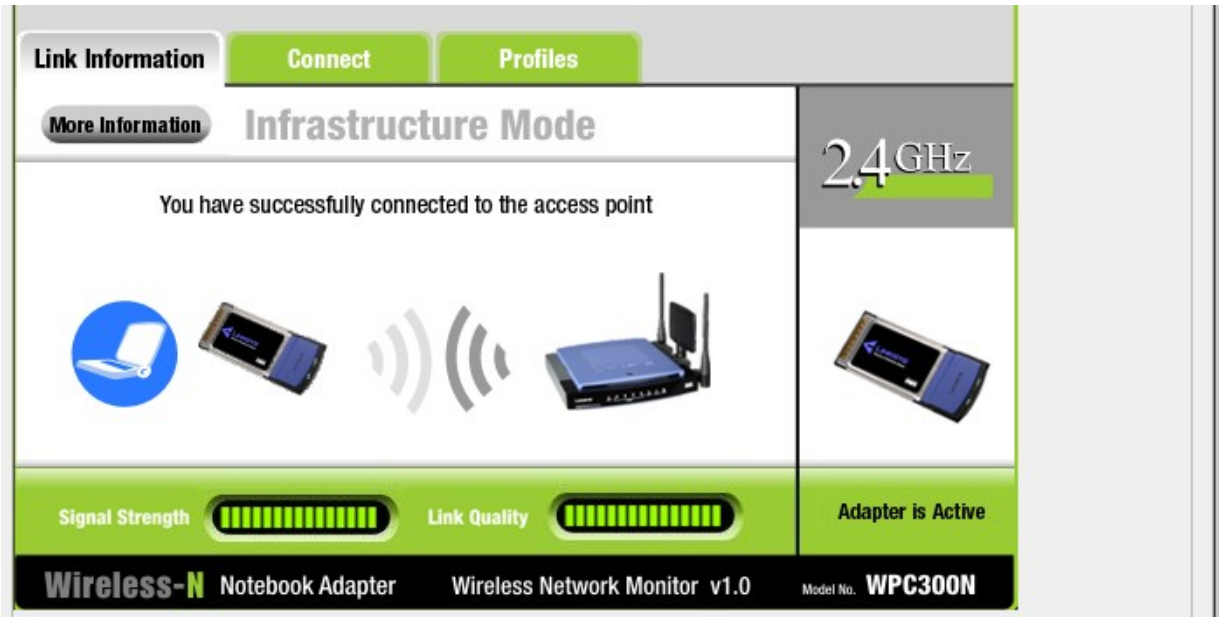
a. Click the **Laptop** in the living room, and then the **Desktop** tab > **PC Wireless**.

b. Click the **Connect** tab. After a short delay you should the wireless network that you configured previously appear in the list of wireless network names.

c. Click the name of the network that you created, and then click the **Connect** button.

d. Enter the passphrase that you configured early for the wireless network in the **Pre-shared Key** field, and then click **Connect**.

e. Click the **Link Information** tab. You should see the message: **You have successfully connected to the access point**.



f. Configure the IPaddress to DHCP. Click the **More Information** button to see details about the connection. If the IP address does not begin with **192**, click the **Fast Forward Time** several times to speed up the simulation.

g. Close the **PC Wireless** app and open the **Web Browser**. Verify that the **Laptop** can now connect to **skillsforall.srv**, clicking **Fast Forward Time** until the page loads. This verifies that the **Laptop** has internet connectivity.