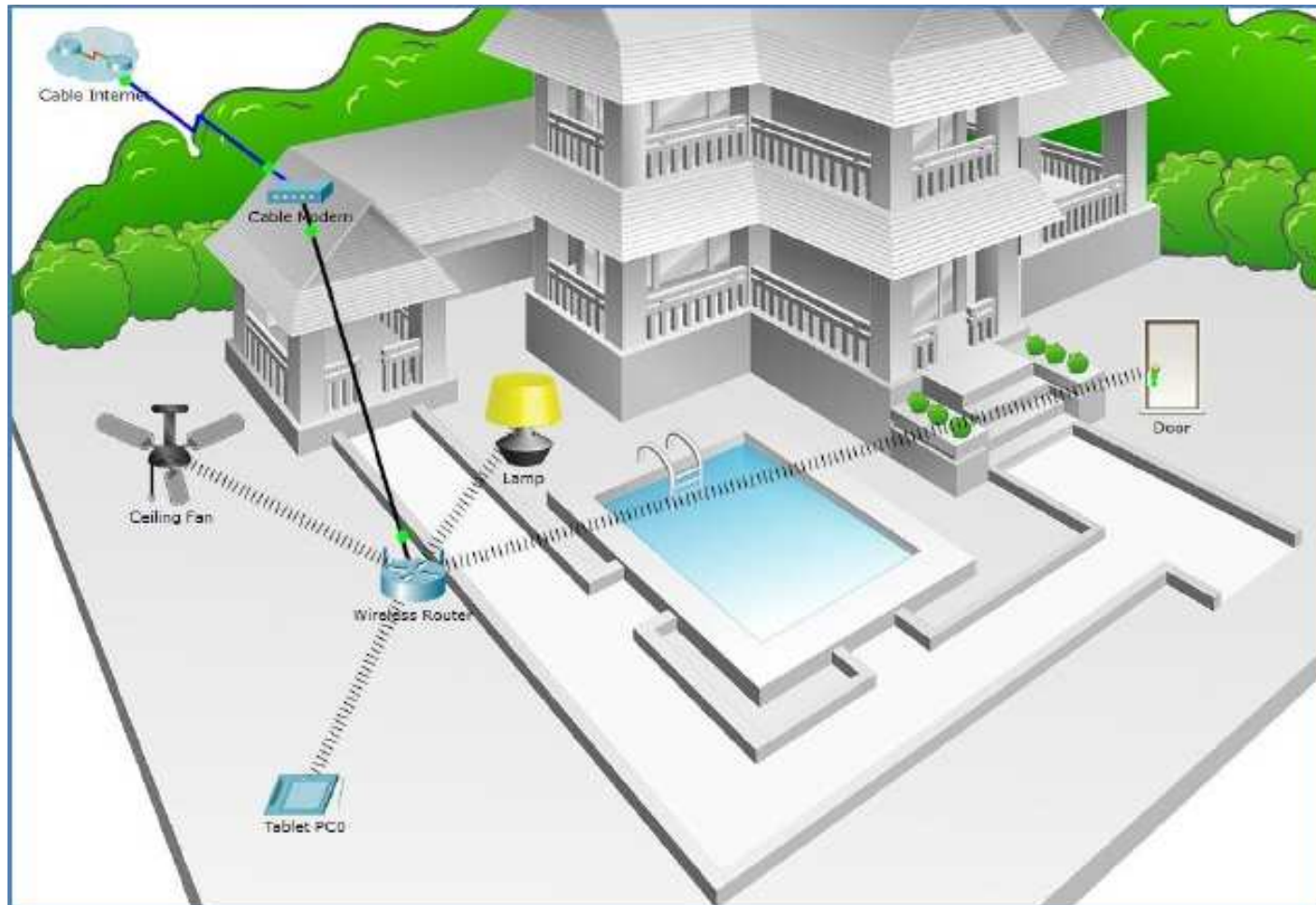


# Packet Tracer – Connect IoT Devices to a Registration Server

## The Smart Home Network



### Objectives

Part 1: Add a Registration Server to the Network

Part 2: Register IoT Devices to the Registration Server

### Background / Scenario

In this activity you will add a Registration Server and several IoT devices to an existing home network and monitor those devices through the Registration Server.

### Part 1: Add a Registration Server to the Network

Step 1: Open the Registration\_Server.pkt file and save the file to your computer

Step 2: Add a registration server on the network

- a. Place the Generic server onto the workspace and connect it to the home gateway.  
Find the Generic server in the End Devices Selection box and drag it to the workspace.

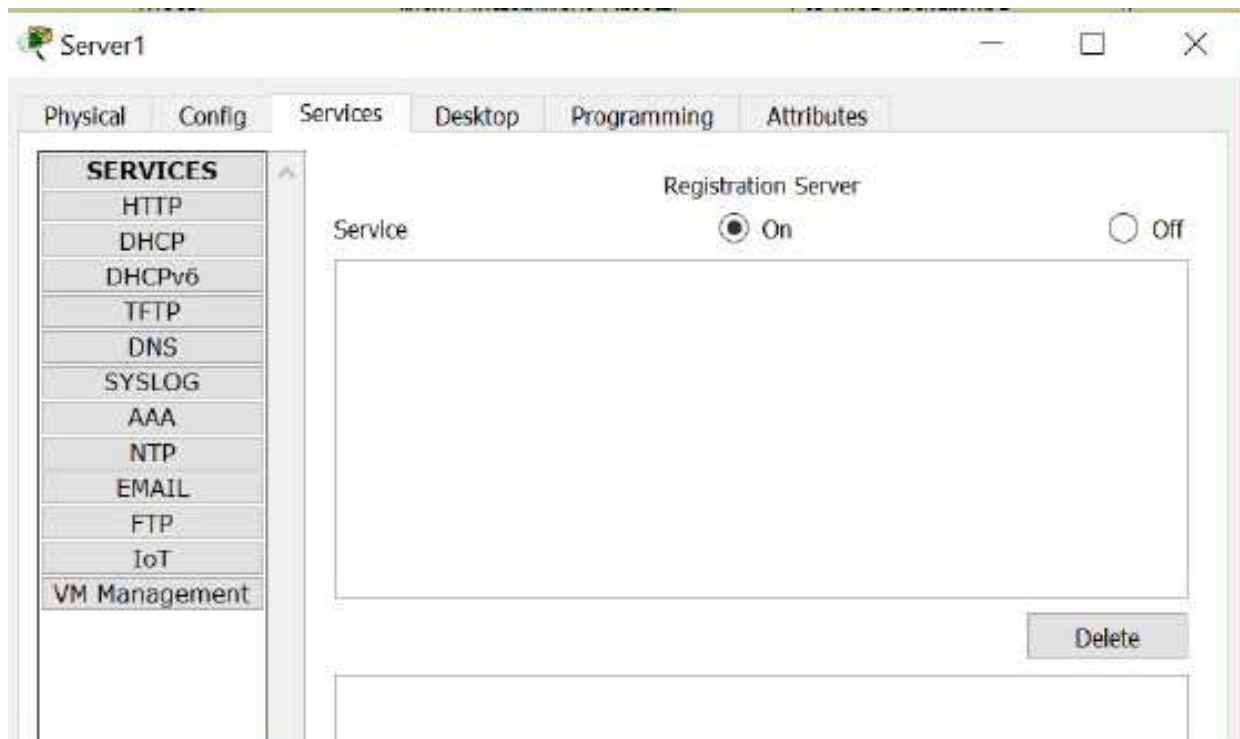


- b. Connect the server to the Wireless Router.

Using a Copper Straight-Through cable, connect the server to the Wireless Router.

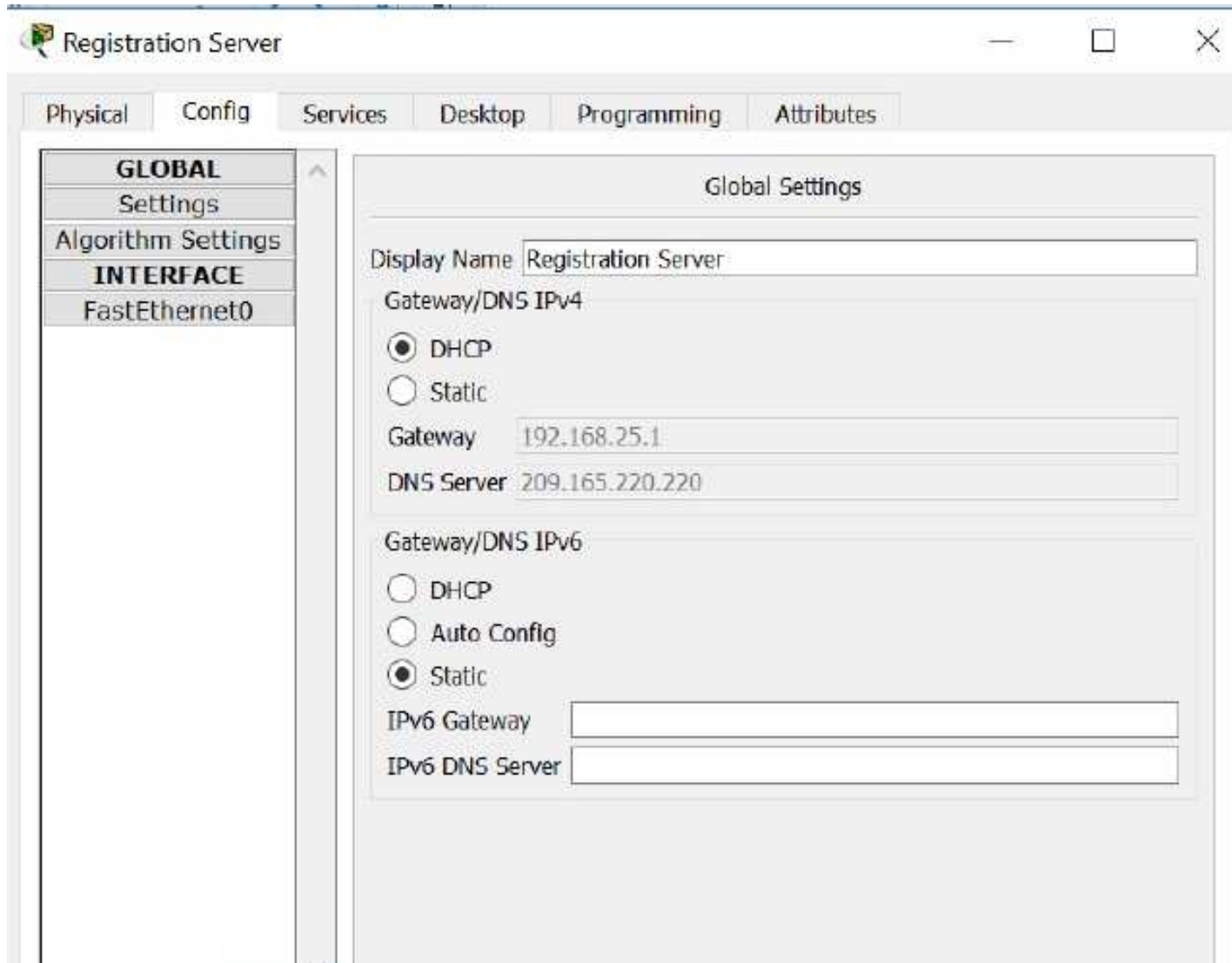
- c. Enable the registration server service.

Click the Registration Server in the workspace to open the Registration Server configuration window. Click the Services tab and then click the IoT service in the left pane. Click the “On” button to enable the service.

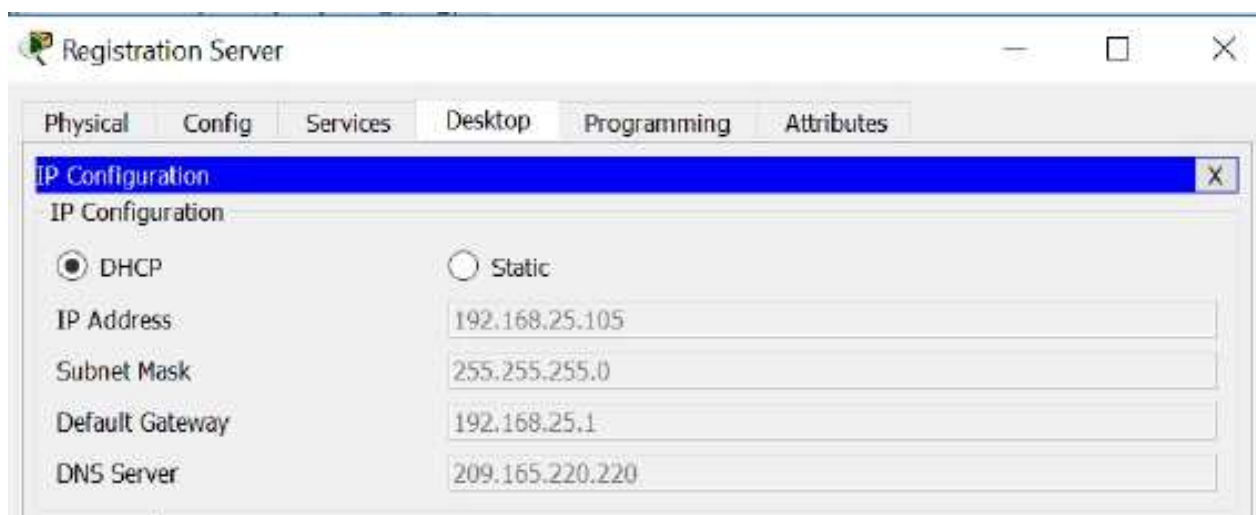


- d. Configure the registration server.

Click the Config tab. In the Global Settings window change the Display Name to Registration Server and change the DHCP/DNS IPv4 setting from the default Static to DHCP.



Verify that the server has received an IPv4 address from the Home Gateway by clicking the Desktop tab and then the IP Configuration icon.



Note that, in this example, the IPv4 address assigned to the server is 192.168.25.105. Yours may be different.

Close the Registrati on Server window.

## Part 2: Register Devices to the Registration Server

### Step 1: Create registration server account

- a. Click the Tablet icon to open the Tablet configuration window. Click the Web Browser icon in the Desktop tab. Enter the IPv4 address of the Registration Server in the URL box and then click Go.

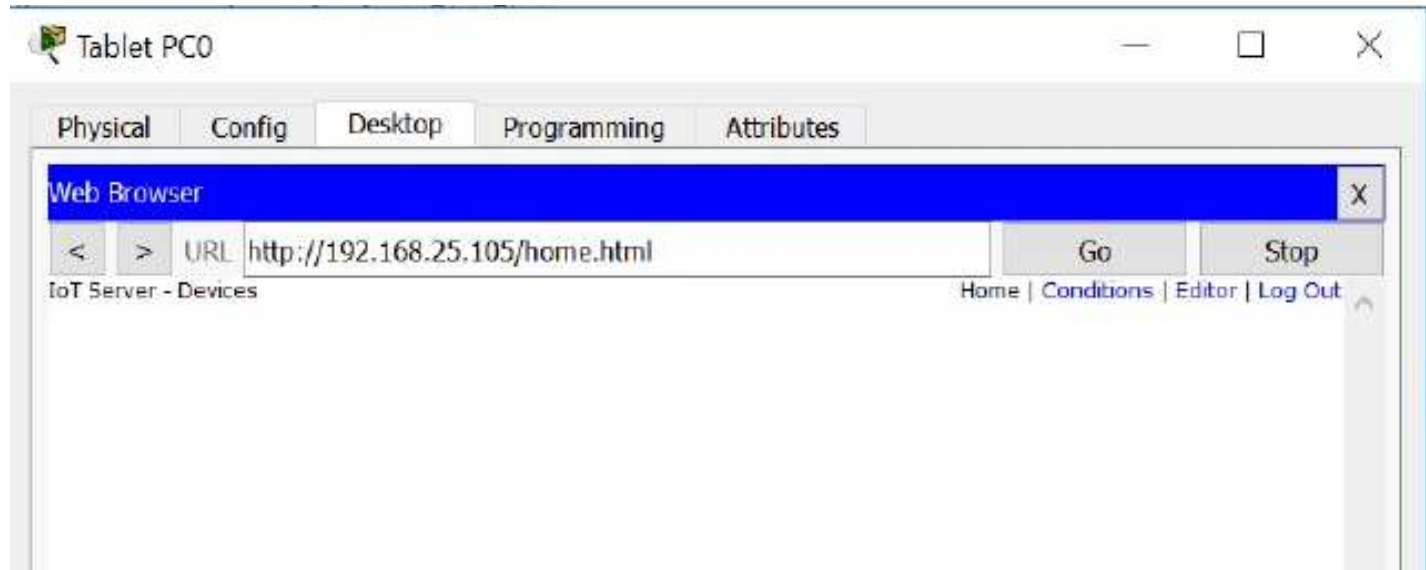
Because there is no IoT account created yet, one will need to be created. Click the Sign up now option.



Select a username and password and then click Create to create the IoT account.



Notice in the IoT Server – Devices window there are no IoT devices listed. This is because all the devices are still registered with the Home Gateway.

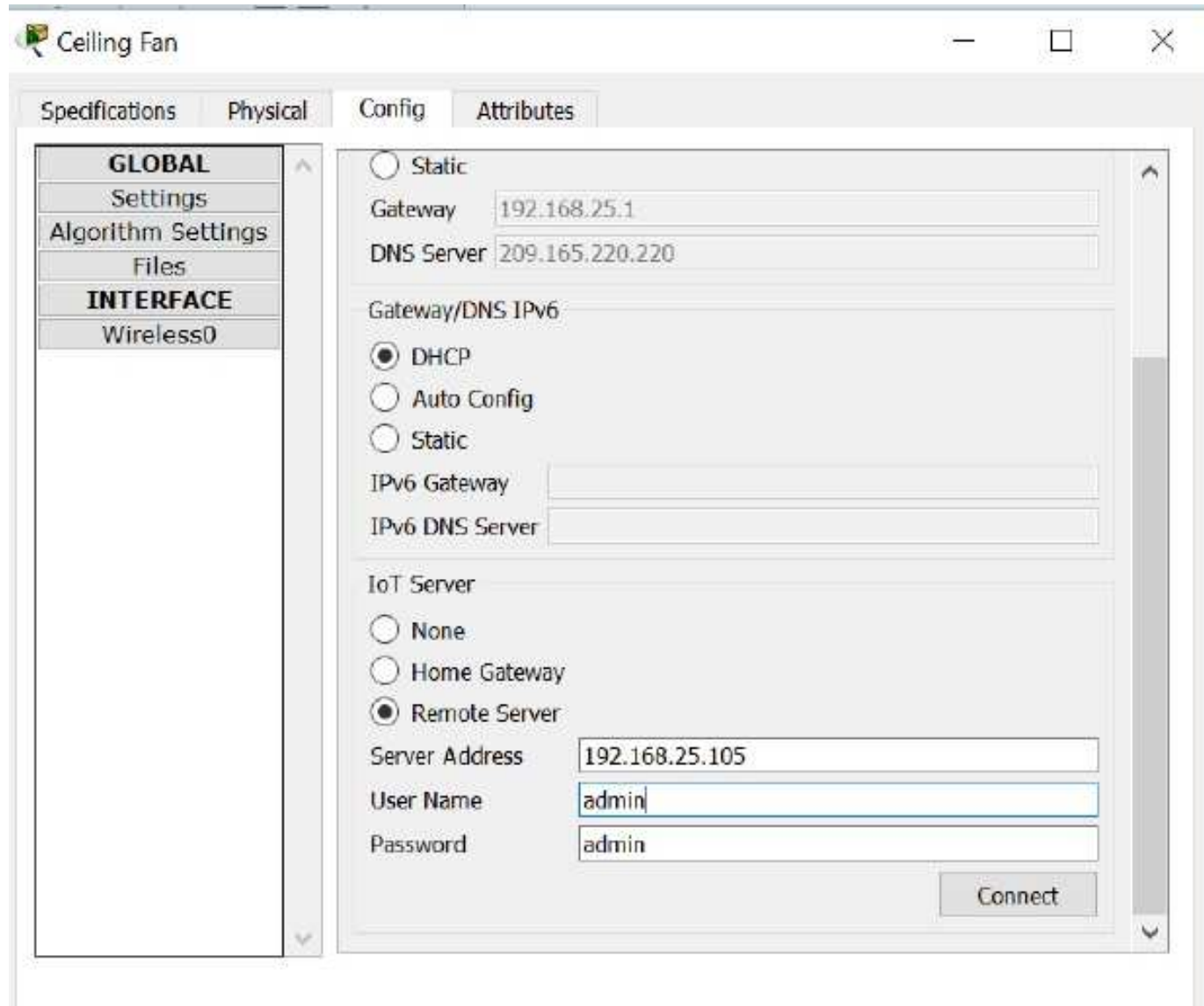


Close the Tablet PC window.

## Step 2: Register IoT devices to the Registration Server

- a. Configure the Ceiling Fan to register with the Registration Server.

Click the Ceiling Fan icon in the workspace to open the device configuration window and then click the Config tab. Change the IoT Server type from Home Gateway to Remote Server. Enter the IP address of the Registration Server from Part 1, and the IoT account Username and Password created in Step 1 above. Next, click the Connect button.



Close the Ceiling Fan window.

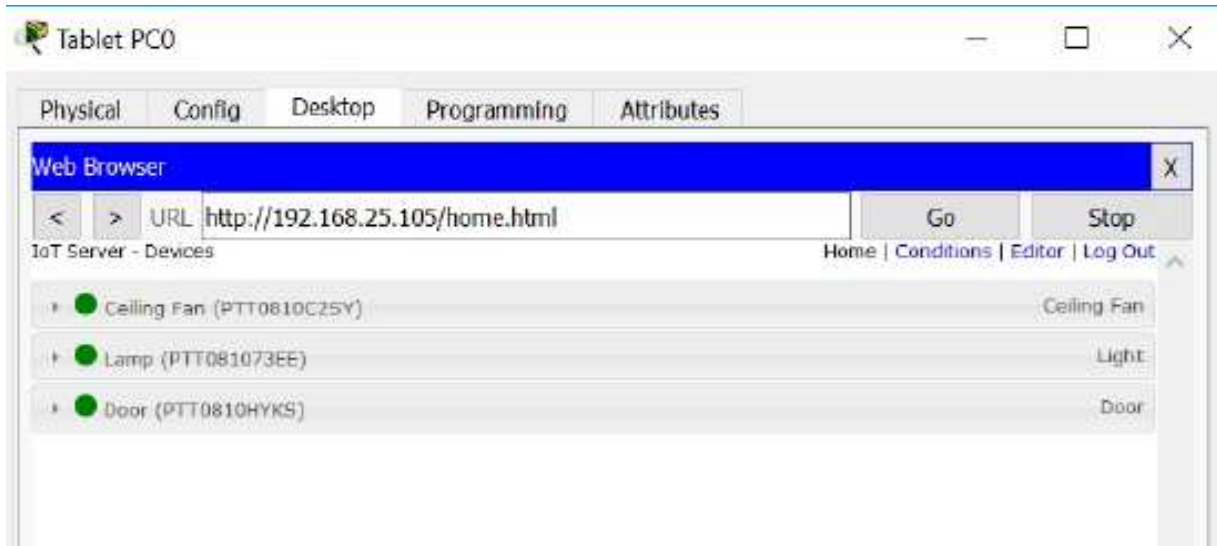
- b. Configure the Lamp and the Door IoT devices to register with the Registration Server in the same manner.

### Step 3: Verify IoT devices are registered to the Registration Server

Access the IoT Registration Server through the wireless Tablet Web browser using credentials from Step 1 above.

The three IoT devices, the Ceiling Fan, the Lamp, and the Door should now be registered with the IoT Server.

Close the Tablet PC window.





# Packet Tracer – Connect and Monitor IoT Devices

## The Smart Home Network



### Objectives

**Part 1: Add Home Gateway to the Network**

**Part 2: Connect IoT Devices to the Wireless Network**

**Part 3: Add End User Device to the Network**

### Background / Scenario

In this activity you will add a Home Gateway and several IoT devices to an existing home network and monitor those devices through the Home Gateway.

## Part 1: Connect a Home Gateway to the Network

### Step 1: Adding a home gateway

- a. Select the Home Gateway device.

Click the **Wireless Devices** icon in the **Device-Type Selection** box. Click the **Home Gateway** device icon and then click in the Logical workspace to add the device.



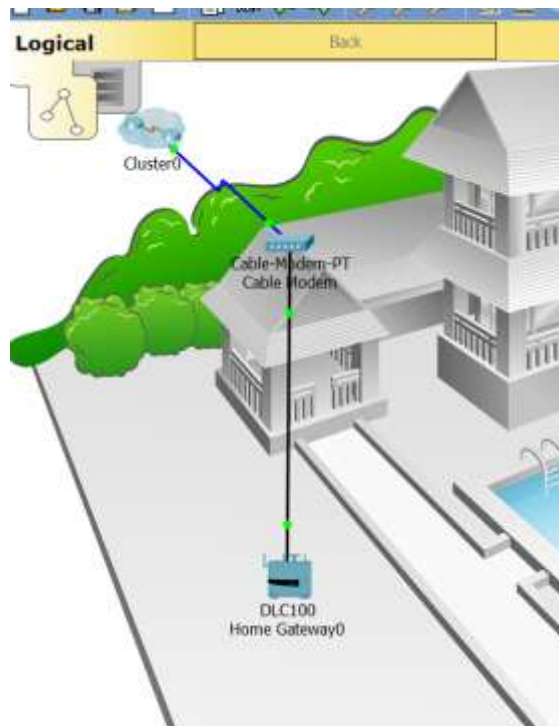


- b. Connect the Home Gateway to the Cable Modem.

Click the **Copper Straight-Through** connector icon in the Device-Type Selection box, then click the Home Gateway to add one end of the cable to the gateway. Next, click the Cable Modem icon to connect the other end of the cable to the **Internet** port.



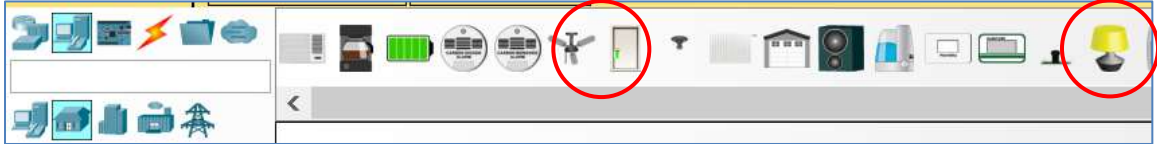
After a few seconds both ends of the cable should have green lights indicating that the link is up.



## Part 2: Connect IoT Devices to the Wireless Network

### Step 1: Select wireless devices

- a. Click the **Home Devices** icon in the **Device-Type Selection** box and add the **Fan**, the **Door**, and the **Lamp** to the workspace.

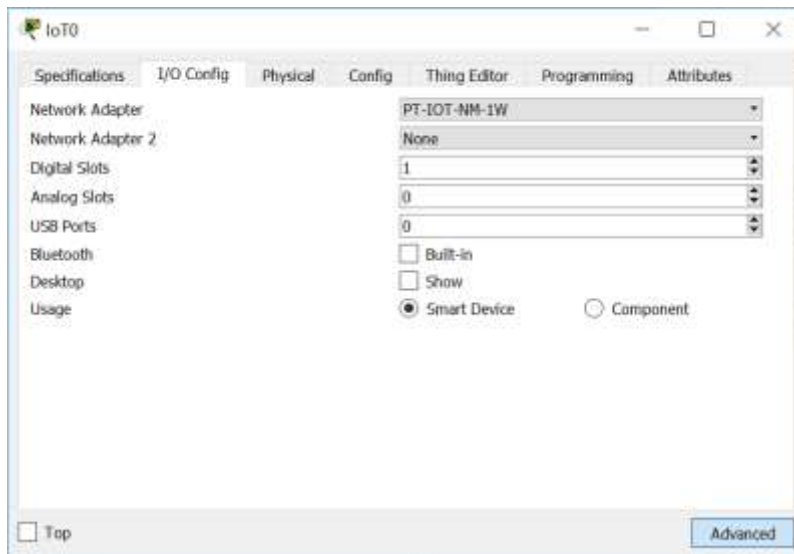


### Step 2: Add devices to the home wireless network

- a. Add a wireless adapter to the **Fan** device.

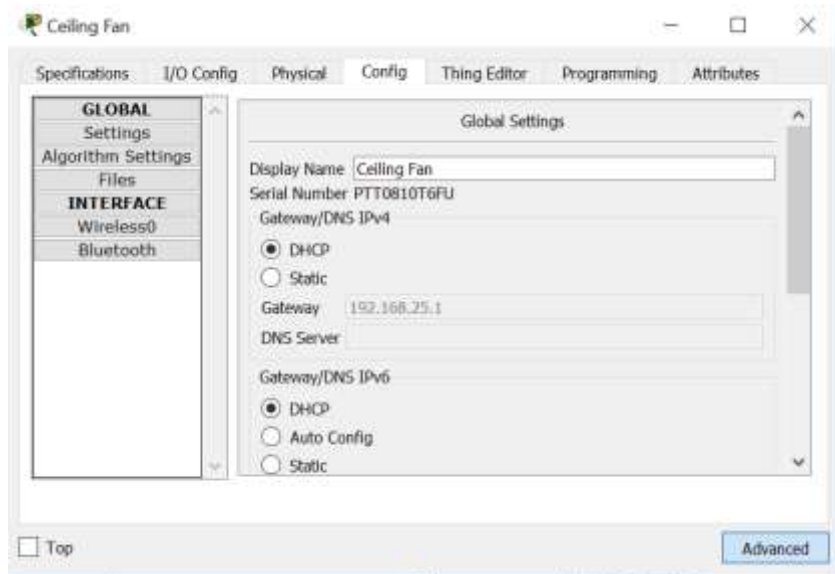
Click the **Fan** icon in the workspace to open the **Config** tab and then click the **Advanced** button in the bottom right corner of the window. Notice that the tabs at the top of the configuration window change. There are now more tabs.

Click the **I/O Config** tab and change the **Network Adapter** type to the **PT-IOT-NM-1W** wireless adapter.



- b. Change the display name of the **Fan** device.

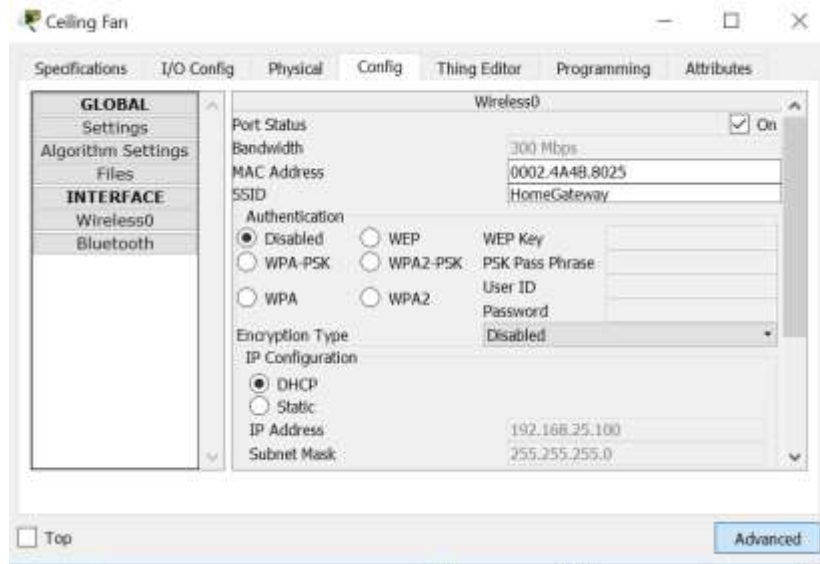
Click the **Config** tab. In the Display Name box, type **Ceiling Fan**.



- c. Verify that the Fan device is connected to the wireless network.

While still in the **Config** tab, click the **Wireless0** interface in the left pane.

In the configuration settings, the **HomeGateway** network should be listed in the SSID box. Verify that the DHCP is selected in the **IP Configuration** settings, the IP address is 192.168.25.100 and the default gateway is 192.168.25.1. This indicates that the fan is connected to the network and is receiving IP configuration information from the home gateway.



Close the Ceiling Fan configuration window.

- d. Connect the **Door** and the **Lamp** to the wireless network following the same steps used for the fan.

## Part 3: Add a Wireless Tablet to the Network

### Step 1: Add the wireless tablet to the workspace

- Click the **End Devices** icon in the **Device-Type Selection** box and add the **Wireless Tablet** to the workspace.

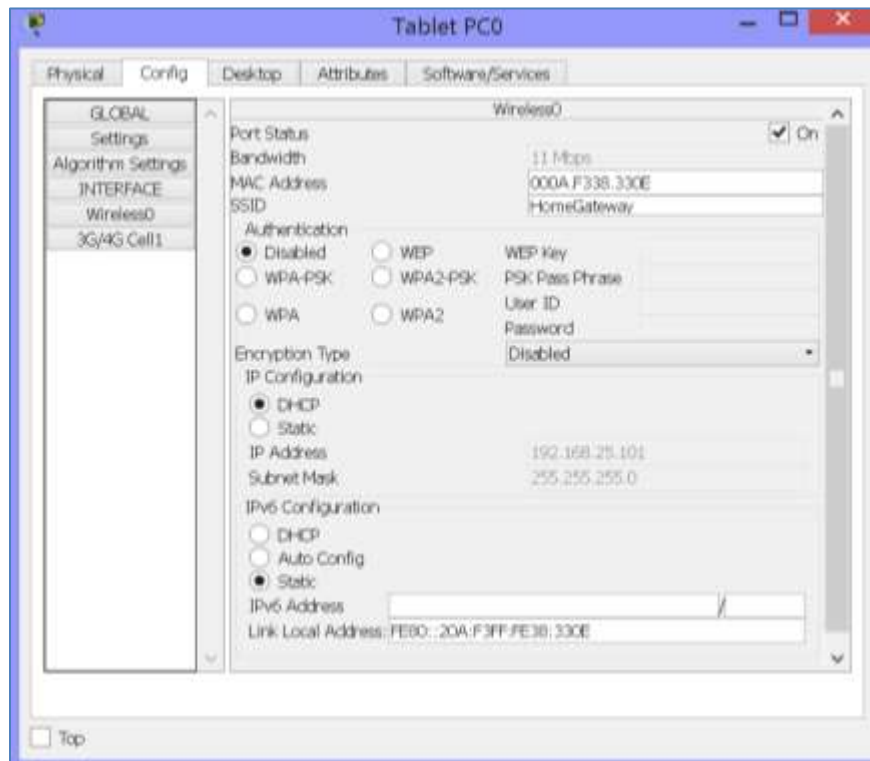


### Step 2: Connect the wireless tablet to the HomeGateway network

- Change the wireless tablet network settings.

Click the **Tablet icon** to open the Tablet configuration window.

Click the **Config** tab and then click the **Wireless0** Interface. Change the SSID from **Default** to **HomeGateway**. After the network SSID is changed the Tablet should learn an IP address through DHCP within a few seconds.

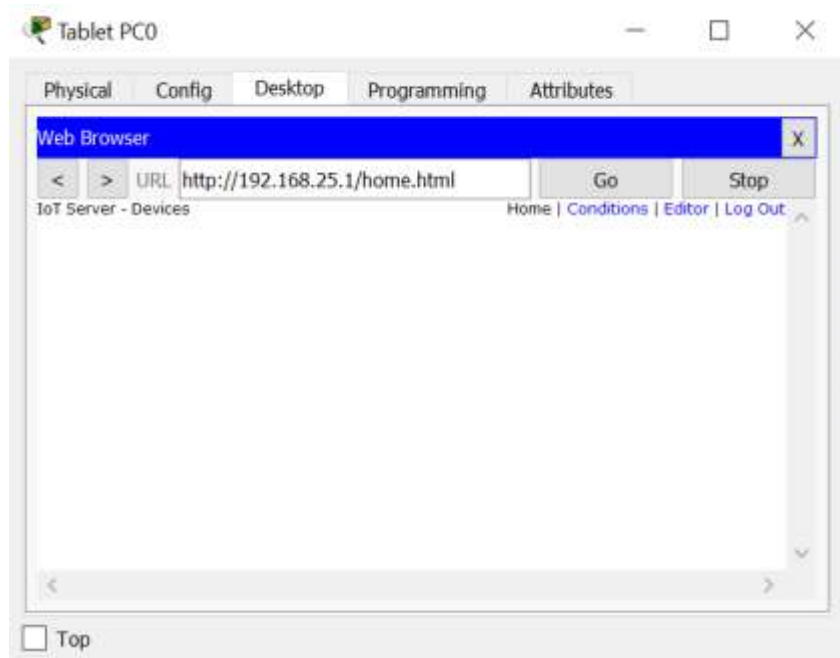


- Access the home gateway IoT server from the tablet.

Click the **Desktop** tab and then click the **Web Browser** icon to open a Web browser. Type 192.168.25.1 (the address of the home gateway) in the URL box and click **Go**.

At the **Home Gateway Login** page, enter **admin** as the username and **admin** as the password and click the **Submit** button to connect to the Home Gateway server.

Note that no devices appear in the Home Gateway IoT Server - Devices list.

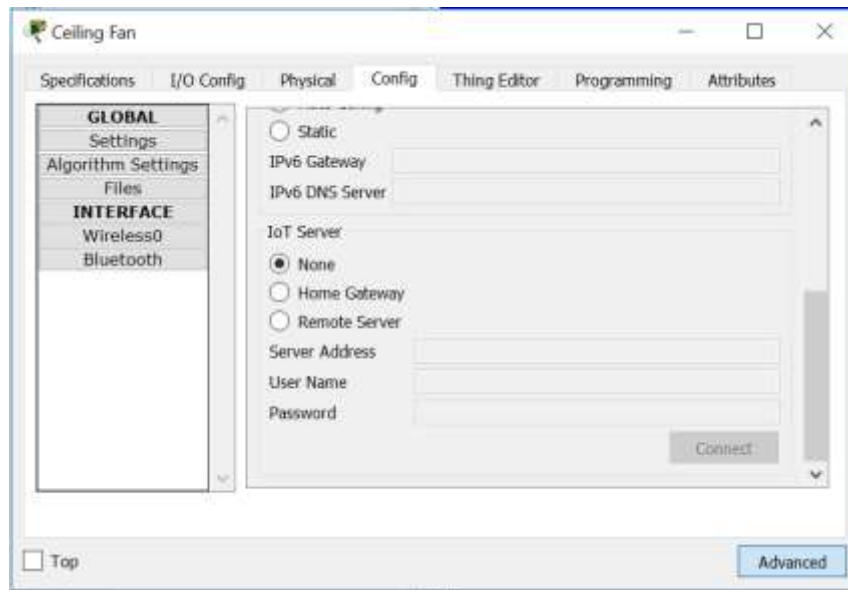


Close the **Tablet** window.

### Step 3: Configure IoT devices to register with the Home Gateway server

- a. Register the ceiling fan to the home gateway server.

Click the **Fan** icon in the workspace, click the **Config** tab, and then click **Settings** in the left pane. At the **IoT Server** options list, click the **Home Gateway** button.



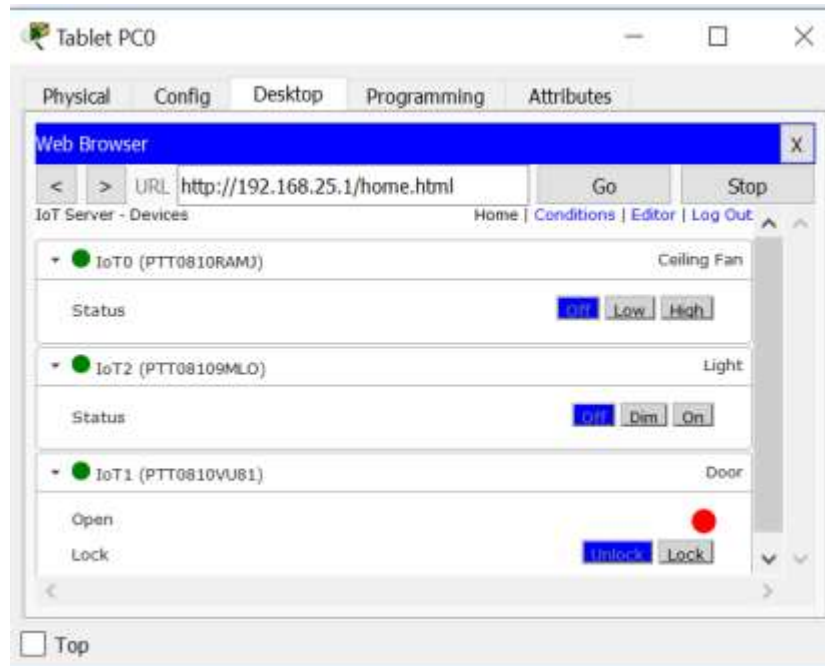
Close the **Ceiling Fan** window.

Repeat the steps in 3a to register the **Door** and the **Lamp** devices to the home gateway.

- b. Verify that the devices are now registered with the Home Gateway server.

Click the **Tablet** icon in the workspace and open the **Web Browser**. Connect to the Home Gateway by typing **192.168.25.1** in the URL box and then click **Go**. Enter **admin** as the username and password and click **Submit**.

After a few seconds all three devices should be listed in the Home Gateway **IoT Server - Devices** list.



Close the **Tablet** window.