**Add IoT Devices in Packet Tracer**

**Packet Tracer - Add IoT Devices in PT**

**Objectives**

**Part 1: Explore the Existing Smart Home Network**

**Part 2: Add Wireless IoT Devices to the Smart Home Network**

**Part 3: Add Wired IoT Devices to the Smart Home Network**

**Background / Scenario**

In this activity, you will open a Packet Tracer file with an existing home network, explore the devices on the network, and then add additional wired and wireless IoT devices.

**Instructions**

**Part 1: Explore the Existing Smart Home Network**

**Step 1: Explore available IoT end devices.**

a.     At the bottom left corner of the Packet Tracer window, locate and click the **End Devices** icon (Ctrl + Alt + V) in the top row, and the **Home** icon (Ctrl + Alt + H) in the bottom row.

b.     The **Device-Specific Selection** box displays the many different Smart Home IoT devices available.

Move the mouse pointer over each device and notice that the descriptive name of the device is displayed at the bottom of the **Device-Specific Selection** box. Take a moment to look at each device type.

**Step 2: Explore the Smart Home network.**

a.     In the **Logical** workspace is a prebuilt smart home network that consists of many wired and wireless IoT devices, and network infrastructure devices.

When you place your cursor over a device, such as the **Smart Fan**, an informational window opens containing basic network information about that device.

b.     To turn on or activate a device, hold down the **Alt** key, and then click the device you want to test. Try this on each of the smart devices to observe what they do.

c.     Click the **Home Gateway**. The **Physical** tab is selected by default and shows a picture of the Home Gateway.

d.     Click the **Config**tab, and then in the left pane click **LAN** to view the LAN settings of the Home Gateway.

Record the IP Address of the home network for future reference.

**192.168.25.1**

Click **Wireless**in the left pane. Expand the window if necessary.

Record the SSID of the home network.

**HomeGateway**

Record the WPA2-PSK Pass Phrase.

**mySecretKey**

Click the **Tablet** device, and then click **Desktop** tab > **Web Browser**.

g.     In the **URL** field, enter the IP address you recorded for the **Home Gateway**, and then click **Go**.

h.     Enter **admin** for both the username and the password, and then click **Submit**.

i.      A list of all the connected IoT devices appears. Click a device in the list to view its status and settings. Try interacting with some of the devices to see how you can manage their states from the **Tablet**. For example, open and close the **Garage Door**, turn on and off the **Smart Lamp**, and so on.

## Part 2: Add Wireless IoT Devices to the Smart Home Network

### Step 1: Add a wireless device to the network.

a.     In the **Device-Specific Selection** box, click the **Wind Detector** icon and then click in the workspace where you would like to locate the **Wind Detector**. (Click **End Devices** > **Home** > **Wind Detector**)

b.     To configure the **Wind Detector**, click it, and then click the **Config** tab.

c.     Change the Display Name to **Wind Detector**.

**Note**: To score correctly, the Display Name has to be the same as stated in the instructions.

d.     At the bottom pane, change the **IoT Server** to **Home Gateway**.

e.     Click **Wireless0** in the left pane. Change the Authentication type to **WPA2-PSK** and in the **PSK Pass Phrase** box, enter the pass phrase recorded in the previous part.

In a few seconds, a wireless connection should be formed between the **Wind Detector** and the **Home Gateway**. You can close the **Wind Detector** window.

### Step 2: Verify that the Wind Detector is on the network.

a.     Click the **Tablet**.

b.     If necessary, log back into the **Home Gateway**.

c.     The device **Wind Detector** now appears at the bottom of the list of **IoT Server - Devices**.

## Part 3: Add Wired IoT Devices to the Smart Home Network

### Step 1: Cable a device to the network.

a.     In the **Device-Specific Selection** box, click **Lawn Sprinkler** (**End Devices**> **Home**> **Lawn Sprinkler**), and then click in the workspace where you would like to place it.

b.     Click the **Lawn Sprinkler**, and then click **Advanced** at the bottom right corner. More tabs are now available.

c.     Click the **I/O Config** tab.

d.     In the drop-down menu for Network Adapter, change it to **PT-IOT-NM-1CFE** for a FastEthernet connection.

e.     Cable the **Lawn Sprinkler** to the **Home Gateway**.

In the **Device-Type Selection** box, click the **Connections**icon (this looks like a lightning bolt). Click the **Copper Straight Through** connector type icon in the **Device-Specific Selection** box, and then click the **Lawn Sprinkler** icon and connect it to the **FastEthernet0** interface. Next, click the **Home Gateway** icon and connect the other end of the cable to an available **Ethernet** interface.

### Step 2: Configure the Lawn Sprinkler for network connectivity.

a.     In the **Lawn Sprinkler** window, click the **Config** tab to edit the device configuration settings.

b.     Set the Display Name to **Smart Sprinkler**.

c.     Set the **IoT Server** to **Home Gateway**.

d.     In the left panel, click **FastEthernet0**, and then click **DHCP** for the **IP Configuration**.

### Step 3: Verify that the Lawn Sprinkler is on the network.

a.     Click the **Tablet**.

b.     If necessary, log back into the **Home Gateway**.

c.     The device **Smart Sprinkler** now appears at the bottom of the list of **IoT Server - Devices**.

**Note**: It may take a few seconds for **Smart Sprinkler** to be listed.

### Step 4: Add a Water Level Monitor.

a.     In the **Device-Specific Selection** box, click the **Water Level Monitor** (**End Devices**> **Home**> **Water Level Monitor**), and then click in the workspace where you would like to place it.

b.     Click the **Water Level Monitor**, and then click **Advanced** to display more tabs.

c.     Click the **Config** tab and change the **Display Name** to **Water Meter**.

d.     Set the **IoT Server** to **Home Gateway**.

e.     Click **Wireless0** and verify the **Water Meter** is using **HomeGateway** as the SSID.

f.      Configure **the wireless network pass phrase**.

g.     Verify that it is configured to receive an IP address from the DHCP server on **Home Gateway**.

h.     Click the **I/O Config** tab, and then change the number of**Digital Slots** to 1.

i.      For the **Usage** setting, change it to **Component**.

j.      Connect the **Water Meter** to the **Smart Sprinkler**.

Click **Connections** in the **Device-Type Selection** box, and then click the **IoT Custom Cable** in the **Device-Specific Selection** box. Click the **Smart Sprinkler** and connect one end of the cable to the **D0** interface. Click the **Water Meter** and connect the cable to the **D0** interface.

### Step 5: Verify that the Water Meter is on the network.

a.     Click the **Smartphone**, and then **Desktop** tab > **Web Browser**.

b.     Log into the **Home Gateway**.

c.     The device **Water Meter** now appears at the bottom of the list of **IoT Server - Devices**.

### Step 6: Add other IoT devices.

Experiment by adding other types of IoT devices to the smart home wireless network.

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