

## Networking Basics

### Packet Tracer 11.2.3

Congratulations Guest! You completed the activity.

Overall Feedback **Assessment Items** Connectivity Tests

| Assessment Items    | Status  | Points | Component(s) | Feedback | Score | Item Count |
|---------------------|---------|--------|--------------|----------|-------|------------|
| Network             |         |        |              |          | 9/9   | 9/9        |
| DHCP Enabled Router |         |        |              |          | 9/9   | 9/9        |
| DHCP Server         |         |        |              |          | 9/9   | 9/9        |
| Pools               |         |        |              |          | 9/9   | 9/9        |
| Pool linking Pool   |         |        |              |          | 9/9   | 9/9        |
| Default Gateway     | Correct | 1      | ip           |          |       |            |
| Max User            | Correct | 1      | ip           |          |       |            |
| Start IP Address    | Correct | 1      | ip           |          |       |            |
| PC0                 |         |        |              |          | 9/9   | 9/9        |
| Ports               |         |        |              |          | 9/9   | 9/9        |
| FastEthernet0       | Correct | 1      | ip           |          |       |            |
| IP Address          | Correct | 1      | ip           |          |       |            |
| Subnet Mask         | Correct | 1      | ip           |          |       |            |
| PC1                 |         |        |              |          | 9/9   | 9/9        |
| Ports               |         |        |              |          | 9/9   | 9/9        |
| FastEthernet0       | Correct | 1      | ip           |          |       |            |
| IP Address          | Correct | 1      | ip           |          |       |            |
| Subnet Mask         | Correct | 1      | ip           |          |       |            |
| PC2                 |         |        |              |          | 9/9   | 9/9        |
| Ports               |         |        |              |          | 9/9   | 9/9        |
| FastEthernet0       | Correct | 1      | ip           |          |       |            |
| IP Address          | Correct | 1      | ip           |          |       |            |
| Subnet Mask         | Correct | 1      | ip           |          |       |            |

### Packet Tracer 12.2.2

**Part 5: View the header information of the packets that traveled across the network.**

- Examine the headers of the packets sent between a PC and the web server.
- In the Simulation Panel, double click the 3rd line down in the event list. This displays an envelope in the work area that represents that line.
- Click the envelope in the work area window to view the packet and header information.
- Click the Inbound PDU details tab. Examine the packet information for the source (SRC) IP address and destination IP address.
- Click the Outbound PDU details tab. Examine the packet information for the source (SRC) IP address and destination IP address.
- Notice the change in SRC IP address.
- Click through other event lines to view those headers throughout the process.
- When finished, click Check Results to check your work.

Time Elapsed: 00:16:48 Completion: 100%

PLAY CONTROLS: Back | 1/1 | Next | Time: 00:08:02.481

Event List Panel:

| Vis.    | Time(sec) | Last Device        |
|---------|-----------|--------------------|
| Visible | 0.305     | Wireless Router    |
|         | 0.306     | Switch0            |
|         | 0.307     | ciscolearn.net.com |
|         | 0.308     | Switch0            |
|         | 0.309     | Wireless Router    |
|         | 0.310     | --                 |
|         | 0.310     | PC0                |
|         | 0.311     | --                 |
|         | 0.311     | PC0                |
|         | 0.311     | Wireless Router    |
|         | 0.312     | Wireless Router    |
|         | 0.312     | Switch0            |
|         | 0.313     | Switch0            |
|         | 0.313     | ciscolearn.net.com |
|         | 0.314     | Switch0            |
|         | 0.315     | Switch0            |

Event List Filters - Visible Events: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, FCoE, GRE, ICMP, ICMPv6, IGMP, ISAKMP, IoT, IoT TCP, LACP, LLDP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAP, POP3, PPP, Radius, RIPv2, RSTP, SDP, SIP, SMTP, TACACS+, Telnet, TFTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Event List | Realtime | Simulation

## Packet Tracer 13.1.3

Cisco Packet Tracer - /Users/AshleySofiaAlfaro/Downloads/13.1.3-packet-tracer-identify-mac-and-ip-addresses.pka - Guest - 2024-11-22 12:16:22

Logical Physical x: 5, y: 319

Event List

| Vis. | Time(sec) | Last Device  |
|------|-----------|--------------|
|      | 0.000     | --           |
|      | 0.001     | 172.16.31.3  |
|      | 0.002     | Switch 2     |
|      | 0.003     | Router       |
|      | 0.004     | Switch 1     |
|      | 0.005     | Access Point |
|      | 0.005     | Access Point |
|      | 0.007     | --           |
|      | 0.008     | 10.10.10.2   |
|      | 0.009     | Access Point |
|      | 0.009     | --           |
|      | 0.010     | Access Point |
|      | 0.010     | Access Point |
|      | 0.010     | Switch 1     |
|      | 0.011     | Router       |
|      | 0.012     | Switch 2     |
|      | 1.013     | --           |
|      | 1.014     | 172.16.31.3  |

Reset Simulation  Constant Delay Captured to: 1.014 s

Play Controls

Event List Filters - Visible Events ICMP

Event List Realtime Simulation

Time Elapsed: 00:22:58

Dock Check Results Back 1/1 Next

Time: 00:06:44.045 PLAY CONTROLS

4331 4321 1941 2901 2911 8191OX 8191GW 8

Scenario 0 New Delete Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

(Select a Device to Drag and Drop to the Workspace)

## Packet Tracer 14.3.3 See note on 2nd screenshot

Cisco Packet Tracer - /Users/AshleySofiaAlfaro/Downloads/14.3.3-packet-tracer-observe-traffic-flow-in-a-routed-network.pka - Guest - 2024-12-0...

Root 04:03:00

Part 1: OBSERVE TRAFFIC FLOW in the Routed Network.

In this part, you will observe how traffic now flows through a routed network.

**Step 1: Ping Sales 1 from Sales 2.**

- Return to the Command Prompt for Sales 2 and verify that its ARP cache is empty. If it is not, delete any entries.
- Switch to Simulation mode.
- Ping Sales 1 from Sales 2.
- Use the Capture then Forward button to step the PDUs through the network. Observe how the ARP request message flows through the network this time.

Time Elapsed: 00:30:25 Completion: 83%

Dock Check Results Back 1/1 Next

Time: 00:06:54 PLAY CONTROLS

4331 4321 1941 2901 2911 8191OX 8191GW 8

Scenario 0 New Delete Toggle PDU List Window

Realtime Simulation

Finance 2

```
C:\>ipconfig /renew
Connection-specific DNS Suffix...: 192.168.2.3
IP Address........................: 192.168.2.3
Subnet Mask....................: 255.255.255.0
Default Gateway................: 192.168.2.1
DNS Server....................: 0.0.0.0

C:\>ipconfig /all
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix.: 192.168.2.3
Link-local IPv6 Address.....: FE80::C8B4:AB78
IPv4 Address................: 192.168.2.3
Subnet Mask................: 255.255.255.0
Default Gateway................: 192.168.2.1
DHCP Servers................: 192.168.2.1
DHCPv6 FDID.....: FE80::C8B4:AB78%2
EPRID: 00-00-00-23-30-78
DNS Servers................: 0.0.0.0

Bluetooth Connection:
Connection-specific DNS Suffix.: 0000:58C4:8008
Link-local IPv6 Address.....: ::

C:\>arp -a
No ARP Entries Found
C:\>arp -d
C:\>ipconfig /renew
Request failed.
C:\>DHCP request failed.

C:\>
IP Address................: 192.168.2.3
Subnet Mask................: 255.255.255.0
Default Gateway................: 192.168.2.1
DNS Server................: 0.0.0.0

C:\>ipconfig /renew
IP Address........................: 192.168.2.3
Subnet Mask....................: 255.255.255.0
Default Gateway................: 192.168.2.1
DNS Server....................: 0.0.0.0
C:\>
```

(Select a Device to Drag and Drop to the Workspace)

For some reason, the packet tracer isn't checking off the IP Address for Finance 2, even though I used the ipconfig /renew command in the Command Prompt.

The screenshot shows a Cisco Packet Tracer interface with a network diagram and a Command Line interface window. The network diagram includes nodes for Network, Finance, Finance 1, Finance 2, Sales, Sales 1, and Sales 2, each with various ports and IP addresses. The Command Line interface window shows the results of running ipconfig /renew commands on different interfaces, including FastEthernet0 and GigabitEthernet1/0, which show updated IP addresses (192.168.2.3) and other network configuration details like subnet mask, default gateway, and DNS server.

Packet Tracer 14.3.4

Cisco Packet Tracer - /Users/AshleySofiaAlfaro/Downloads/14.3.4-packet-tracer-create-lan.pka - Guest - 2024-12-02 13:57:07

**Logical** Physical x: 24, y: 82

Branch Office

Office Router

Internet

www.cisco.pl

Switch

Admin PC

Manager PC

Printer

**Step 2: Connect the end devices.**

Use the table and instructions to connect the network devices and hosts to create the physical network.

**Connections Table**

| Device        | Interface |
|---------------|-----------|
| Office Router | G0/0      |
| Office Router | G0/1      |
| Admin PC      | NIC (F/0) |
| Manager PC    | NIC (F/0) |
| Printer       | NIC (F/0) |

Time Elapsed: 00:13:44 Completion: 100%

Dock  Check Results  Back  Next

Time: 00:29:39

**G**

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

New Delete Toggle PDU List Window

Copper Straight-Through

## Packet Tracer 16.1.5

**from the PC.**

You will open a simulated web browser on the PC and request a web page from the server.

- Click **PC**. Click **Desktop** tab and click **Web Browser**.
- A simulated web browser opens. Type **www.example.com** into the URL box and click **Go** button to the right. Minimize the PC window.

| Vis. | Time(sec) | Last Device |
|------|-----------|-------------|
|      | 0.000     | --          |
|      | 0.000     | --          |
|      | 0.002     | --          |
|      | 0.002     | --          |
|      | 0.003     | PC          |
|      | 0.003     | --          |
|      | 0.004     | PC          |
|      | 0.004     | Server      |
|      | 0.005     | Server      |
|      | 0.007     | --          |
|      | 0.008     | --          |
|      | 0.009     | PC          |
|      | 0.010     | Server      |

**Part 4: Run the simulation.**

- In the **Play Controls** section of the **Simulation Panel**, click **Play**. The exchange between the PC and the server is animated and the events are added to the **Event List**.

These events represent the PC's request to resolve the URL to an IP address, the server's providing the IP address, and the PC's request to download the page.

Time Elapsed: 00:06:16

PLAY CONTROLS:

Event List Filters - Visible Events: DNS, HTTP

Event List:

## Packet Tracer 16.4.3

1) Observe the traffic flow by clicking **Play** in the **Simulation Panel**. Speed up the animation by using the play control slider.

When the Buffer Full window appears, click **View Previous Events** to close the window.

2) Scroll through the **Event List**. Notice the number of packets that traveled from source to destination. HTTP is a TCP protocol, which requires connection establishment and acknowledgement of receipt of packets, considerably increasing the amount of traffic overhead.

| Vis. | Time(sec) | Last Device  |
|------|-----------|--------------|
|      | 30.447    | RemoteSwitch |
|      | 36.447    | RemoteSwitch |
|      | 60.558    | --           |
|      | 60.559    | Local        |
|      | 60.560    | WebSwitch    |
|      | 60.560    | WebSwitch    |
|      | 66.423    | --           |
|      | 66.424    | Remote       |
|      | 66.425    | RemoteSwitch |
|      | 66.425    | RemoteSwitch |
|      | 69.308    | --           |
|      | 69.309    | Local        |
|      | 89.310    | WebSwitch    |
|      | 89.310    | WebSwitch    |

Time Elapsed: 00:06:44

PLAY CONTROLS:

Event List Filters - Visible Events: ARP, BGP, DHCPv6, DNS, EIGRP, EIGRPv6, HSRP, HSRPv6, HTTP, ICMP, ICMPv6, NDP, OSPF, OSPFv6, RIP, RIPng, TCP

Event List:

### Packet Tracer 16.5.3

Cisco Packet Tracer - /Users/AshleySofiaAlfaro/Downloads/16.5.3-packet-tracer---use-ftp-services.pka - Guest - 2024-12-02 14:48:59

Logical Physical x: 100, y: 207 Root Back Cloud Refresh Print 06:24:30

Reading file sampleFile\_FTP.txt from 209.165.200.226:  
File transfer in progress...

[Transfer complete - 26 bytes]  
26 bytes copied in 0.013 secs (2000 bytes/sec)  
ftp>

- Enter **quit** to exit the FTP client when finished.
- Display the contents of the directory on the PC again to see the image file from the FTP server.

**Step 3: Delete the file from the FTP server.**

- Log into the FTP server again to delete the file **sampleFile\_FTP.txt**.
- Enter the command to delete the file **sampleFile\_FTP.txt** from the server.

What command did you use to remove the file from the FTP server?

- Enter **quit** to exit the FTP client when finished.

Time Elapsed: 00:06:24 Dock Check Results Completion: 100% Time: 00:06:09 Realtime Simulation

(Select a Device to Drag and Drop to the Workspace)

Scenario 0 New Delete Toggle PDU List Window

### Packet Tracer 16.6.4

Cisco Packet Tracer - /Users/AshleySofiaAlfaro/Desktop/School/16.6.4-AshleyAlfaro-Complete-packet-tracer---use-telnet-and-ssh.pka.pkz - Guest - 2024-12-02 18:01:22

Logical Physical x: 39, y: 289 Root Back Cloud Refresh Print 03:06:00

In this part, you will attempt to establish a remote connection using Telnet and SSH.

**Step 1: Telnet to HQ.**

At the prompt, enter the command **telnet 64.100.1.1**.  
Were you successful? What was the output?

**Step 2: SSH to HQ.**

The router is properly configured to not allow insecure Telnet access. You must use SSH.  
At the prompt, enter the command **ssh -l admin 64.100.1.1**. Enter the password **class** when prompted.

```
C:\> ssh -l admin 64.100.1.1
Password:
```

What is prompt after accessing the router successfully via SSH?

Time Elapsed: 00:09:02 Dock Check Results Back 1/1 Next Time: 00:06:30 Realtime Simulation

(Select a Device to Drag and Drop to the Workspace)

Scenario 0 New Delete Toggle PDU List Window

## Packet Tracer 17.1.3

**Instructions**

**Part 1: Verify Configurations**

- Access the **Command Prompt** on each PC and enter the command **ipconfig /all** at the prompt.
- Examine the IP address, subnet mask, and default gateway configuration for each PC. Be sure to record this IP configuration for each PC to help identify any PCs that are incorrectly configured.

The network diagram shows four desktop computers labeled PC1, PC2, PC3, and PC4 connected to a central Wireless Router. The router is also connected to a cloud icon representing "The Internet". Arrows indicate the connections from each PC to the router, and from the router to the internet.

**Part 2: Correct Any Misconfigurations**

- Select the PC that is incorrectly configured.
- Click the **Desktop tab > IP Configuration tab** to correct the misconfiguration.

Screenshot of Cisco Packet Tracer interface showing the workspace and toolbar.

## Packet Tracer 17.1.6

**ipconfig /all**, examine the DNS server configuration on the PCs without any issues.

- Access the **Command Prompt** of the PCs with connectivity issues.
- Using the command **ipconfig /all**, examine the DNS server configuration on the PCs with misconfigurations. Do the two configurations match?

**Part 6: Make any necessary configuration changes on the PCs.**

- Navigate to the **Desktop tab** of the PCs with issues, make any necessary configuration changes in **IP Configuration**.
- Using the **Web Browser** within the **Desktop tab**

The network diagram is identical to the one in Packet Tracer 17.1.3, showing four PCs connected to a Wireless Router, which is then connected to "The Internet".

Screenshot of Cisco Packet Tracer interface showing the workspace and toolbar.

**Cisco Packet Tracer**

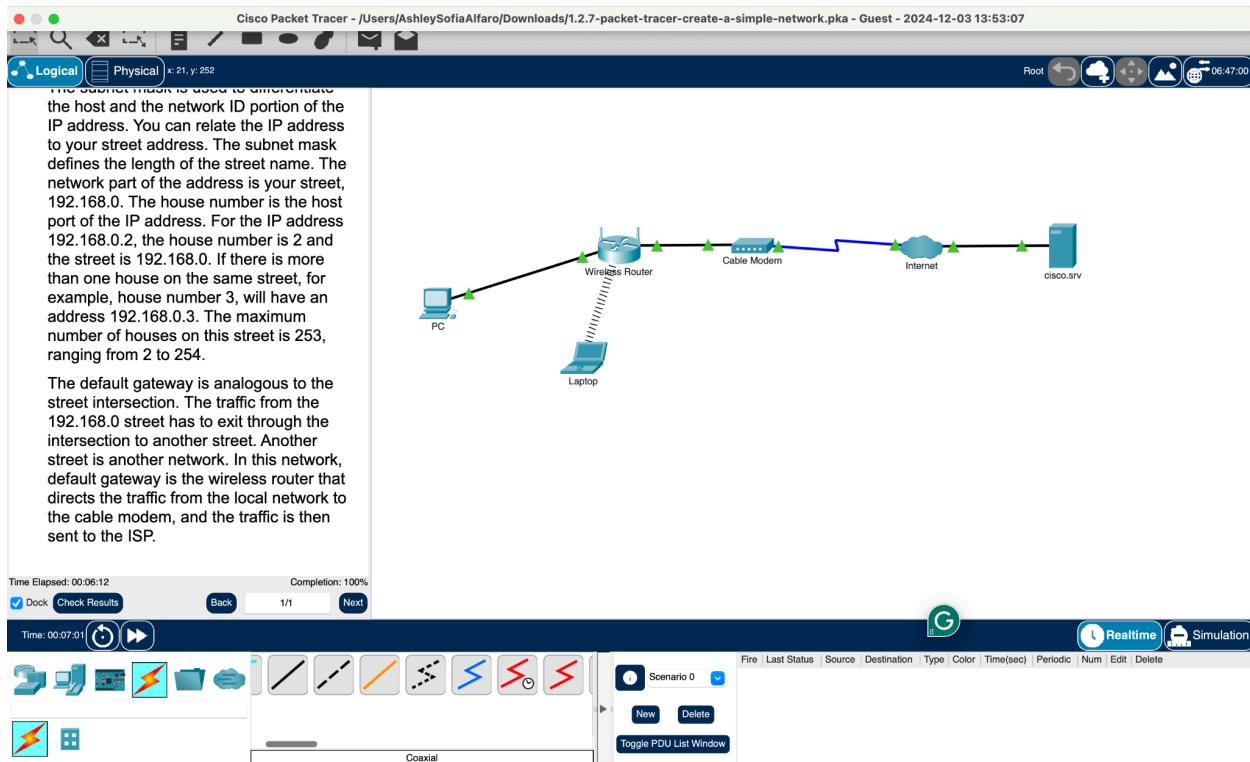
Welcome to Cisco Packet Tracer.

Quick Links:

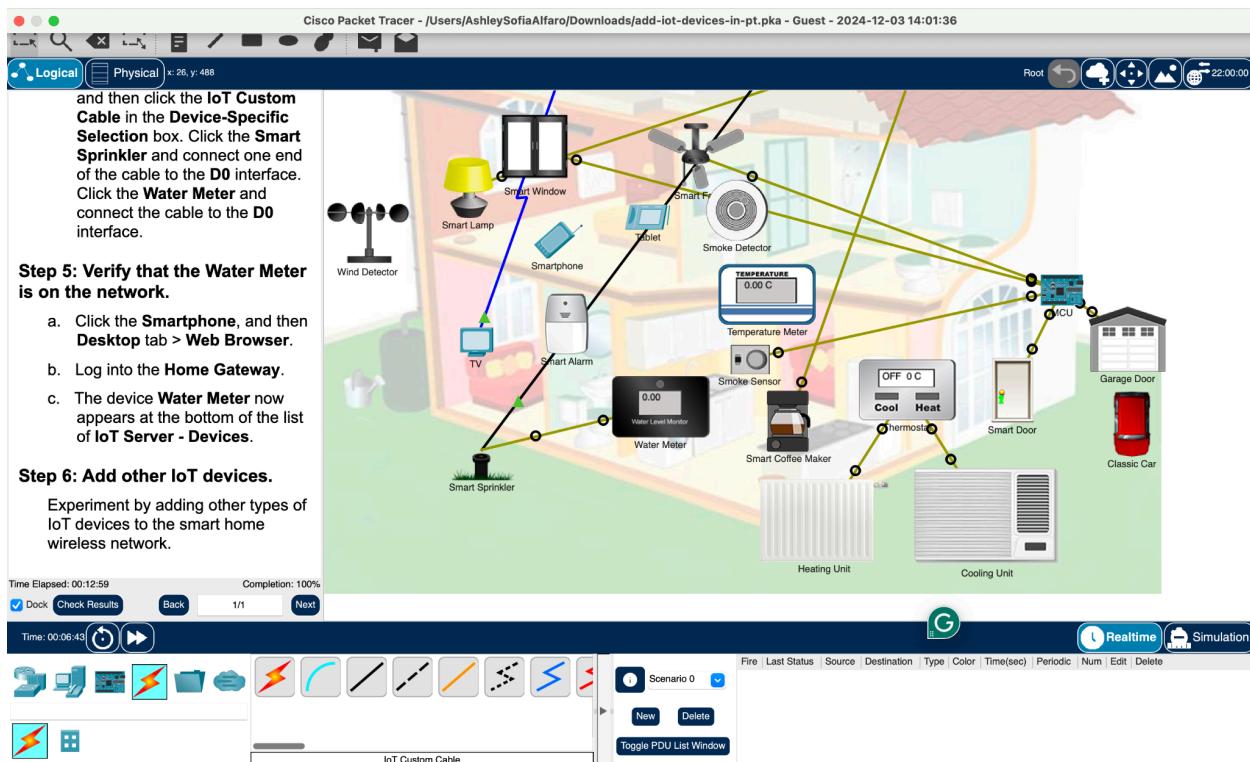
- [A small page](#)
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## Introduction to IoT and Digital Transformation

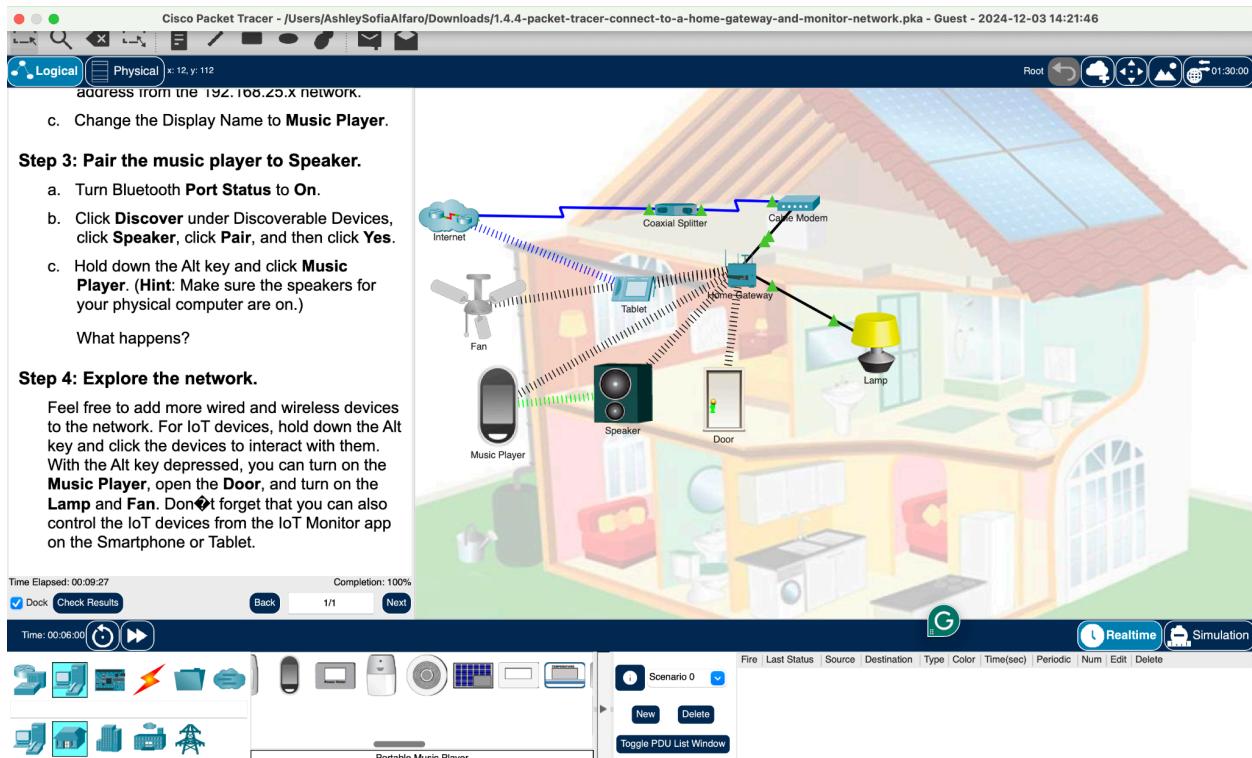
### Packet Tracer 1.2.7



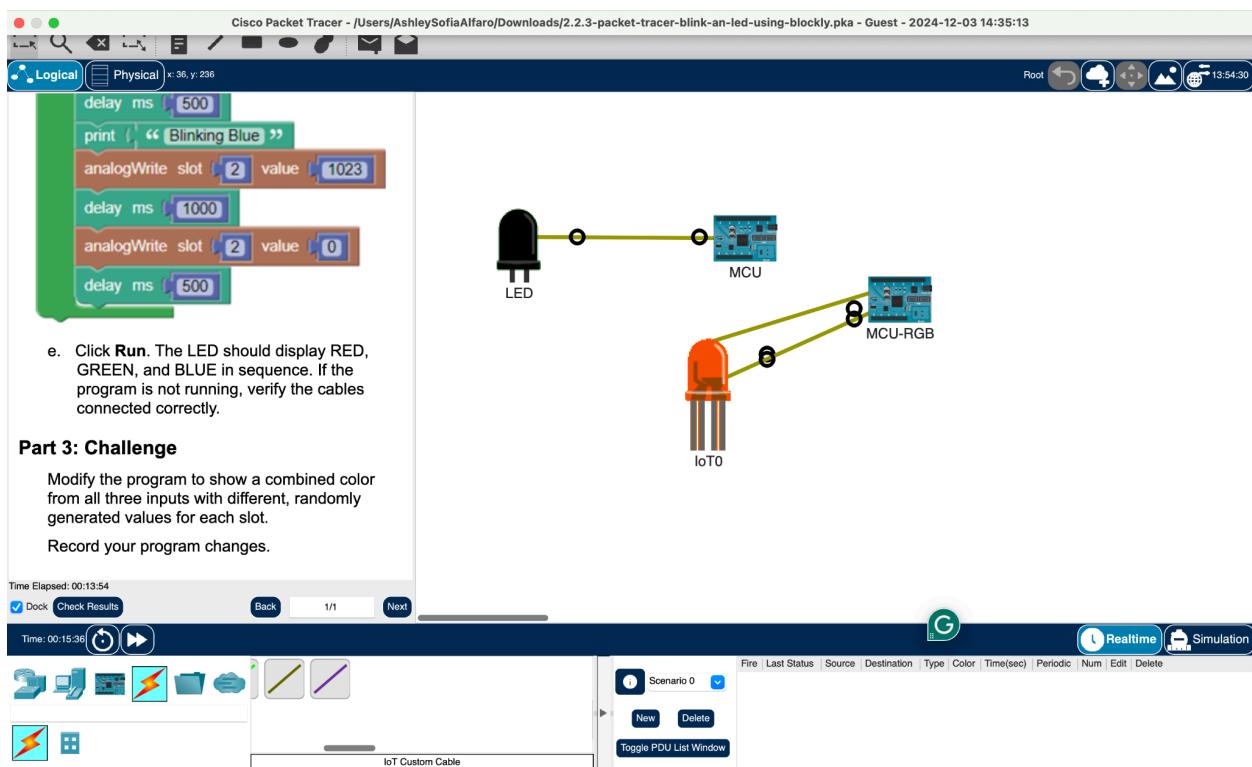
### Packet Tracer 1.4.2



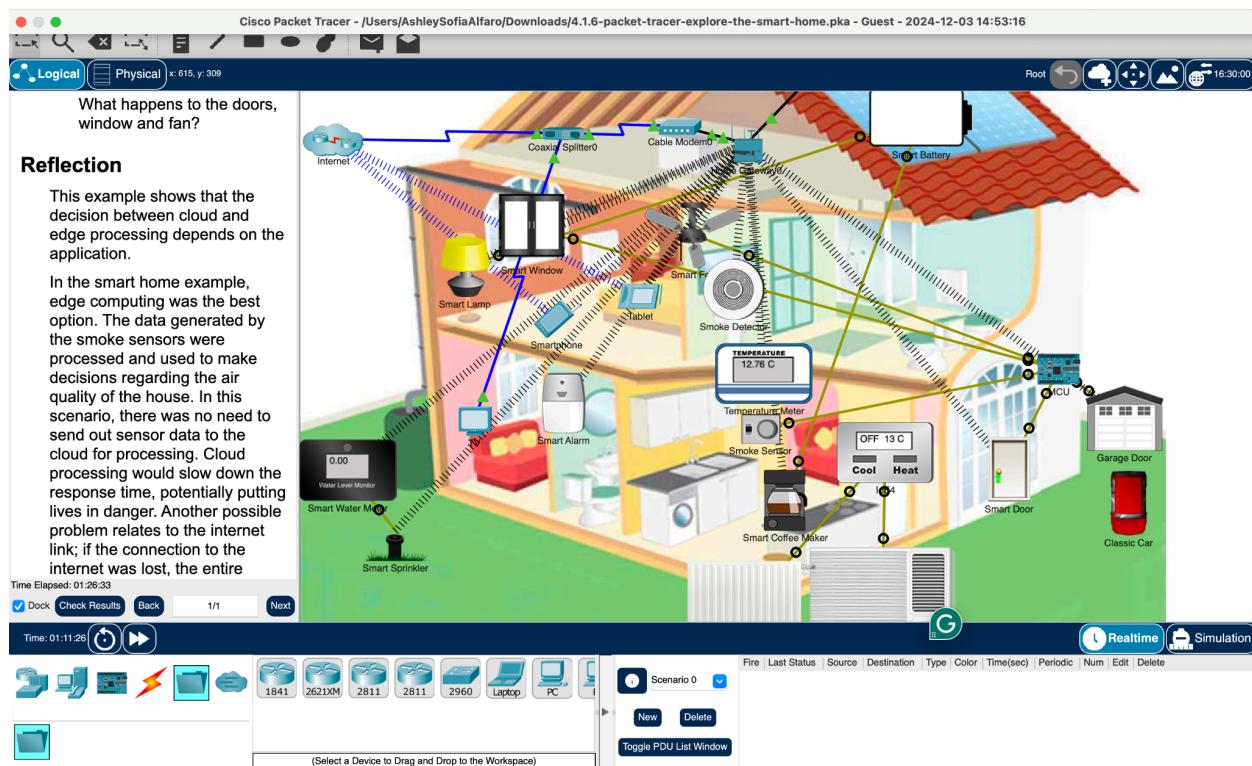
## Packet Tracer 1.4.4



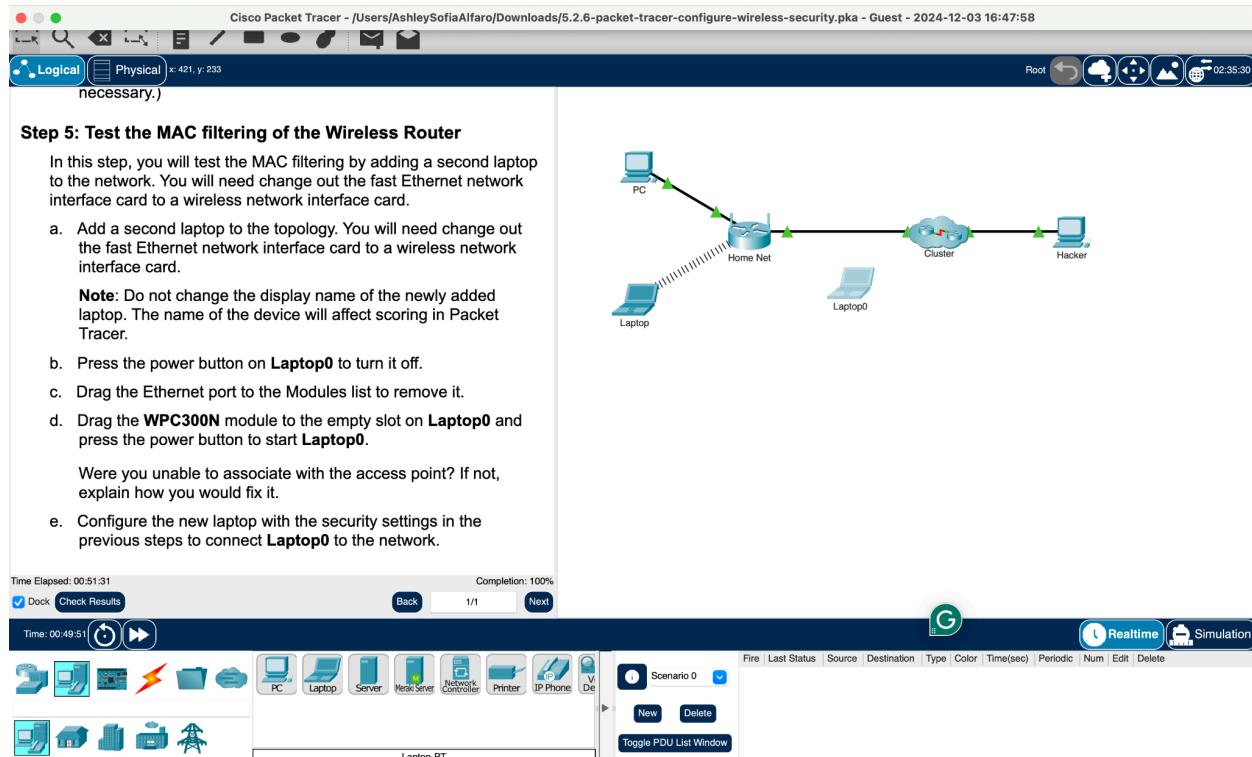
## Packet Tracer 2.2.3



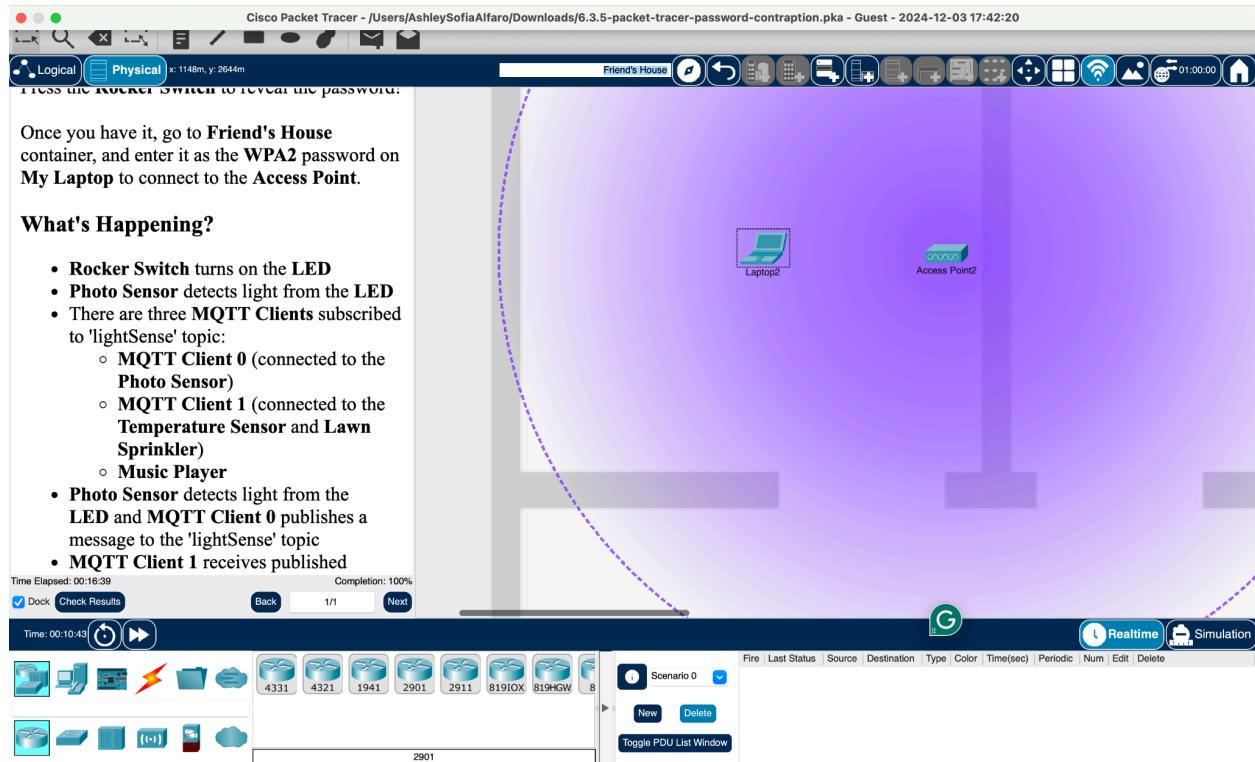
## Packet Tracer 4.1.6



## Packet Tracer 5.2.6

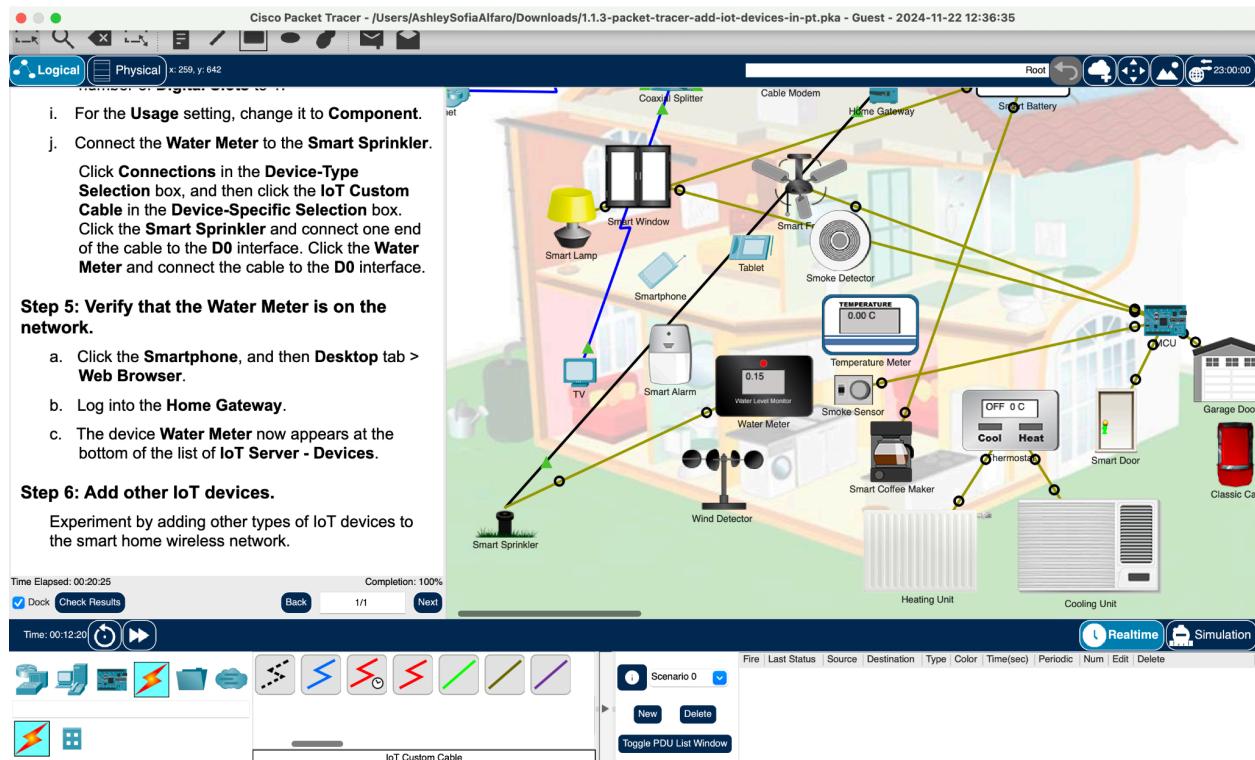


### Packet Tracer 6.3.5

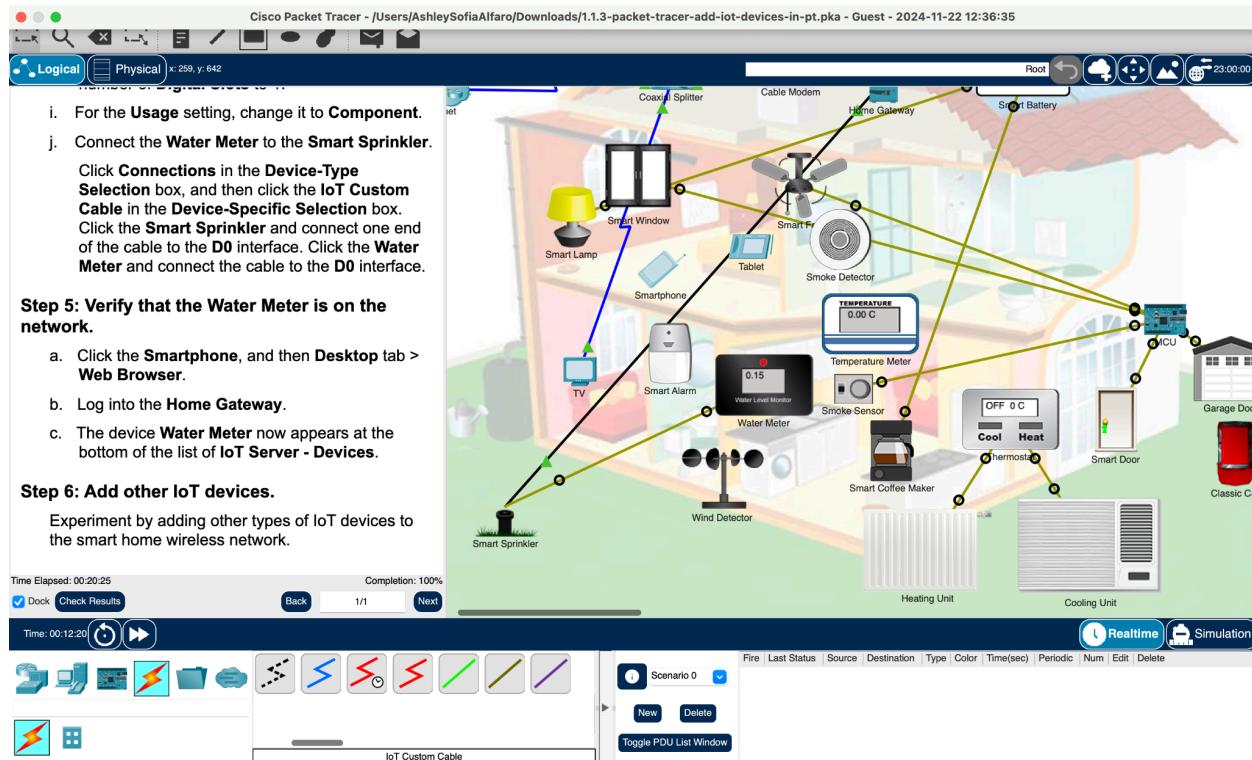


## Exploring IoT with Cisco Packet Tracer

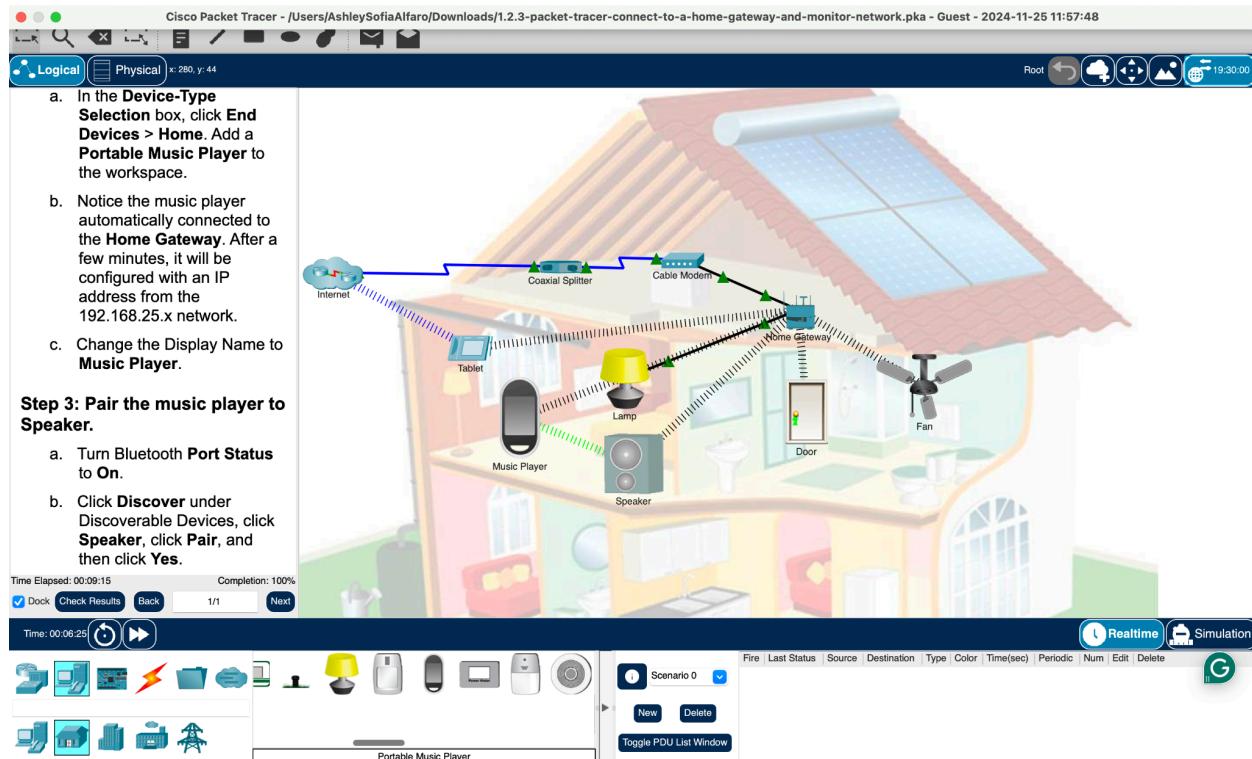
### Packet Tracer 1.1.3



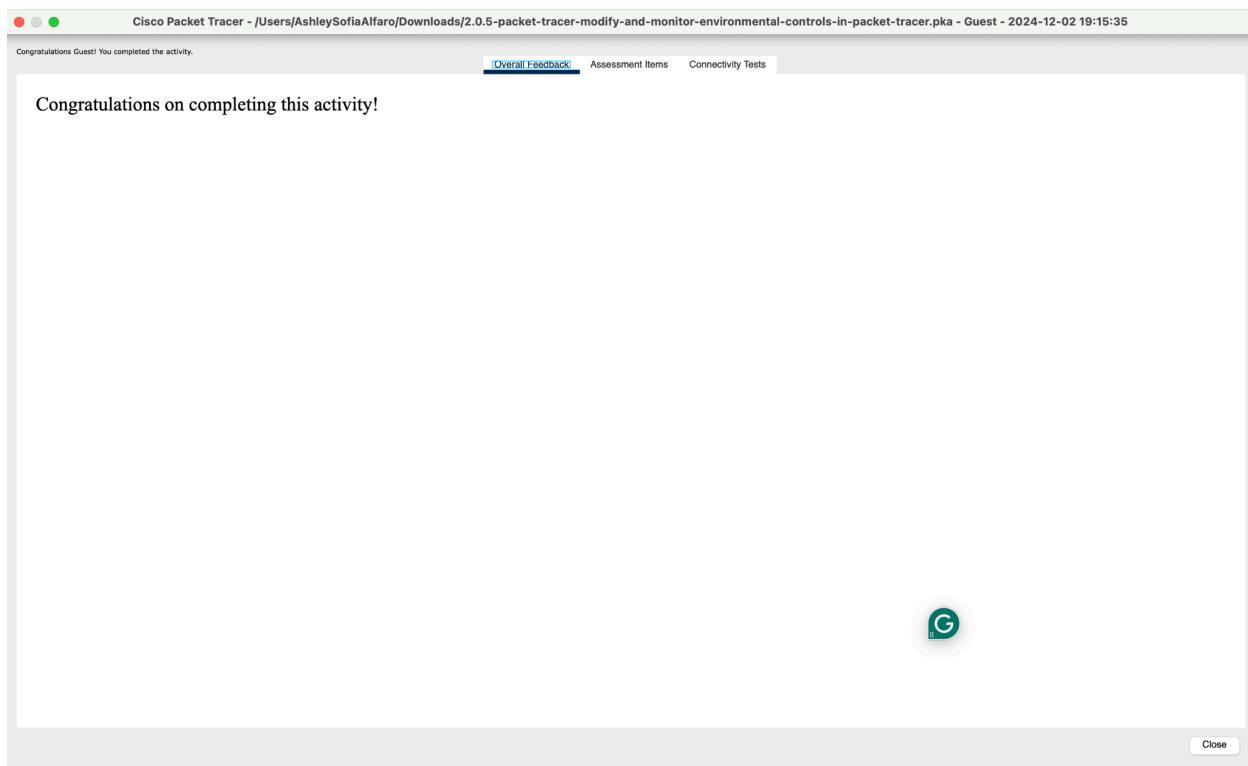
### Packet Tracer 1.2.3



### Packet Tracer 1.2.6



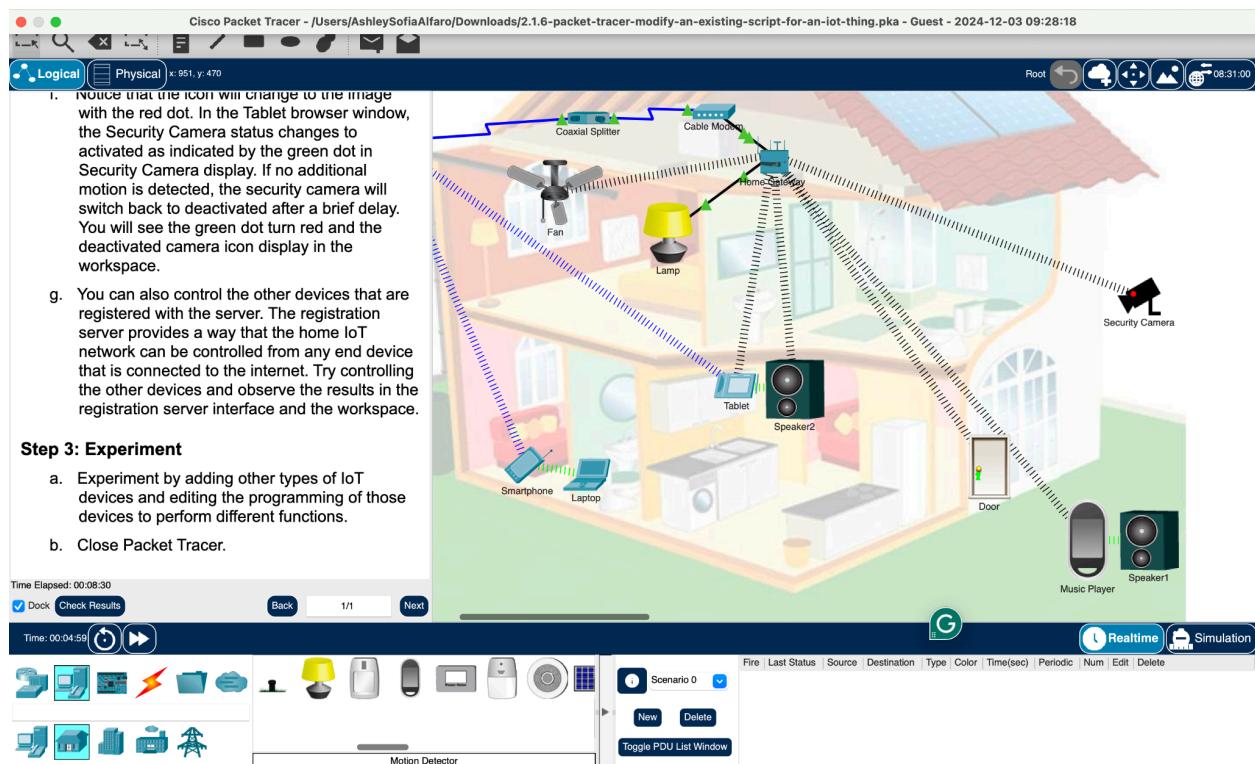
## Packet Tracer 2.0.5



## Packet Tracer 2.1.3



## Packet Tracer 2.1.6



## Course Completion

Welcome, Ashley Sofia Alfaro

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Networking Basics

Course Outline | Resources

Module 10: IPv6 Addressing Formats and Rules 100%

Module 11: Dynamic Addressing with DHCP 100%

Checkpoint Exam: The Internet Protocol 100%

Module 12: Gateways to Other Networks 100%

Module 13: The ARP Process 100%

Module 14: Routing Between Networks 100%

Checkpoint Exam: Communication Between Networks 100%

Module 15: TCP and UDP 100%

Module 16: Application Layer Services 100%

Module 17: Network Testing Utilities 100%

Checkpoint Exam: Protocols for Specific Tasks 100%

Networking Basics Course Final Exam 100%

**Course Introduction**

Course Introduction

First Time in this Course

**Introduction to IoT and Digital Transformation**

**1.0.1 First Time in the Course**

**First Time in this Course**

Did you know that farmers can put sensors on their crops that tell them when to water, how much water is needed, and when to harvest? With this information, farmers can get the best quality and quantity from their crops. Coal miners can place sensors in a mine that detect tiny amounts of dangerous gases. This information saves lives. Automobile insurance companies can offer drivers lower rates in exchange for access to their driving data. This allows for fairer and more accurate pricing and increases profits while lowering costs.

The IoT is about data. The IoT is about digitizing into how lives can be saved, efficiencies can be gained. Maybe you would like a career in the IoT.

The Introduction to the Internet of Things course (I2IoT) explains what the IoT is, what it does, how it is part of digital transformation, and how you can become part of this. You will learn about the exponential increase of intelligent devices connected to the internet and you...

**Exploring Internet of Things with Cisco Packet Tracer**

**1.0.1 Welcome to Create Your Own Smart Home Network**

The Internet of Things (IoT) is vast. Sensors, actuators, and "smart" devices work together to collect and share data such as temperature, humidity, water levels, power, speed and so much more. Right now there are factories that are automated using the IoT and farms that have sensors which tell irrigation systems to water specific areas. You already know about self-driving cars and refrigerators that can place an order for grocery delivery. This is all part of the IoT and it is still growing. In the Exploring IoT with Packet Tracer course, you take a simple home network and turn it into a **smart home** network. Cisco's Packet Tracer network simulation tool is your introduction to all things IoT. All you need is a computer and an internet connection! Let's go!