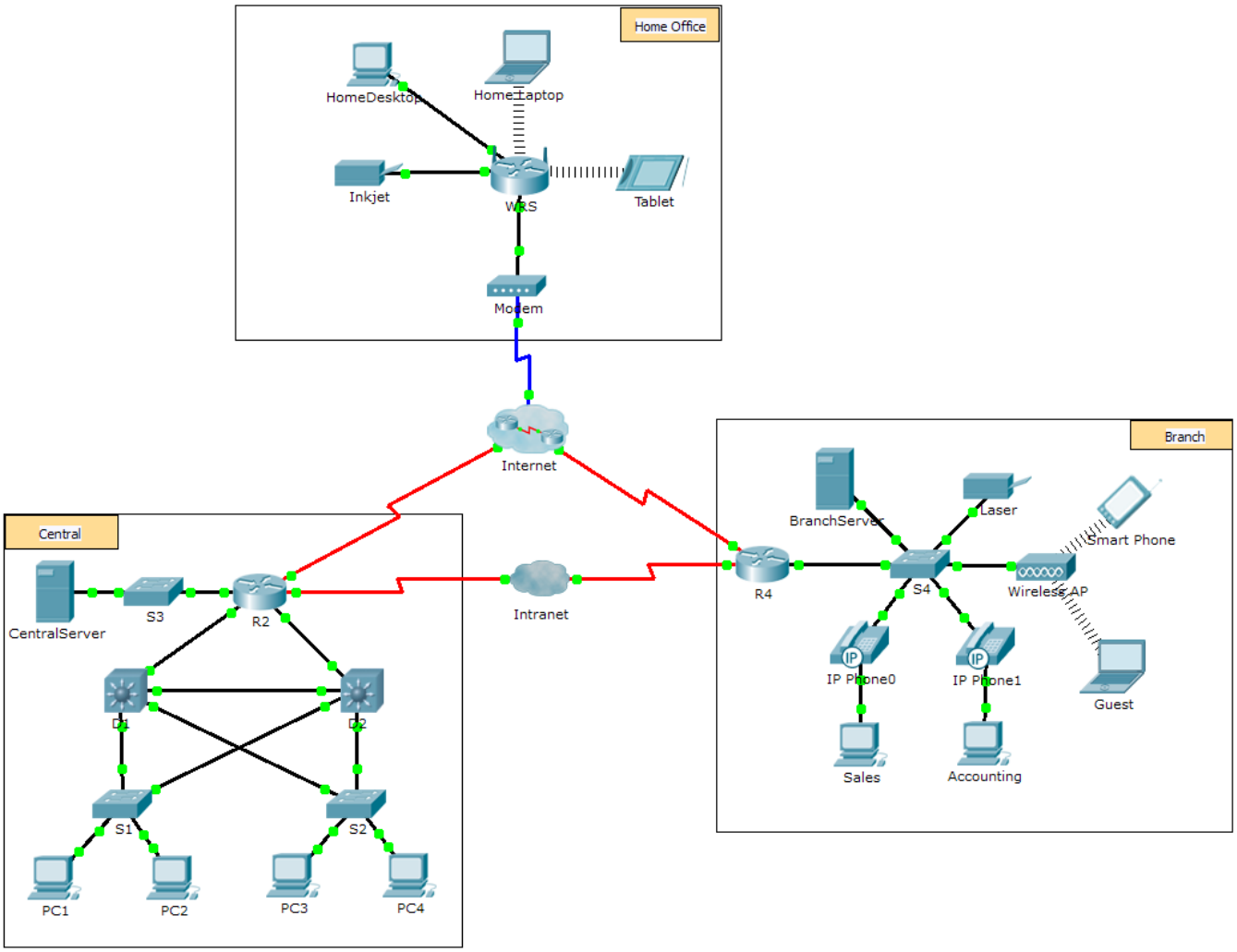
Packet Tracer - Help and Navigation Tips

Topology



Objectives

Overview of the Packet Tracer Program

Background

Packet Tracer is a fun, take-home, flexible software program which will help you with your Cisco Certified Network Associate (CCNA) studies. Packet Tracer allows you to experiment with network behavior, build network models, and ask "what if" questions.

In this activity, you will explore a relatively complex network that highlights a few of Packet Tracer's features. While doing so, you will learn how to access Help and the tutorials. You will learn how to switch between various modes and workspaces. You may need to adjust the window size of Packet Tracer to see the full network. If necessary, you can use the zoom in and out tools to adjust the size of the Packet Tracer window.

Note: It is not important that you understand everything you see and do in this activity. Feel free to explore the network on your own. If you wish to proceed more systematically, follow the steps below. Answer the questions to the best of your ability.

1. Access the Packet Tracer Help pages, tutorial videos, and online resources

a. Access the Packet Tracer Help pages in two ways:

- Click the question mark icon in the top, right-hand corner of the menu toolbar.
- Click the Help menu, and then choose Contents.

b. Access the Packet Tracer tutorial videos by clicking **Help** > **Tutorials**. These videos are a visual demonstration of the information found in the **Help** pages and various aspects of the Packet Tracer software program. Before proceeding with this activity, you should gain some familiarity with the Packet Tracer interface and Simulation mode.

1) View the **Interface Overview** video in the **Getting Started** section of Tutorials.
2) View the **Simulation Environment** video in the **Realtime** and **Simulation Modes** section of **Tutorials**.

c. Find the "Configuring Devices Using the Desktop Tab" tutorial. Watch the first part of the tutorial and answer the following question: What information can you configure in the IP Configuration window?

-DHCP or Static:

-Static: IP Address, Subnet Mask, Default Gateway, DNS Server, IPv6 Configuration;

-DHCP or Auto Config or Static:

-Static: IPv6 Address, Link Local Address, IPv6 Gateway, IPv6 DNS Server;

2. Toggle between Realtime and Simulation modes.

a. Find the word **Realtime** in the bottom right corner of the Packet Tracer interface. In Realtime mode, your network is always running like a real network, whether or not you are working on the network. Your configurations are performed in real time, and the network responds in near real time.

b. Click the tab directly behind the **Realtime** tab to switch to **Simulation** mode. In Simulation mode, you can watch your network run at a slower pace, observing the paths that data takes, and inspecting the data packets in detail.

c. In the Simulation Panel, click **Auto Capture / Play**. You should now see data packets, represented as envelopes of various colors, traveling between the devices.

d. Click **Auto Capture / Play** again to pause the simulation.

e. Click **Capture / Forward** to step through the simulation. Click the button a few more times to see the effect.

f. In the network topology on the left, click one of the envelopes on an intermediary device and investigate what is inside. Over the course of your CCNA studies, you will learn the meaning of most everything inside these envelopes. For now, see if you can answer the following questions:

- Under the **OSI Model tab**, how many **In Layers** and **Out Layers** have information?

  -Varies, depending on the devices selected;

- Under the **Inbound PDU Details** and **Outbound PDU Details** tabs, what are the headings of the main sections?

  -Varies, but examples include:

  -Inbound PDU Details: Ethernet, LLC, STP BPDU, etc…;

  -Outbound PDU Details: Ethernet, LLC, STP BPDU, etc…;

- Click back and forth between the **Inbound PDU Details** and **Outbound PDU Details** tabs. Do you see information changing? If so, what?

  - Yes. The source address, root id, bridge id, port id, etc…;

g. Click the toggle button above **Simulation** in the bottom right corner to return to **Realtime** mode.

3. Toggle between Logical and Physical views.

a. Find the word **Logical** in the top left corner of the Packet Tracer interface. You are currently in the Logical workspace where you will spend the majority of your time building, configuring, investigating, and troubleshooting networks.

Note: Although you can add a geographical map as the background image for the Logical workspace, it does not usually have any relationship to the actual physical location of devices.

b. Click the tab below **Logical** to switch to the **Physical** workspace. The purpose of the Physical workspace is to give a physical dimension to your Logical network topology. It gives you a sense of scale and placement (how your network might look in a real environment).

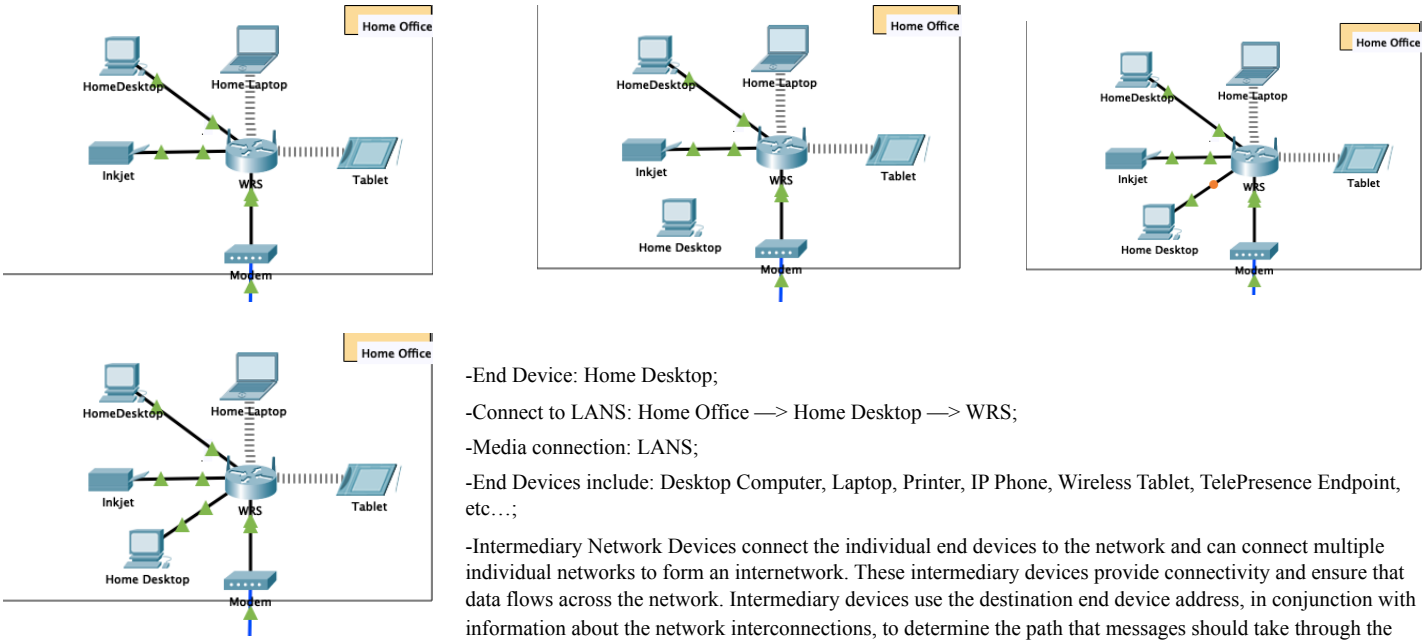
c. During your CCNA studies, you will use this workspace on occasion. For now, just know that it is available for you to use. To learn more about the Physical workspace, refer to the Help files and tutorial videos.

d. Click the toggle button below **Physical** in the top right corner to return to the **Logical** workspace.

Challenge

Now that you have had an opportunity to explore the network represented in this Packet Tracer activity, you may have picked up a few skills that you would like to try out. Or maybe you would like the opportunity to explore this network in more detail. Recognize that most of what you see and experience in Packet Tracer is currently beyond your skill level. However, here are some challenges you might want to attempt. Do not worry if you cannot do them all. You will be a Packet Tracer master user and network designer soon enough.

- Add an end device to the topology and connect it to one of the LANs with a media connection. What else does this device need to send data to other end users? Can you provide the information? Is there a way to verify that you correctly connected the device?



-End Device: Home Desktop;

-Connect to LANS: Home Office —> Home Desktop —> WRS;

-Media connection: LANS;

-End Devices include: Desktop Computer, Laptop, Printer, IP Phone, Wireless Tablet, TelePresence Endpoint, etc…;

-Intermediary Network Devices connect the individual end devices to the network and can connect multiple individual networks to form an internetwork. These intermediary devices provide connectivity and ensure that data flows across the network. Intermediary devices use the destination end device address, in conjunction with information about the network interconnections, to determine the path that messages should take through the network.

-End devices communicate across the internetwork.

-Intermediary network devices perform some or all of these functions:
-Regenerate and retransmit data signals;
-Maintain information about what pathways exist through the network and internetwork;
-Notify other devices of errors and communication failures;
-Direct data along alternate pathways where there is a link failure;
-Classify and direct messages according to priorities;

-Permit or deny the flow of data, based on security settings

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-Intermediary Network Devices (1.2.1.3)

-Communication across a network is carried on a medium. The medium provides the channel over which the message travels from source to destination. Modern networks primarily use three types of media to interconnect devices and to provide the pathway over which data can be transmitted.

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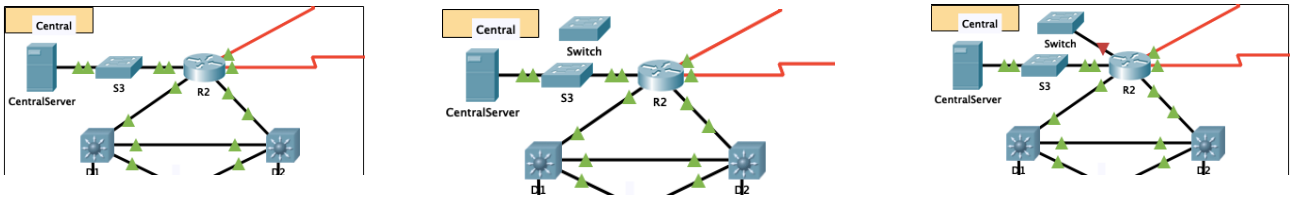
-Network Media (1.2.1.4)

- Add a new intermediary device to one of the networks and connect it to one of the LANs or WANs with a media connection. What else does this device need in order to serve as an intermediary to other devices in the network?



-Intermediary Device: Switch;

-Connect to LANS or WANS: Central —> Switch —> Router —>;

-Media connection: LANS;

-Needs end device and media;

-Intermediary Devices include: Wireless Router, LAN Switch, Router, Multilayer Switch, Firewall Appliance, etc…;

-Network Interface Card: A NIC, or LAN adapter, provides the physical connection to the network at the PC or other end device. The media that are connecting the PC to the networking device plug directly into the NIC.

-Physical Port: A connector or outlet on a networking device where the media is connected to an end device or another networking device.

-Interface: Specialized ports on a networking device that connect to individual networks. Because routers are used to interconnect networks, the ports on a router are referred to as network interfaces.

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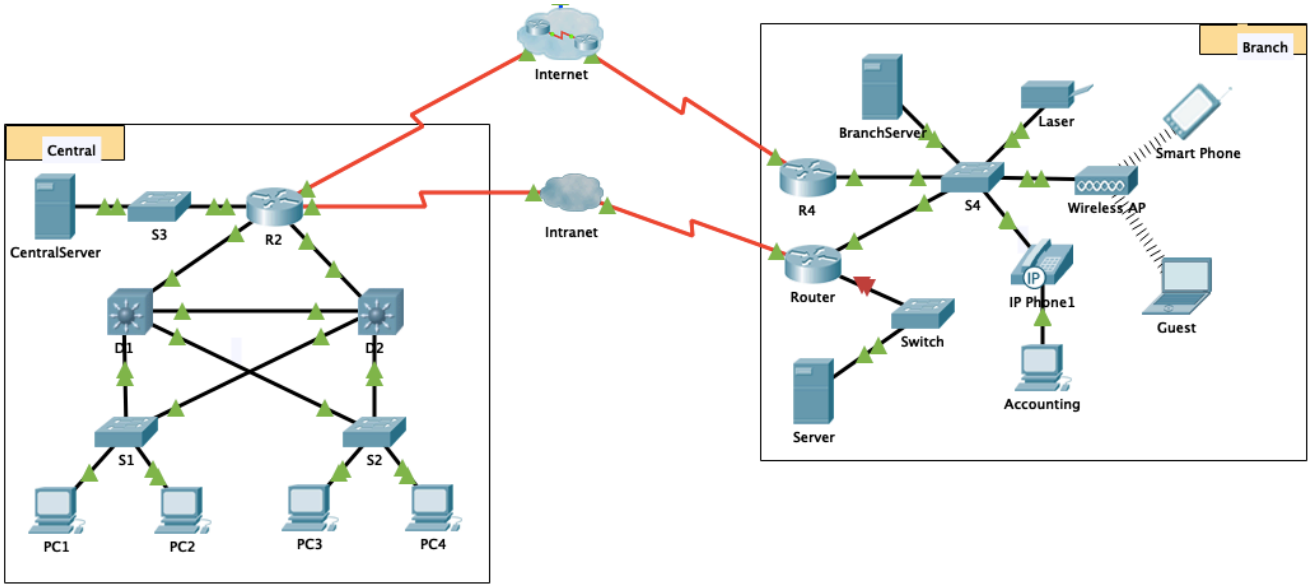
-Network Representations (1.2.1.5)

- Open a new instance of Packet Tracer. Create a new network with at least two LANs connected by a WAN. Connect all the devices. Investigate the original Packet Tracer activity to see what else you might need to do to make your new network functional. Record your thoughts and save your Packet Tracer file. You may want to revisit your network later after you have mastered a few more skills.



Suggested Scoring Rubric

Question Location	Possible Points	Earned Points
Step 1c	4	
Step 2f	6	
Total Score	**10**	