Packet Tracer - Network Representation

Objectives

The network model in this activity incorporates many of the technologies that you will master in your CCNA studies. It represents a simplified version of how a small to medium-sized business network might look. Feel free to explore the network on your own. When you are ready, proceed through the following steps and answer the questions.

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.

Instructions

Step 1: Identify common components of a network as represented in Packet Tracer.

The icon toolbar at the bottom left hand corner has various categories of networking components. You should see categories that correspond to intermediary devices, end devices, and media. The **Connections** category (with the lightning bolt icon) represents the networking media supported by Packet Tracer. There is also an **End Devices** category and two categories specific to Packet Tracer: **Custom Made Devices** and **Multiuser Connection**.

List the intermediary device categories.

- Routers, Hub, Wireless Device, Security, WAN Emulation.

Without entering into the internet cloud or intranet cloud, how many icons in the topology represent endpoint devices (only one connection leading to them)?

- 15 end devices

Without counting the two clouds, how many icons in the topology represent intermediary devices (multiple connections leading to them)?

- 2

How many end devices are **not** desktop computers?

- 11

How many different types of media connections are used in this network topology?

- 6

Step 2: Explain the purpose of the devices.

a. In Packet Tracer, only the Server-PT device can act as a server. Desktop or Laptop PCs cannot act as a server. Based on your studies so far, explain the client-server model.

• In today's networks, a host can serve as both a client and a server. The role that the host performs on the network is determined by the software that is installed on it. Servers are hosts that have software installed that allows them to give information and services to other hosts on the network, such as email or web pages. Clients are hosts who have software installed on their computers that allows them to request and display information.

b. List at least two functions of intermediary devices.

•generate and retransmit data signals; preserve knowledge about which network and internetwork channels exist; alert other devices to mistakes and communication problems; In the event of a link failure, direct data down alternate paths; Sort and direct communications based on their priority in terms of quality of service; Allow or disallow data transfer based on security settings

c. List at least two criteria for choosing a network media type.

• The maximum distance over which a signal can be successfully transmitted. The location where the media will be installed. The amount of data to be sent and the rate at which it must be sent. The price of the media as well as the installation.

Step 3: Compare and contrast LANs and WANs.

a. Explain the difference between a LAN and a WAN. Give examples of each.
- LAN is a type of network that operates in a local area
- WAN wide area network is a network that has multiple LAN
- Home internet is an example of LAN while the internet itself and a network used in corporation or the government is an example of WAN

b. In the Packet Tracer network, how many WANs do you see?
- There are two: the Internet and the Intranet WANs.

c. How many LANs do you see?
- There are three, easily identifiable because each has a border and label.

d. The internet in this Packet Tracer network is overly simplified and does not represent the structure and form of the real internet. Briefly describe the internet.
- The internet is a worldwide collection of interconnected networks (internetworks, or internet for short). It is like a portal that can be access by anyone in anytime anywhere

e. What are some of the common ways a home user connects to the internet?
- Cable, DSL, cellular

f. What are some common methods that businesses use to connect to the internet in your area?
- Metro-E, DSL, Cable, satellite