Packet Tracer - Who Hears the Broadcast?

Objectives

Part 1: Observe Broadcast Traffic in a VLAN Implementation

Part 2: Complete Review Questions

Scenario

In this activity, a 24-port Catalyst 2960 switch is fully populated. All ports are in use. You will observe broadcast traffic in a VLAN implementation and answer some reflection questions.

Instructions

Step 1: Use ping to generate traffic.

a. Click **PC0** and click the **Desktop** tab> **Command Prompt**.

b. Enter the **ping 192.168.1.8** command. The ping should succeed.

Unlike a LAN, a VLAN is a broadcast domain created by switches. Using Packet Tracer **Simulation** mode, ping the end devices within their own VLAN. Based on your observation, answer the questions in Step 2.

Step 2: Generate and examine broadcast traffic in a VLAN implementation.

a. Switch to **Simulation** mode.

b. Click **Edit Filters** in the Simulation Panel. Uncheck the **Show All/None** checkbox. Check the **ICMP** checkbox.

c. Click the **Add Complex PDU** tool, this is the open envelope icon on the right toolbar.

d. Float the mouse cursor over the topology and the pointer changes to an envelope with a plus (+) sign.

e. Click **PC0** to serve as the source for this test message and the **Create Complex PDU** dialog window opens. Enter the following values:

o   Destination IP Address: 255.255.255.255 (broadcast address)

o   Sequence Number: 1

o   One Shot Time: 0

Within the PDU settings, the default for **Select Application:** is PING.

What are at least 3 other applications available for use?

f. Click **Create PDU**. This test broadcast packet now appears in the **Simulation Panel Event List.** It also appears in the PDU List window. It is the first PDU for Scenario 0.

g. Click **Capture/Forward** twice.

What happened to the packet?

h. Repeat this process for **PC8** and **PC16**.

Reflection Questions

1. If a PC in VLAN 10 sends a broadcast message, which devices receive it?

2. If a PC in VLAN 20 sends a broadcast message, which devices receive it?

3. If a PC in VLAN 30 sends a broadcast message, which devices receive it?

4. What happens to a frame sent from a PC in VLAN 10 to a PC in VLAN 30?

5. Which ports on the switch light up if a PC connected to port 11 sends a unicast message to a PC connected to port 13?

6. Which ports on the switch light if a PC connected to port 2 sends a unicast message to a PC connected to port 23?

7. In terms of ports, what are the collision domains on the switch?

8. In terms of ports, what are the broadcast domains on the switch?