VANIER COLLEGE – Computer Engineering Technology Winter 2021

Network Fundamentals (247-409-VA)

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LABORATORY EXPERIMENT 1

Introduction to Packet Tracer

NOTE:
To be completed in one lab session of 3 hrs + at home to finish.

To be submitted: Non formal lab report, Hand in:

- this document with the answers to all questions in another color (not red)
- 2 packet tracer files.

This exercise is to be done individually.

OBJECTIVES:

After performing this experiment, the student will be able to:

1. Develop an understanding of the basic functions of Packet Tracer (PT)
2. Recognize and locate key network components in PT interface
3. Correctly identify cables for use in network
4. Create/model a simple network topology

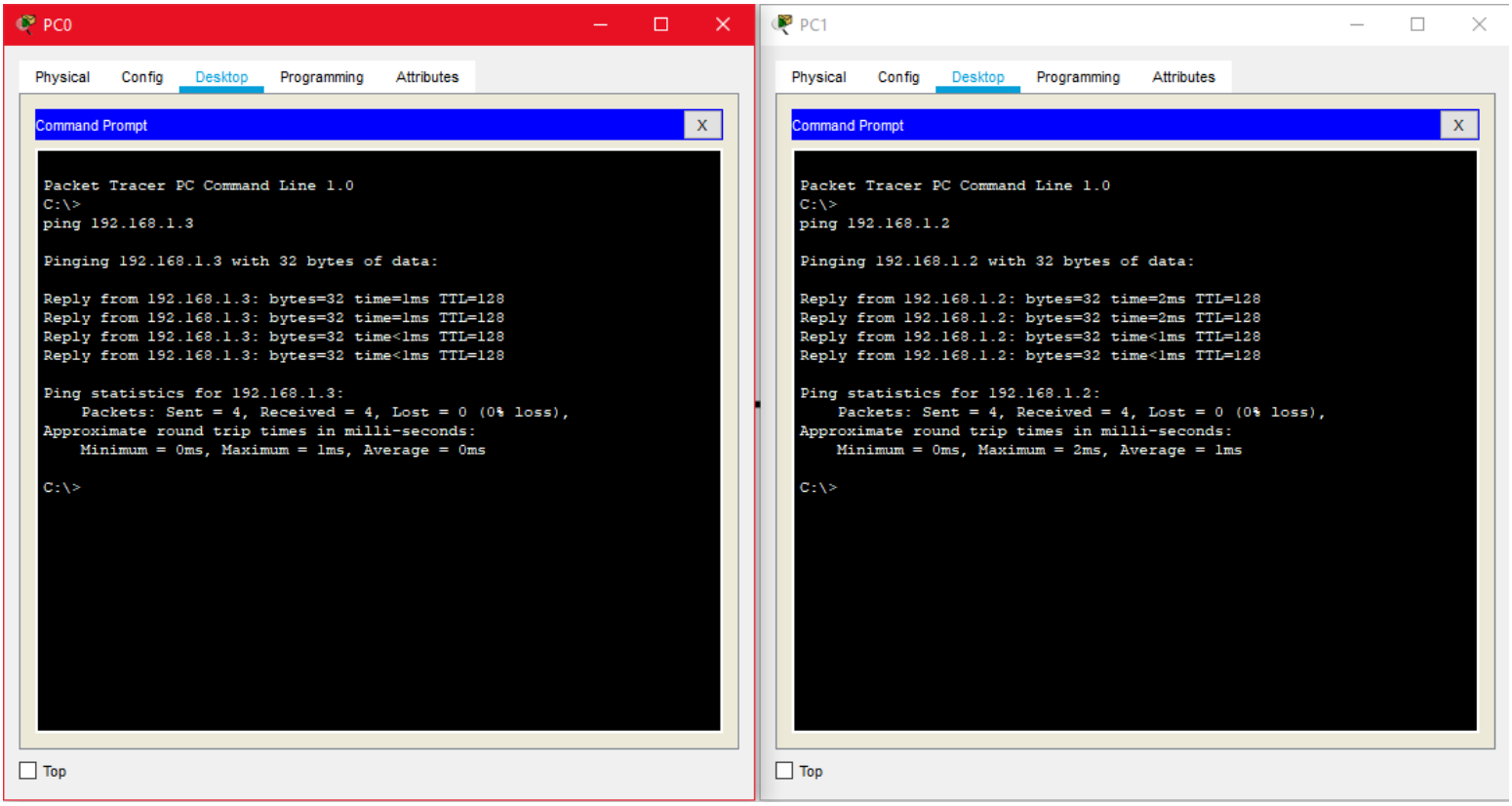
PROCEDURE

Part A: Familiarization with Packet Tracer.

1. Read chapter 2 in the packet tracer course on Cisco Academy

Part B: Building a small network (peer-to-peer) using PT

2. Create a new packet tracer file.
3. Using the correct Ethernet cable, connect 2 generic PCs together. Connect one end of the cable to the NIC port of PC0 and the other end of the cable to PC1 to form a peer-to-peer network.
    a. Which cable did you use? Copper Cross-Over
4. Apply a Layer 3 address to the workstations.
    a. Click the PC you want to assign an address to.
    b. Click the **Desktop** tab
    c. Click the **IP Configuration** tab
    d. In the **IP address** box, enter the IP address *192.168.1.2* for PC0.
    e. Press the tab key and the Subnet mask is automatically entered. The subnet address should be 255.255.255.0. If this address is not automatically entered, enter this address manually
    f. Close the IP configuration window by clicking on the X
    g. Repeat a. to f. for PC1 with IPaddress *192.168.1.3*
5. Verify the connectivity by following the following instructions:
    a. Click **PC0**
    b. Click the **Desktop** tab
    c. Click the **Command Prompt** tab
    d. Type **ping 192.168.1.3** then press enter.
    e. What is the output of the ping command? (screen shot)
    f. Perform ping from PC1 to PC0 and record your results. (screen shot)



Left screenshot: PC0, right screenshot: PC1. This is the result after executing the ping command on each computer. When the ping command is executed (on either computer), a packet is sent from the originating computer (the one who is executing the command) to the specified destination computer (typically an IP address) to see if it receives the packet and sends back a response to the originating computer. If the network is configured correctly, the response after the command is executed should look like what is shown above. This is an easy way to test to see if your network configuration is configured properly.

6. Save your file and hand it in MS Teams for LAB 1

Part C: Building a simple Ethernet network using PT

7. Create a new packet tracer file. Add the following components onto your workspace.
    a. 2 generic PCs
    b. 1 generic hub

8. Choose a **Copper Straight-through** cable type. Click the first host, **PC0**, and assign the cable to the **FastEthernet0** connector. Click the hub, **Hub0**, and select a connection, **FastEthernet0**.

9. Repeat Step 8 for the second PC, **PC1**, to connect the PC1 to **FastEthernet1** on the hub. **There should be* **green** triangles at both ends of each cable connection. If not, check the cable type selected.

10. Configure host names and IP addresses on the PCs
    a. Click PC0. Select the **Config** tab. Change the PC **Display Name** to PC-A.
    b. Select the **FastEthernet** tab on the left and add the IP address of **192.168.1.1** and subnet mask of **255.255.255.0**. Close the PC-A configuration window.
    c. Click PC1. Repeat similar procedures as in (a) to change the PC Display Name to **PC-B**, IP address of **192.168.1.2** and subnet mask of **255.255.255.0**.

11. Discover how to reconfigure components
    a. Add a generic PC.
    b. Turn if off and replace the Normal NIC card by a Wireless NIC card.
    c. Try doing the same to routers and other components.

12. Save your file and hand it in MS Teams for LAB 1