Packet Tracer – IPv4 Addresses and Network Communication

1. Topology



1. Objectives

* Build a simple peer-to-peer network and verify physical connectivity.
* Assign various IPv4 addresses to hosts and observe the effects on network communication

1. Background / Preparation

In this activity, you will build a simple peer-to-peer network using two PCs and an Ethernet crossover cable. You will assign IPv4 addressing to the hosts and determine the effects on their ability to communicate.

* + 1. Connect the PCs to create a peer-to-peer network.
       1. Click **Connections > Copper Cross-Over** cable. Click **PC-A > FastEthernet0** and the click **PC-B > FastEthernet0**.
       2. Verify that a green light is next to both PCs indicating that the physical connection is functional.
    2. Configure IPv4 Settings on PC-A and PC-B.

Configure IPv4 addressing on PC-A and PC-B manually so that they are able to communicate using TCP/IP.

* + - 1. Click **PC-A > Config > FastEthernet0.**
      2. In the IP Configuration, type in the IP address **192.168.1.1** and the subnet mask **255.255.255.0**.

**Note**: when you click the Subnet Mask after you enter the IP address, Packet Tracer should enter the value 255.255.255.0 automatically. You can manually enter or change it if needed.

* + - 1. Close the Config window.
      2. Repeat steps 2b – 2c for PC-B using an IPv4 address **192.168.1.2** and a subnet mask **255.255.255.0**.
    1. Verify IPv4 connectivity between PC-A and PC-B.

Now that the two PCs are connected and configured correctly with IPv4 addresses, we need to make sure they can communicate with each other. The **ping** command is a simple way to accomplish this task.

* + - 1. Click **PC-A** **> Desktop > Command Prompt**. Test connectivity to PC-B by entering the command **ping 192.168.1.2**. The ping should be successful. If not, check your configurations in Step 2.
      2. Repeat from PC-B with the command **ping 192.168.1.1**. The ping should be successful. If not, check your configurations in Step 2.
      3. Close the command prompt on both PCs.
    1. Change IPv4 address for PC-B.
       1. Click **PC-B > Config > FastEthernet0**.
       2. Change the IP address for PC-B from 192.168.1.2 to **192.168.2.2** and leave the subnet mask set to 255.255.255.0.
    2. Test network connectivity between the 2 PCs.
       1. Click **PC-A > Desktop > Command Prompt**. Test connectivity to PC-B by entering the command **ping 192.168.2.2**. Was it successful? Explain.

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* + - 1. What type of networking device would allow the PCs to communicate even though they are on different networks?

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* + 1. Change IPv4 address for PC-A.
       1. Click **PC-A > Config > FastEthernet0.**
       2. Change the IPv address for PC-A from 192.168.1.1 to 192.168.2.99 and leave the subnet mask set to 255.255.255.0.

The two PCs are still on the same physical Ethernet network. Are they on the same logical IPv4 network now?

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* + 1. Test network connectivity between the 2 PCs.
       1. Click **PC-B > Desktop > Command Prompt**. Test connectivity to PC-A by entering the command **ping 192.168.2.99**. Was it successful? Explain.

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