VANIER COLLEGE – Computer Engineering Technology – Winter 2021

Network Fundamentals (247-409-VA)

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LABORATORY EXPERIMENT 2

Building a Simple Peer-to-peer Network

NOTE:
To be completed in one lab session of 3 hrs.
To be submitted using the typical lab format, one week later – **at the start** of your respective lab session. This exercise is to be done individually except where specified in the procedure. **Each** student must submit a lab report with **original observations and conclusions**.

OBJECTIVES:

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

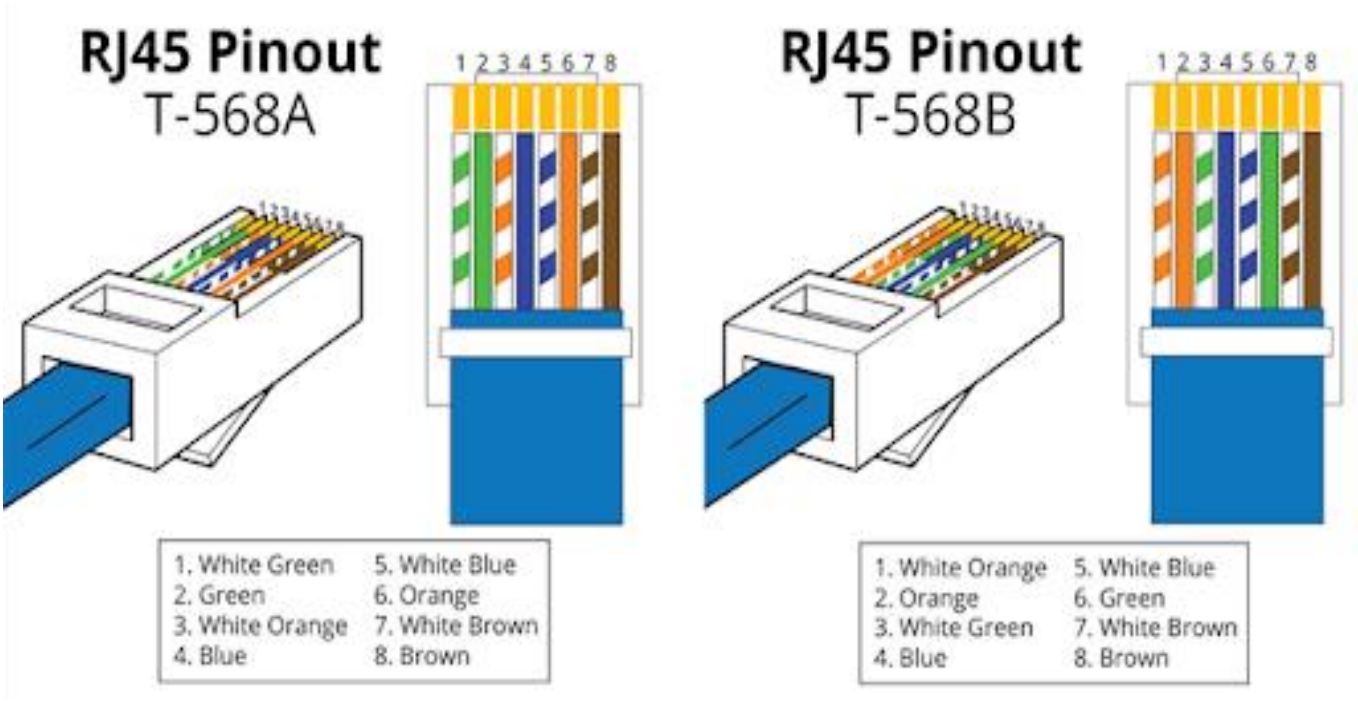
1. Build a simple peer-to-peer network
2. Understand the differences between patch and crossover Cat 5e UTP cable

Part A: Build a cross-over cable

Normal **patch** cables, also known as straight-through cables, have wire terminations on either end that are identical. Another kind of cable is a **crossover** cable. In this type of cable, the transmit and receive pins in one of the cable's plugs must be reversed.

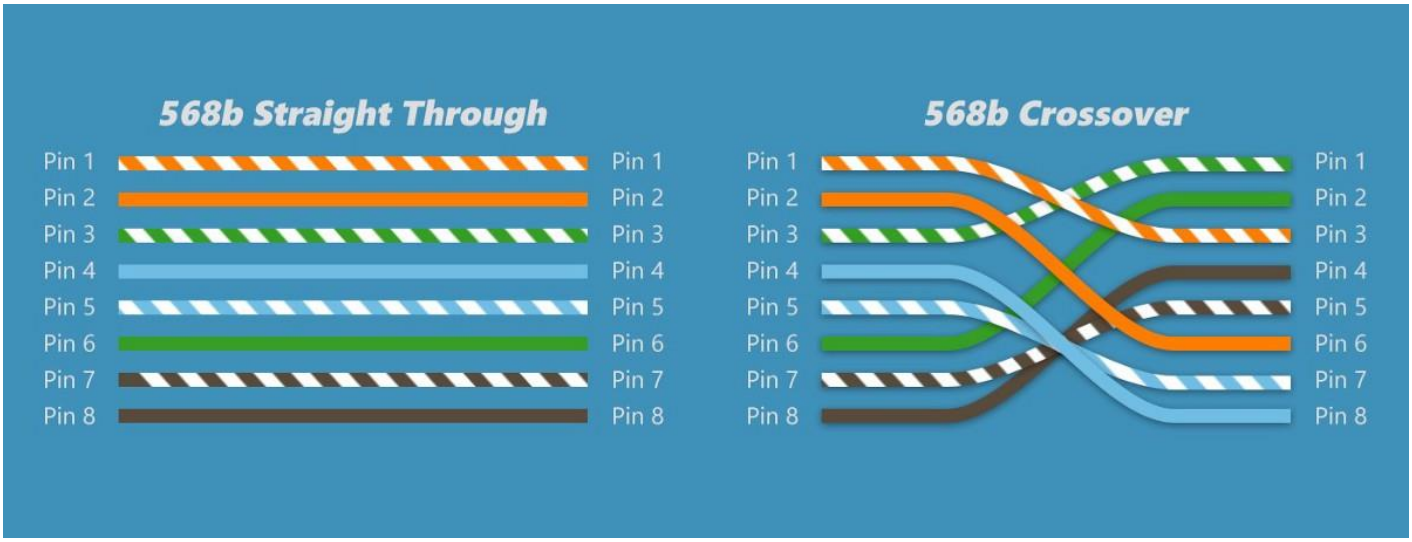
Perform some research about Ethernet cable and answer the following questions:

1. What is the standard colour coding and signals of Ethernet cables?



The 568A and 568B common standards diagrams for ethernet cables shown above.

2. Using diagram, illustrate the differences of cables connections between a patch and crossover cable.



Difference between the copper straight through and copper crossover cable ends shown above. Straight through copper cables have the same two ends (both 568B or 568A) whereas the crossover copper cables have two different ends (one 568B and the other 568A).

3. What is the name of the type of connector commonly used for Ethernet cable?
   The name of the type of connector commonly used for Ethernet cables is RJ-45.

PROCEDURE (team up in 2)

Part B: Building peer-to-peer network

Make sure before you start to disable all firewalls.

Disable all **but** the D-265 NIC card.

You report should include all necessary screen shots of step/procedures taken. Take your time to explore the capability of peer-to-peer network.

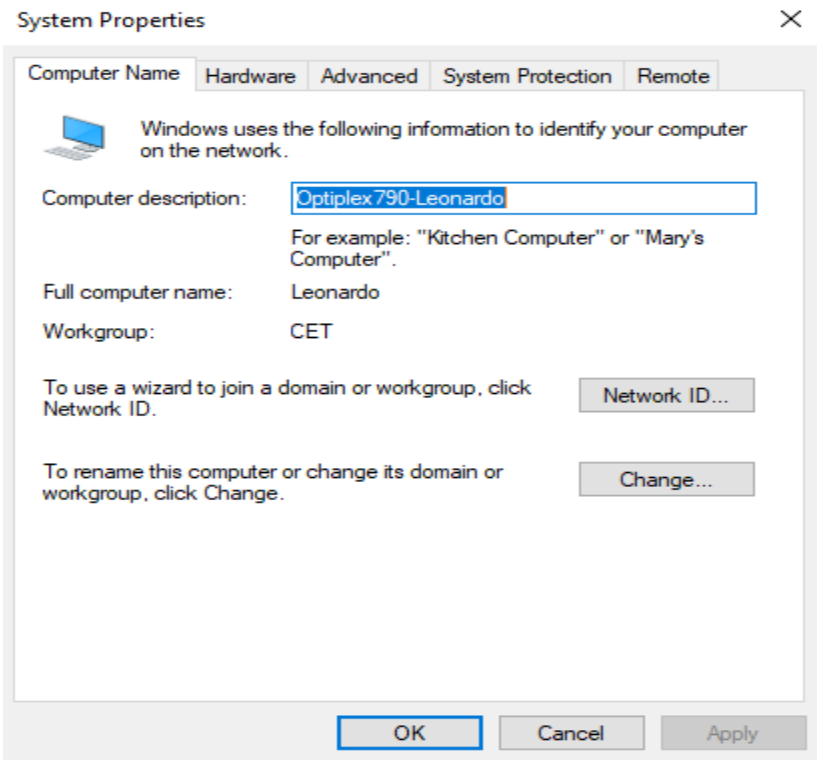
4. Using the cross over cable you built, connect the PC via NIC interface. ** **NOTE**: *You are not allowed to change/disconnect any of the cable at your desk. Any connections needed are to be done at the patch panel in D-265 system room*. A link light on both NICs illuminates, indicating that each NIC has successfully connected.

D-265	Identifying...	Intel(R) 82579LM Gigabit Network Connection	No network access	Public network
Vanier Ethernet	Disabled	Realtek PCIe GbE Family Controller		
D-245 NO	Disabled	Realtek PCIe GbE Family Controller #2		
Npcap Loopback Adapter	Enabled	Npcap Loopback Adapter		
Wi-Fi	Disabled	Realtek 8185 Extensible 802.11b/g Wireless Device		

Complete list of adapters shown on my PC shown above. Only adapter that is being used is the "D-265" adapter. All other unused adapters are disabled.

5. On computer 1: On *Workstation1*, click the **Search Box,** type control panel, and then select **Control Panel** > **System and Security** > **System** >**Change settings**. Type WORKSTATION1 in the Computer name text box.

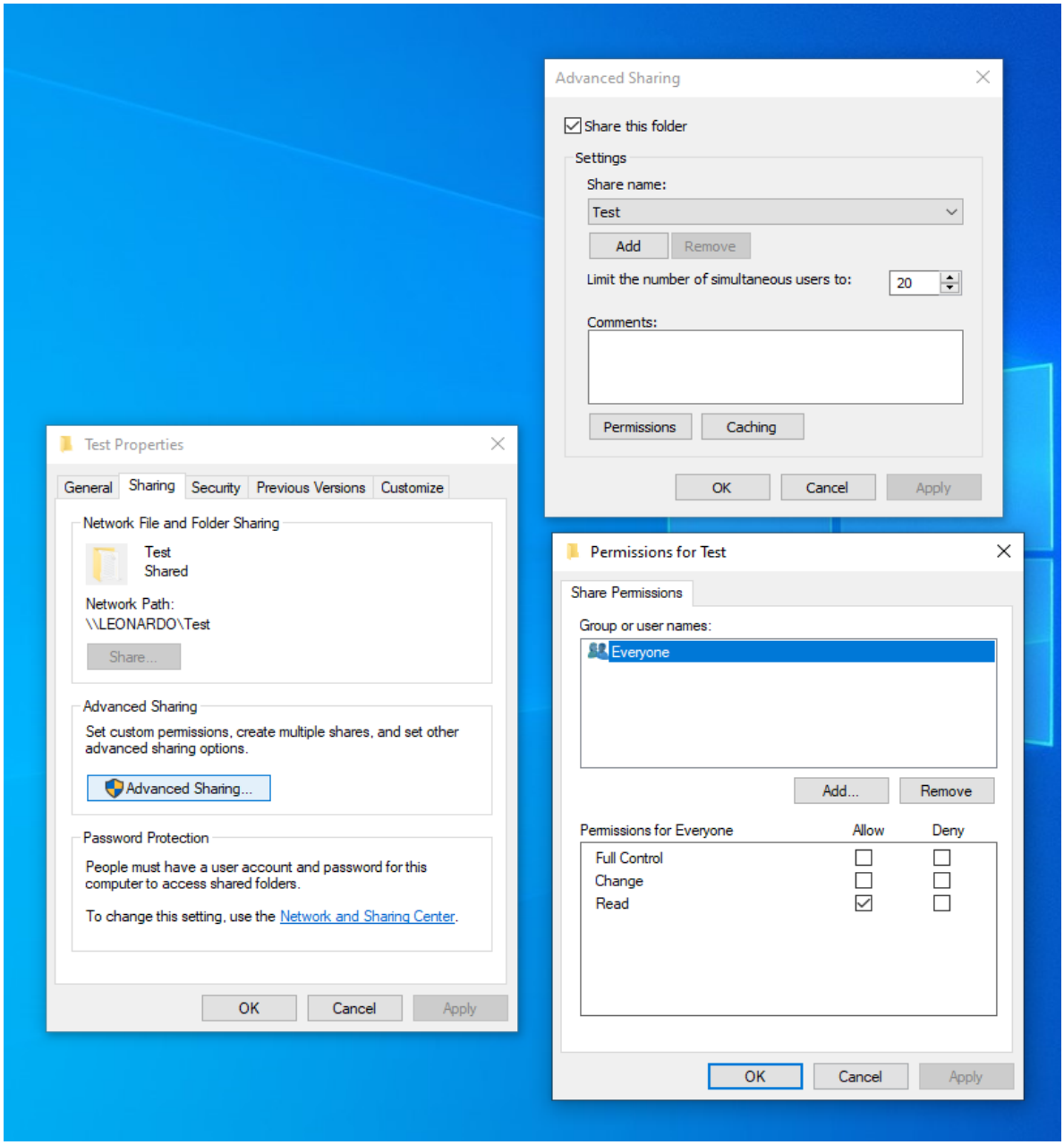
6. Click the "**Change**…" button. Select **Workgroup**, and type CET in the Workgroup name text box. Click OK in the dialog box and close any open windows. Restart the computer when prompted.



My system information about my PC shown above.

7. Now try to share a drive, it can be either DVD-ROM drive (if you have a DVD or CD in it) or USB drive. Right-click the icon for the drive and select **Give access to** > **Advanced sharing**.

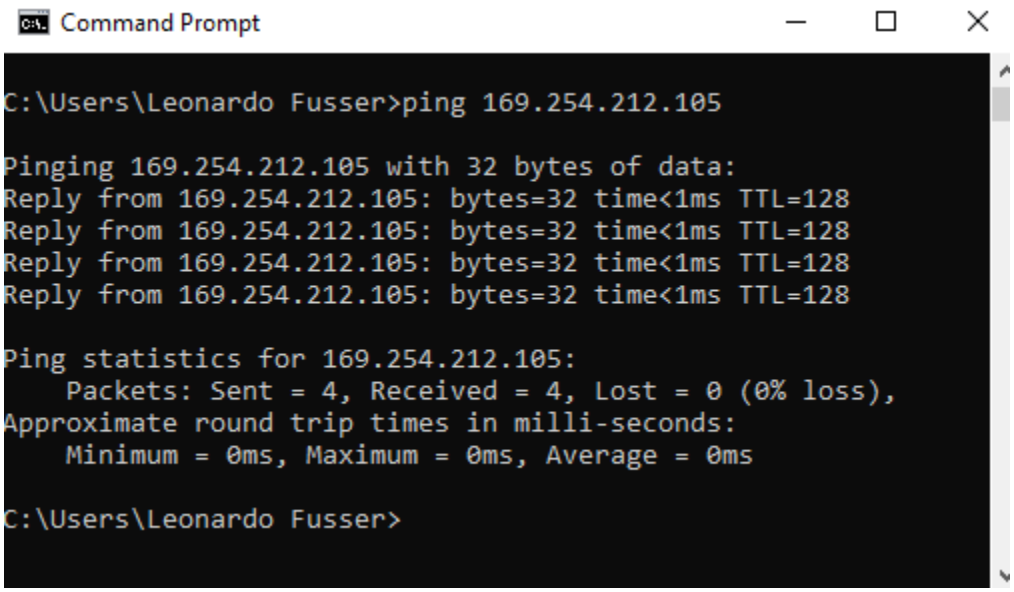
8. Click the Advanced Sharing button. Check the Share this folder check box, click apply, and click Add. Enter an appropriate name in the Share name text box and click OK. Close all the dialog and setting box.



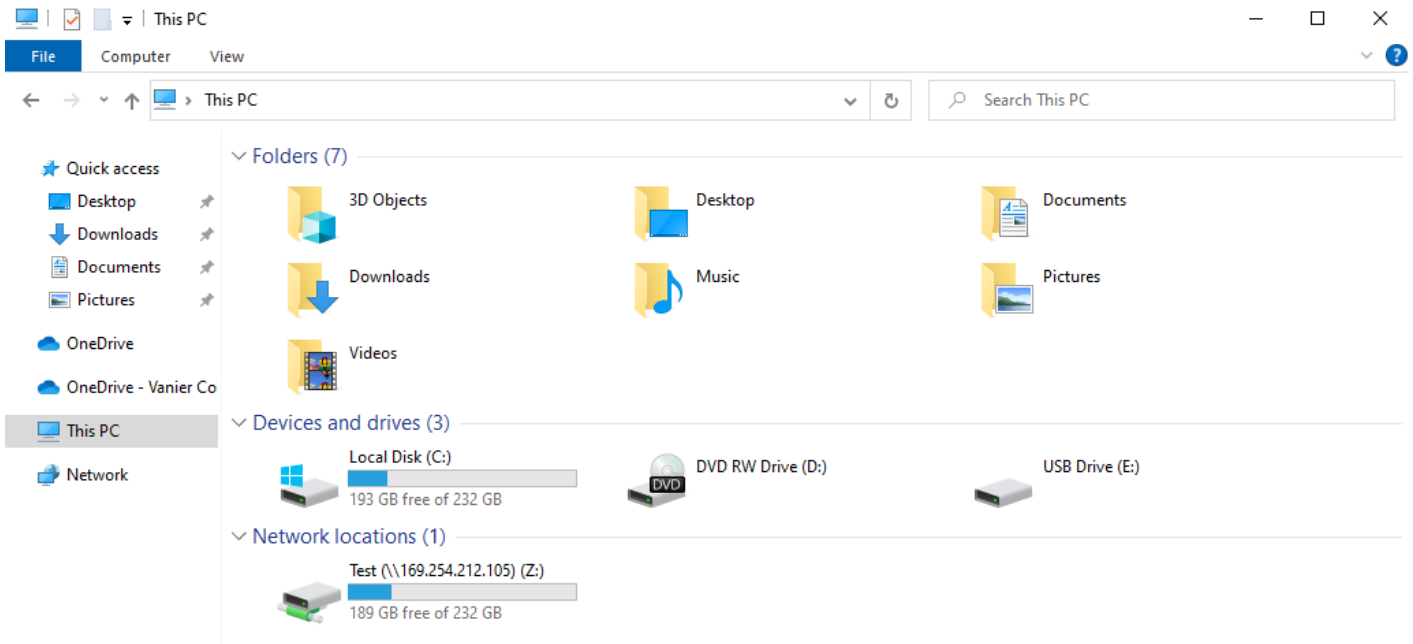
Folder with README text file created and enabled for sharing to connect on the other PC shown above.

9. Repeat step 2 & 3 on *Workstation2*, using WORKSTATION2 as the name of the 2nd computer.

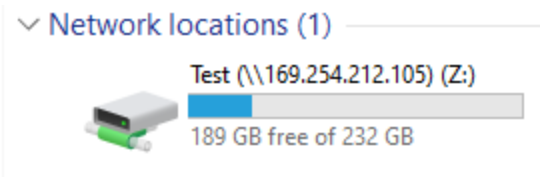
10. On Workstation2, click the Network. Double-click the icon for WORKSTATION1 to open it. Can you successfully access to the shared folder? If you can not see WORKSTATION1 type \\WORKSTATION1 in the address bar.



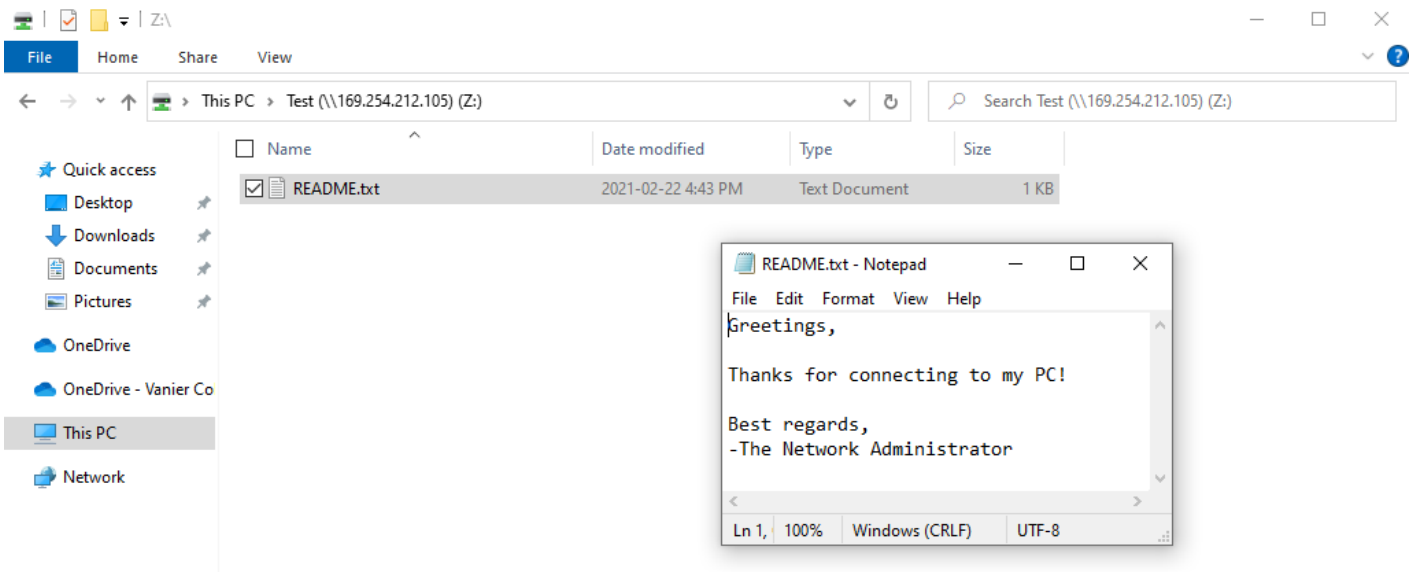
Successful communication with other PC shown above.



Successfully connected to network share on other PC shown above.



Network share from other PC connected on my PC shown above.



Successfully opened README text document on network share from other PC.