



**Computer Engineering Department**

**Course Name: Networks Lab**

**Number: 10636594**

**Lab Report Grading Sheet**

Instructor: Dr. Muhannad Al-Jabi	Experiment #: 2
Academic Year: 2020/2021	Experiment Name: Simple Network
Semester: Summer Semester	

Students				
1- Mohammad Badawi		2- Taher Anaya		
3-		4-		
Performed on: 24 <sup>th</sup> of June		Submitted on: 30 <sup>th</sup> of June		
Report's Outcomes				
ILO __ =( ) %	ILO __ =( ) %	ILO __ =( ) %	ILO __ =( ) %	ILO __ =( ) %
Evaluation Criterion			Grade	Points
<b>Abstract</b> answers of the questions: “What did you do? How did you do it? What did you find?”			0.5	
<b>Introduction and Theory</b> Sufficient, clear and complete statement of objectives. In addition to Presents sufficiently the theoretical basis.			1.5	
<b>Apparatus/ Procedure</b> Apparatus sufficiently described to enable another experimenter to identify the equipment needed to conduct the experiment. Procedure sufficiently described.			2	
<b>Experimental Results and Discussion (In-Lab Worksheet)</b> Crisp explanation of experimental results. Comparison of theoretical predictions to experimental results, including discussion of accuracy and error analysis in some cases.			4	
<b>Conclusions and Recommendations</b> Conclusions summarize the major findings from the experimental results with adequate specificity. Recommendations appropriate in light of conclusions. Correct grammar.			1	
<b>Appearance</b> Title page is complete, page numbers applied, content is well organized, correct spelling, fonts are consistent, good visual appeal.			1	
<b>Total</b>			10	



## **Abstract:**

In this experiment, we are going to create a simple peer-to-peer LAN connection between two computers and share a folder between them.

## **Objectives:**

- Creating a simple ethernet network between two PCs using a switch.
- Using the Network Utility/Control Panel to configure and verify the network settings.
- Using the CMD “ping” command to verify the TCP/IP connection between both computers.
- Using the CMD “ipconfig” command to verify all the network IP configuration settings.

## **Procedure:**

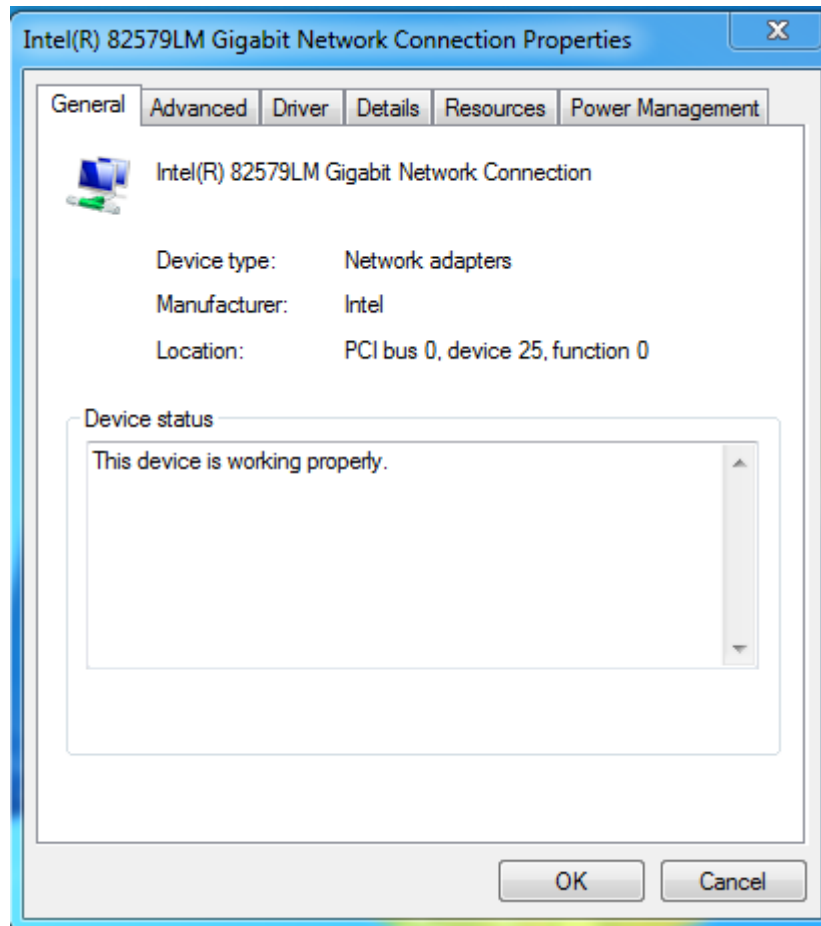
In the first step of the experiment, we had to verify that the ethernet cables are not faulty and suffer from no issues. To do that, we connected both ends of the cable to the PC and the switch. The switch let up a LED with a green color, which indicates that the wires are fine and suffer from no issues.

The next step of the experiment is to disable the Virtual and the Wireless network adapters. Because we will be using the ethernet adapter, we will disable both of these adapters to make sure that they won't interfere with our connection.

The ethernet adapter used is the Intel(R) 82579LM Gigabit Network Connection adapter. The adapter was working properly with no issues. We verified that from the properties panel for the adapter. The Device Status section showed that the device is working properly.



## Procedure: (cont.)



After verifying the adapters on both PCs, we will now navigate to the Network and Sharing Center panel -> change adapter settings -> navigate to the ethernet adapter and choosing the properties option from the context menu. After that we double click on the Internet Protocol Version 4 (TCP/IPv4).

In the given menu, we will be able to set the IP address for each PC on the network. We chose one PC to have the IP 192.168.1.30 and the other PC to have the IP 192.168.1.31. The subnet mask for both PCs will be 255.255.255.0.

To verify the changes, we will run the "ipconfig/all" command for both PCs and navigating to the network adapter section.



## Procedure: (cont.)

For example, we verified that the IP on the PC with the IP 192.168.1.31 we set earlier was changed successfully.

```
C:\Windows\system32\cmd.exe

Primary Dns Suffix . . . . . : 
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    Description . . . . . : Intel(R) 82579LM Gigabit Network Connection
    Physical Address. . . . . : B8-CA-3A-A4-AC-43
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::bdce:88c1:7060:88a3%11(Preferred)
    IPv4 Address. . . . . : 192.168.1.31(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 
    DHCPv6 IAID . . . . . : 246991418
    DHCPv6 Client DUID. . . . . : 00-01-00-01-21-DD-14-C2-B8-CA-3A-A4-AD-B4

    DNS Servers . . . . . : fec0:0:0:ffff::1%1
                           fec0:0:0:ffff::2%1
                           fec0:0:0:ffff::3%1
    NetBIOS over Tcpip. . . . . : Enabled
```

The next step is to verify that we can establish a connection between both PCs. We will run the “ping” command in the CMD followed by the IP of the other PC. We chose to execute the command from the PC with the IP ending with 31, making the complete command “ping 192.168.1.30”.

```
C:\Windows\system32\cmd.exe

C:\Users\NetworksPC>ping 192.168.1.30

Pinging 192.168.1.30 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.30:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\NetworksPC>ping 192.168.1.30

Pinging 192.168.1.30 with 32 bytes of data:
Reply from 192.168.1.30: bytes=32 time=2ms TTL=128
Reply from 192.168.1.30: bytes=32 time<1ms TTL=128
Reply from 192.168.1.30: bytes=32 time<1ms TTL=128
Reply from 192.168.1.30: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\Users\NetworksPC>
```



## Procedure: (cont.)

As we can see, the packets arrived with no issues, meaning that there are no issues with our connection and we can begin sharing folders across the network.

To create a shareable folder, we created a folder called “Taher & Badawi” on one PC, similarly, we created another folder on the other PC called “Ali Moalla and Haroon Dwekat”. The first file had a text file called “myFile” with “This Is New File” as its content. The second file had a text file called “test” with “hi from pc 1” as its content.

**Note for the instructor: We worked in a group of 4 in this experiment but after we split into two groups, each group made their own report, that’s why the file names have 4 student names as their title.**

To share the desired file, first we chose the properties option from the context menu -> chose the sharing menu -> clicked on the share button. In the given menu, we added a new sharing option that included “Everyone”, with Read/Write permissions.

Name	Permission Level
 Everyone	Read/Write ▼

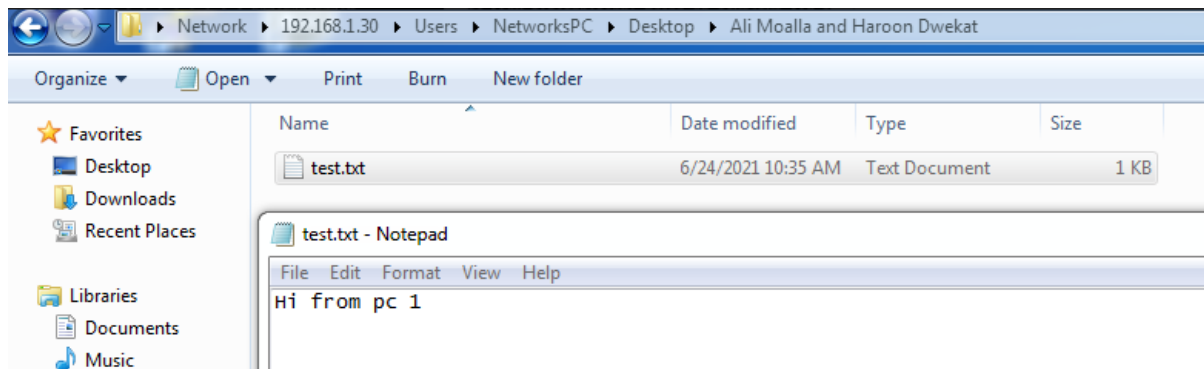
Additionally, from the Advanced Sharing menu, we turned off the password protected sharing to insure that we can access the file with no issues.

We have also disabled the Windows Firewall as an extra step to verify that there will be no issues with the file sharing.

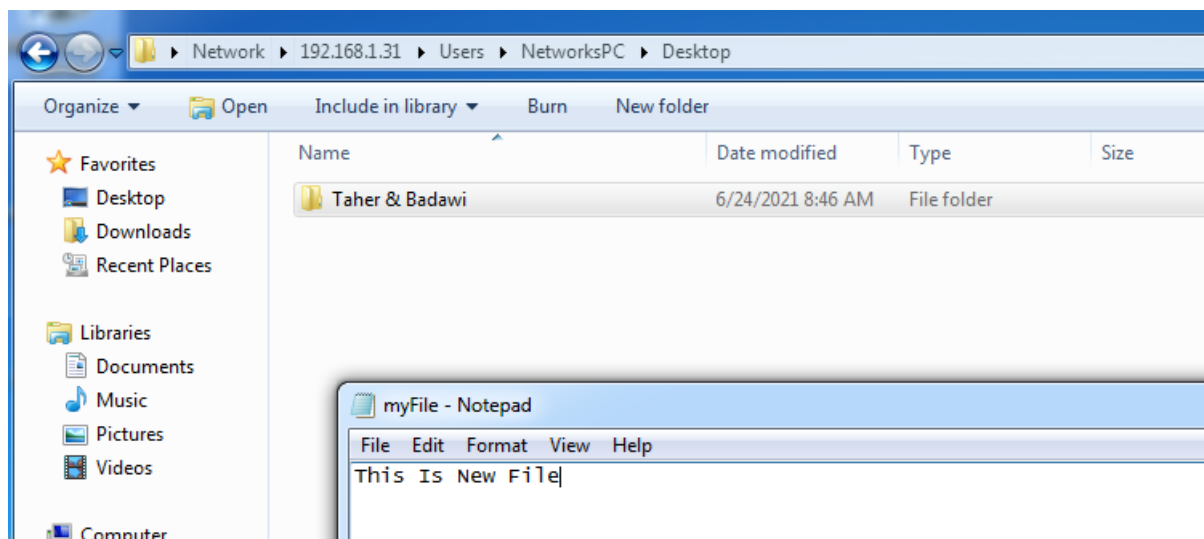


## Procedure: (cont.)

From the PC with the IP 192.168.31, we were able to access the file in the other PC:



Likewise, we were able to do the same from the other PC:





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## **Conclusion:**

In the end, we learned how to establish a simple connection between two PCs. Additionally, we learned how to verify that the connection is working properly. Finally, we learned how we can share a folder between two PCs on the same network.