Lab - Configure a NIC to Use DHCP in Windows

Introduction

In this lab, you will configure an Ethernet NIC to use DHCP to obtain an IP address and test connectivity between two computers.

Recommended Equipment

- Wireless router
- Two computers running Windows
- Ethernet patch cables (straight-through cable)

Instructions

Step 1: Connect the hosts to the router.

a. For **Host A**, plug one end of the Ethernet patch cable into **Port 1** of the router.

b. For **Host A**, plug the other end of the Ethernet patch cable into the **network** port on the computer.

c. For **Host B**, plug one end of the Ethernet patch cable into **Port 2** on the back of the router.

d. For **Host B**, plug the other end of the Ethernet patch cable into the **network** port on the computer.

e. Plug in the power cable of the router, if it is not already plugged in.

f. Turn on both computers and log on to Windows on **Host A** using with administrative privileges.

Step 2: Set Host A's NIC to use DHCP.

a. Click **Control Panel** > **Network and Sharing Center**.

b. Click **Change adapter settings**, then double click **Ethernet** or other appropriate network adapters. The **Ethernet Status** window opens.

c. In the **Ethernet Status** window, select **Properties**.
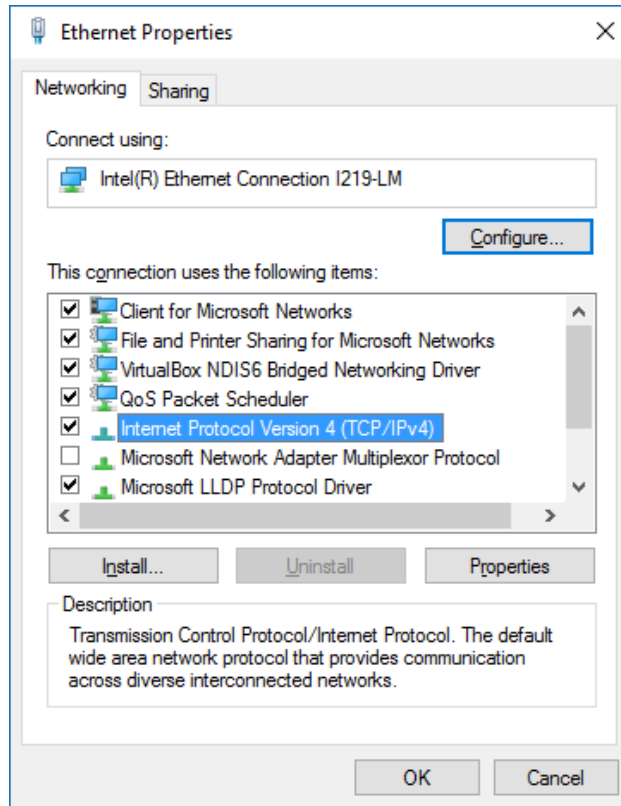
Questions:

In the **Ethernet Properties** window, what is the name and model number of the NIC in the **Connect using:** field?

Type your answers here.

What are items listed in the **This connection uses the following items:** field apply to IP addressing?

Type your answers here.

d. Select **Internet Protocol Version 4 (TCP/IP)** and click **Properties.**

e. In the **Internet Protocol Version 4 (TCP/IPv4) Properties** window, verify **Obtain an IP address automatically** is selected.

f. Select the **Obtain DNS server address automatically** radio button, if it is not already selected. Click **OK** to continue.

g. Click **Close** to close the **Ethernet Properties** and **Ethernet Status** windows.

Step 3: Record Host A's IP address information.

a. Check the lights on the back of the NIC. These lights will blink when there is network activity.

b. Open a command prompt window. At the prompt, enter **ipconfig /all**.

```
    C:\Users\ITEUser> ipconfig /all

Windows IP Configuration

    Host Name . . . . . . . . . . . . : DESKTOP-LV5FF1R
    Primary Dns Suffix  . . . . . . . :
    Node Type . . . . . . . . . . . . : Hybrid
    IP Routing Enabled. . . . . . . . : No
    WINS Proxy Enabled. . . . . . . . : No
    DNS Suffix Search List. . . . . . : example.com

Ethernet adapter Ethernet:
```

```
Connection-specific DNS Suffix  . : example.com
Description . . . . . . . . . . . : Intel(R) Ethernet Connection I219-LM
Physical Address. . . . . . . . . : 08-00-27-AF-71-CB
DHCP Enabled. . . . . . . . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::3dfb:37ab:4bd5:4d07%5(Preferred)
IPv4 Address. . . . . . . . . . . : 192.168.1.73(Preferred)
Subnet Mask . . . . . . . . . . . : 255.255.255.0
Lease Obtained. . . . . . . . . . : Monday, December 10, 2018 7:27:29 AM
Lease Expires . . . . . . . . . . : Monday, December 10, 2018 8:27:48 AM
Default Gateway . . . . . . . . . : 192.168.1.1
DHCP Server . . . . . . . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . . . . . . . : 67633191
DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-23-9F-46-CF-08-00-27-AF-71-CB
DNS Servers . . . . . . . . . . . : 192.168.1.1
Primary WINS Server . . . . . . . : 192.168.1.1
NetBIOS over Tcpip. . . . . . . . : Enabled
Connection-specific DNS Suffix Search List : example.com
```

Questions:

What is the IP address of the computer?

Type your answers here.

What is the subnet mask of the computer?

Type your answers here.

What is the default gateway of the computer?

Type your answers here.

What are the DNS servers for the computer?

Type your answers here.

What is the MAC address of the computer?

Type your answers here.

Is DHCP enabled?

Type your answers here.

What is the IP address of the DHCP server?

Type your answers here.

On what date was the lease obtained?

Type your answers here.

On what date does the lease expire?

Type your answers here.

c.   Type **ping *your IP address***. For example, **ping 192.168.1.73**.

```
C:\Users\ITEUser>ping 192.168.1.73
```

```
Pinging 192.168.1.73 with 32 bytes of data:
Reply from 192.168.1.73: bytes=32 time<1ms TTL=128
Reply from 192.168.1.73: bytes=32 time<1ms TTL=128
Reply from 192.168.1.73: bytes=32 time<1ms TTL=128
Reply from 192.168.1.73: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.73:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

If the ping was not successful, ask the instructor for assistance.

Step 4: Record Host B's IP address information.

a. Log in to **Host B** using an account with administrative privileges. Ensure the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons are selected.

b. Open a command prompt window. At the prompt, enter **ipconfig /all**.

Questions:

What is the IP address of the computer?

Type your answers here.

What is the subnet mask of the computer?

Type your answers here.

What is the default gateway of the computer?

Type your answers here.

What are the DNS servers for the computer?

Type your answers here.

What is the IP address of the DHCP server?

Type your answers here.

Step 5: Set static IP address information.

a. Select the radio buttons **Use the following IP address** and **Use the following DNS server address**.

b. Enter in the IP address information for the NIC from the previous step. Click **OK** > **OK** to continue.

c. Open a command prompt window. At the prompt, enter **ping** *IP address for Host B*.

If the ping was not successful, ask the instructor for assistance.

Step 6: Verify Connectivity.

a. From **Host B**, type **ping** *IP address for Host A*.

Question:

Was the ping successful?

Type your answers here.

b.   From **Host A** type **ping *IP address for Host B***.

Question:

Was the ping successful?

Type your answers here.

Note: If the pings were not successful, the sharing settings need to be changed to allow pings. Click **Start** > Type **Control Panel** > Select **Network and Sharing Center** > Click **Change advanced sharing settings** > Select **Turn on file and printer sharing** for the current profile. This needs to be done for both Hosts A and B.

c.   Return all network configurations to their original settings, unless stated otherwise by the instructor. Set the NIC to **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Click **OK** > **OK**.