Lab 4.6.6 - View Wired and Wireless NIC Information

This lab has been updated for use on NETLAB+.
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Objectives

Part 1: Identify and Work with PC NICs

Part 2: Identify and Use the System Tray Network Icons

Background / Scenario

This lab requires you to determine the availability and status of the network interface cards (NICs) on the PC that you use. Windows provides a number of ways to view and work with your NICs.

In this lab, you will access the NIC information of your PC and change the status of these cards.

Instructions

Part 1: Identify and Work with PC NICs.

In Part 1, you will identify the NIC types in the PC that you are using. You will explore different ways to extract information about these NICs and how to activate and deactivate them.

Note: This lab was performed using a PC running on the Windows 10 operating system. You should be able to perform the lab with one of the other Windows operating systems listed; however, menu selections and screens may vary.

Step 1: Use the Network and Sharing Center.

a. Navigate to the **Control Panel**. Click **View network status and tasks** under Network and Internet heading in the Category View.

b. In the left pane, click the **Change adapter settings** link.

c. In the Network Connections window, the results provide a list of NICs available on this PC. Look for your Ethernet adapter.

Note: Virtual Private Network (VPN) adapters and other types of network connections may also be displayed in this window.

Step 2: Work with your wired NIC.

a. Locate the wired network connection. If it is disabled, right-click and select **Enable** to activate your wired NIC.

b. Right-click a wired network connection, and then click **Status**.

c. The **Ethernet Status** window displays where you can view information about your wired connection.

What is the Media State of your connection?

Type your answers here.

Enabled

What is the speed of your connection?

Type your answers here.

1.0 Gbps

d. Click **Details** to display the Network Connection Details window.

What is the MAC address of your Ethernet NIC?

Type your answers here.

00-50-56-82-FA-9F

Do you have multiple IPv4 DNS Servers listed? Why would multiple DNS Servers be listed?

Type your answers here.

Yes, there are multiple DNS Servers listed. There are multiple servers listed in case the primary DNS server is unresponsive, then the computer computer can use the secondary.

e. Open a command window prompt and type **ipconfig /all**. Find your Ethernet adapter information and compare this with the information displayed in the Network Connection Details window. If a 169.254.x.x address exists, use **ipconfig /renew** on the PC.

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

Windows IP Configuration

   Host Name . . . . . . . . . . . . : MDP-PC-A
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Intel(R) PRO/1000 MT Network Connection
   Physical Address. . . . . . . . . :00-50-56-A4-2C-94
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::d829:6d18:e229:a705%5(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.1.10(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Wednesday, November 28, 2019 1:19:07 PM
   Lease Expires . . . . . . . . . . : Thursday, November 29, 2019 1:19:08 PM
   Default Gateway . . . . . . . . . : 192.168.1.1
   DHCP Server . . . . . . . . . . . : 192.168.1.1
   DHCPv6 IAID . . . . . . . . . . . : 50855975
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-24-21-BA-64-08-00-27-80-91-DB
   DNS Servers . . . . . . . . . . . : 208.67.222.222
                                       208.67.220.220
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

f. Close all windows on your desktop.

Part 2: Identify and Use the System Tray Network Icons

In Part 2, you will use the network icons in your system tray to determine and control the NICs on your PC.

Step 1: Use the network icon.

a. Click the system tray. Click the network icon to view the pop-up window that displays your wired NIC. If you have a wireless NIC you may also view any wireless SSIDs that are within range.

b. Click **Network & Internet settings**.

c. In the Settings windows, click **Change adapter options** under the Change your network settings heading.

d. In the Network Connections window, right-click the wired NIC and select **Disable**.

e. Examine your system tray. Click the **Network** icon again. With the wired NIC disabled, the wired network connection is no longer listed.

f. You can also disable a Wireless network connection by disabling a wireless NIC.

Step 2: Identify the Network Problem icon.

a. In the Network Connections window, disable all **Wi-Fi** and **Ethernet** adapters.

b. The system tray now displays the **Network Disabled** icon, which indicates that network connectivity has been disabled.

c. You can click this icon to return to the Network and Internet settings.

d. In the Network and Internet settings window, click **Troubleshoot** to use the PC to resolve the network issue for you.

e. If you are asked, allow the Windows Network Diagnostics to repair the PC.

f. If troubleshooting did not enable one of your NICs, then you should do this manually to restore the network connectivity of your PC.

Note: When using NETLAB+, the **Troubleshoot** button will enable the NIC but will be unable to establish an Internet Connection with a broadband modem.

Reflection Question

Why would you activate more than one NIC on a PC?

Type your answers here.

There are many reasons why more than one NIC could be activated on a PC. For example, to connect the PC to two different physical networks, redundancy, traffic separation, load balancing, or link aggregation. For example, a individual VMware ESXi host could use a low speed NIC to connect to a physically separate VCenter management network, a high-speed NIC for storage shared between multiple hosts on a SAN, and a NIC, or set of NICs, that the VMs use to connect to the rest network.

Router and Switch Interface Summary Table

Router / Switch Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
1800	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
1900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2801	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)

Router / Switch Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
2811	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2960	Fast Ethernet 0/1 (F0/1)	Fast Ethernet 0/2 (F0/2)	n/a	n/a
3560	Fast Ethernet 0/1 (F0/1)	Fast Ethernet 0/2 (F0/2)	n/a	n/a
3650	Gigabit Ethernet 1/0/1 (G1/0/1)	Gigabit Ethernet 1/0/2 (G1/0/2)	n/a	n/a
4221	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)
4300	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)

Note: To find out how the router is configured, look at the interfaces to identify the type of router and how many interfaces the router has. There is no way to effectively list all the combinations of configurations for each router class. This table includes identifiers for the possible combinations of Ethernet and Serial interfaces in the device. The table does not include any other type of interface, even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in Cisco IOS commands to represent the interface.