Lab - Determine the IP Address Configuration of a Computer

# Objectives

In this lab, you will determine the IP address assigned to your computer.

# Required Resources

* 1 PC (Windows 10)
* Network access

# Instructions

## Determine the IP Address using the Command Prompt

### Verify network access

* + - 1. Open a web browser.
      2. Navigate to any website, such as **www.netacad.com**.

**Note**: If you do not have any internet access, you can still continue with this lab. Your computer may use Automatic Private Internet Protocol Addressing (APIPA) for IP address information.

### The command ipconfig

The **ipconfig** command provides you with the IP address, subnet mask and default gateway.

* + - 1. Open a **Command Prompt**. Click **Start**. Search for **Command Prompt**.
      2. At the prompt, enter **ipconfig** to determine the IP address assigned to each network adapter on your computer.

C:\Users\Student> **ipconfig**

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::ac29:44a8:6409:c30e%6

IPv4 Address. . . . . . . . . . . : 192.168.1.11

Subnet Mask . . . . . . . . . . . : 255.255.255.0

Default Gateway . . . . . . . . . : 192.168.1.1

#### Questions:

What is the IPv4 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.

### The command ipconfig /all

* + - 1. At the prompt, enter **ipconfig /all** command to view IP configuration on PC-A.

C:\Users\Student> **ipconfig /all**

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . :

Description . . . . . . . . . . . : Intel(R) 82574L Gigabit Network Connection

Physical Address. . . . . . . . . : 00-50-56-B3-E8-C1

DHCP Enabled. . . . . . . . . . . : Yes

Autoconfiguration Enabled . . . . : Yes

Link-local IPv6 Address . . . . . : fe80::ac29:44a8:6409:c30e%6(Preferred)

IPv4 Address. . . . . . . . . . . : 192.168.1.11(Preferred)

Subnet Mask . . . . . . . . . . . : 255.255.255.0

Lease Obtained. . . . . . . . . . : Sunday, July 24, 2016 9:33:49 AM

Lease Expires . . . . . . . . . . : Monday, July 25, 2016 10:33:17 AM

Default Gateway . . . . . . . . . : 192.168.1.1

DHCP Server . . . . . . . . . . . : 192.168.1.1

DHCPv6 IAID . . . . . . . . . . . : 50334761

DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-25-84-55-DE-00-50-56-B3-E8-C1

DNS Servers . . . . . . . . . . . : 8.8.8.8

8.8.4.4

NetBIOS over Tcpip. . . . . . . . : Enabled

#### Questions:

What are the DNS servers for the computer?

Type your answers here.

What is the MAC address (physical address) of the network adapter?

Type your answers here.

Is DHCP enabled? If yes, what is the IP address of the DHCP server?

Type your answers here.

If DHCP is enabled, on what date was the Lease Obtained? On what date does the Lease Expire?

Type your answers here.

## Test the Network Interface TCP/IP Stack.

### Test TCP/IP stack using the loopback address.

To verify that the TCP/IP protocol is functioning, pinging your loopback address (127.0.0.1). Enter the **ping 127.0.0.1** command at the prompt.

C:\Users\Student> **ping 127.0.0.1**

### Test TCP/IP stack using the configured IP address.

You can also pingyour IP address. In this example, enter the **ping 192.168.1.11** command at the prompt.

#### Question:

Record one of the replies from your ping command.

Type your answers here.

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

# Answer Key

## Determine the IP Address using the Command Prompt

### Verify network access

### The command ipconfig

What is the IPv4 address of the computer?

Answers will vary. It is 192.168.1.11 in this example.

What is the subnet mask of the computer?

Answers will vary. The subnet mask is 255.255.0.0 in this example.

What is the default gateway of the computer?

Answers will vary. The default gateway is 192.168.1.1 in this example. For a home network using a wireless router, the default gateway address can be the same IP address as the wireless router.

### The command ipconfig /all

What are the DNS servers for the computer?

Answers will vary. The DNS servers are 8.8.8.8 and 8.8.4.4 in this example. The DNS server IP addresses are for the Google public DNS servers.

What is the MAC address (physical address) of the network adapter?

Answers will vary. The MAC address is 00-50-56-B3-E8-C1 in this example. The Organizational Unique Identifier (OUI) is the first three pairs of the digital of the MAC address that identify the manufacturer or the seller of the device. The last three pairs are unique to the device. Together, the MAC address provides a unique ID to the device.

Is DHCP enabled? If yes, what is the IP address of the DHCP server?

Answers will vary. 192.168.1.1 in this example. From the given info in this example, it appears that the DHCP server is at the same IP address as the default gateway.

If DHCP is enabled, on what date was the Lease Obtained? On what date does the Lease Expire?

The lease is obtained on July 24, 2016 and the lease is expired on July 25, 2016.

## Test the Network Interface TCP/IP Stack.

### Test TCP/IP stack using the loopback address.

### Test TCP/IP stack using the configured IP address.

Record one of the replies from your ping command.

Answers will vary. In this example, one of the replies was “Reply from 192.168.1.11: bytes=32 time<1ms TTL=128”. The ping results indicate that you received a reply from the remote server 192.168.1.11. The roundtrip trip took less than <1ms. Time-to-live (TTL) is the amount of time passed when the packet is discarded.

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