

Lab – Determining the IP Address Configuration of a Computer

Objectives

In this lab, you will configure an Ethernet NIC to use DHCP to obtain an IP address and test connectivity between 2 computers.

Required Resources

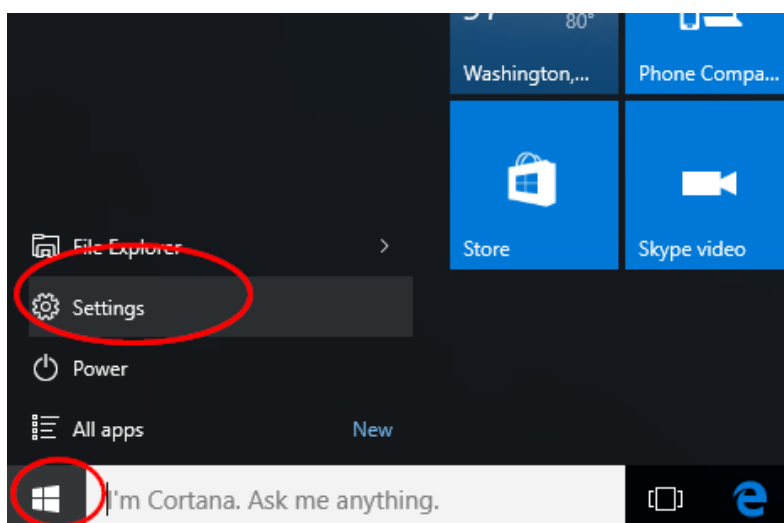
- 1 Wireless router
- 1 PCs (Windows 10)
- Ethernet cables

Step 1: Connect PC-A to a home/small business wireless router.

- For PC-A, plug one end of the Ethernet cable into “Port 1” on the back of the wireless router.
- For PC-A, plug the other end of the Ethernet cable into the network port on the NIC in your computer.
- Power on the wireless router.
- Turn on computer and log on to Windows in PC-A using an account with administrative privileges.

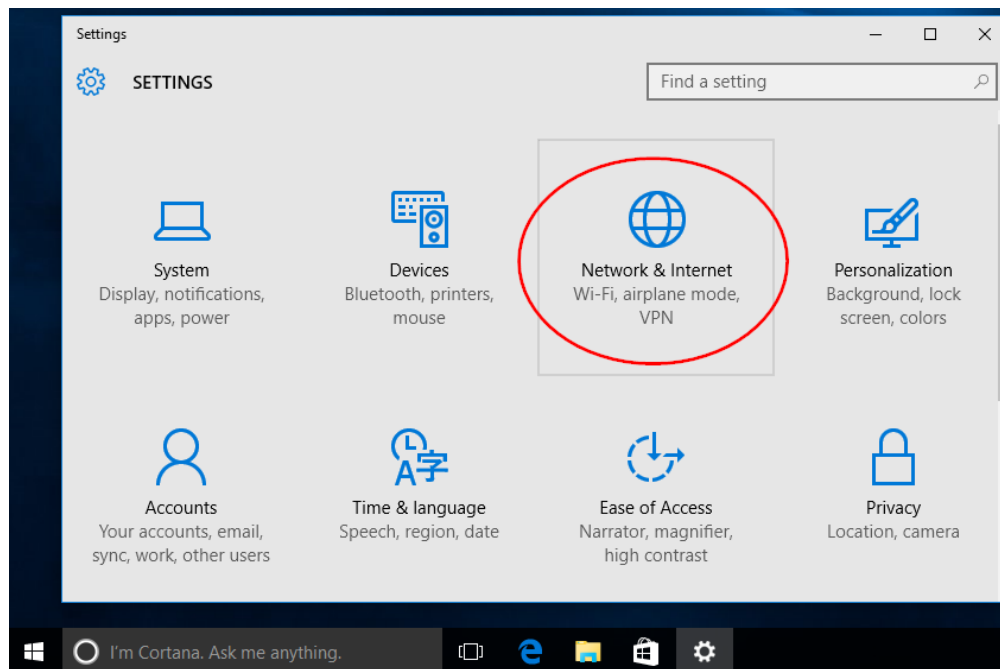
Step 2: Set network settings to autoconfigure using DHCP

- Click **Start**, then click **Settings**.

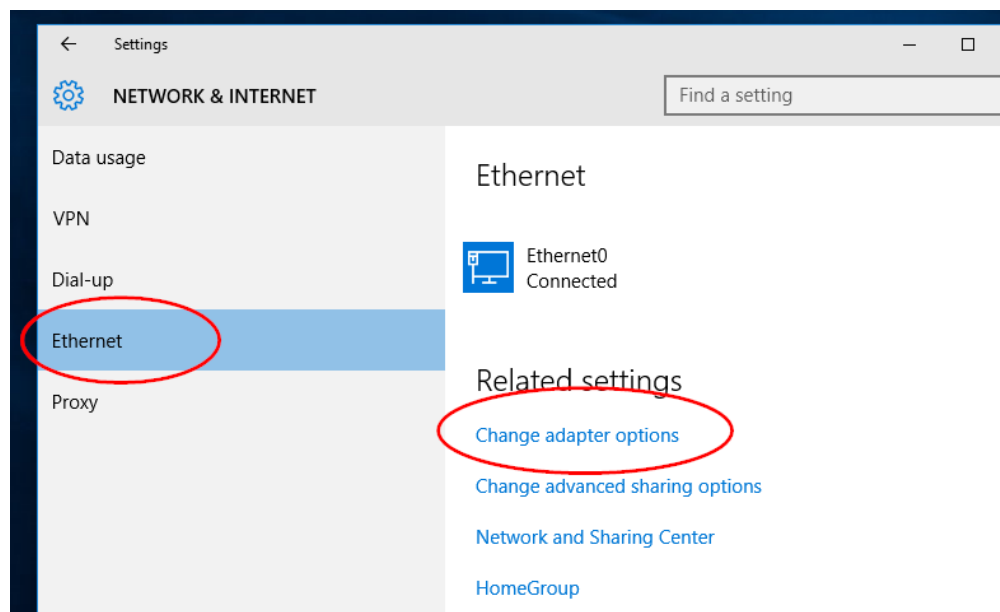


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- b. In the Settings window click **Network & Internet**.

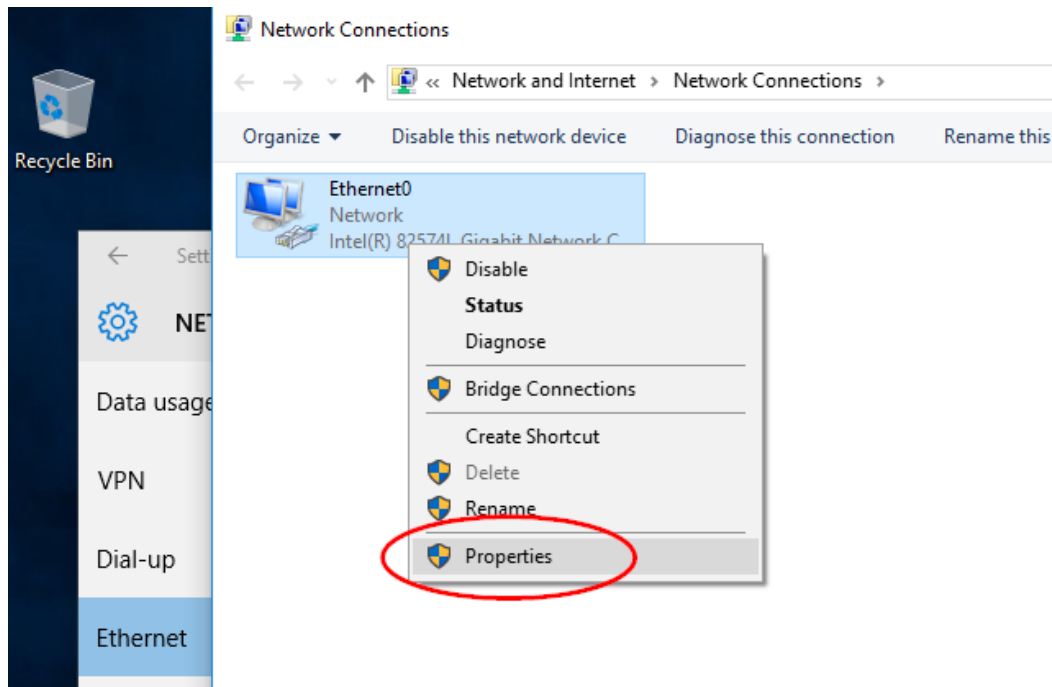


- c. In the left pane select **Ethernet**, then click the **Change adapter options** link.

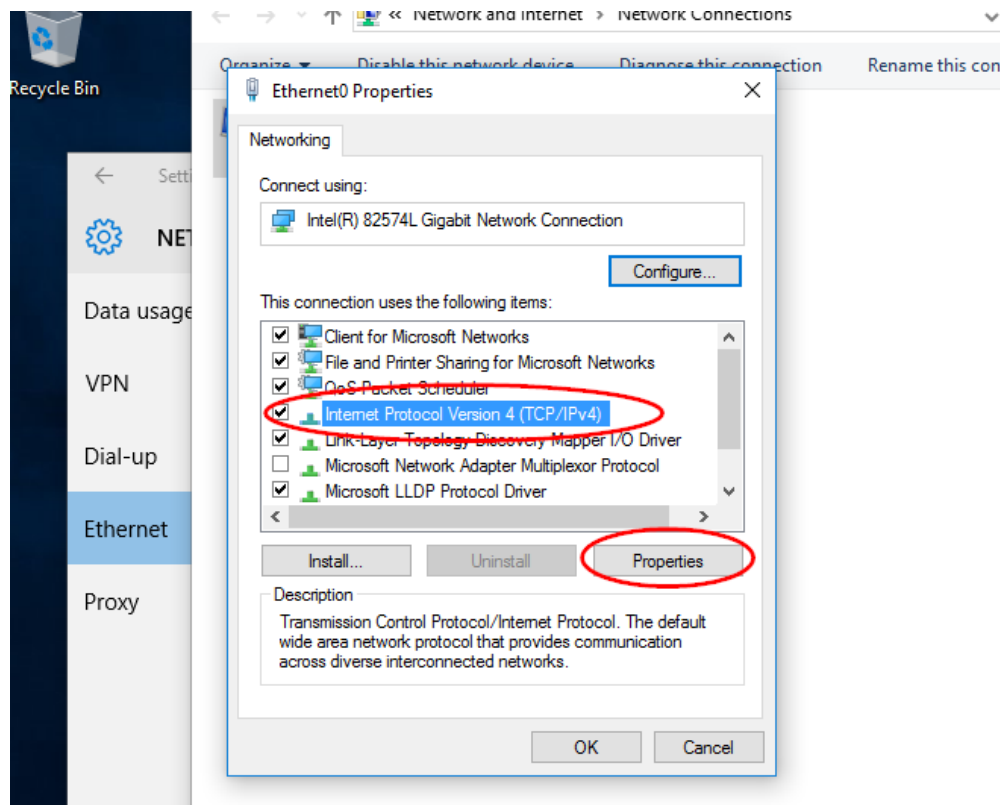


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- d. The Network Connections window displays the available network interfaces on the PC. In this example, right-click the **Ethernet0** interface and select **Properties**.



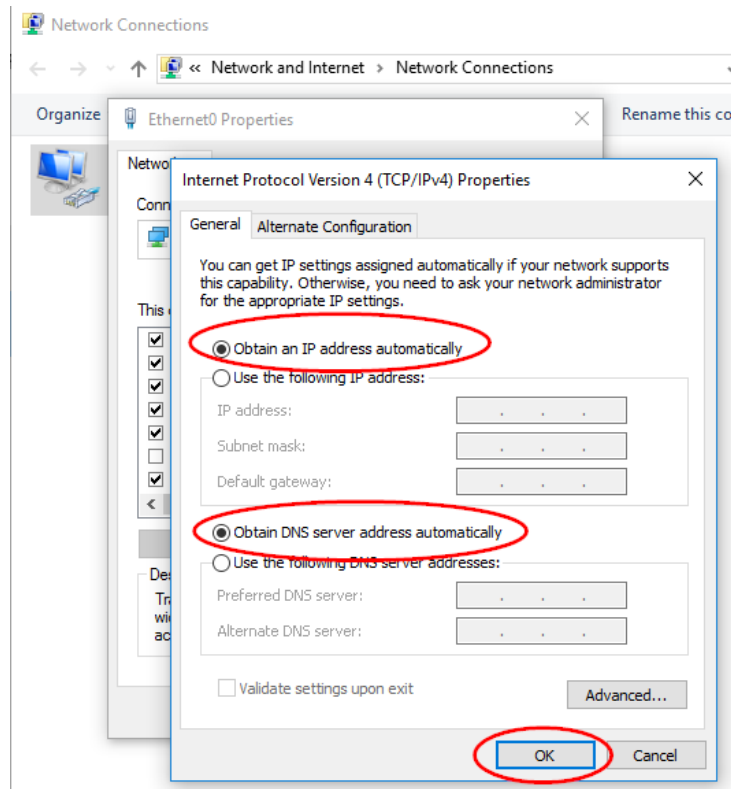
- e. Select **Internet Protocol Version 4 (TCP/IPv4)** and then click **Properties**.



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Note: You can also double-click **Internet Protocol Version 4 (TCP/IPv4)** to display the Properties window.

- f. Select the **Obtain an IP address automatically**. Select the **Obtain DNS server address automatically**. Click **OK**.



- g. Before clicking **Close** on the Ethernet0 Properties window answer the following questions:
What is the name and model number of the NIC in the “Connect using:” field?

What are the first three items listed in the “This connection uses the following items:” field?

- h. Repeat the previous steps to configure network address settings on PC-B.

Step 3: Document PC-A networking address settings.

- Check the lights on the back of the NIC of PC-A. These lights will blink when there is network activity.
- Use **Command Prompt** to verify the PC settings and connectivity. From PC-A, right-click **Start** and select **Command Prompt**.

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

```
CA: Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Bob>ipconfig /all

Windows IP Configuration

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

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-EB-1F-2D
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::4d86:3d:47b:b083%4(Preferred)
IPv4 Address. . . . . : 10.11.3.146(Preferred)
Subnet Mask . . . . . : 255.255.0.0
Lease Obtained. . . . . : Sunday, July 24, 2016 4:58:26 PM
Lease Expires . . . . . : Monday, July 25, 2016 4:58:12 AM
Default Gateway . . . . . : 10.11.1.1
DHCP Server . . . . . : 10.11.1.1
DHCPv6 IAID . . . . . : 33557545
DHCPv6 Client DUID. . . . . : 00-01-00-01-1F-25-7C-01-00-0C-29-EB-1F-2D
DNS Servers . . . . . : 8.8.8.8
                        8.8.4.4
NetBIOS over Tcpip. . . . . : Enabled
```

What is the IPv4 address of the computer?

What is the subnet mask of the computer?

What is the default gateway of the computer?

What are the DNS servers for the computer?

What is the MAC address (physical address) of the computer?

Is DHCP enabled?

What is the IP address of the DHCP server?

On what date was the Lease Obtained?

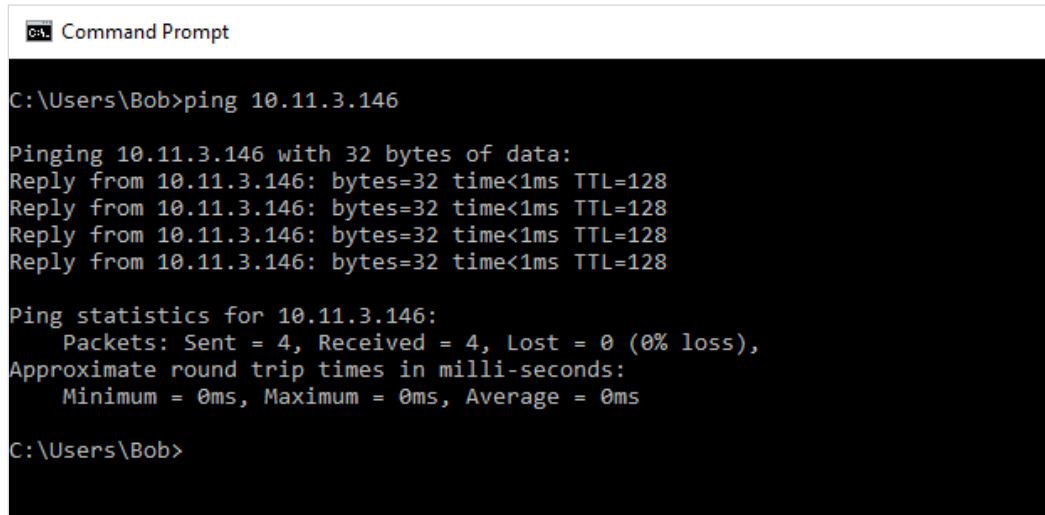
On what date does the Lease Expire?

Step 4: Test the PC-A network interface TCP/IP stack.

- a. 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\Bob> ping 127.0.0.1
```

- b. You can also ping your IP address. In this example, enter the **ping 10.11.3.146** command at the prompt.



```
Command Prompt

C:\Users\Bob>ping 10.11.3.146

Pinging 10.11.3.146 with 32 bytes of data:
Reply from 10.11.3.146: bytes=32 time<1ms TTL=128
Reply from 10.11.3.146: bytes=32 time<1ms TTL=128
Reply from 10.11.3.146: bytes=32 time<1ms TTL=128
Reply from 10.11.3.146: bytes=32 time<1ms TTL=128

Ping statistics for 10.11.3.146:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Bob>
```

- c. Record one of the replies from your ping command.
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If the ping was not successful, ask your instructor for assistance.