

11.4.1 Optional Lab: Install a NIC in Windows 7

Introduction

Print and complete this lab.

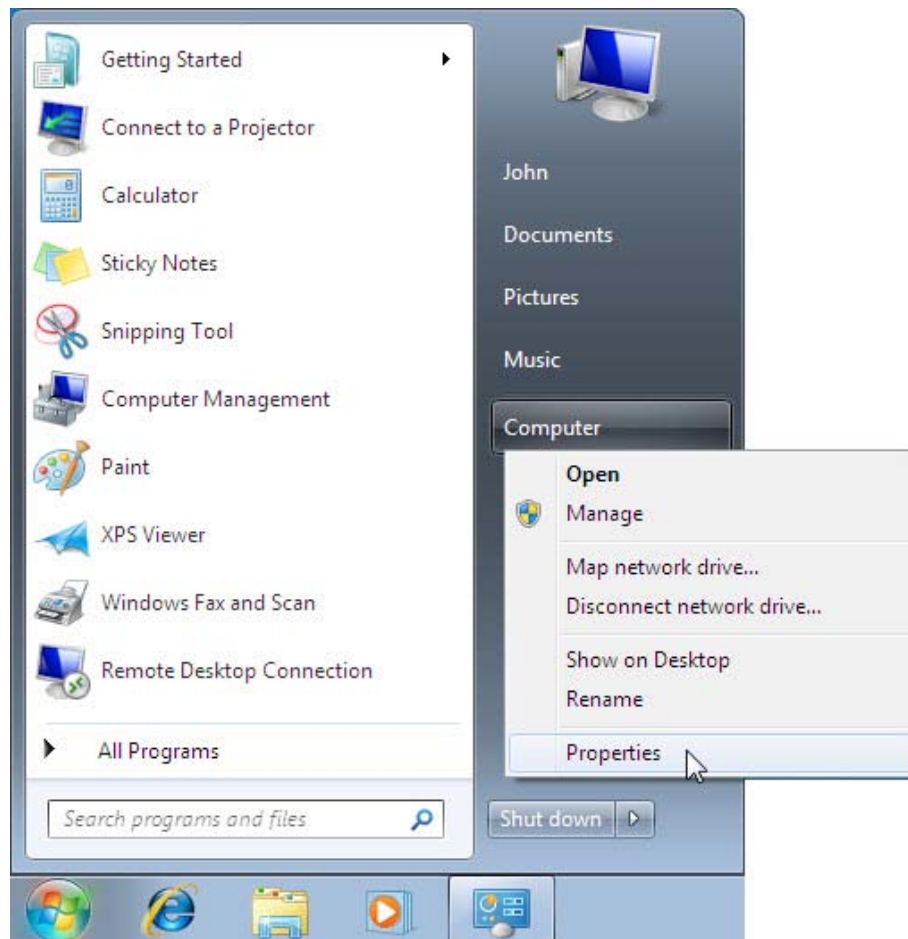
In this lab, you will install a NIC, verify NIC operation, and manually configure an IP address, and set the NIC to use DHCP in Windows 7.

Recommended Equipment

- Computer running Windows 7
- PCI NIC or PCIe NIC
- Driver files for PCI NIC or PCIe NIC on a CD or USB flash drive
- Antistatic wrist strap
- Tool kit

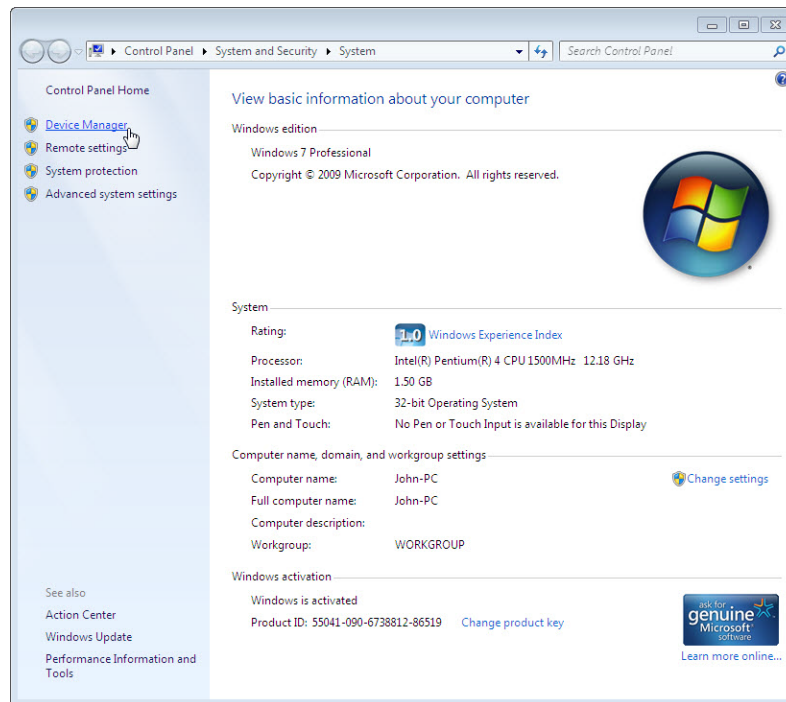
Step 1: Open the Device Manager

- a. Log on to the computer as an Administrator.
- b. Click the **Start** button. Right-click **Computer**, and then choose **Properties**.



The “System” window appears.

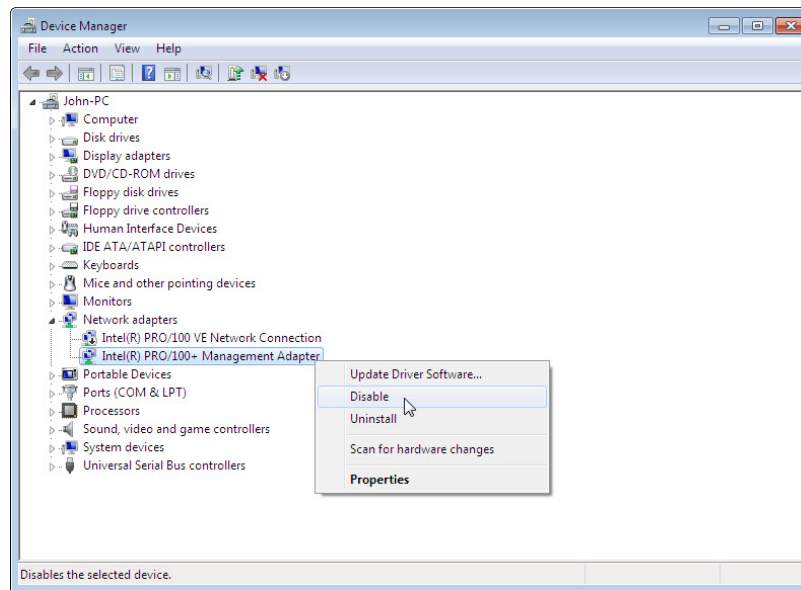
- c. Choose the **Device Manager** link.



The Device Manager window appears.

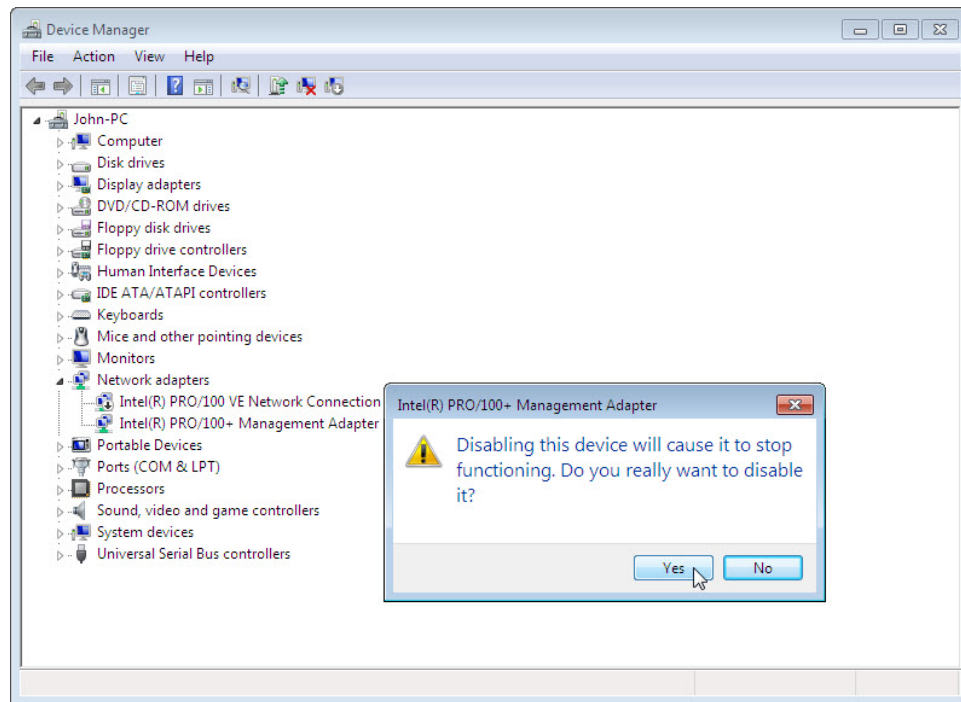
Step 2: Disable any NICs

- a. Expand **Network adapters**.
- b. Right-click the NIC or NICs installed in your computer, and then choose **Disable**.

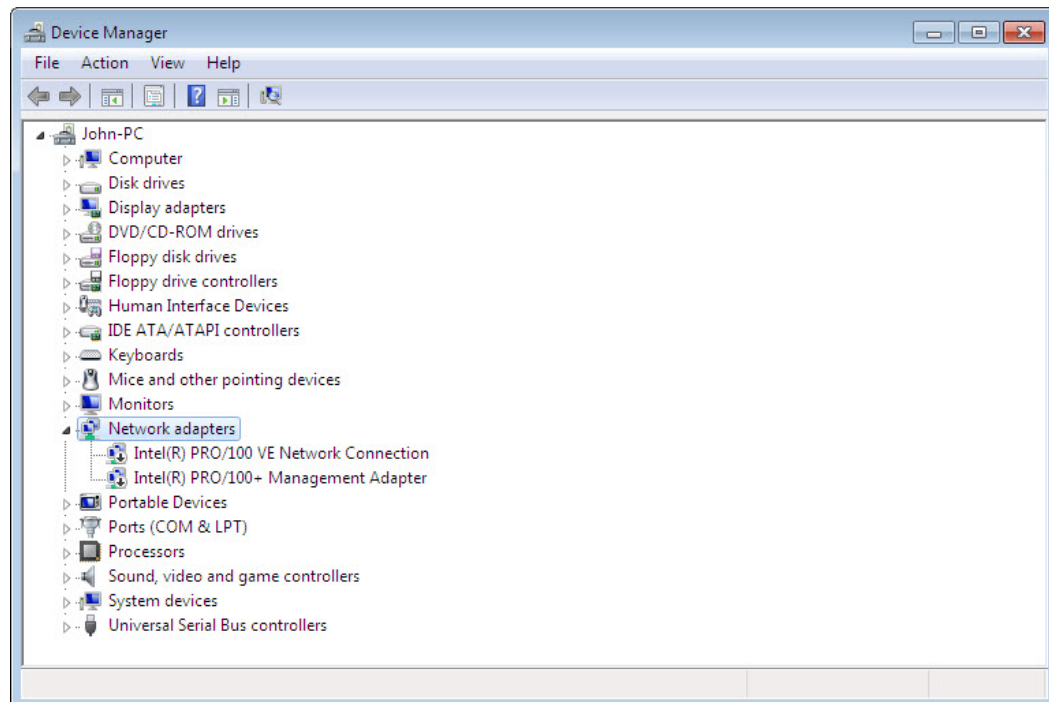


The “Disabling this device will cause it to stop functioning.” confirmation window appears.

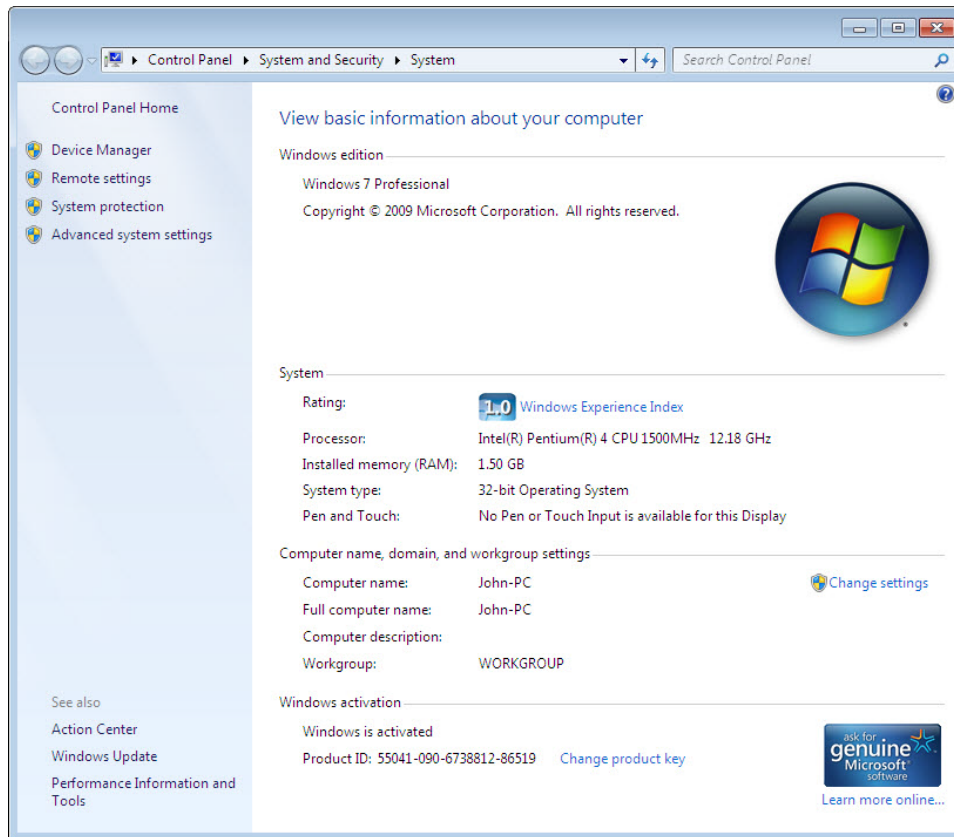
c. Click **Yes**.



A black arrow (↓) appears over the icon of the NIC installed in your computer.



d. Close the Device Manager window.



e. Close the System window.

f. Turn off your computer.

Who is the manufacturer of the new NIC?

What is the model number of the new NIC?

What slot type is used to connect the new NIC to the motherboard?

Step 3: Open the case

- If a switch is present on the power supply, set the switch to “0” or “OFF”.
- Unplug the computer from the AC outlet.
- Unplug the network cable from the computer.
- Remove the side panels from the case.

Step 4: Insert the NIC

- a. Choose an appropriate slot on the motherboard to install the new NIC. You may need to remove the metal cover near the slot on the back of the case.
- b. Make sure the NIC is properly lined up with the slot.
- c. Push down gently on the NIC.
- d. Secure the NIC mounting bracket to the case with a screw.

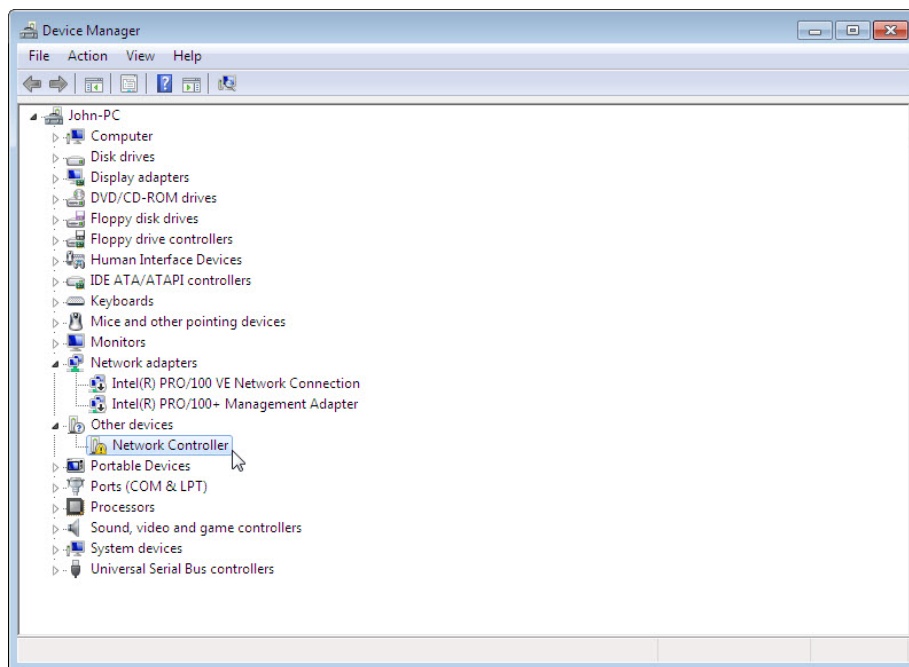
Step 5: Close case and restart the computer

- a. Replace the case panels.
- b. Plug the network cable into the new NIC.
- c. Plug the power cable into an AC outlet.
- d. If a switch is present on the power supply, set the switch to “1” or “ON”.
- e. Boot your computer, and then log on as an administrator.
- f. Windows will attempt to install a driver for the new NIC.
- g. Choose **Start**. Right-click **Computer**, and then choose **Properties**.
- h. Click the **Device Manager** link.

Step 6: Install a new driver

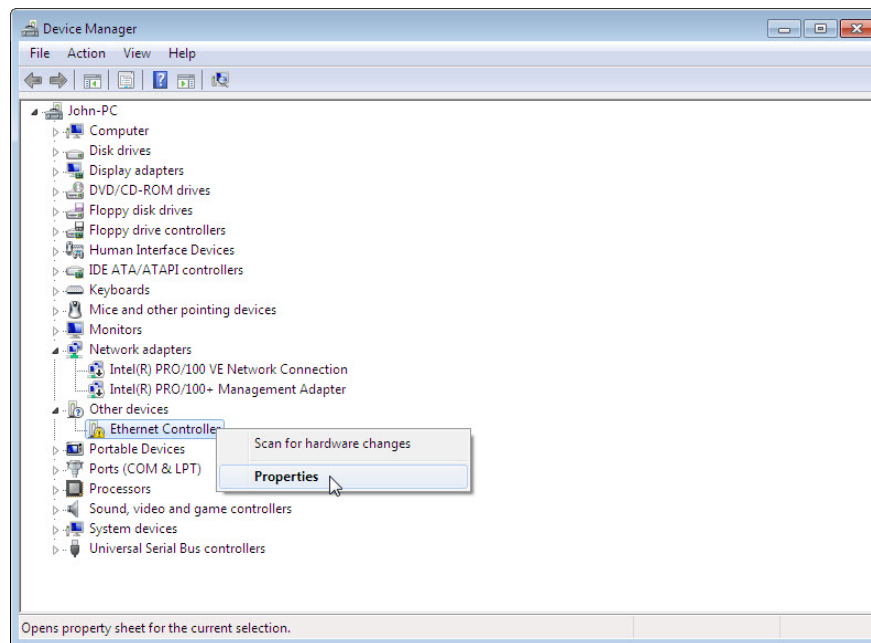
The “Device Manager” window appears.

- a. Expand **Network adapters**. If Windows was not successful at installing a driver for the NIC you will see a yellow exclamation mark next to the device icon.

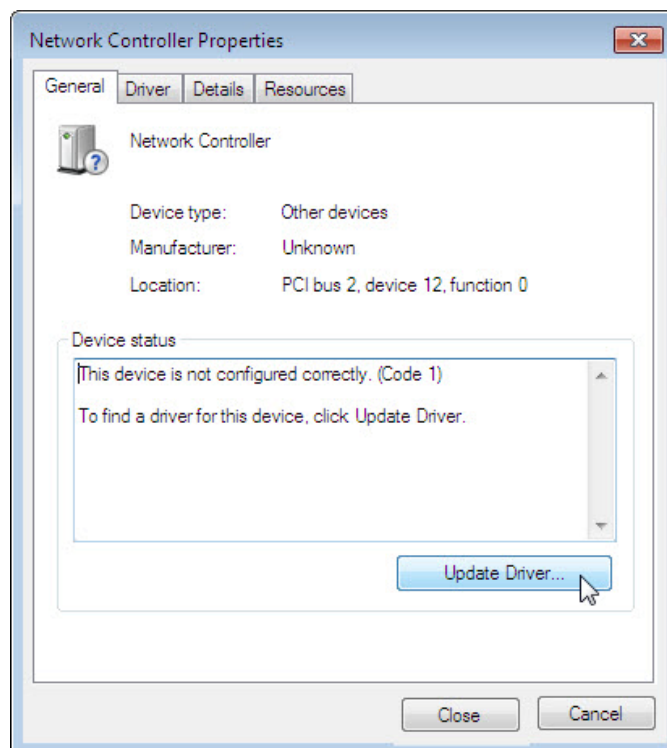


How many Network adapters are present (enabled and disabled) in the list?

- b. Right-click the new NIC icon or Ethernet controller, and then choose **Properties**.

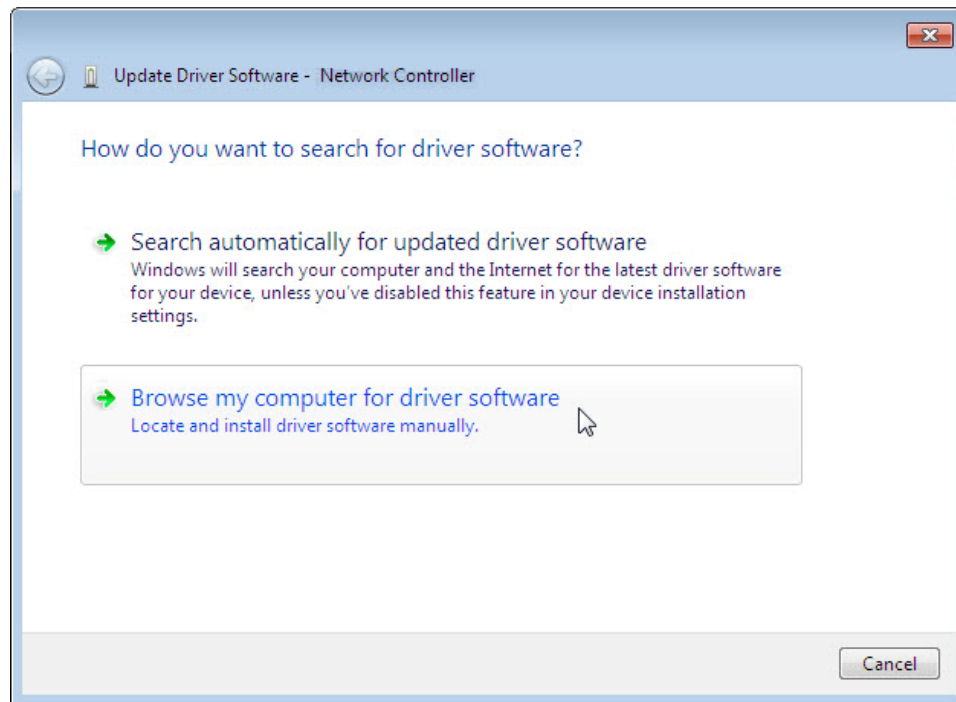


- c. Click the **Update Driver** button.

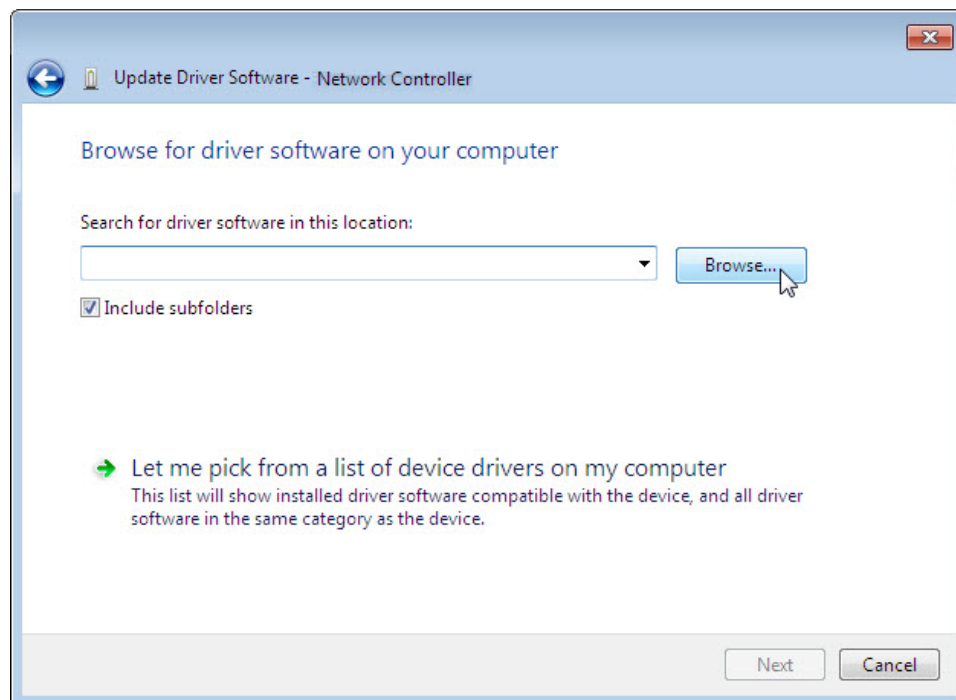


The “Update Driver Software – Network Controller” wizard appears.

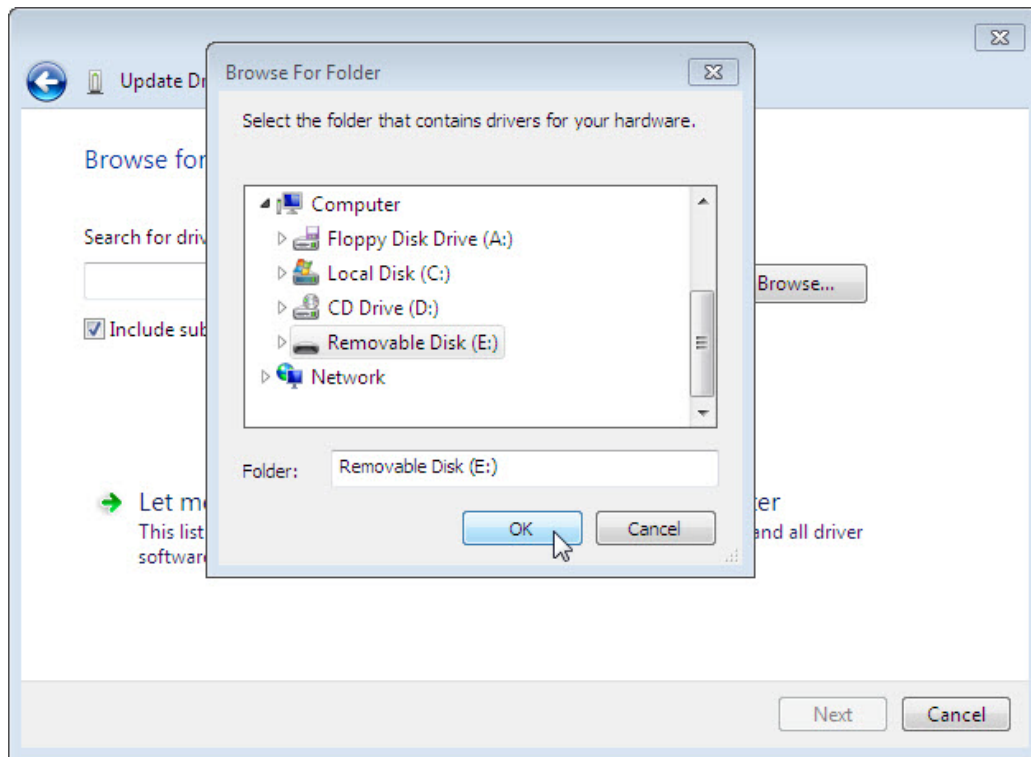
- d. Click **Browse my computer for driver software**.



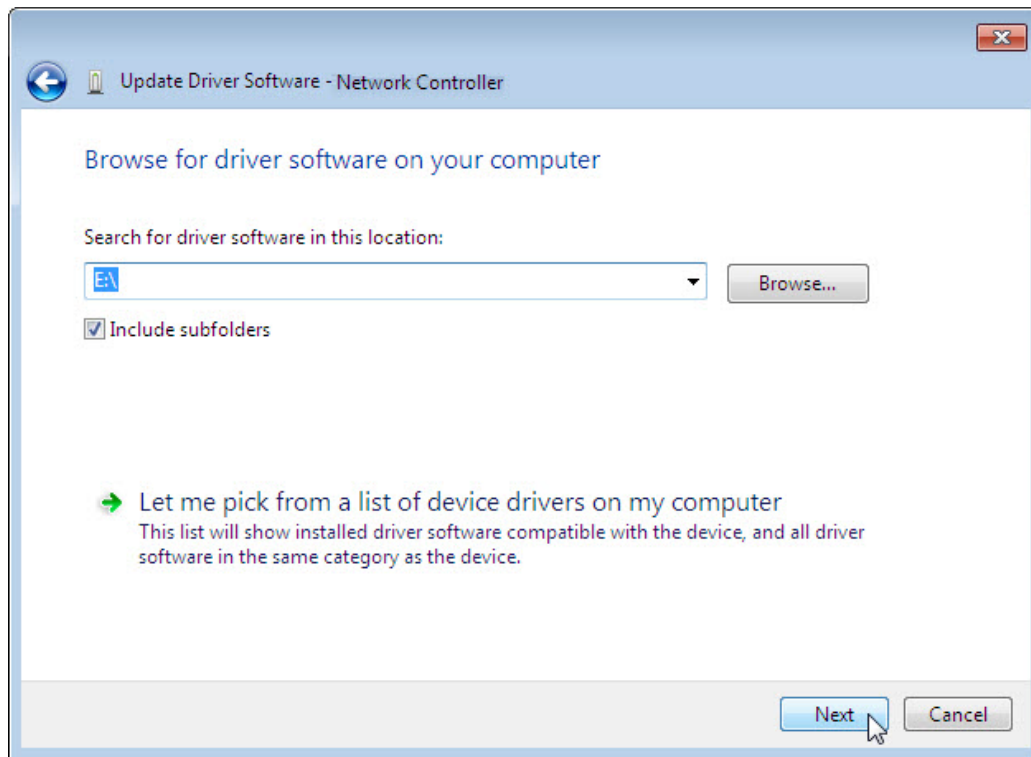
- e. Insert the CD or USB flash drive with the new NIC drivers, and then click **Browse**.



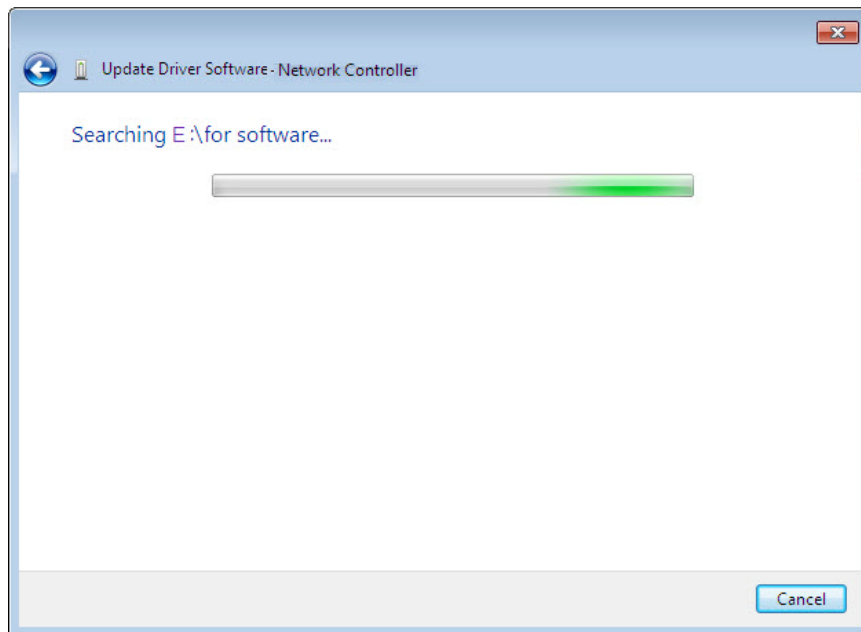
- f. Select the location that contains the driver then click **OK**.



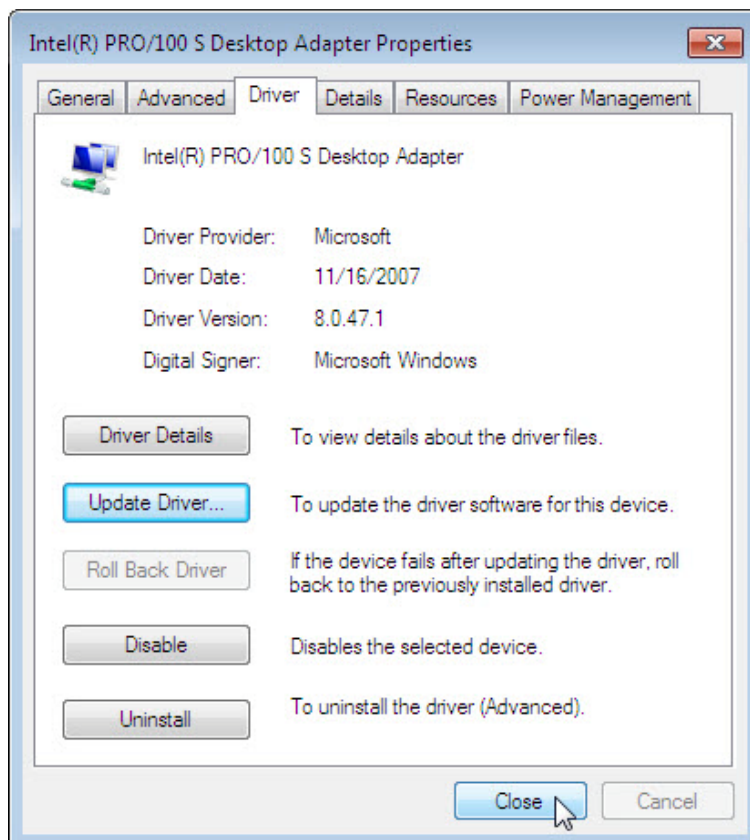
- g. Click **Next** to start the search.



- h. The “Searching E:\ for software...” window appears.



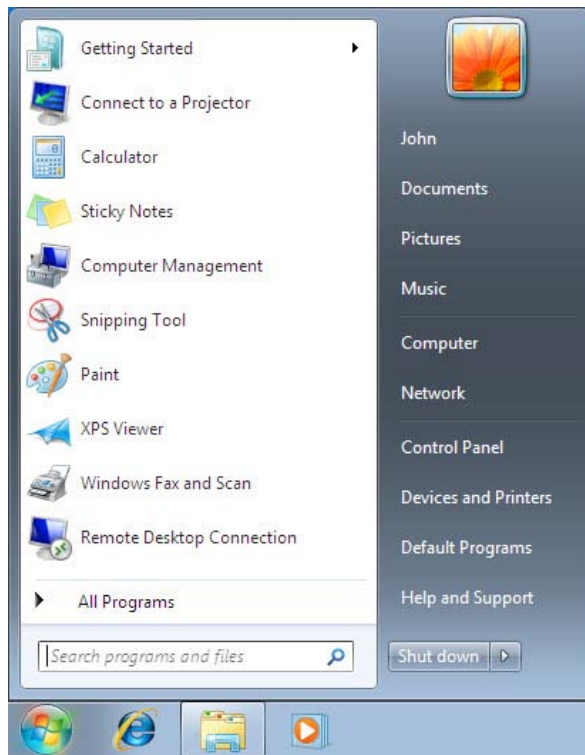
- i. Click **Close** after Windows installs the new driver.



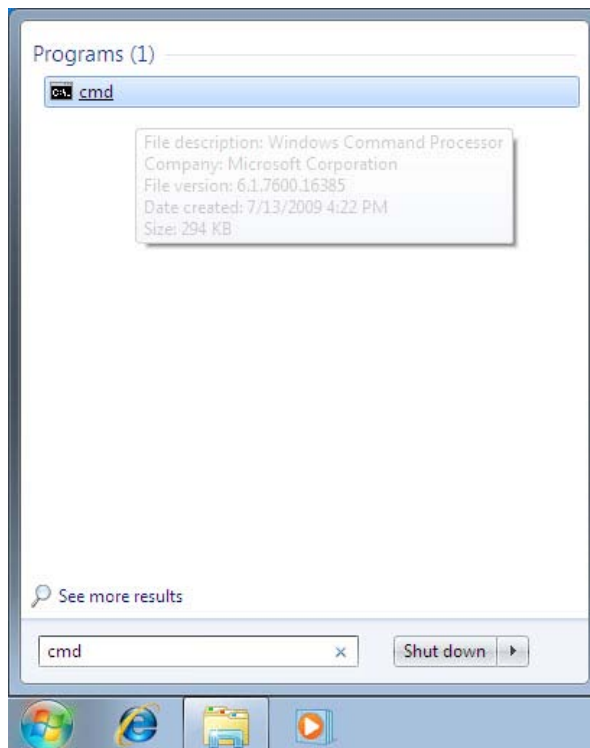
- j. Close the Device Manager.

Step 7: View the NIC settings

- a. Choose **Start > Search programs and files**.

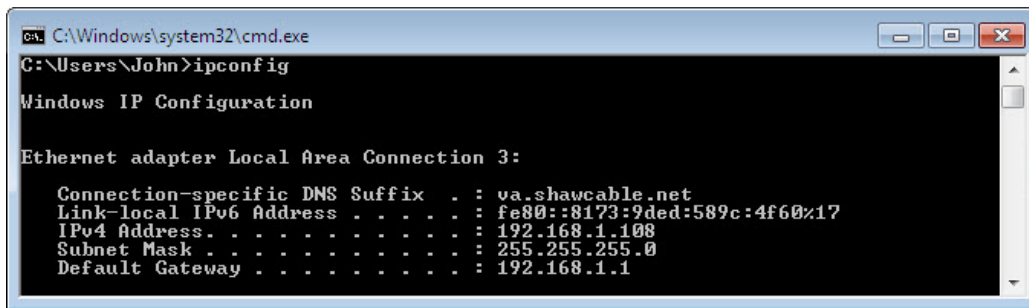


- b. Type **cmd** and press **Enter**.



The “C:\WINDOWS\System32\cmd.exe” window appears.

- c. Type **ipconfig** and press **Enter**.



```
C:\Windows\system32\cmd.exe
C:\Users\John>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection 3:

    Connection-specific DNS Suffix  . : va.shawcable.net
    Link-local IPv6 Address . . . . . : fe80::8173:9ded:589c:4f60%17
    IPv4 Address. . . . . : 192.168.1.108
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1
```

The settings of the new NIC are displayed.

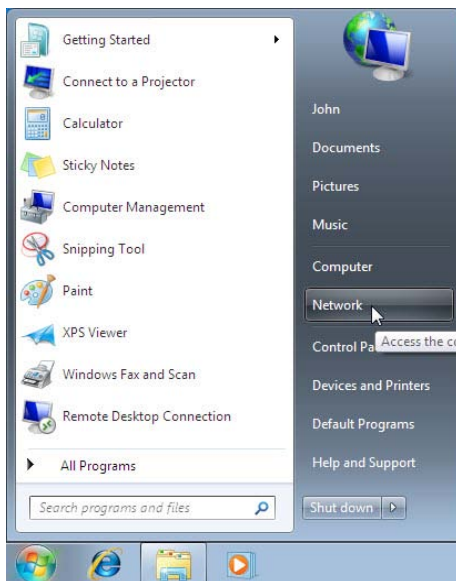
What is the IP address?

What is the subnet mask?

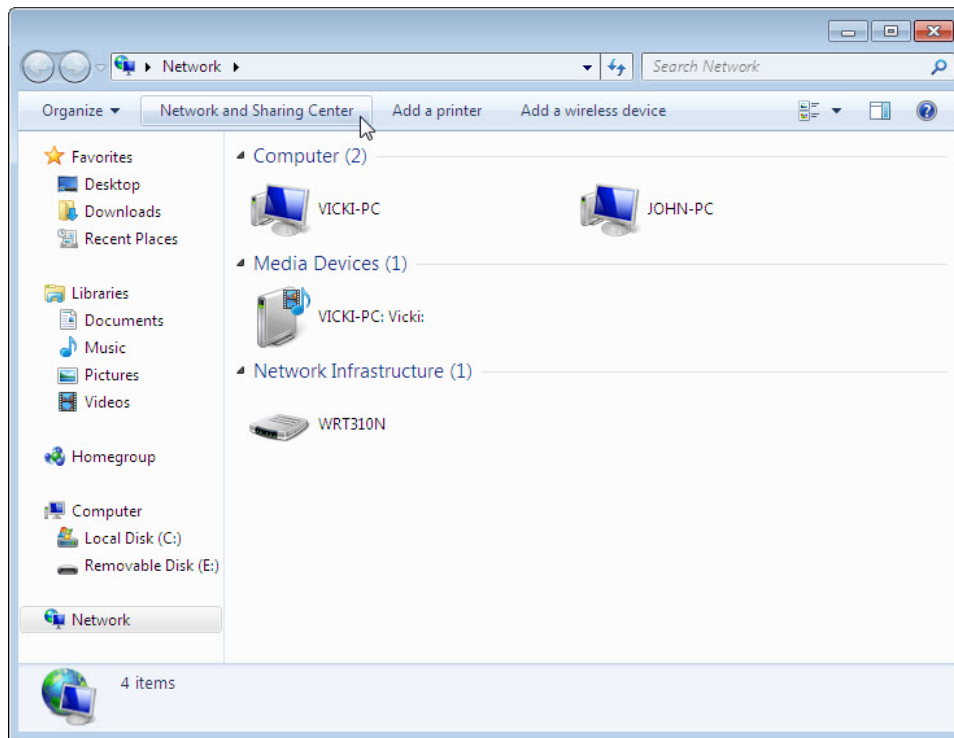
What is the default gateway?

Step 8: Open the Network Connections window

- a. Choose **Start > Network**.

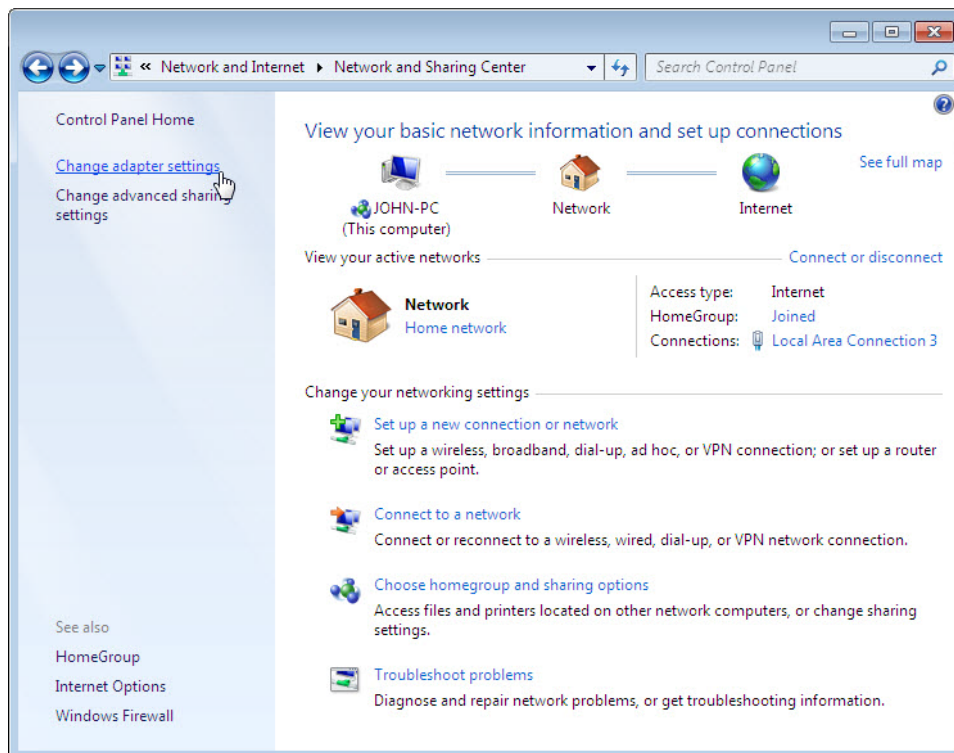


Click **Network and Sharing Center**.

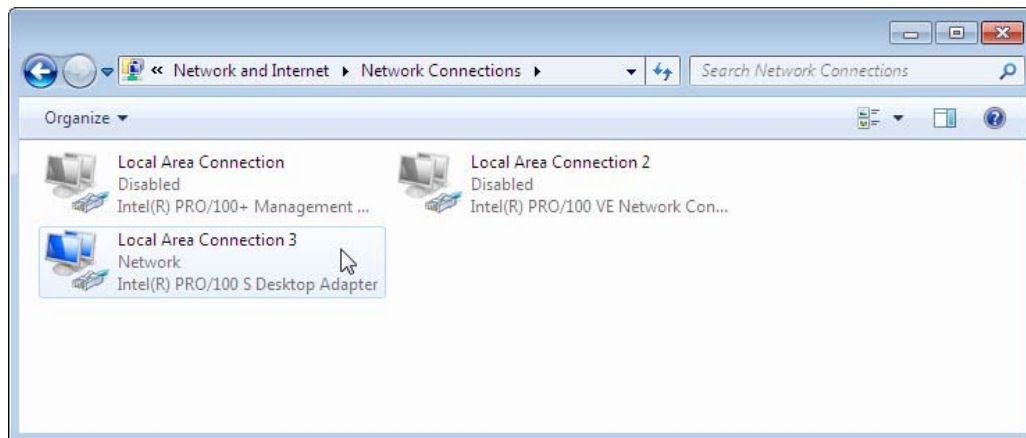


The "Network and Sharing Center" window appears.

b. Click **Change adapter settings**.

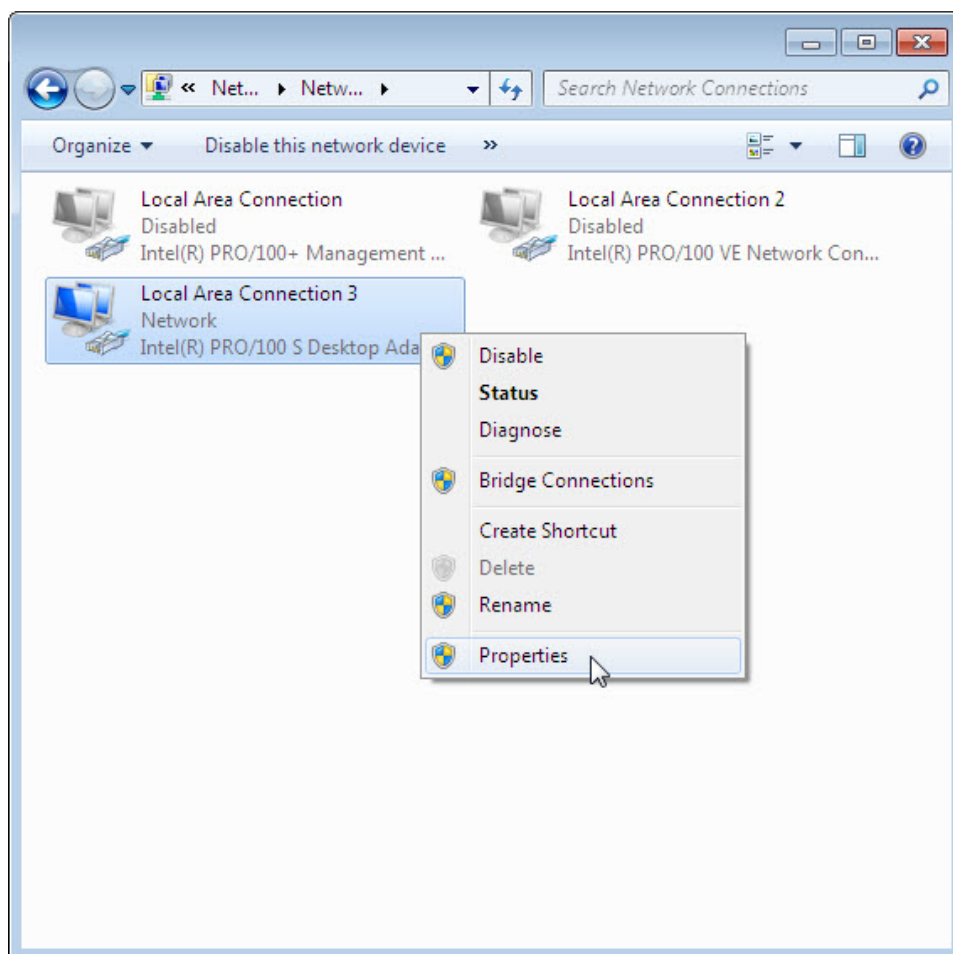


The “Network Connections” window appears.



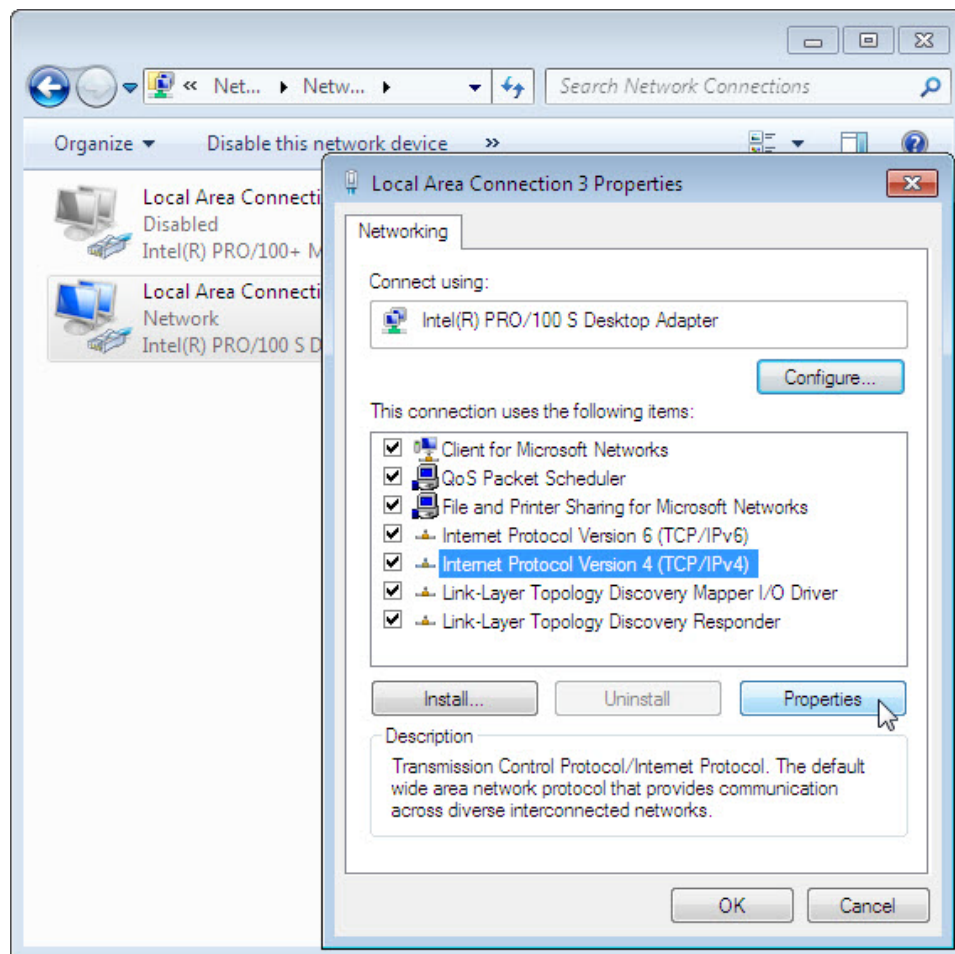
Step 9: Set a static IP address

- a. Right-click the connected “Local Area Connection 3” and choose **Properties**.



The “Local Area Connection 3 Properties” window appears.

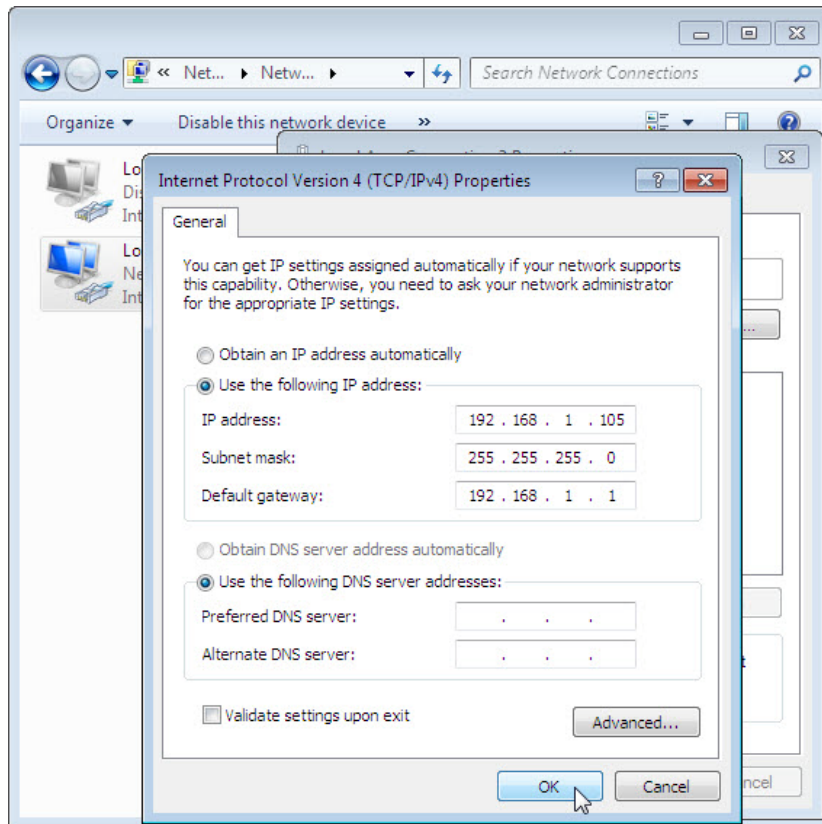
- b. Choose Internet Protocol Version 4 (TCP/IPv4) and click **Properties**.



- c. Click the **Use the Following IP address:** radio button.

Note: Use the IP address, subnet mask, and default gateway you wrote down earlier in the lab to fill in the following three fields:

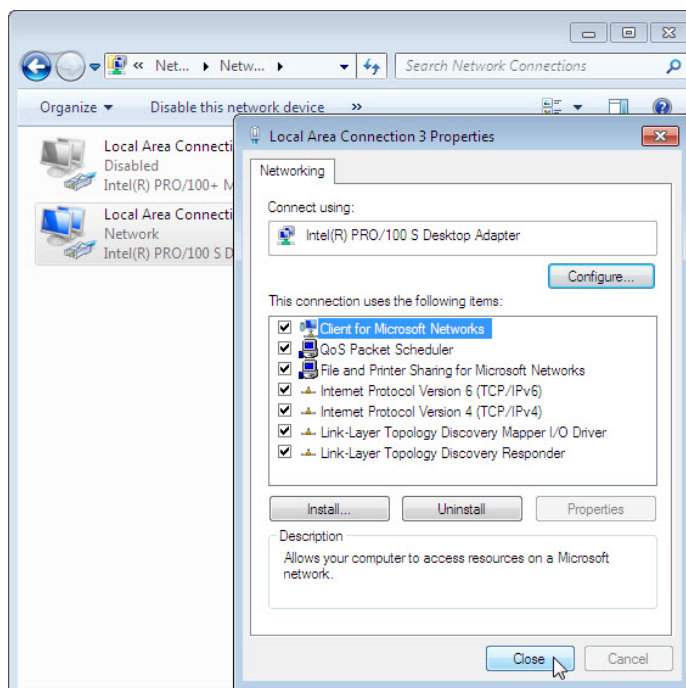
- d. Type the IP address assigned to your computer in the “IP address” field.
e. Type the subnet mask assigned to your network in the “Subnet mask:” field.
f. Type the default gateway assigned to your network in the “Default gateway:” field.



g. Click **OK**.

The “Internet Protocol Version 4 (TCP/IP) Properties” window closes.

h. Click **Close**.

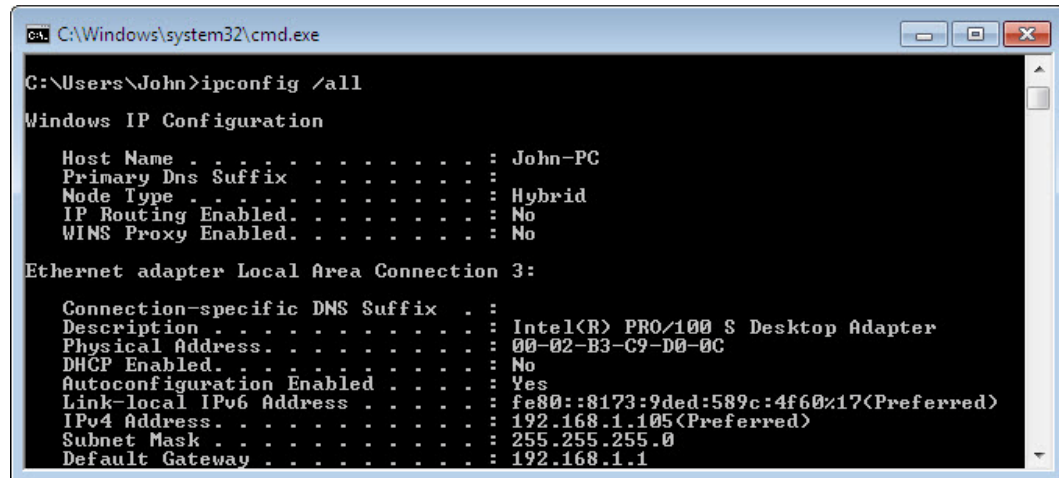


The “Local Area Connection 3 Properties” window closes.

Step 10: Ping your computer

The “C:\WINDOWS\System32\cmd.exe” window is revealed.

- a. Type **ipconfig /all**, and then press **Enter**.



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

C:\Users\John>ipconfig /all

Windows IP Configuration

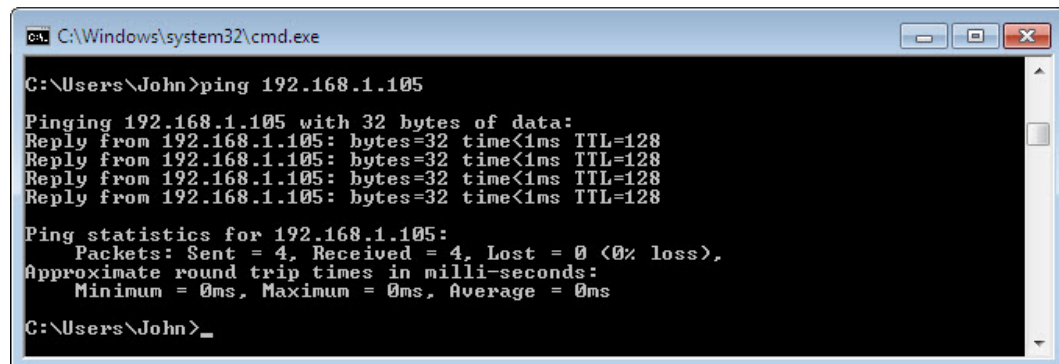
Host Name . . . . . : John-PC
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection 3:

Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) PRO/100 S Desktop Adapter
Physical Address. . . . . : 00-02-B3-C9-D0-0C
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::8173:9ded:589c:4f60%17(Preferred)
IPv4 Address. . . . . : 192.168.1.105(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
```

Does the NIC have DHCP enabled?

- b. Type **ping** and your IP address. For example, **ping 192.168.1.105**.



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

C:\Users\John>ping 192.168.1.105

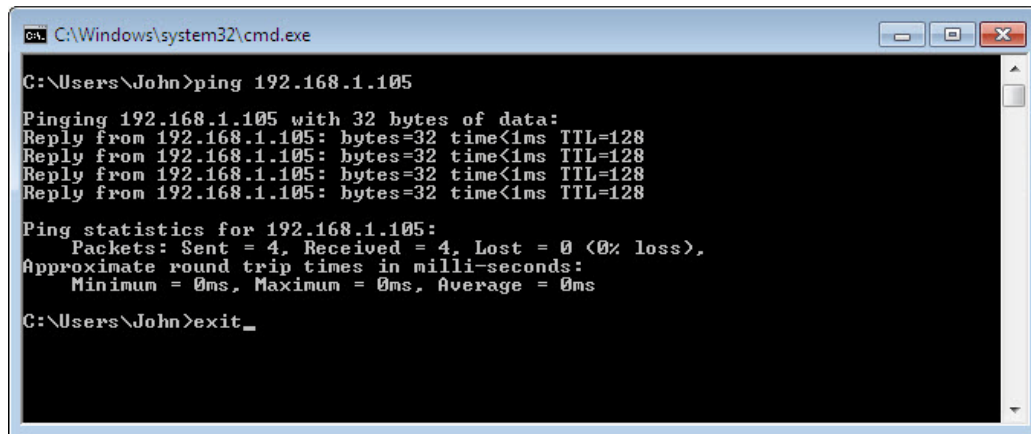
Pinging 192.168.1.105 with 32 bytes of data:
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.105:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\John>
```

Write one of the replies of your ping command.

- c. Type **exit**, and then press **Enter**.



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

C:\Users\John>ping 192.168.1.105

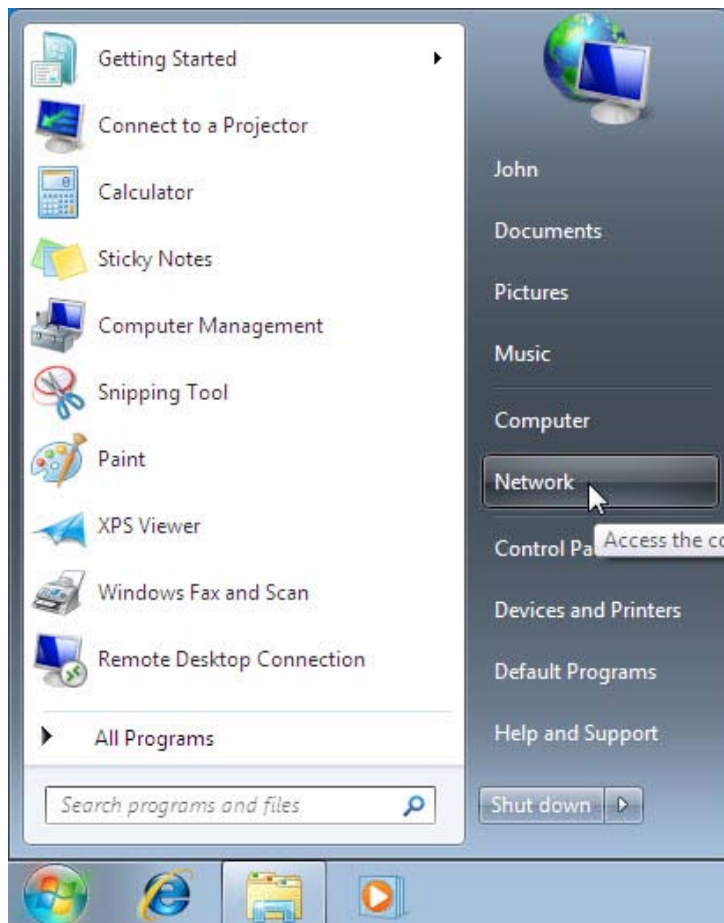
Pinging 192.168.1.105 with 32 bytes of data:
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128
Reply from 192.168.1.105: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.105:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

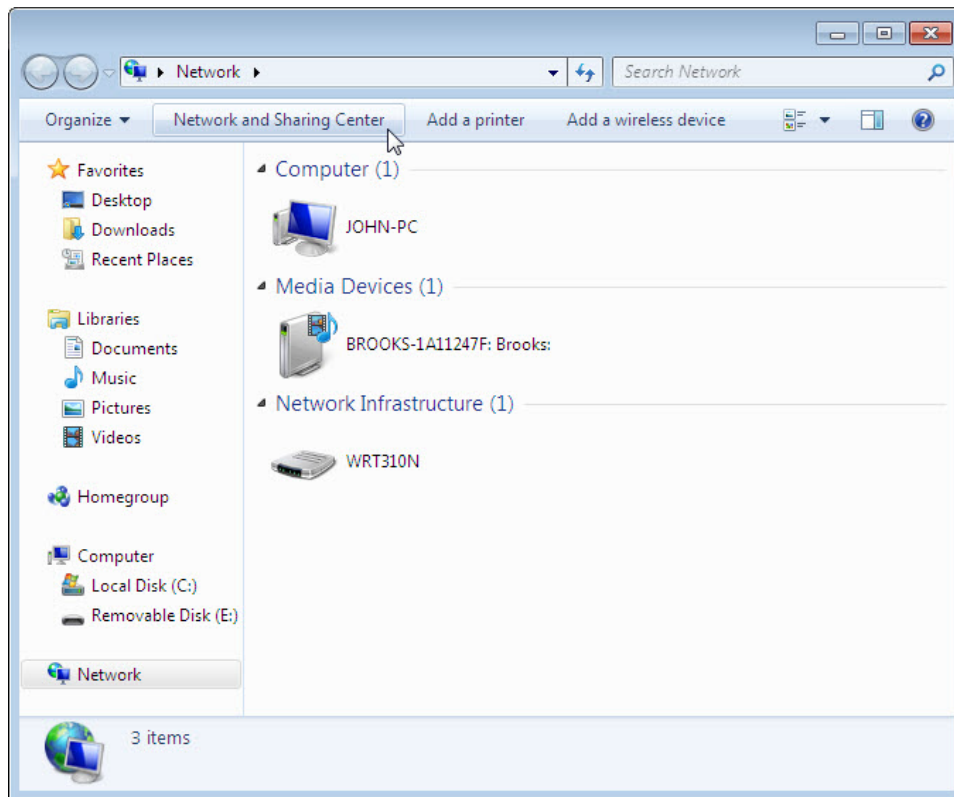
C:\Users\John>exit_
```

Step 11: Set the NIC to use DHCP

- a. Choose **Start > Network**.

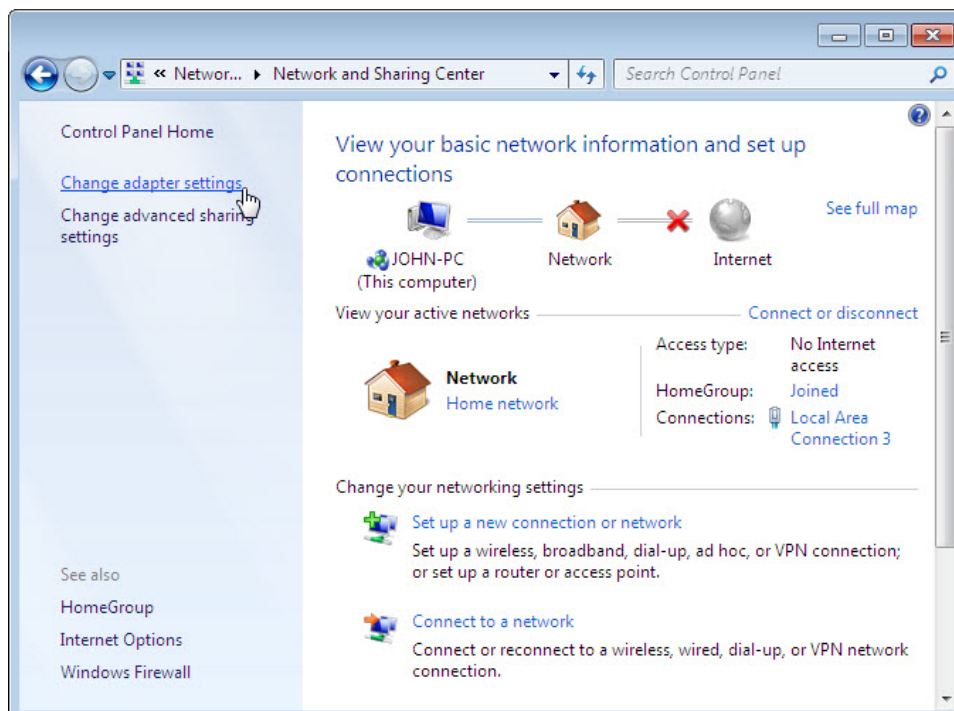


- b. Click **Network and Sharing Center**.



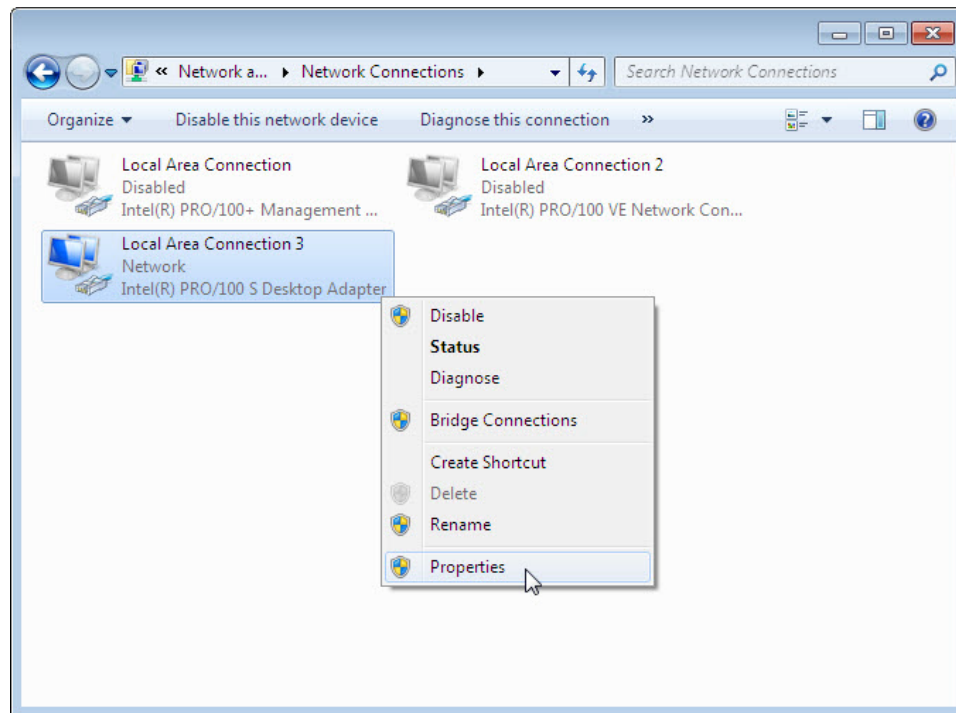
The "Network and Sharing Center" window appears.

- c. Click **Change adapter settings** link.



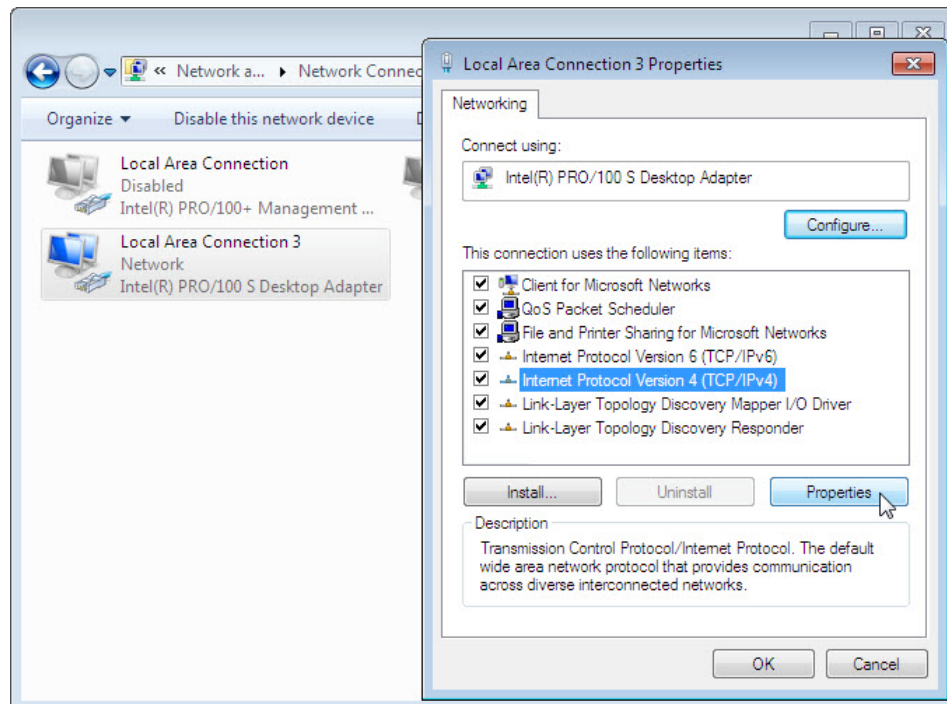
The “Network Connections” window appears.

- d. Right-click the connected “Local Area Connection 3” and choose **Properties**.

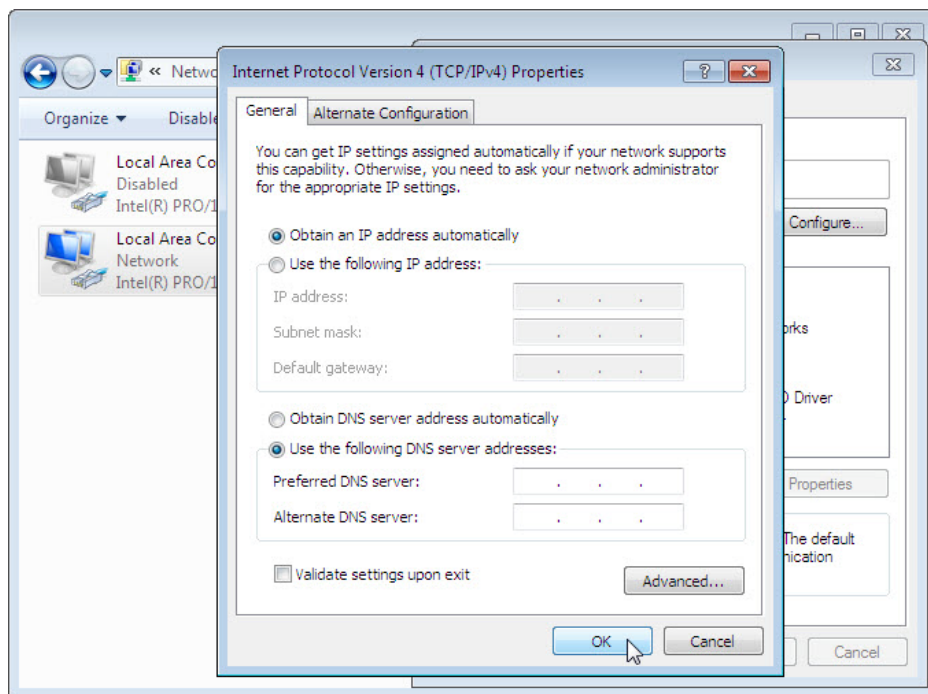


The “Local Area Connection 3 Properties” window appears.

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

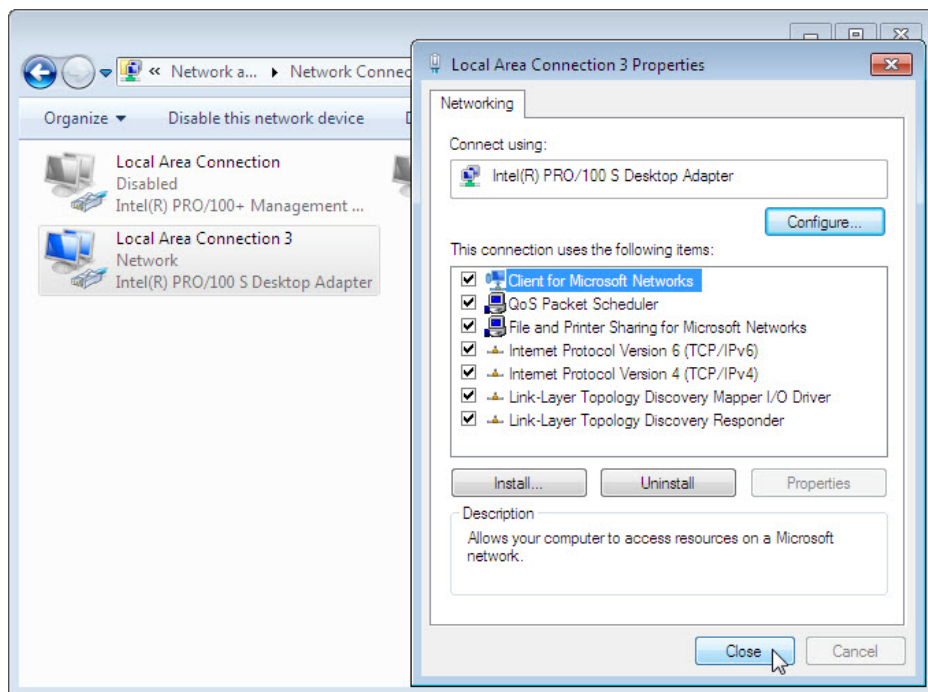


- f. Click the **Obtain an IP address automatically** radio button.
- g. Click **OK**.



The “Internet Protocol Version 4 (TCP/IPv4) Properties” window closes.

- h. Click **Close**.



The “Local Area Connection 3 Properties” window closes.