LAB SHEET

Job No   :   **Lab 3**

Job Title   :   **Install And Manage Dynamic Host Configuration Protocol (DHCP)**

Objectives

To be able to:

*   Install and Authorize the DHCP service

*   Configure DHCP Scope

*   Configure DHCP Reservations and Options

Introduction

For TCP/IP-based networks, DHCP reduces the complexity and amount of administrative work that is involved in reconfiguring computers.

Authorizing a DHCP allows you to control the addition of DHCP servers to the domain. The DHCP server controls the IP addressing configuration for all DHCP clients in a given network environment. An unauthorized DHCP server can assign incorrect IP addressing information to client computers. Because of this, it is critical that you have control over all DHCP servers on your network.

A **scope** is a range of valid IP addresses that are available for lease or assignment to client computers on a particular subnet. You configure a scope on the DHCP server to determine the pool of IP addresses that the server can assign to DHCP clients.

A **reservation** is a permanent IP address assignment. It is a specific IP address, within a scope, that is permanently reserved for lease to a specific DHCP client, such as file and print servers or other application servers.

DHCP options are configuration parameters that a DHCP server assigns to clients when it assigns the IP address.
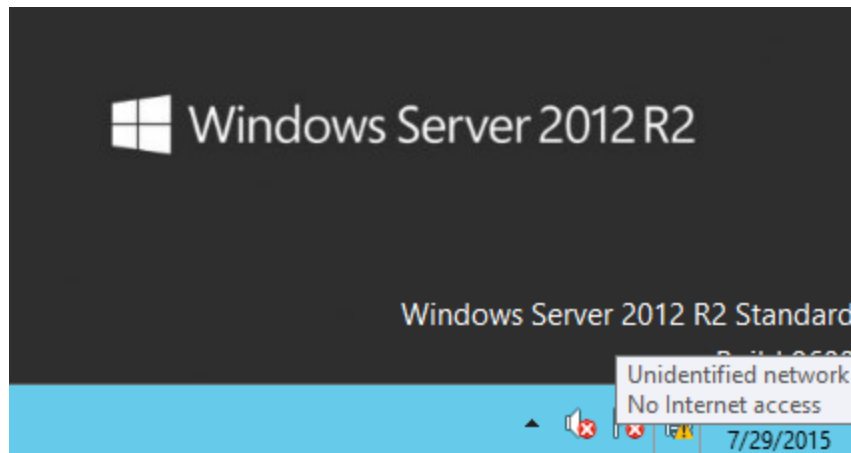
Equipment / Tools

1. Desktop running 64-bit Windows Operating System.

2. VMware Workstation.

3. The following virtual machines:

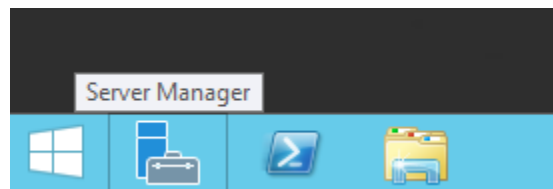   - ITE-DC1

    - ITE-CL1

Instructions

The instructor will provide all additional information required to successfully complete this lab. Notify the instructor after each task is completed.

Exercise 1 – Installing and Authorizing the DHCP Server Role

1. Login to the desktop as **student** with a password: **student**.

2. Launch the **VMware Workstation.**

3. Click **Open a Virtual Machine** and open **ITE-DC1_Lab3** folder.

4. Select and open **ITE-DC1** virtual machine.

5. Set **Network Adapter** settings to **Custom (VMnet2)** and click **OK.**

6. From the VMware Workstation toolbar, select **VM** tab, **Snapshot** and Click **Take Snapshot…**

7. Click **Take Snapshot.**

8. Click **Power on this virtual machine.**

9. Click **I Copied It**.

10. Logon to **ITE-DC1** as **ITE\Administrator** with password: **Pa$$w0rd**.

11. Close the **Server Manager** console.

12. Navigate to bottom-right of the Server 2012 network icon, right-click and select **Open Network and Sharing Center.**
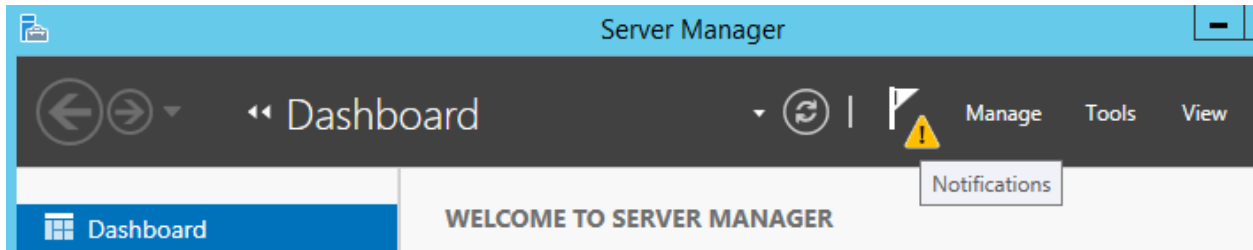
13. In the **Network and Sharing Center**, select **Change adapter settings**.

14. Right-click **Ethernet0**, select **Properties**, select **Internet Protocol Version (TCP/IPv4)** and select **Properties**.

15. Select **Use the following IP address:** and set static IP address: 192.168.8.1, subnet mask : 255.255.255.0.

16. Set **Preferred DNS server** : 192.168.8.3

17. Click **OK** and close **Network Connections**.

18. Navigate to bottom-left of the Server 2012 and click **Server Manager** icon.
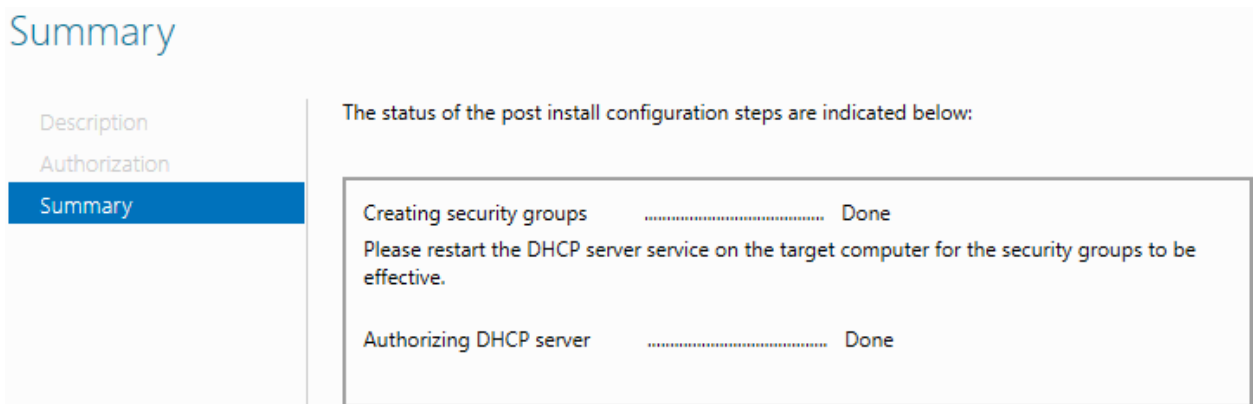

19. In the **Server Manager** select **Add roles and features**.

20. In **Add Roles and Features Wizard**, click **Next**, click **Next**, click **Next** again and check **DHCP Server** and click **Add Features** and click **Next**.

21. In **Select features**, click **Next.**

22. In **DHCP Server**, click Next and click **Install**. Close the wizard when DHCP is successfully installed.

Exercise 2 – Authorize The DHCP Server Role.

1. On the Server Manager toolbar, select the flag "**Notifications**" and click the **Complete DHCP Configuration**.

2. Select **Authorization** and click **Commit**.

3. In the **Summary**, ensure that **Authorizing DHCP server** is **Done**.
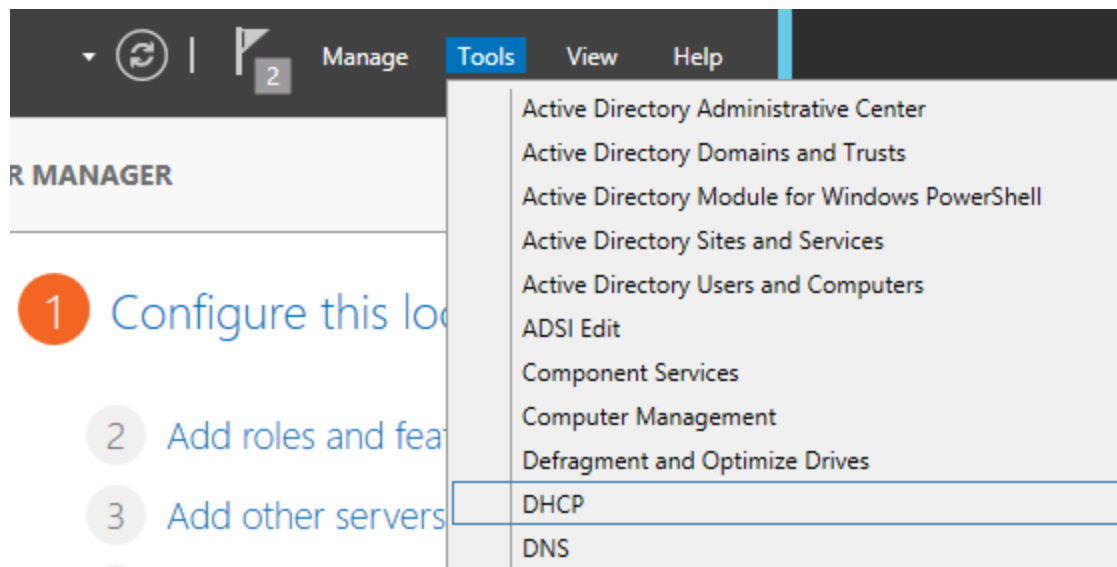

4. Click **Close**.

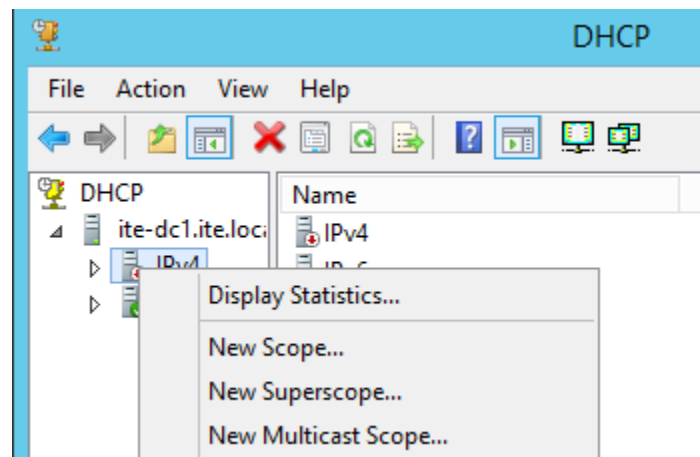☐   Completed   Instructor Initial: _____

Exercise 3 – Configure DHCP Scope

Create an IPv4 scope for distributing IP addresses with the following settings:

1. On the **Server Manager** console, select **Tools** and select **DHCP**.

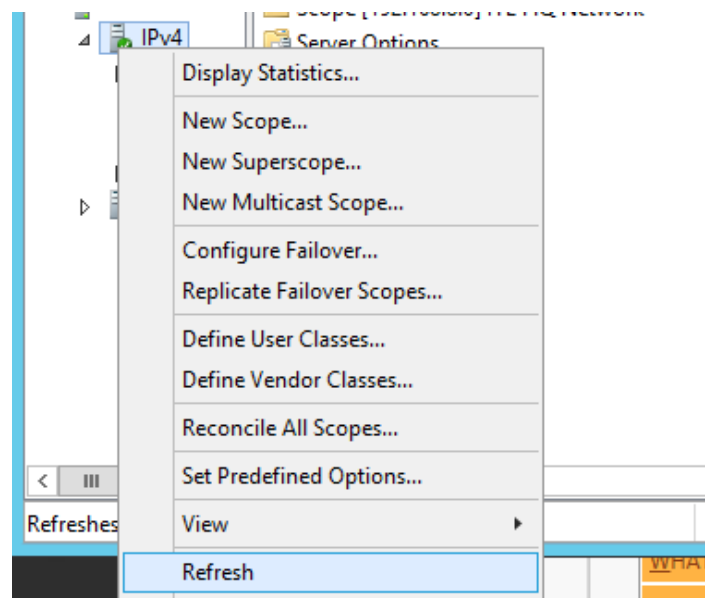2. In the DHCP console, expand **ite-dc1.ite.local**, right-click **IPv4** and select **New Scope…**

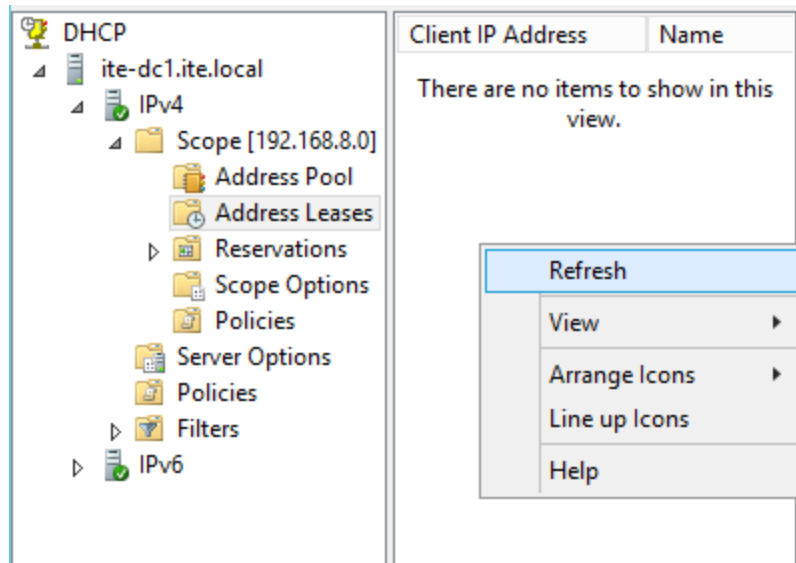3. In the **New Scope Wizard**, click **Next** and enter the following parameters:

Fields	Value
Scope Name	ITE HQ Network
Description	Scope 192.168.8.0
Scope IP Address Range	192.168.8.1 – 192.168.8.254

Subnet mask length	24
IP address range exclusion	192.168.8.1 – 192.168.8.50
Lease duration	1 hour
Scope option	Configure later

4. In the **Add Exclusions and Delay**, key in the IP address range exclusion and click **Add** and click **Next**.

5. In the **Configure DHCP Options**, select **Yes, I want to configure these options now** and click **Next**.

6. Click **Next**, click **Next**, click **Next**, click **Next** and click **Finish**.

7. In the DHCP Console, right-click **IPv4** and click **Refresh**.

8. From **Scope[192.168.8.0]**, right-click **Address Leases** and click **Refresh.** Note that there is no IP address lease activity.
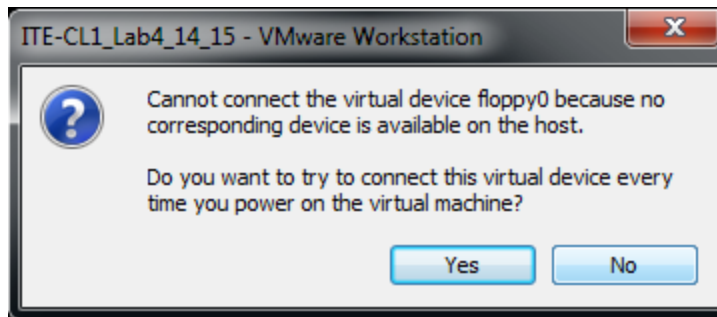
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Exercise 4 – Verify IP address allocation leased by DHCP server

1. Open **ITE-CL1** virtual machine from **ITE-CL1** from **ITE-CL1_Lab3_13_14** folder.

2. Set **Network Adapter** settings to **Custom (VMnet2)** and click **OK.**

3. Set Memory to **1024MB**.

4. From the VMware Workstation toolbar, select **VM** tab, **Snapshot** and Click **Take Snapshot…**

5. Click **Take Snapshot.**

6. Click **Power on this virtual machine.**

7. Click **No.**

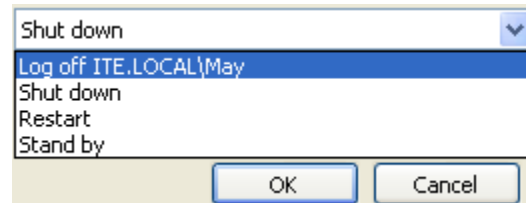8. From the VMware Workstation toolbar, select **V<u>M</u>** tab, select **Send Ctrl+Alt+Del**.

9. Logon to **ITE-CL1** as **ITE\May** with password: **Pa$$w0rd**.

10. Observe the **ITE-CL1** Windows outlook.

11. Go back to **ITE-DC1** DHCP console, from Scope[192.168.8.0], right-click **Address Leases** and click **Refresh.**

12. Fill up the following from your observation**:**
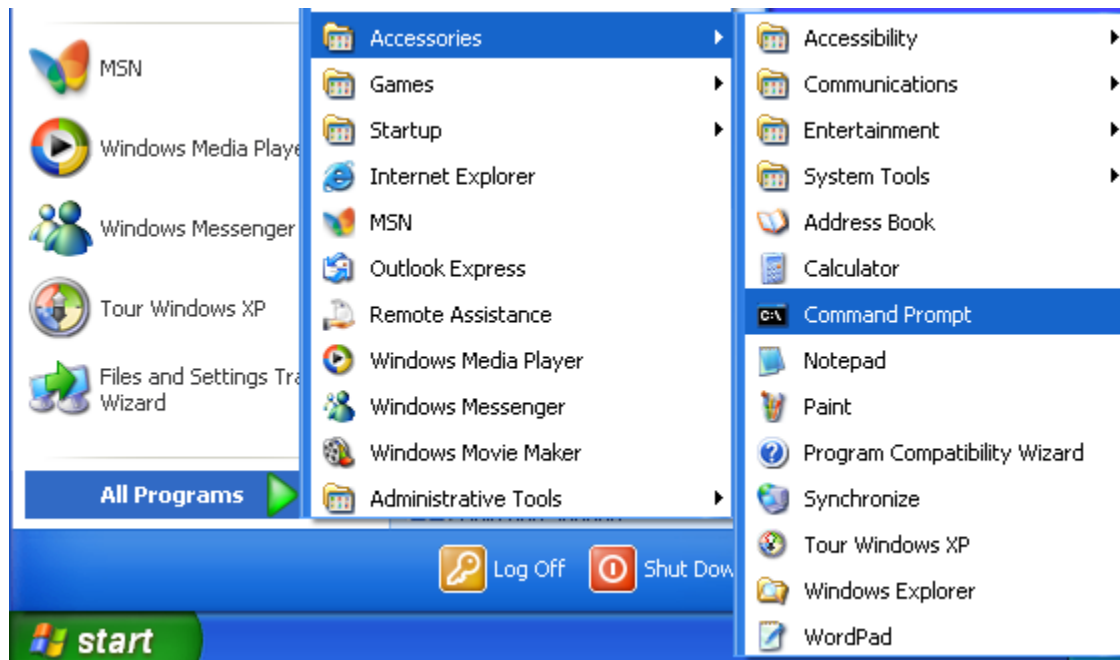

    Client IP address: _____

    Name   : _____

13. Go back to **ITE-CL1** machine, click **start** menu and select **Logoff ITE.LOCAL\May** and click **OK.**

14. From the VMware Workstation toolbar, select **VM** tab, select **Send Ctrl+Alt+Del** and logon to **ITE-CL1** as **ITE\Administrator** with password: **Pa$$w0rd.**

15. Click **Start** menu, select **All Programs**, select **Accessories** and click **Command Prompt**.

16. From the command prompt, type **ipconfig /release** and then press **ENTER** to release the IP configuration.

    Fill up the following:

    IP Address   : _____

    Subnet Mask   : _____

17. Type **ipconfig /renew** and then press **ENTER** to request an IP address from the DHCP server.

Connection-specific DNS Suffix   : _____

IP Address   : _____

Subnet Mask   : _____

18. Type **ipconfig /all** to display the IP address configured.

IP address   : _____

Subnet Mask   : _____

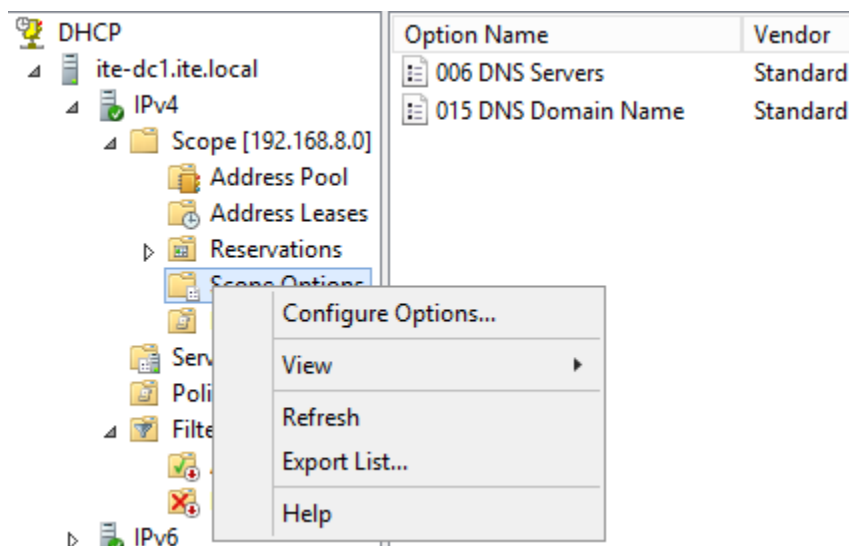Default gateway : _____

DHCP Server   : _____

DNS Server   : _____

Lease Obtained : _____

Lease Expire   : _____

Exercise 5 – Configure DHCP Scope Options

1. Go back to **ITE-DC1** DHCP console, select and right-click **Scope Options**, click **Configure Options.**

2. In the **Scope Options** dialog box, select the **003 Router** check box, in the IP Address box, type **192.168.8.1** and then click **Add** and click **OK**.

3. Go back to **ITE-CL1**, open the command prompt :

    Type **ipconfig/release** and then press **ENTER** to release the IP configuration.

    Type **ipconfig/renew** and then press **ENTER** to request an IP address from the DHCP server.

    Connection-specific DNS Suffix   : _____

    IP Address   : _____

    Subnet Mask   : _____

    Default Gateway   : _____

    Type **ipconfig/all** and then press **ENTER.**

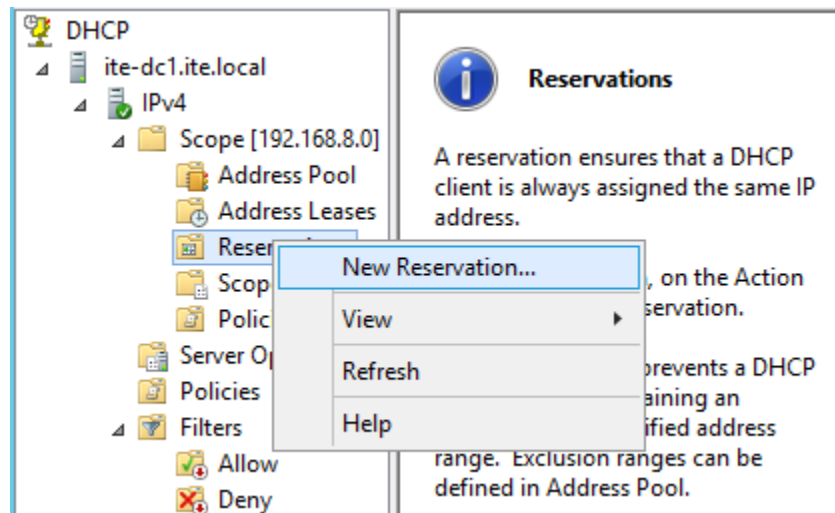   Observe and record the **ITE-CL1 Physical address** : _____

    ☐   Completed   Instructor Initial: _____

Exercise 6 – Configure Reservation

1. Go back to **ITE-DC1** DHCP console, select and right-click **Reservation**, click **New Reservation.**

2. Type **ITE-CL1** in the **Reservation** name field.

3. Type **192.168.8.88** for the IP address.

4. Enter the physical address for **ITE-CL1** you recorded in **Exercise 5** in the **MAC address** field (omit the dashes).

5. Select **Both** and then click **Add** and click **Close** when finished.

6. Go back to **ITE-CL1**, run the command prompt.

7. In the command prompt :

   Type **ipconfig/release** and then press **ENTER** to release the IP configuration.

   Type **ipconfig/renew** and then press **ENTER** to request an IP address from the DHCP server.

Observe and fill up the blanks.

Connection-specific DNS Suffix   : _____

IP Address   : _____

Subnet Mask   : _____

Default Gateway   : _____

8. Is the reserved IP address assigned to the **ITE-CL1** machine? _____

☐ Completed   Instructor Initial: _____

Go to each virtual machines and perform the following:

1. From the VMware Workstation toolbar, select **VM** tab, **Snapshot** and Click **Revert to Snapshot : Snapshot 1** and click **Yes.**

2. Then, click **VM** tab and select **Power** and click **Power Off**