

Voraussetzungen für die Übung:

- ISO-File für Windows Server im Windows Azure runterladen
- Rufus runterladen und einen bootfähigen USB-Stick erstellen
- Windows Server an einem Schul-PC installieren

Die zuvor erstellte Übung in Packet Tracer ist 1:1 mit den definierten IP-Adressen umzusetzen.

In Anlehnung zu:

<https://msftwebcast.com/2019/05/install-and-configure-dhcp-in-server-2019.html>

<https://msftwebcast.com/2019/05/configure-dhcp-in-server-2019.html>

Install and configure DHCP in Windows Server 2019 Step By Step Guide Part-1

This will be the two-part tutorial in which I will cover each and every step to install and configure the DHCP server role on Windows Server 2019.

In the first part of this tutorial, I will show you the steps to install and configure the DHCP server role on Windows Server 2019.

Dynamic Host Configuration Protocol (DHCP) is a network protocol used in Internet Protocol (IP) networks.

The server that supports the protocol is called a DHCP server.

As its name indicates, DHCP is a service that provides TCP/IP settings, such as IP address, subnet mask, default gateway address and DNS server address to the clients automatically.

For this tutorial, I will be using my domain controller named as WS2K19-DC01 that is configured with IP address 172.18.72.5/24 and hosts the Active Directory Domain Service role for the mylab.local domain.

Things to check before you start:

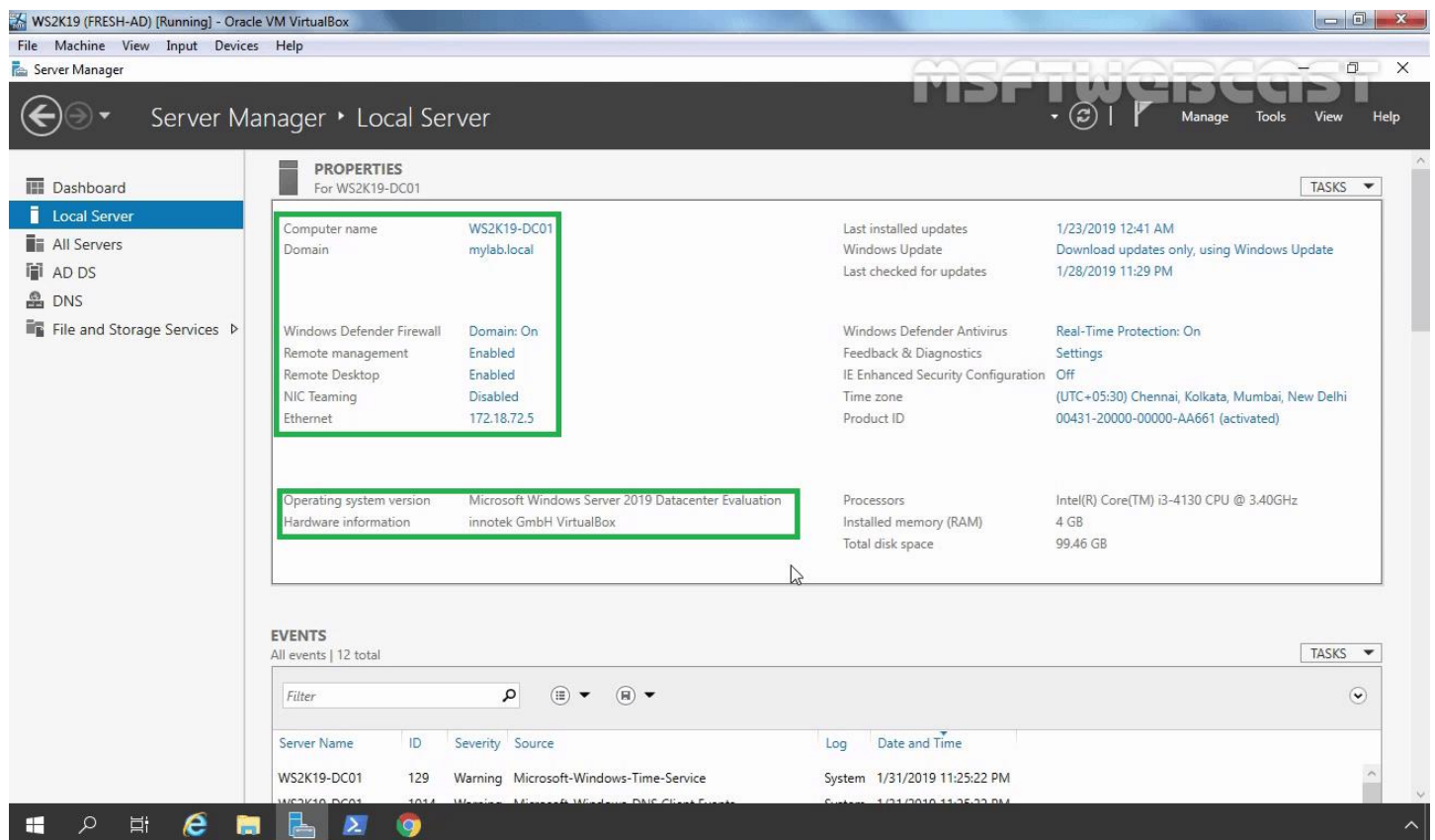
- Assign static IP address to the server.
- You must have administrative privilege to install DHCP server role.

Step:1 Install the DHCP Server Role in Windows Server 2019

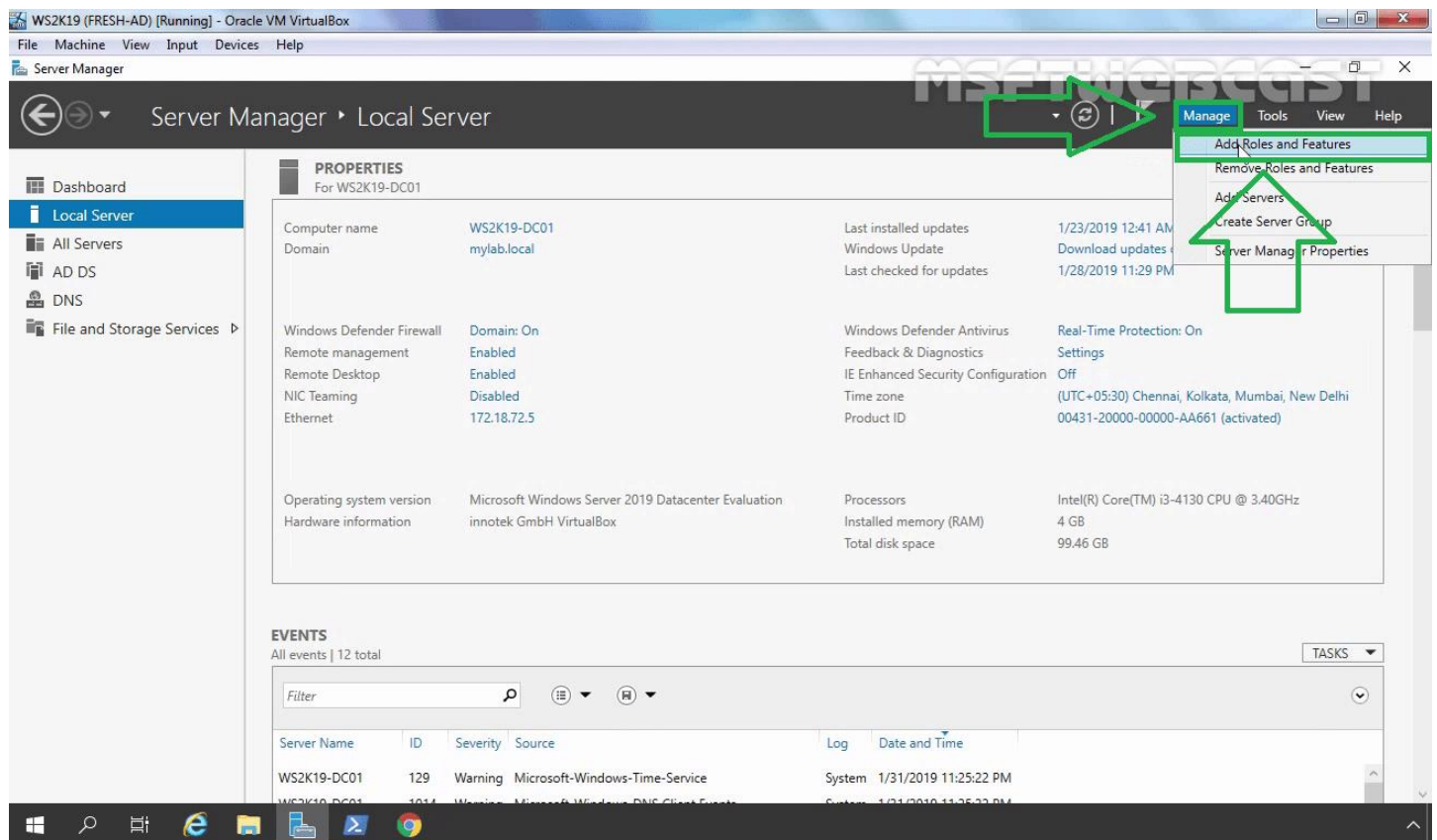
Note: Remember already I have logged on as a domain administrator on WS2K19-DC01 machine.

So we have sufficient permission to install DHCP server role and to authorize the DHCP server in Active Directory environment.

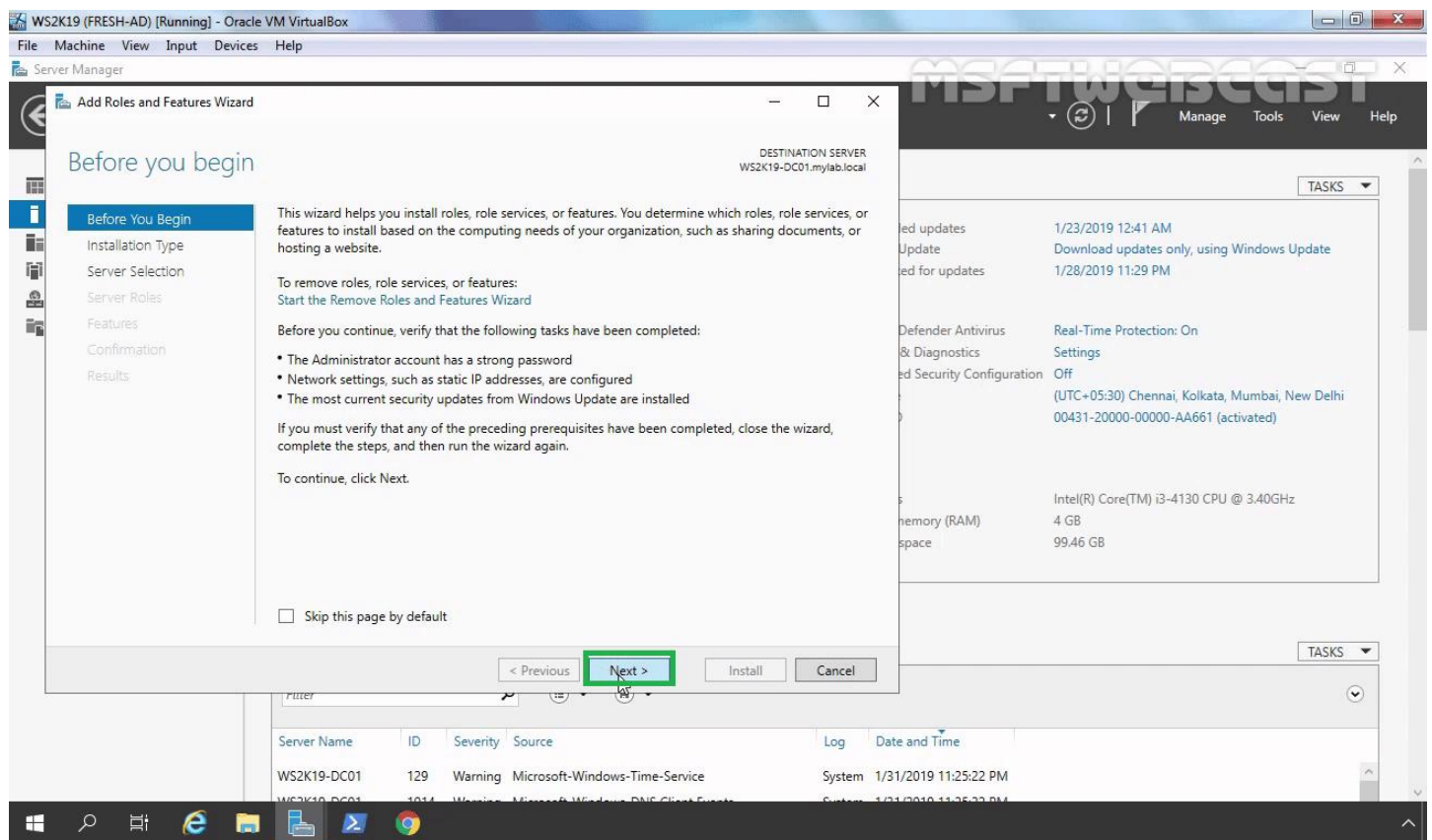
1. First of all open Server Manager Console, as we are going to install the DHCP server role.



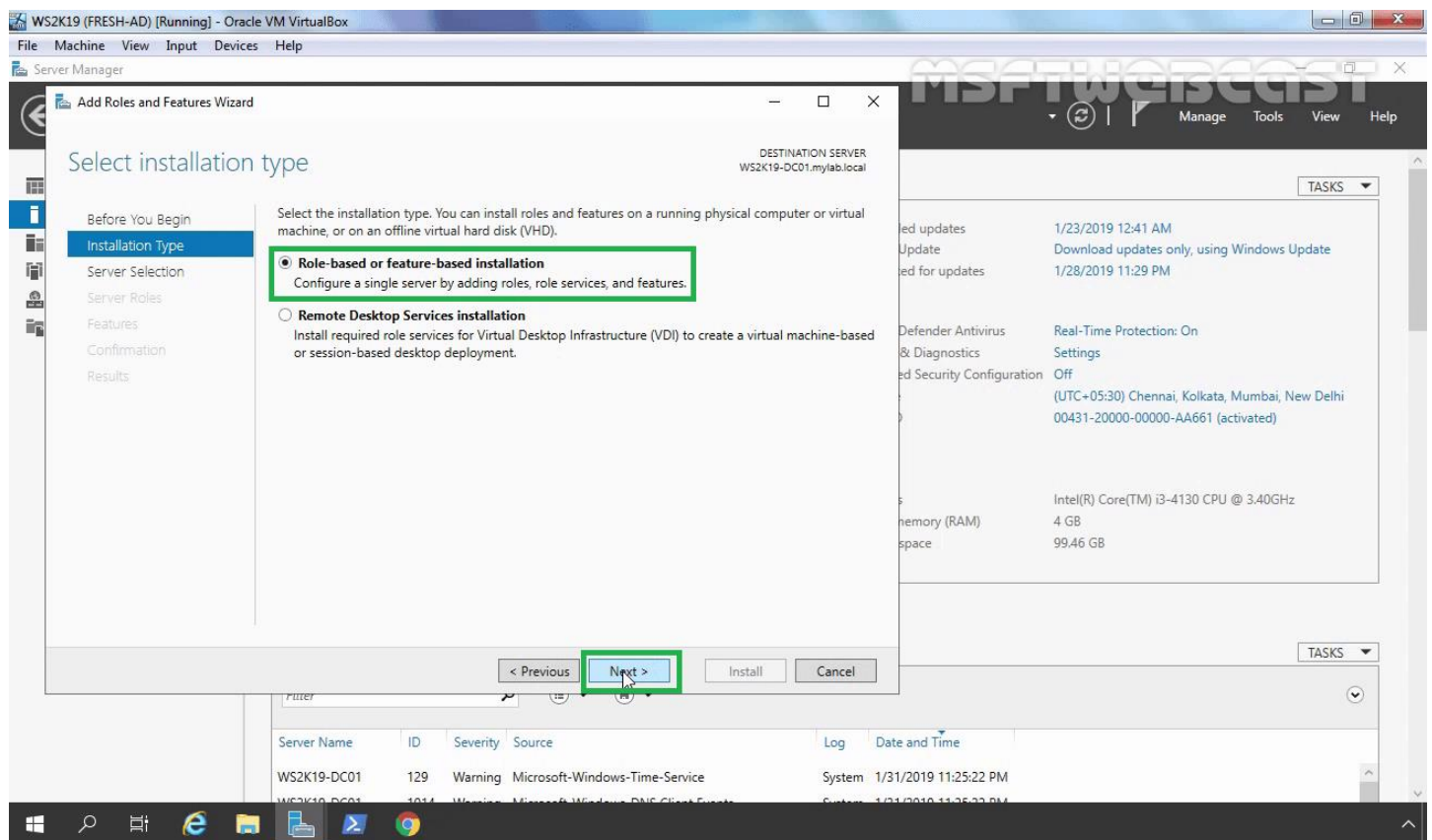
2. On Server Manager dashboard, Click on Manage and select Add Roles and Features.



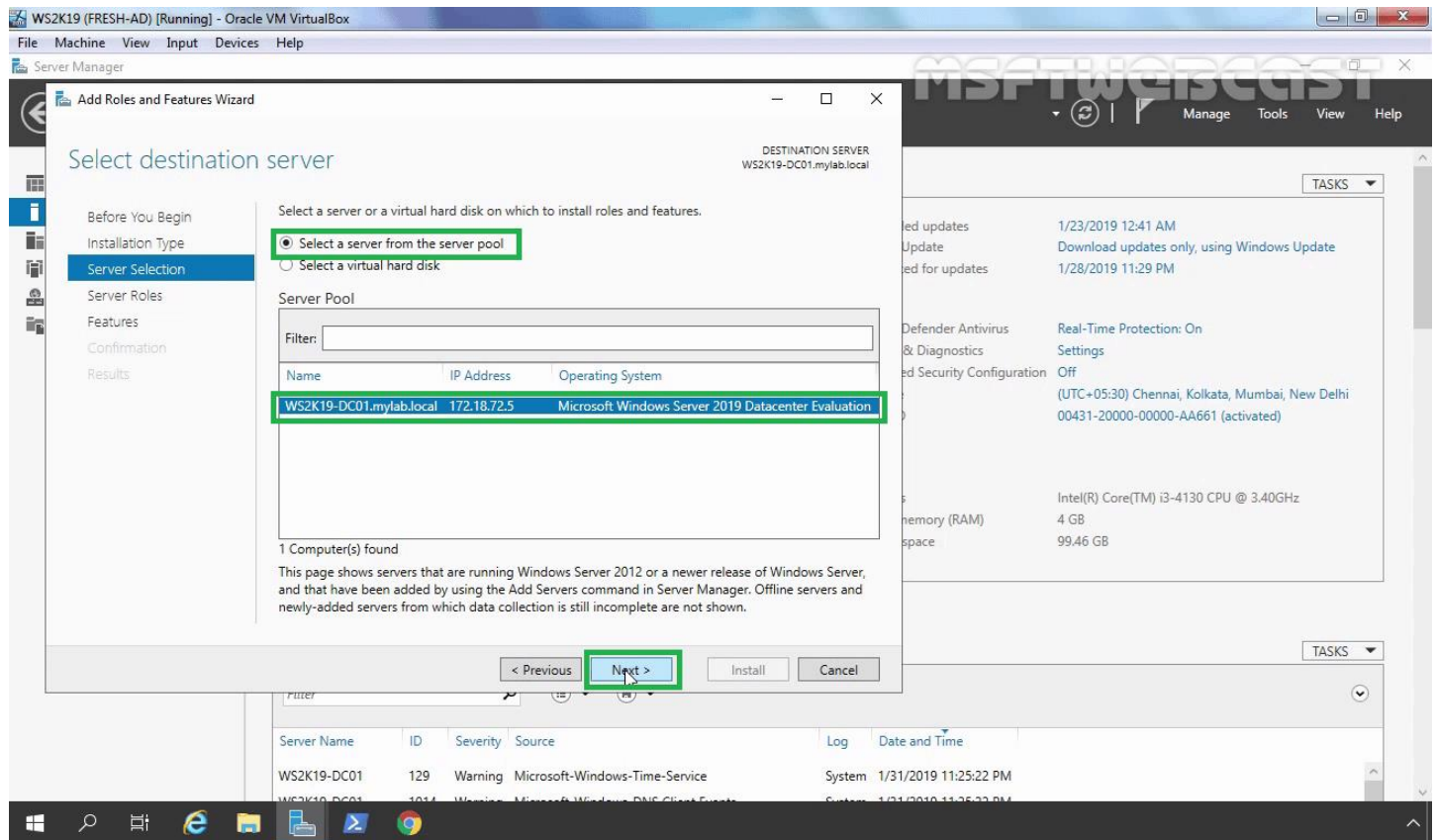
3. On before you begin, Click on Next button on the next screen.



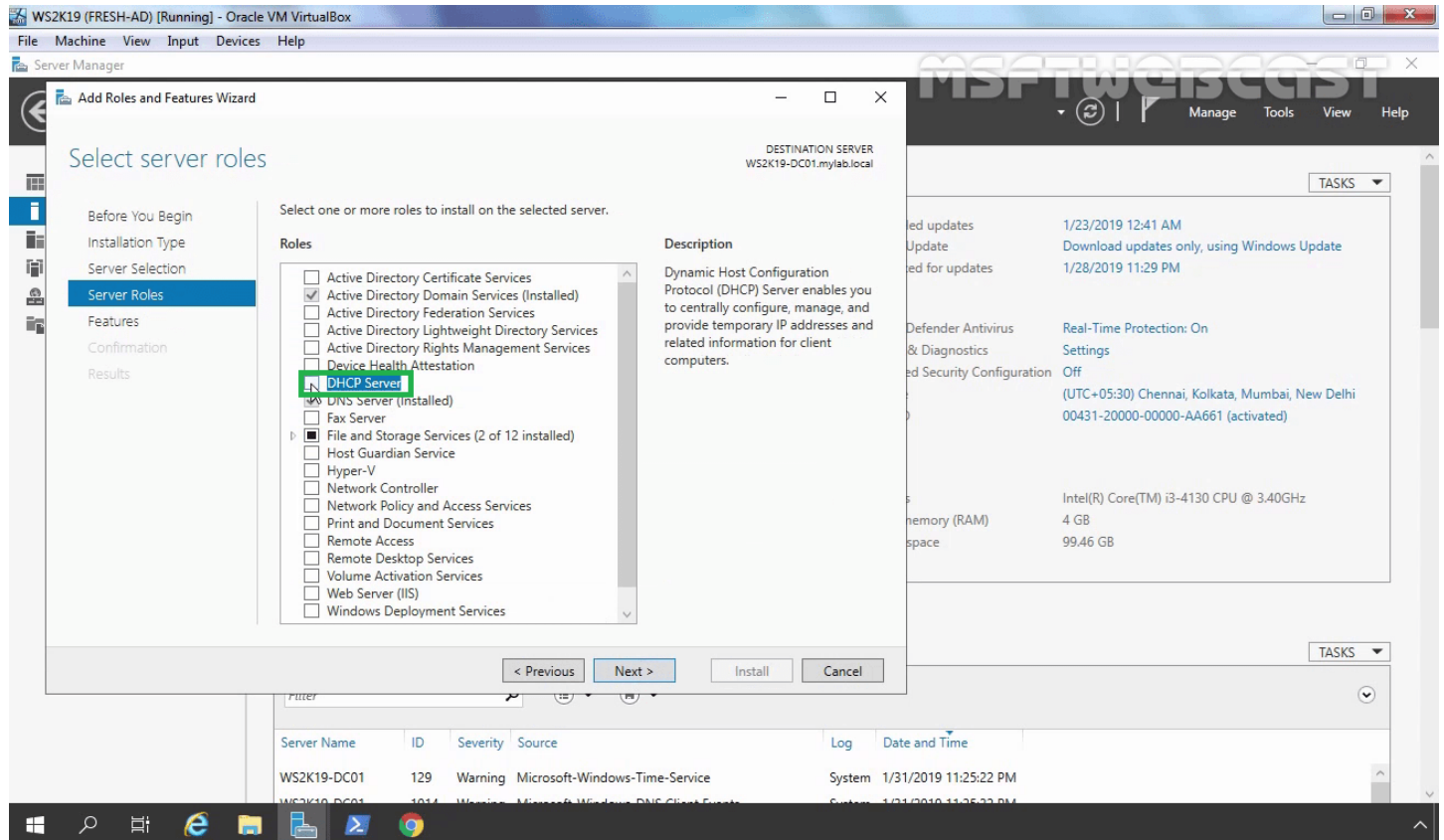
4. On the Select installation type console, make sure you select Role-based or feature-based installation and click Next button.



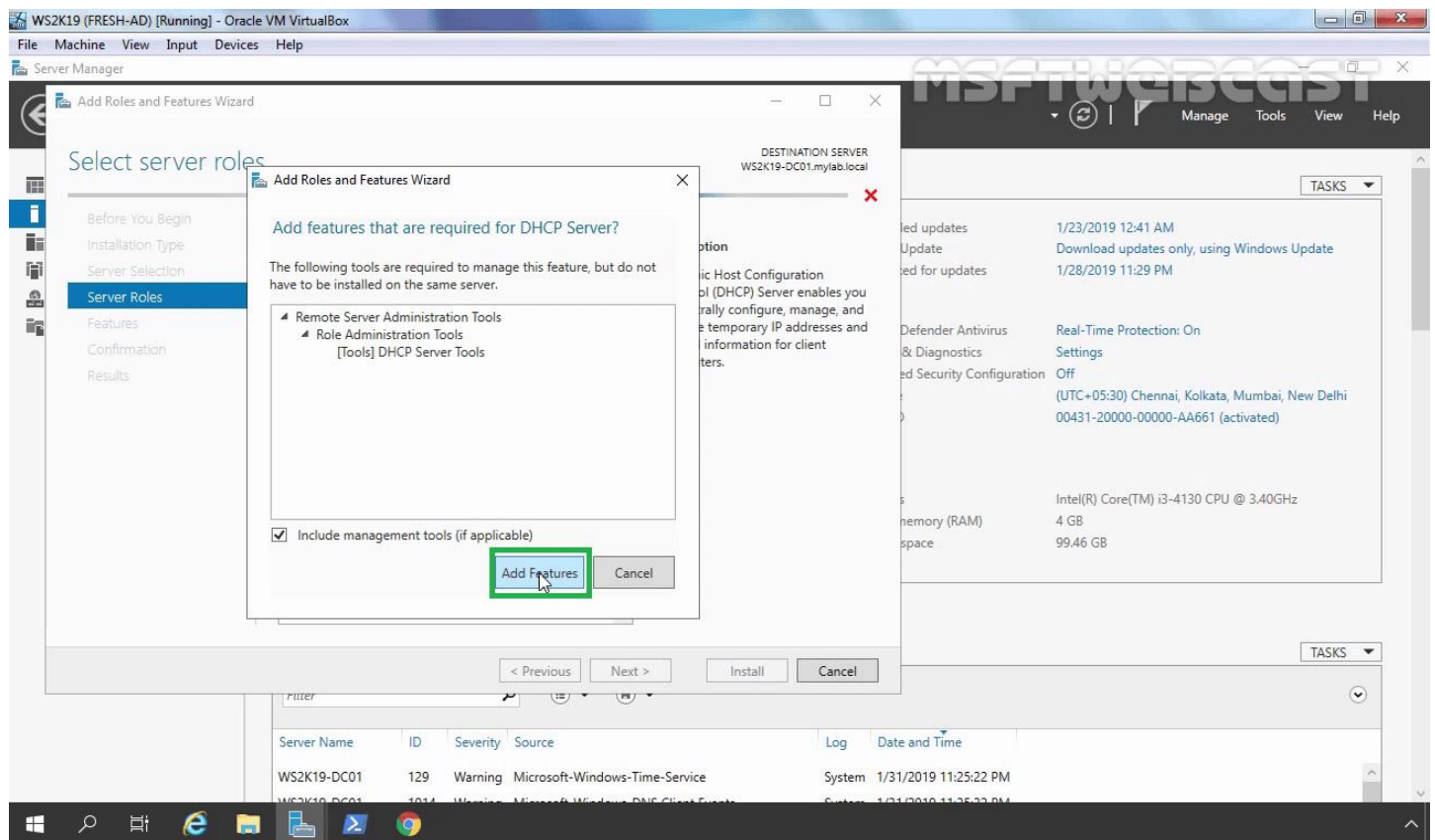
5. On the Select destination server screen, select our local server WS2K19-DC01 and click on Next.



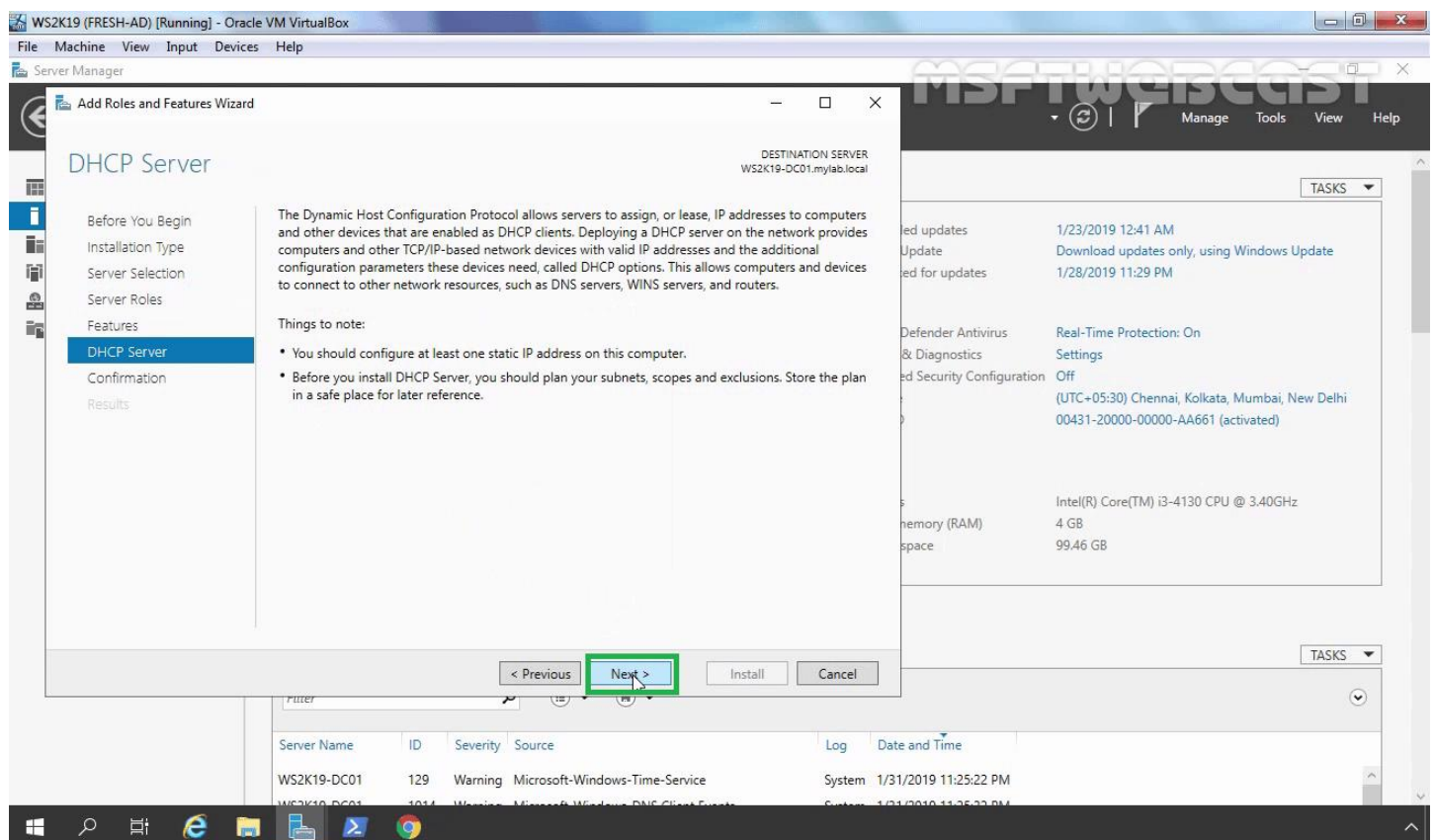
6. On the Select server roles console, select the DHCP Server role for installation.



7. As soon as you choose DHCP, a new window appears. Click Add Features to add required features to manager DHCP server properly, then Click on Next.

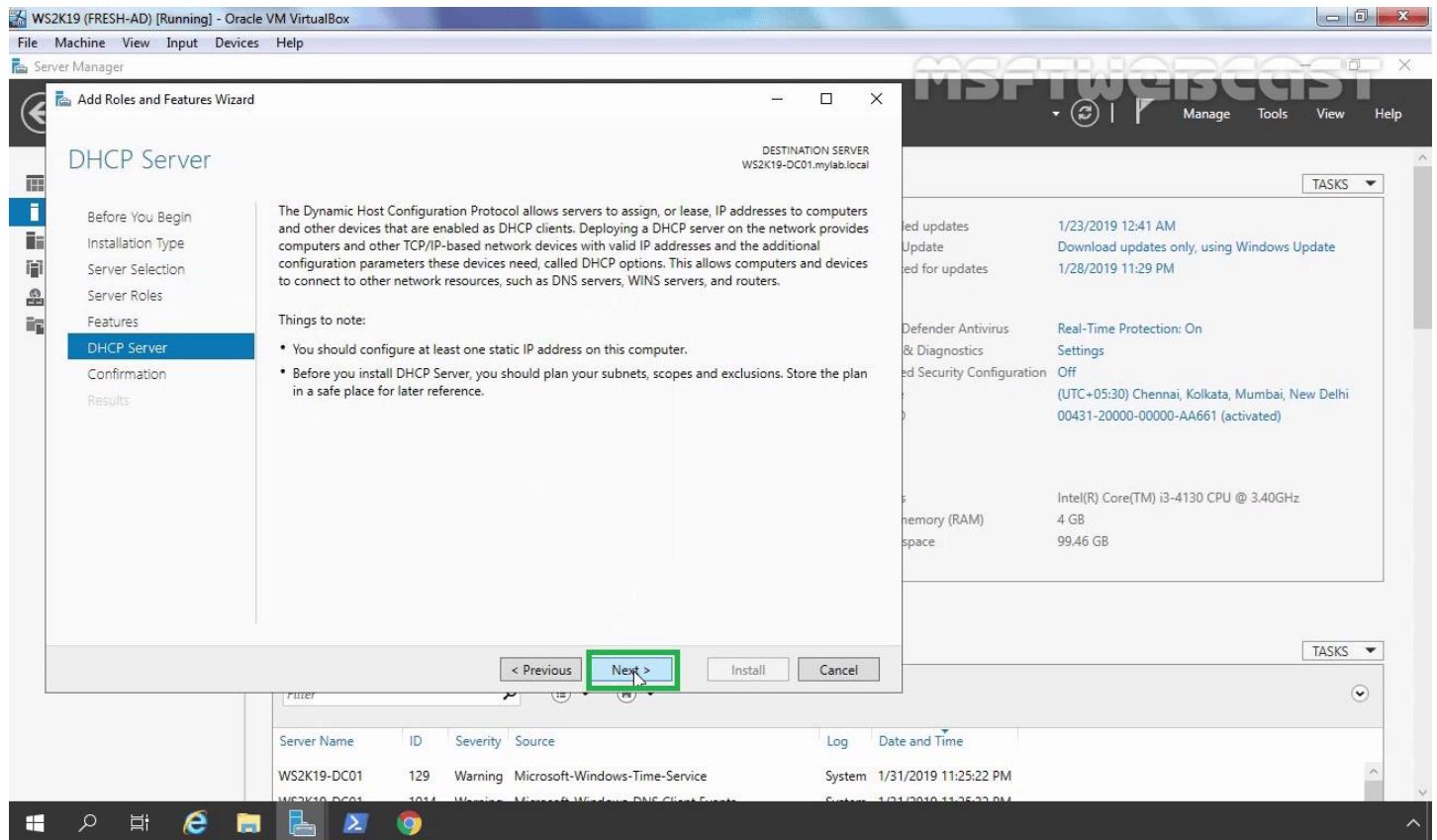


8. On the select features console, just click next because we do not require any extra features at the moment.

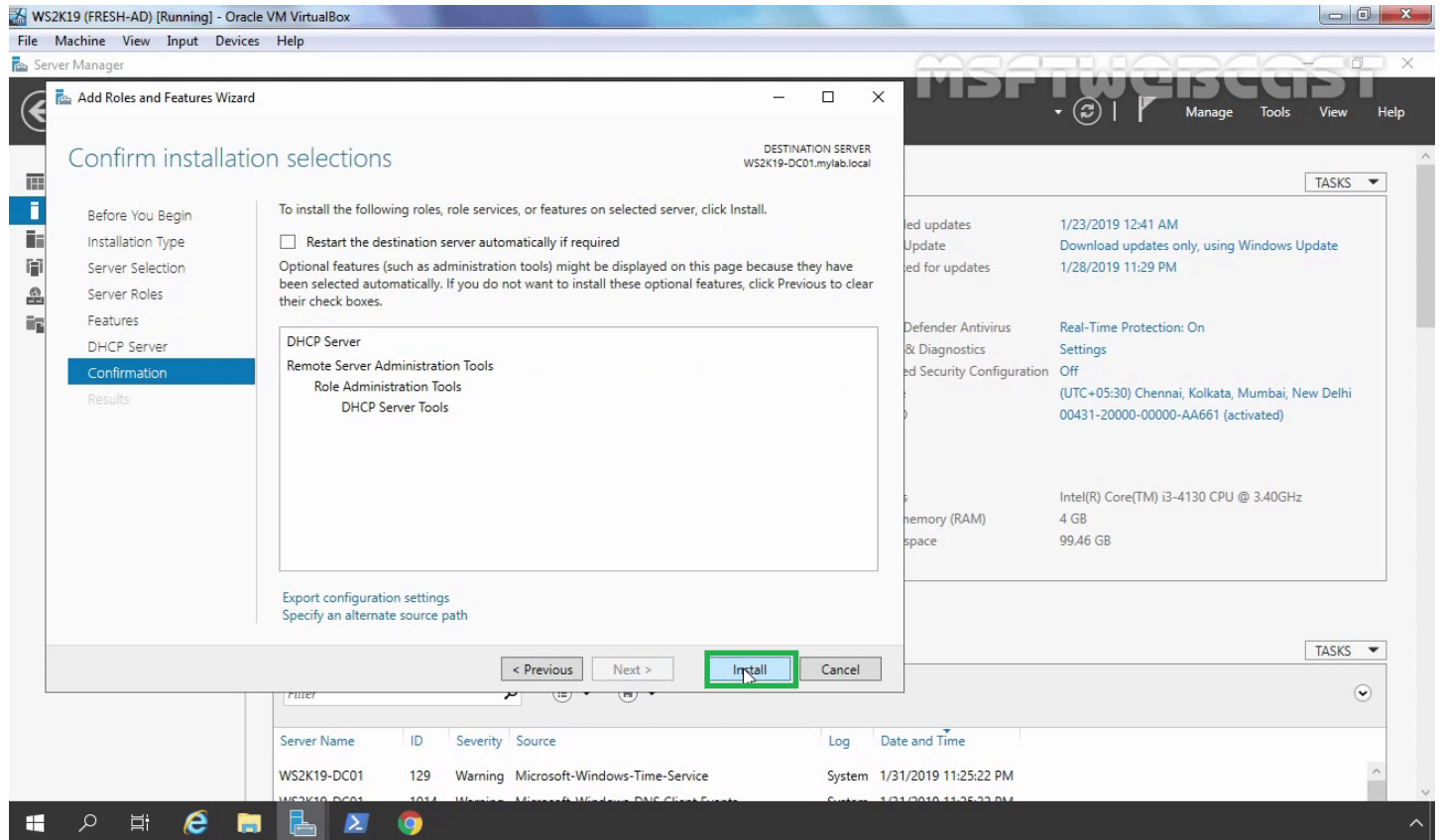


9. On the DHCP Server console, you can read brief information about DHCP server.

When you ready, click next to continue.

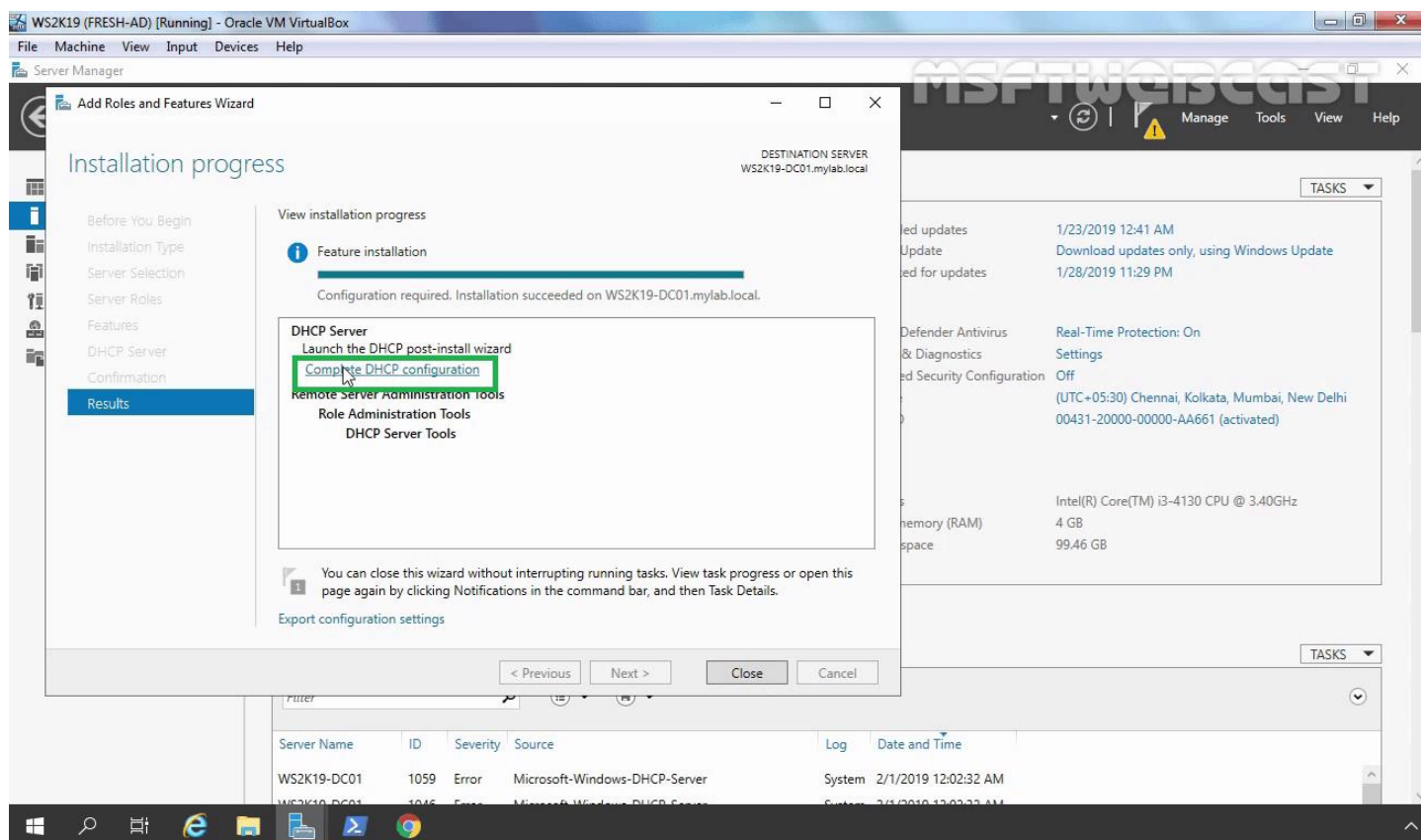


10. On the Confirm installation selections console, Click on Install to start the installation process.

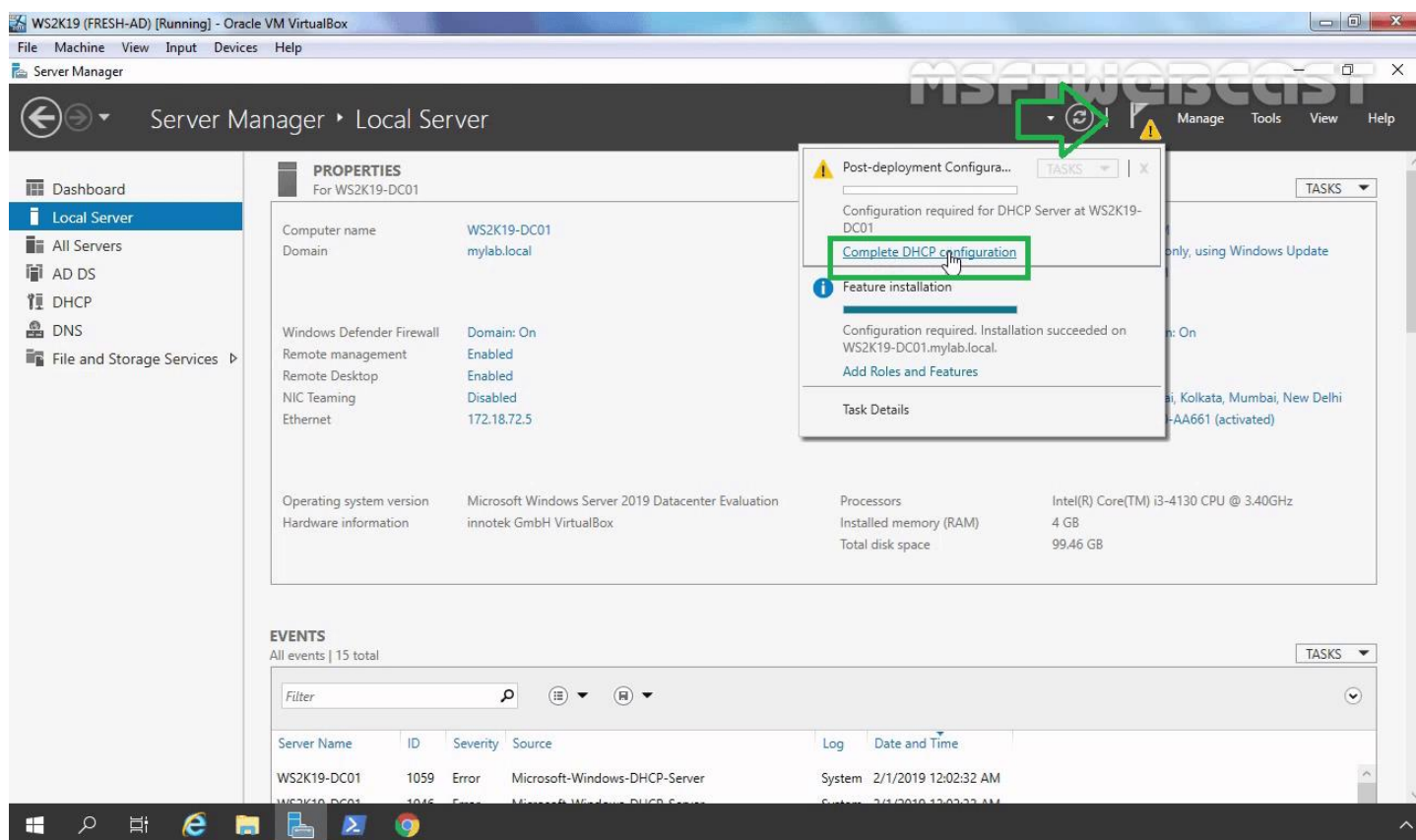


11. This will take some time to complete.

12. Once installation completes, click on "Complete DHCP configuration" link to start the "DHCP post-install wizard".



In case, if you close the console still you can start the “DHCP post-install wizard” by clicking on yellow exclamation mark on the flag in server manager dashboard.



Step:2 DHCP Post Install Configuration

1. On description console, you can read what DHCP post-install configuration wizard is going to do.

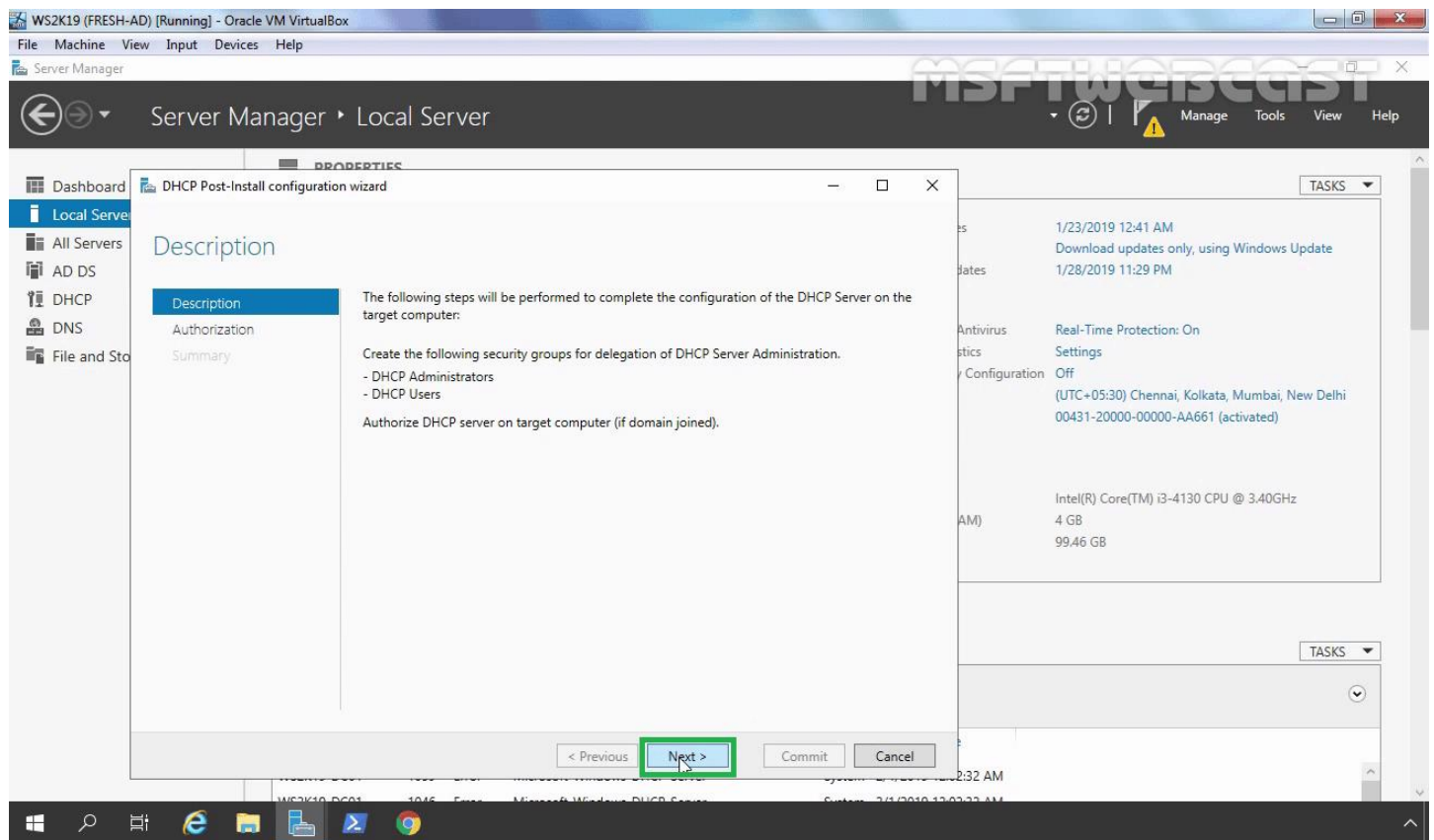
This will create two security groups for DHCP administration:

1. DHCP Administrators
2. DHCP Users

If the server where you are installing DHCP server role is a domain controller or member server, then this wizard is also going to register DHCP service in Active Directory as well.

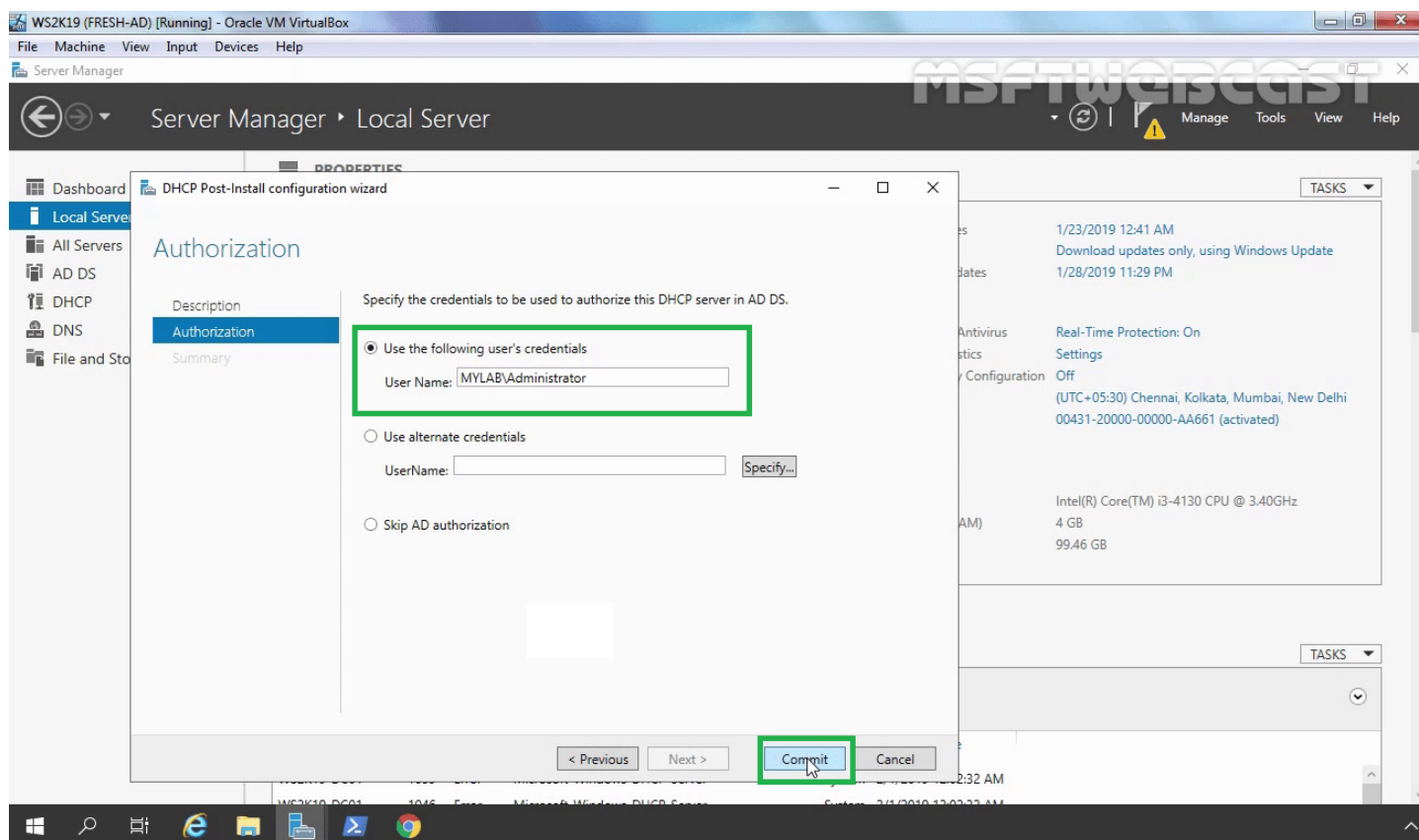
That is known as a DHCP authorization in Active Directory.

Click on Next to continue.

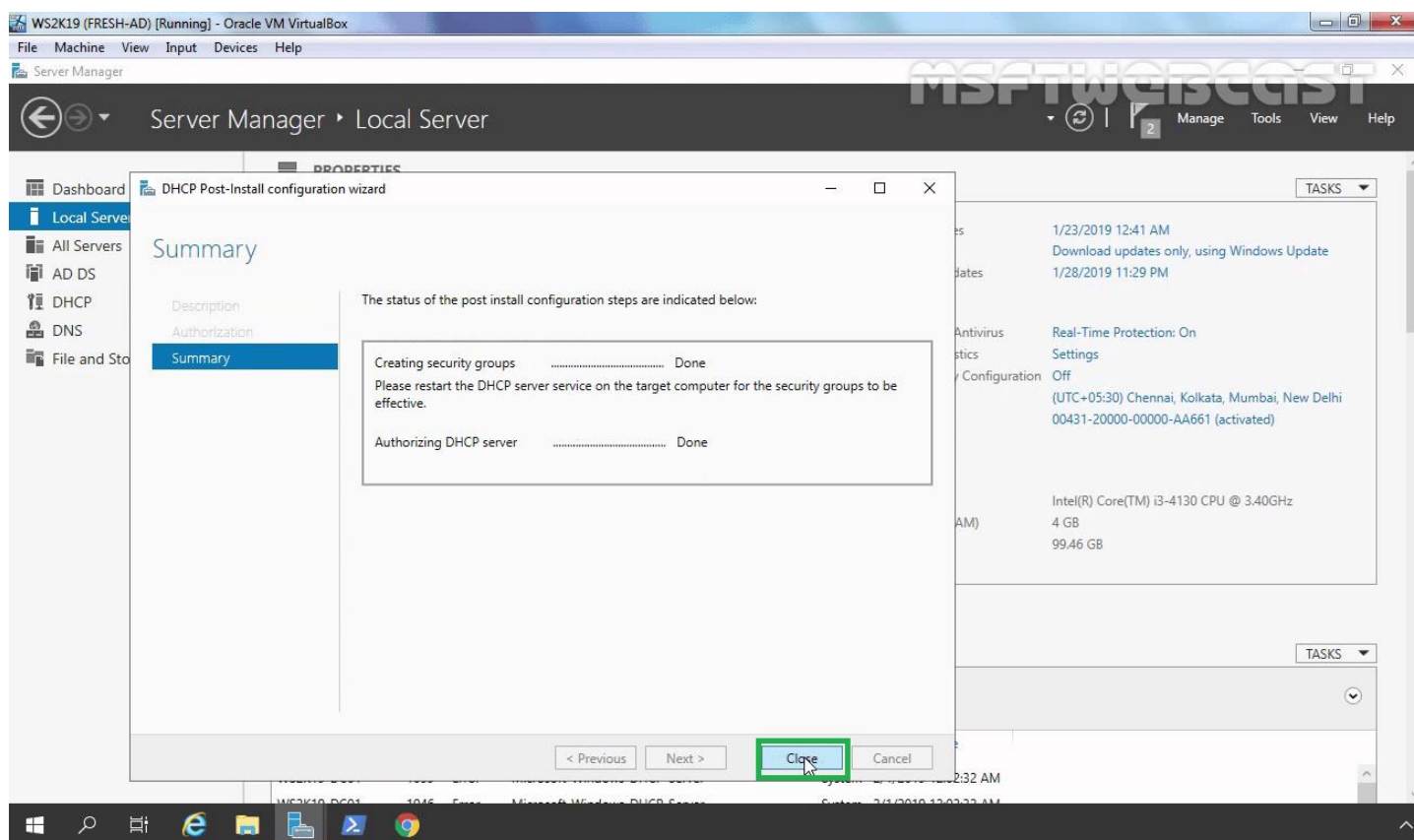


2. On Authorization console, here we need to specify the user credential to register DHCP service in Active Directory. Since we have login as a Domain Administrator and the user has the privilege to do that, I am going with default selection "MYLABadministrator".

Click on commit to proceed.



- Once the security group creation and DHCP authorization complete successfully. Click on Close button to close the DHCP post-install configuration wizard.



That's it, we have successfully completed the installation of DHCP server role on Windows Server 2019 machine.

In the **second part** of this tutorial on the DHCP server, we will see the steps to configure DHCP server role on Windows Server 2019.

In which we will create DHCP scope and then we will check on our client machine whether it receives IP address from DHCP server or not?

Configure DHCP on Windows Server 2019

Now you have installed the DHCP server role on your server 2019.

The next task is to configure DHCP by creating DHCP scopes.

What is DHCP Scope?

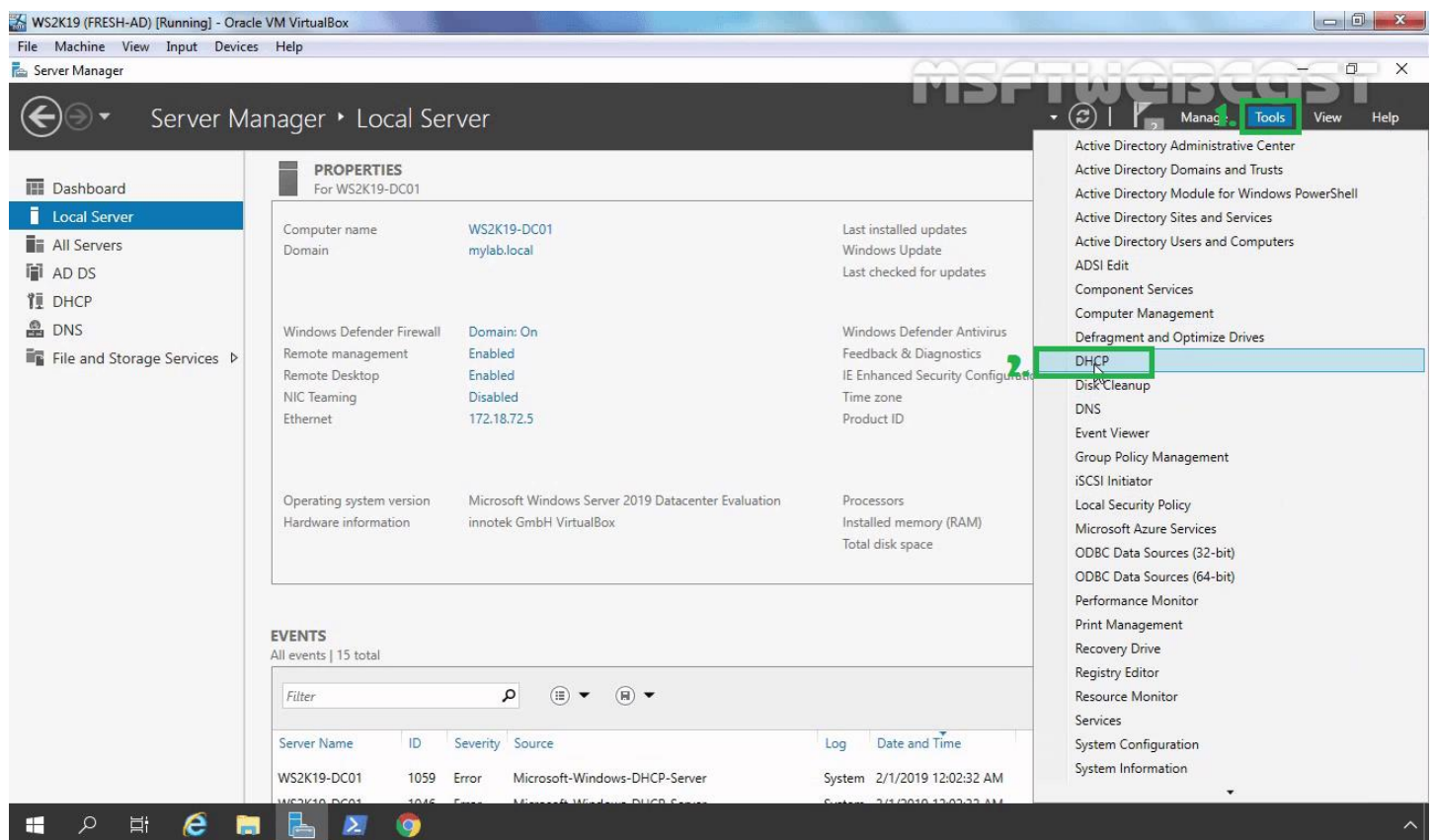
A scope is a range of IP addresses on a particular subnet that a DHCP server has selected for allocation to clients when they make a DHCP request.

You can use DHCP management console or PowerShell to create DHCP scope.

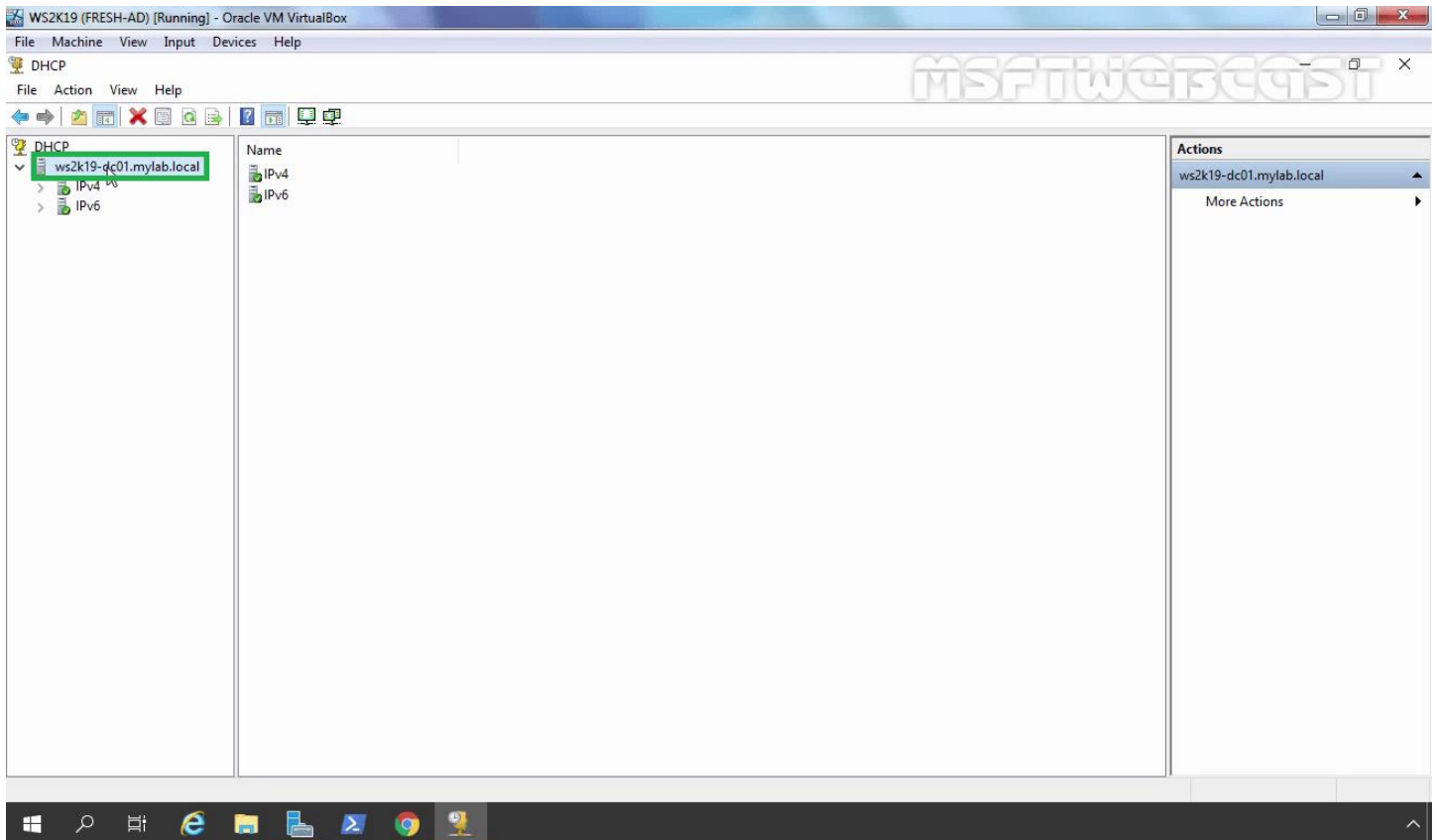
In this tutorial we will create IPv4 DHCP scope using DHCP management console.

Create IPv4 DHCP Scope:

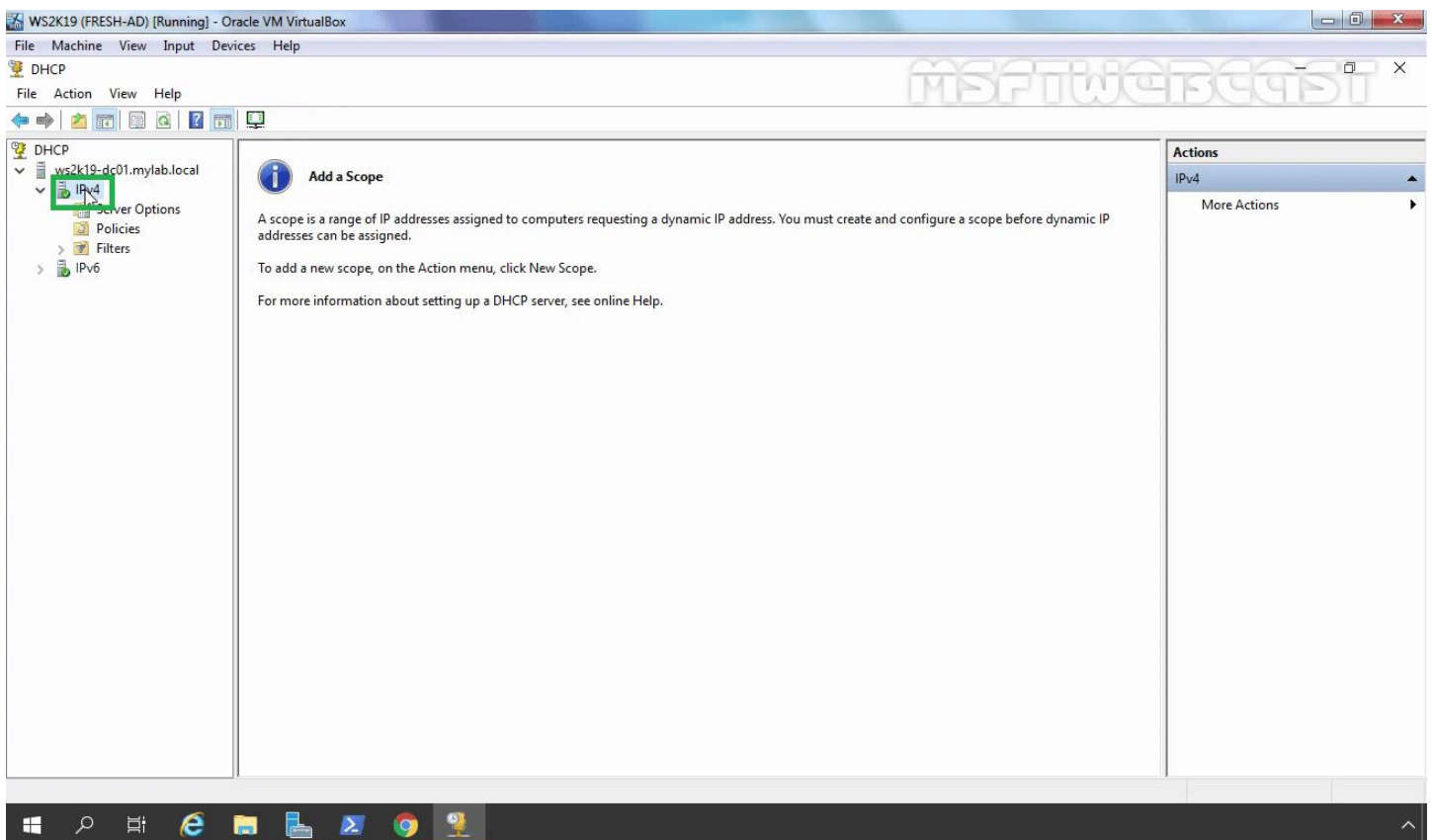
1. On Server Manager console, Click on **Tools** and select **DHCP** to open DHCP management tool.



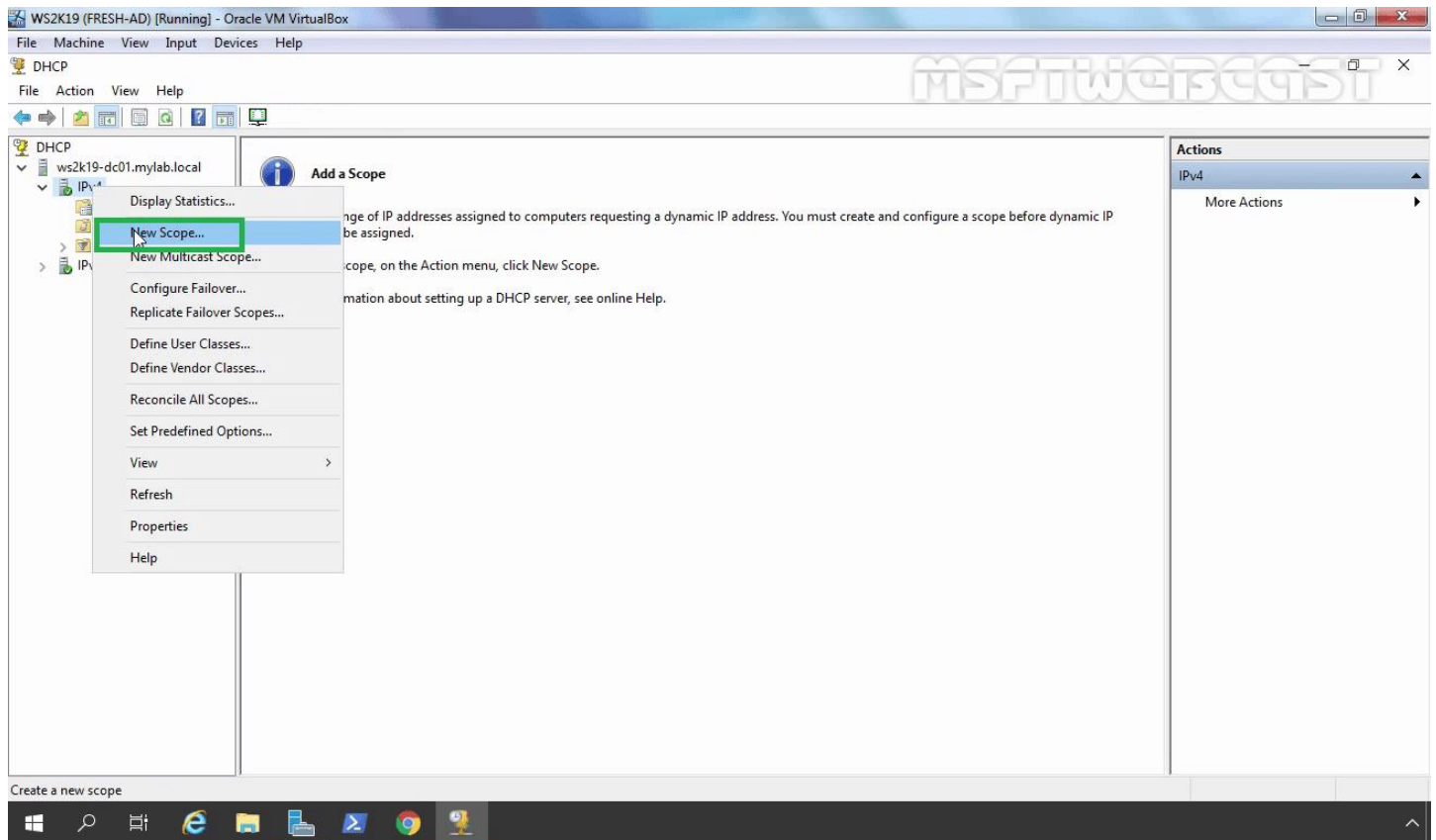
2. On the DHCP console, expand your **server name**. In my case it is ws2k19-dc01.mylab.local.



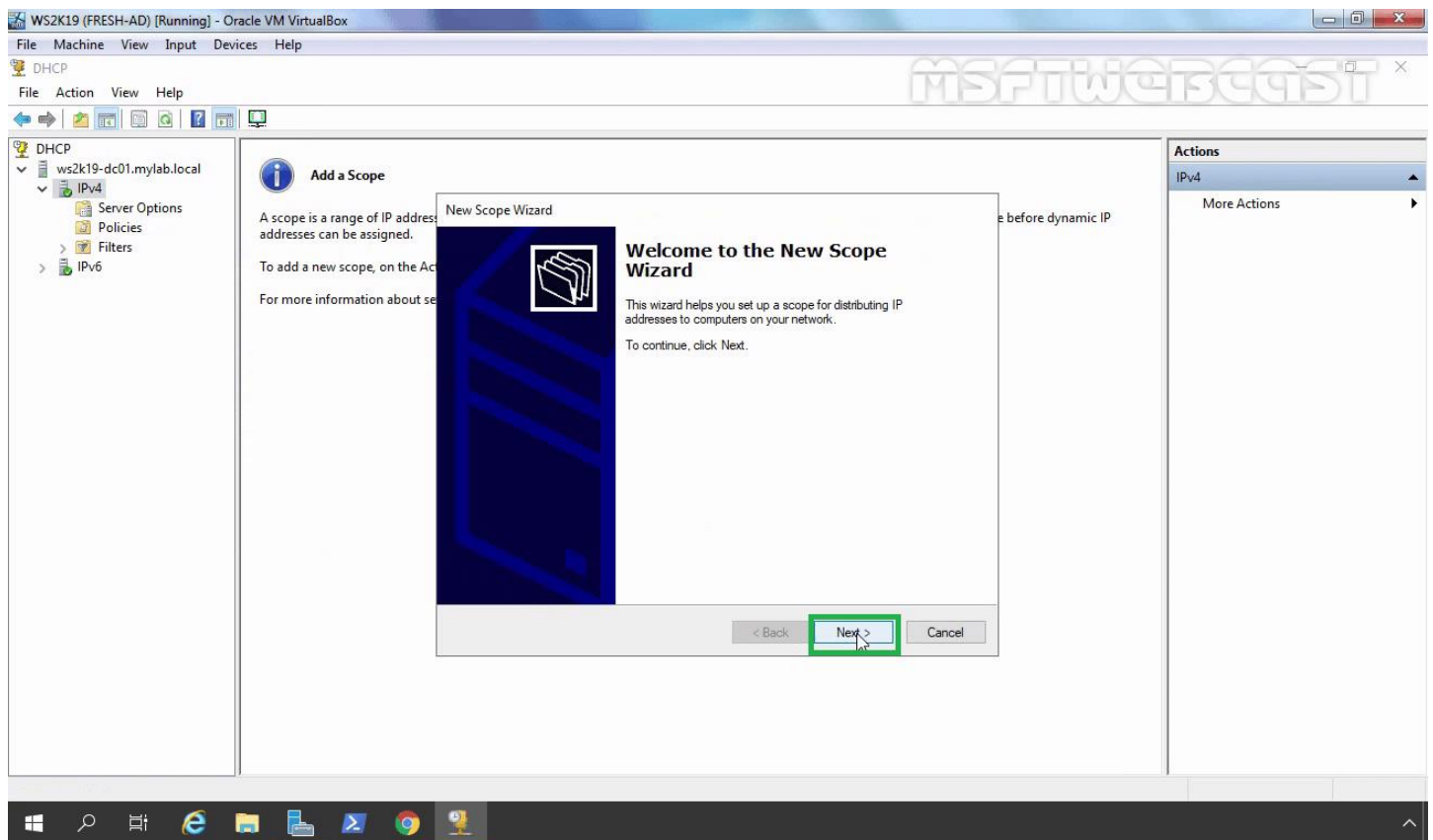
Select **IPv4**. On right pane you can see brief overview about DHCP scope and how to create it.



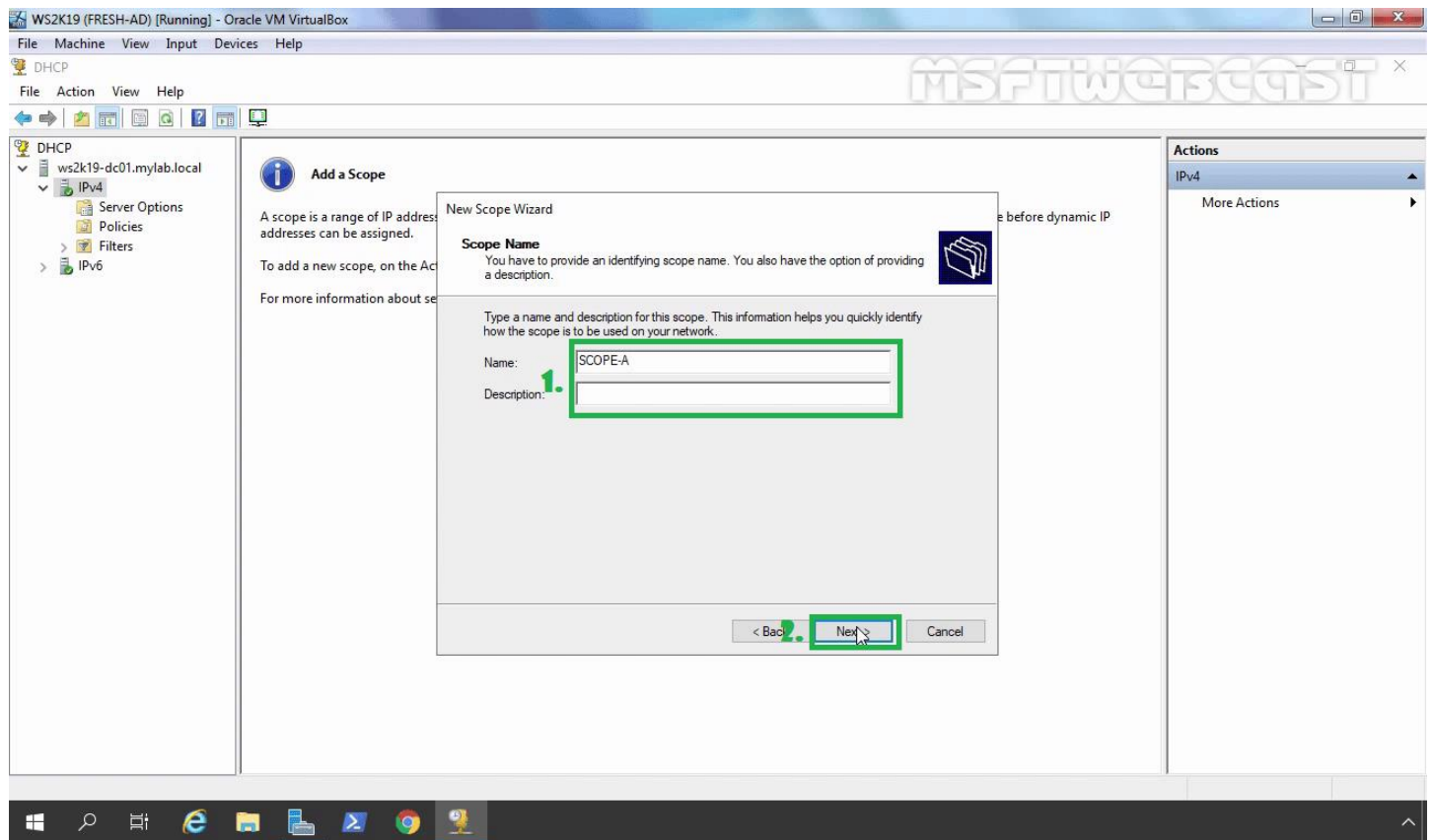
3. Right click on **IPv4** and select “**New Scope**” option.



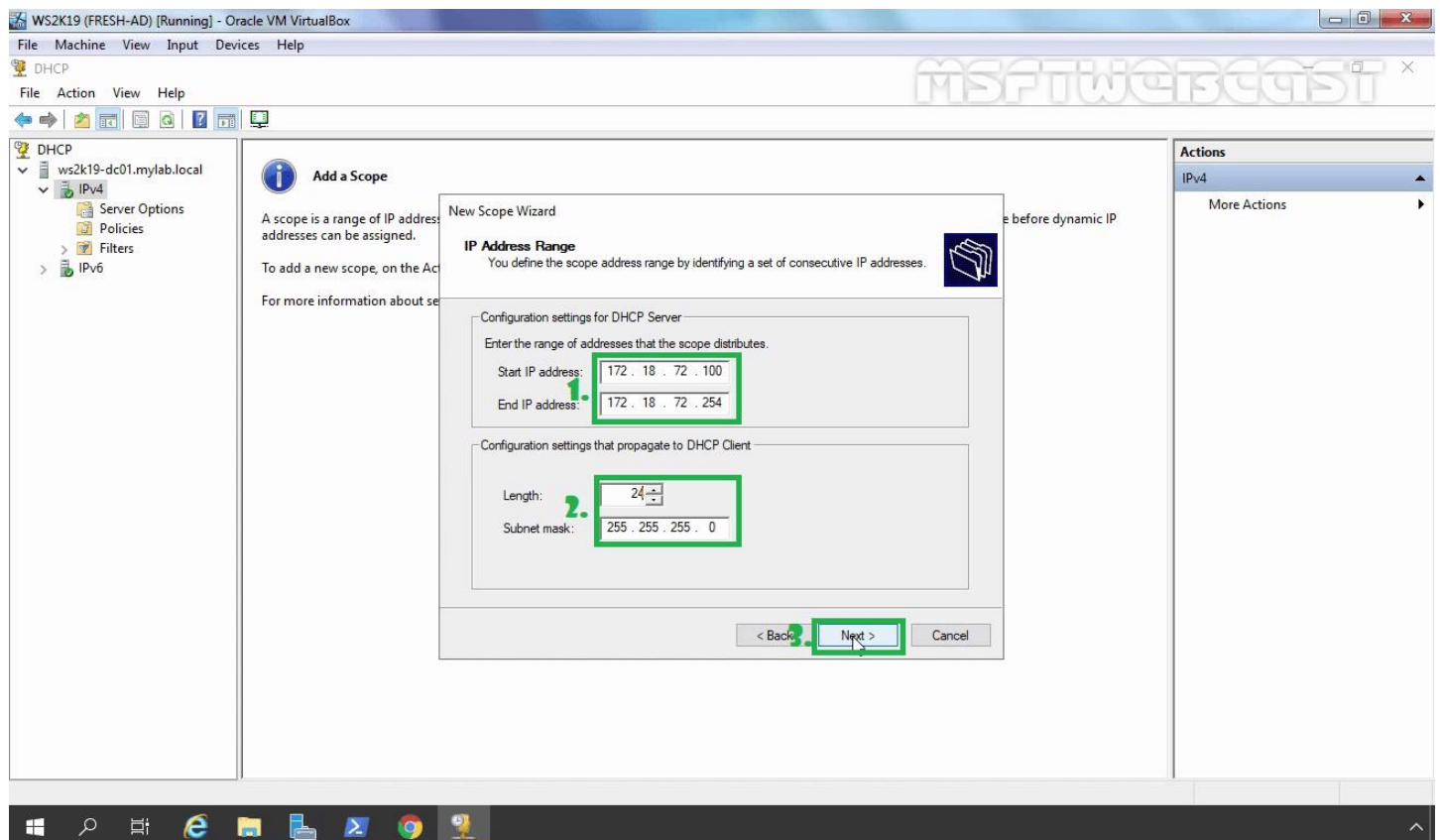
4. The New Scope wizard starts. Click on **Next**.



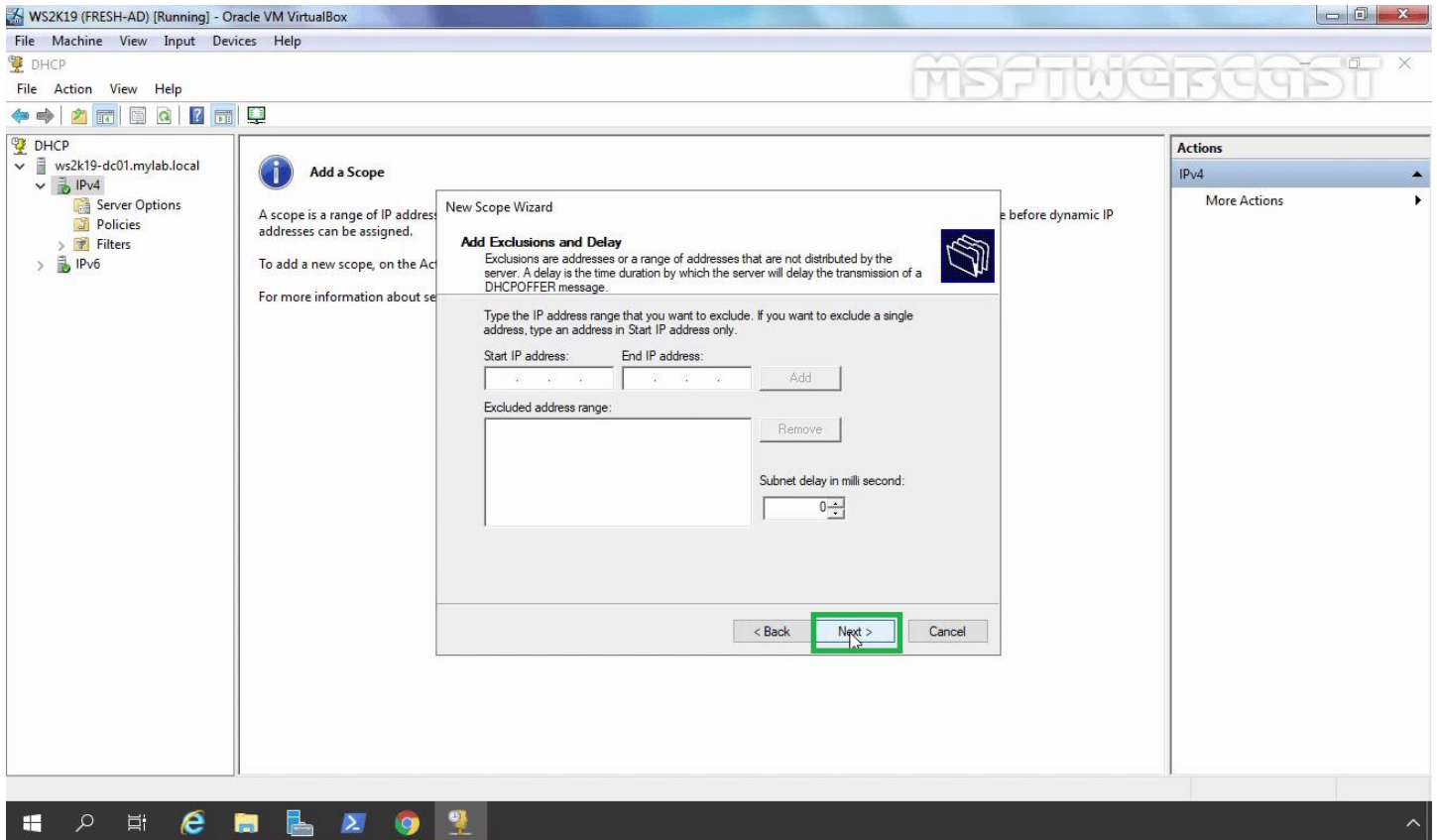
5. On the Scope Name screen, type any name of your choice to scope name.
Add a description for scope, so you can identify the scope information.
Then click **Next** button.



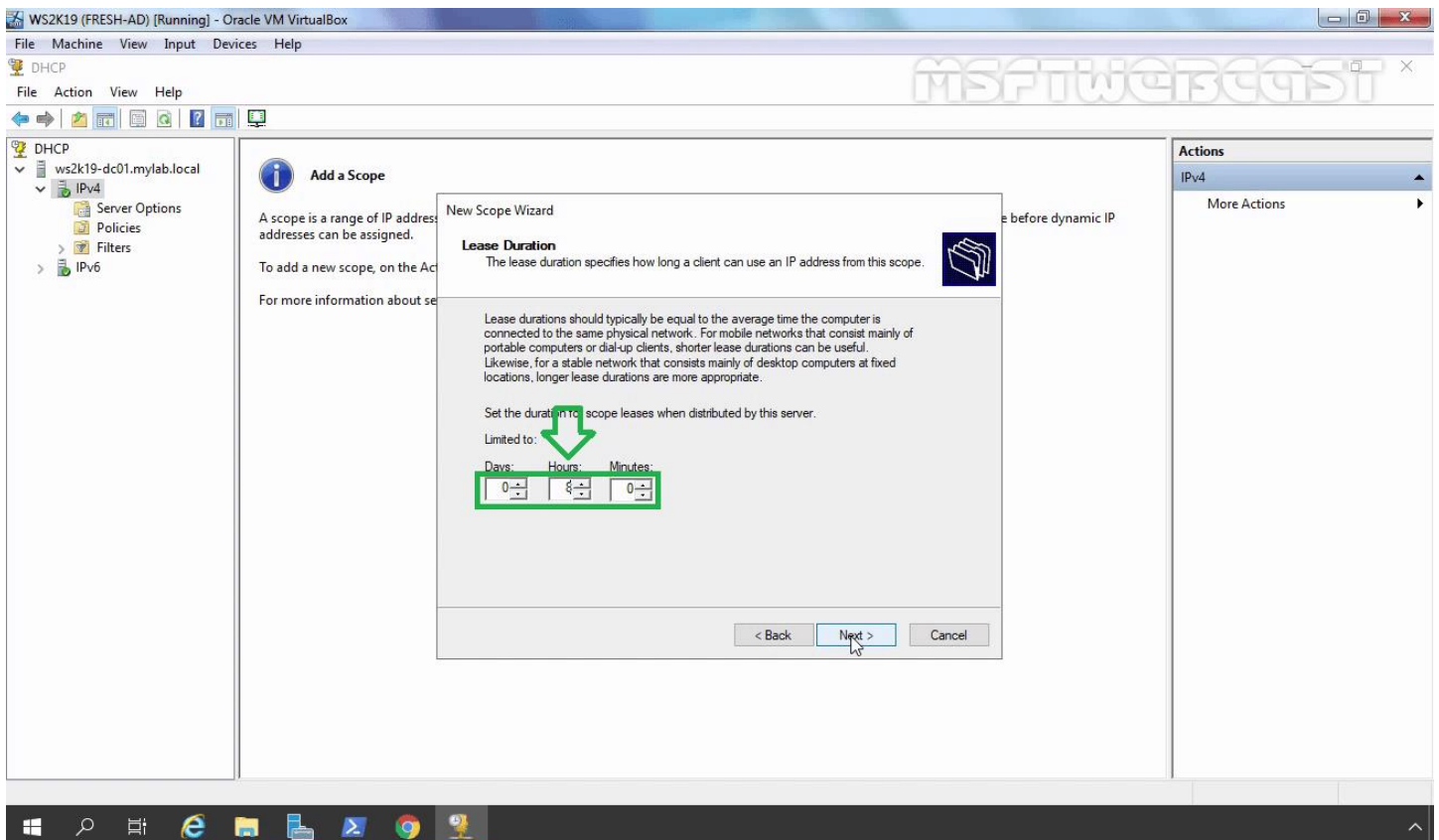
6. On the IP Address Range screen, provide an IP address range (Start IP address and End IP address).
For this demo I am using **172.18.72.100** to **172.18.72.254** with subnet mask **255.255.255.0**.
Once you done with all, click **next** to proceed.



- On the Add Exclusions and Delay screen, leave it empty.
Click on **Next**.

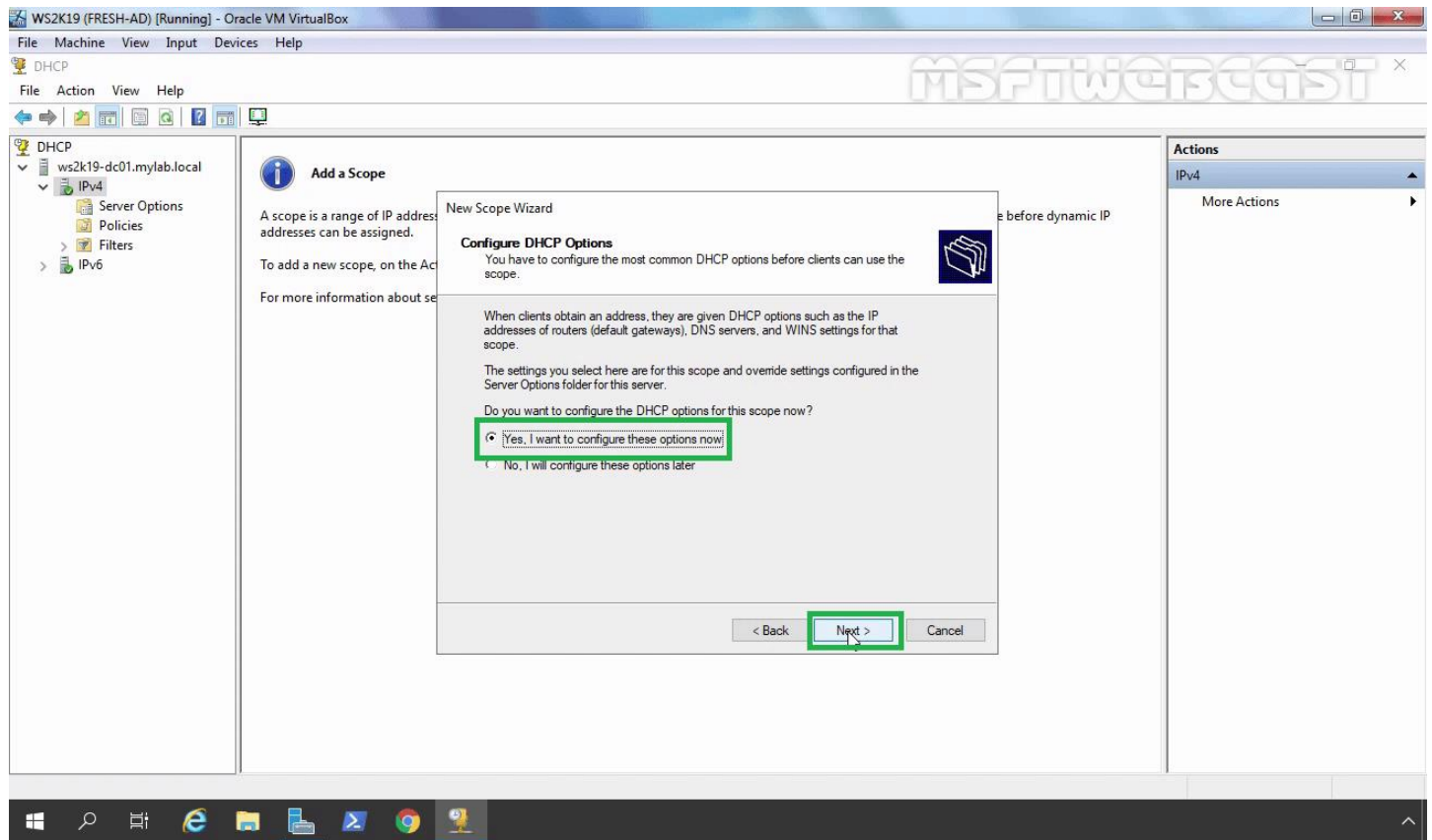


- On the Lease Duration screen, I will change the default lease duration and set new lease duration to **8 hours**.
You can adjust it as per your requirement.
Click on **Next** to continue.

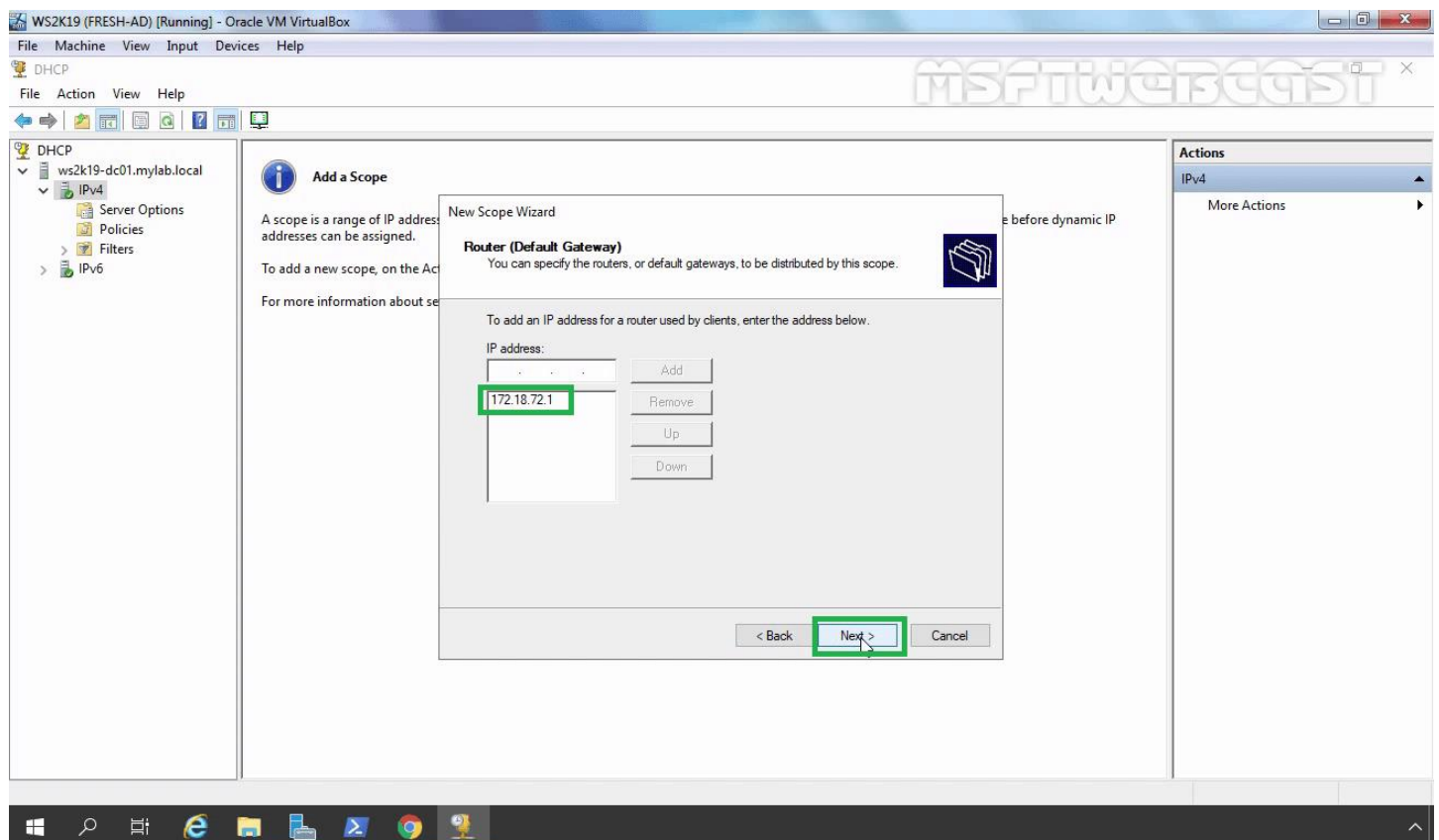


9. On Configure DHCP Option, we can configure additional DHCP options such as Gateways IP address, DNS server address etc.

Select “Yes, I want to configure these options now” and click on **Next** to continue.



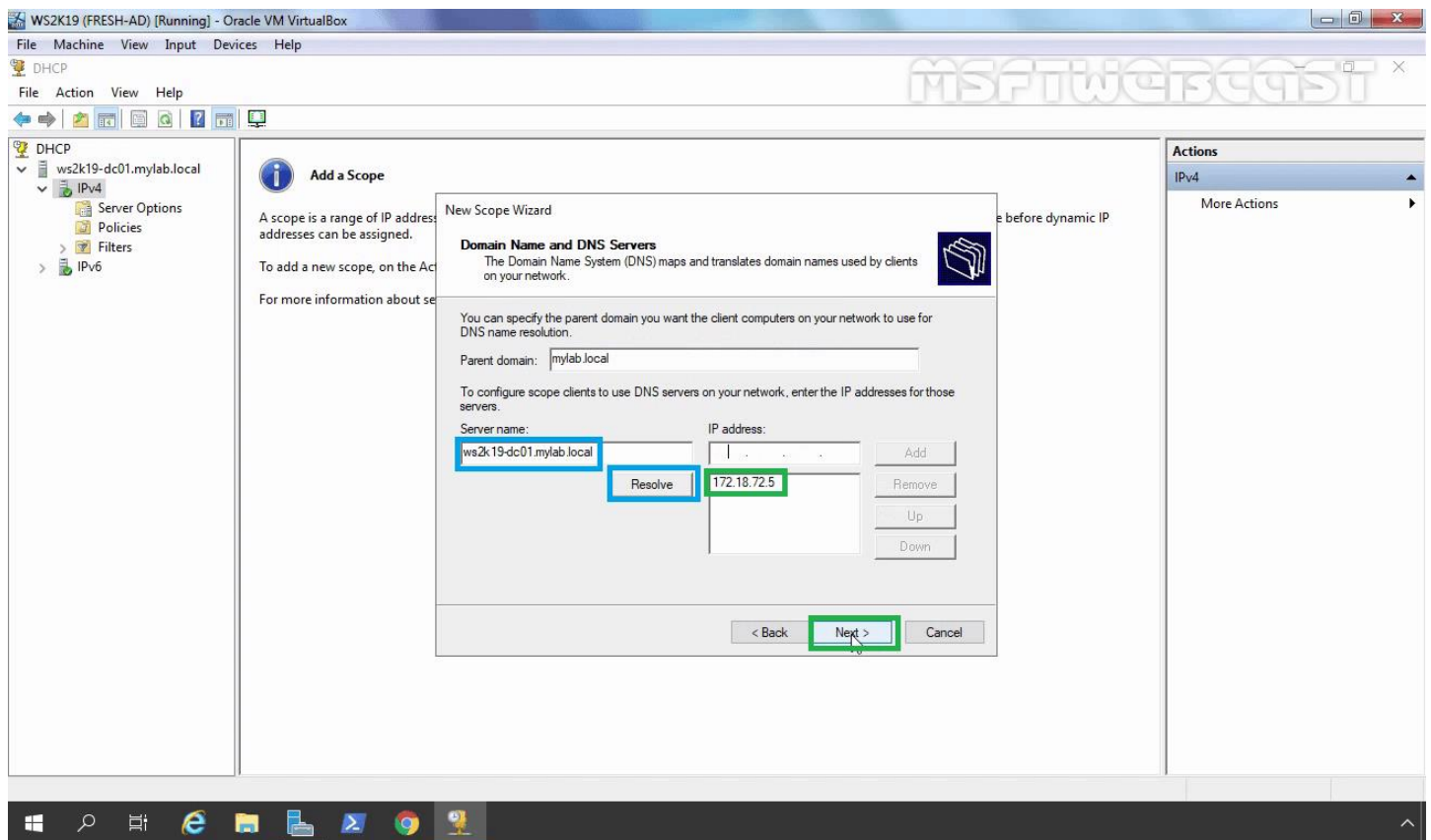
10. On Router (Default Gateway) page, add your **gateways IP address** and click **Next**.
(Don't forget to click on add button after specifying gateways address)



11. We have install the DHCP server role on our Domain Controller, so the wizard will automatically detect the DNS server's address.

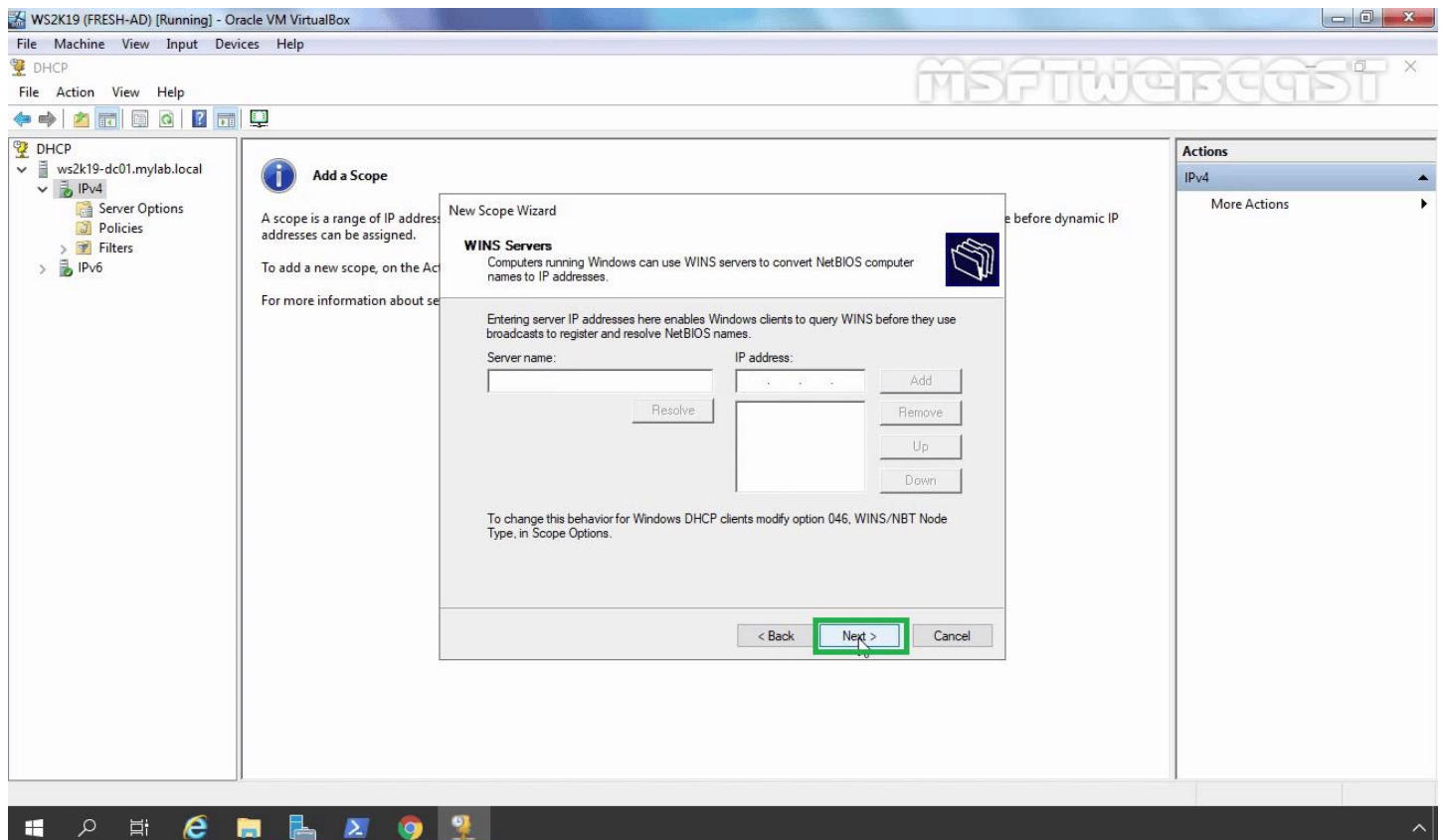
If you wish to add another DNS server address you can but for this demo will use our local DNS address only.

Click **Next**.

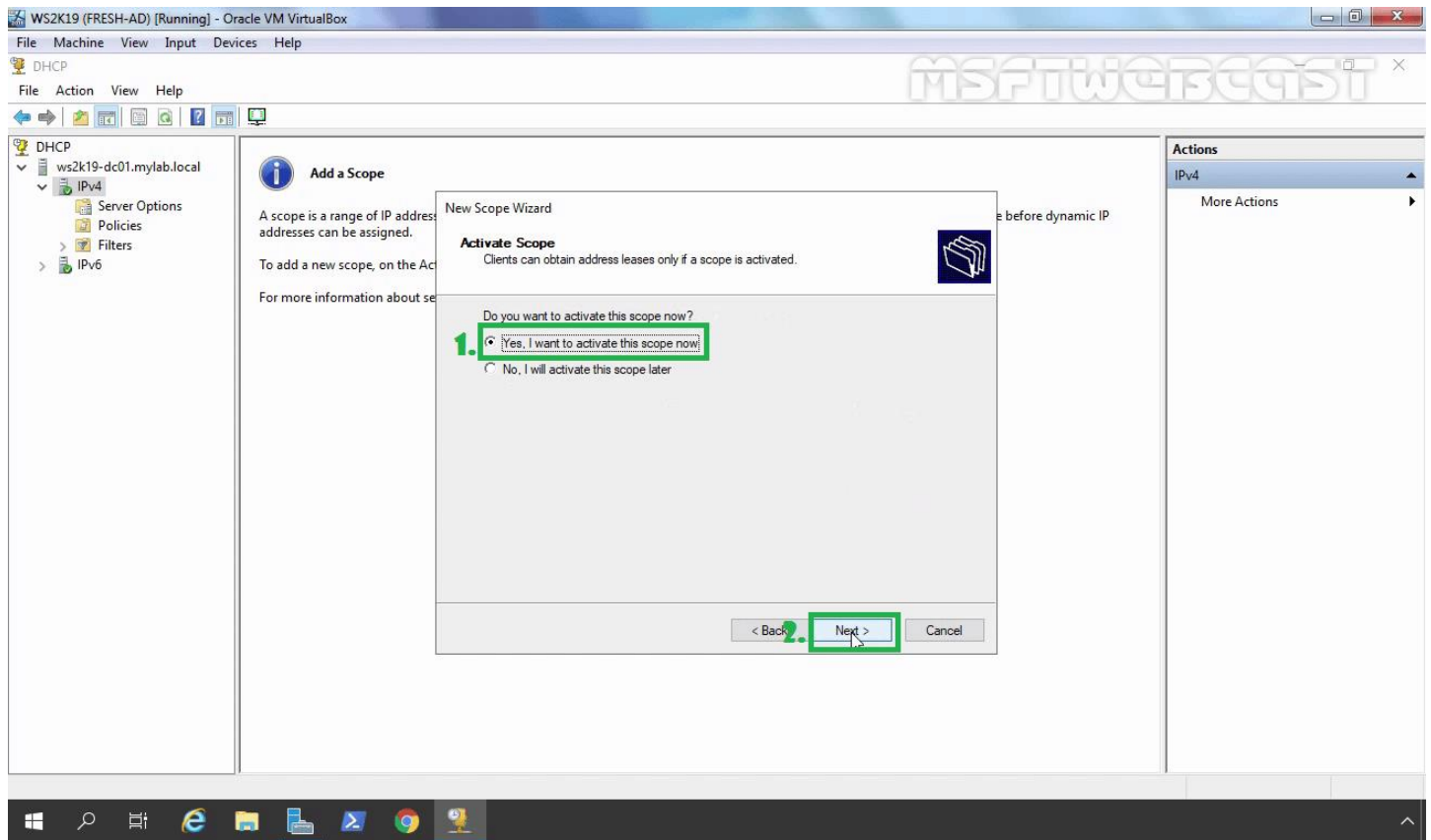


12. If you have any WINS server on your network, you can specify the address here.

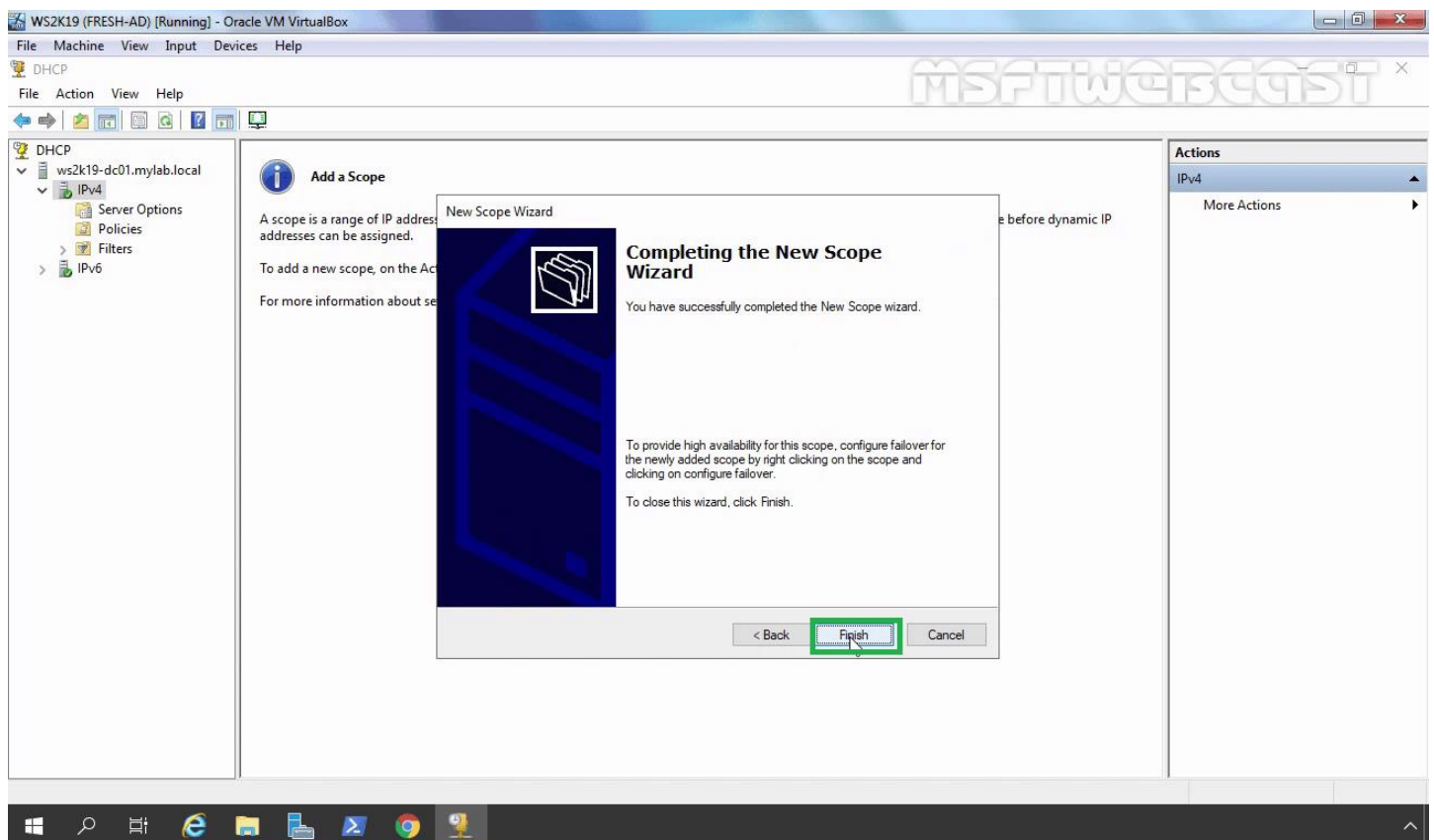
I am going to click on **next** button as we don't have any WINS server.



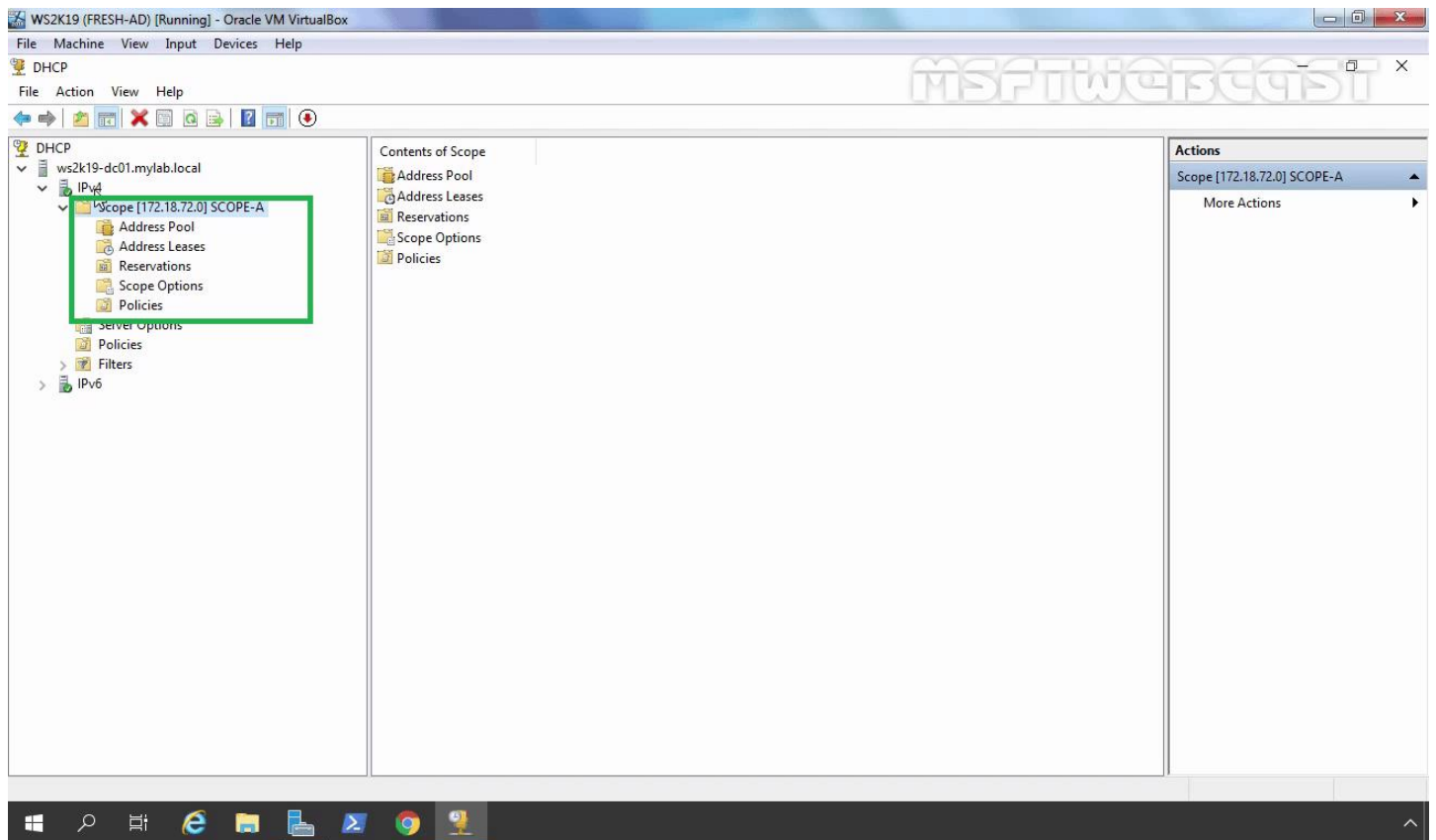
13. On the Activate Scope screen, select **“Yes, I want to activate this scope now”**.
Until you activate the scope your DHCP server is not able assign IP address to client request.
Click **Next**.



14. On the next screen, click **Finish** to create a DHCP scope and close the wizard.



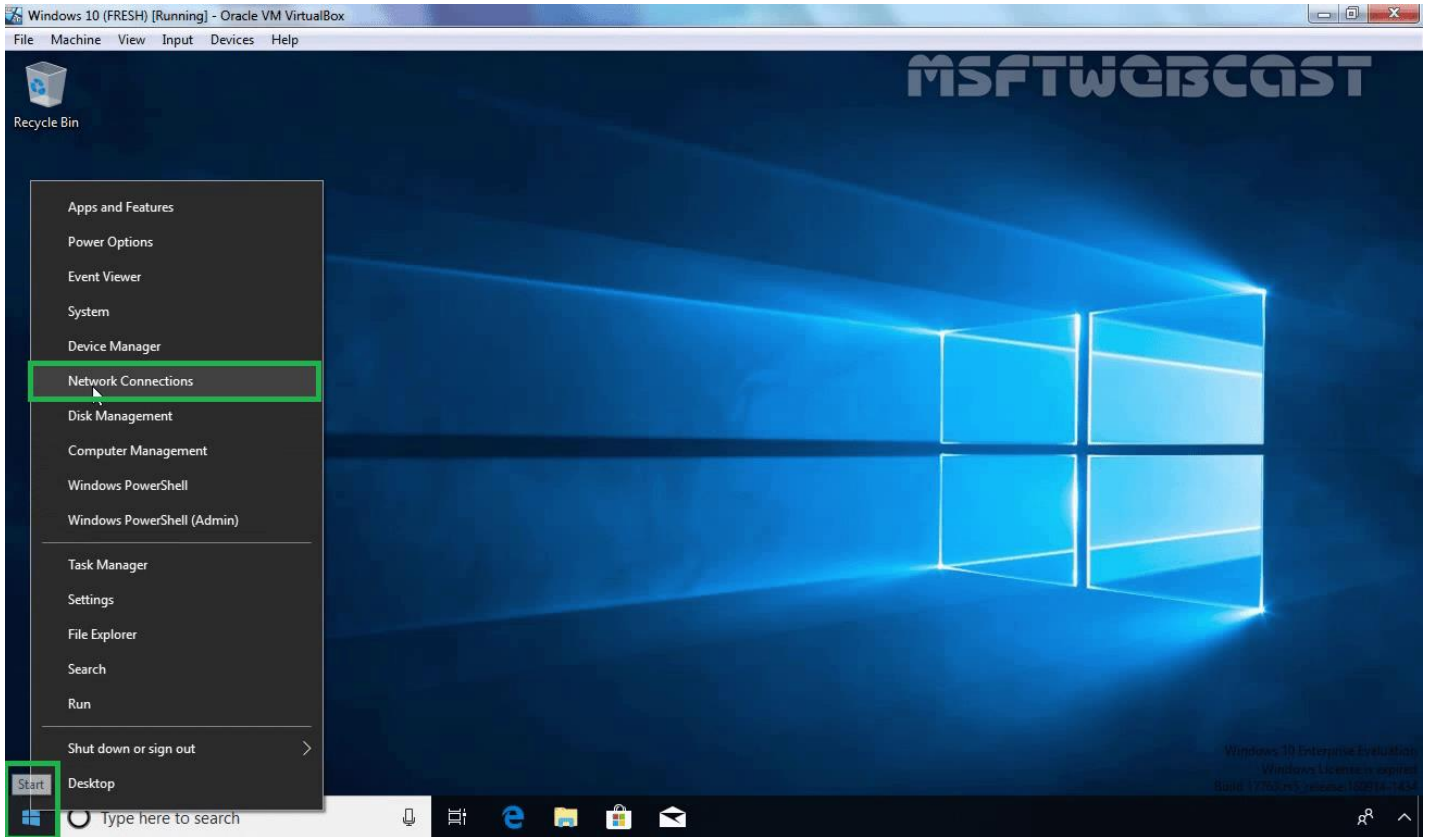
15. On the DHCP Console, Now you can see your newly created scope ready to distribute IP addresses to client computers.



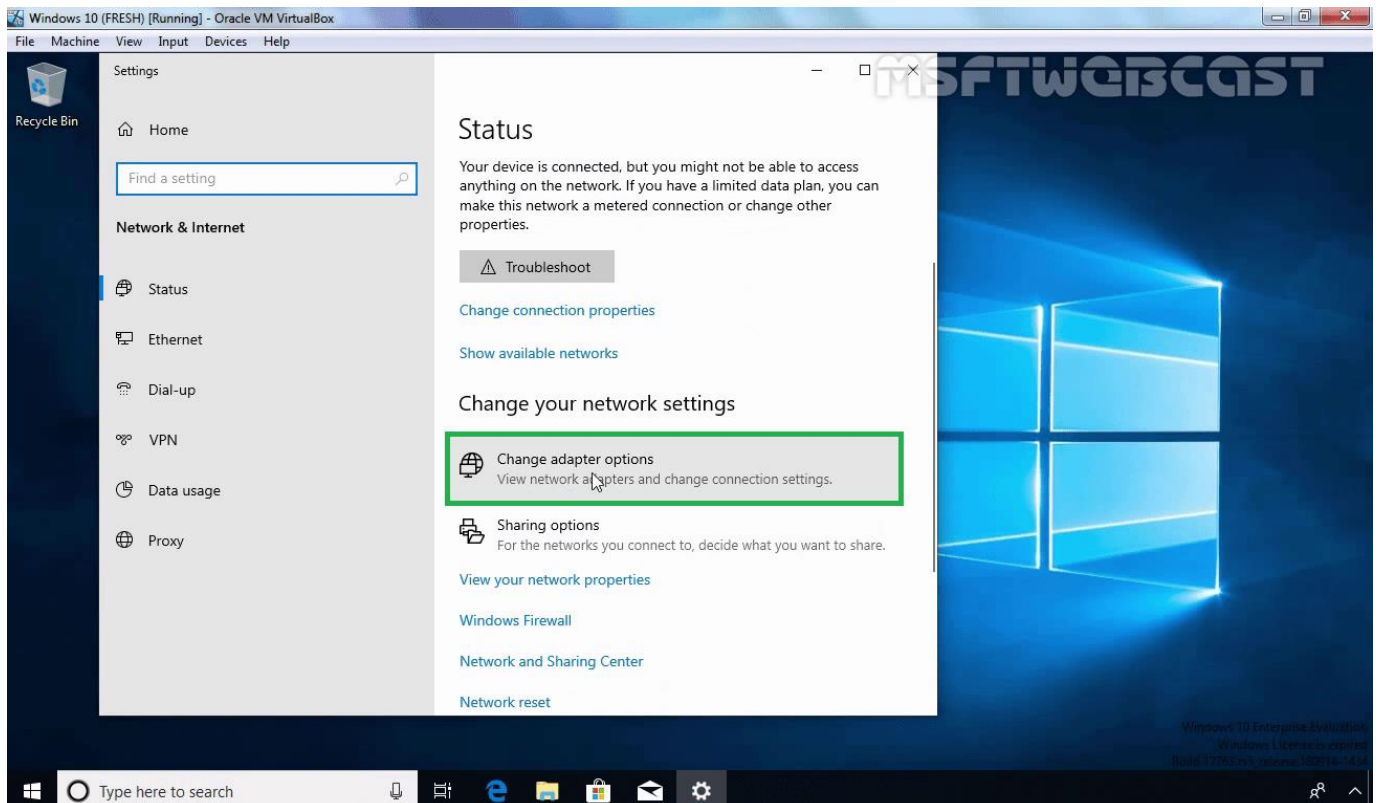
Test DHCP server functionality:

To verify the DHCP server is working properly and distribute the IP address to clients.

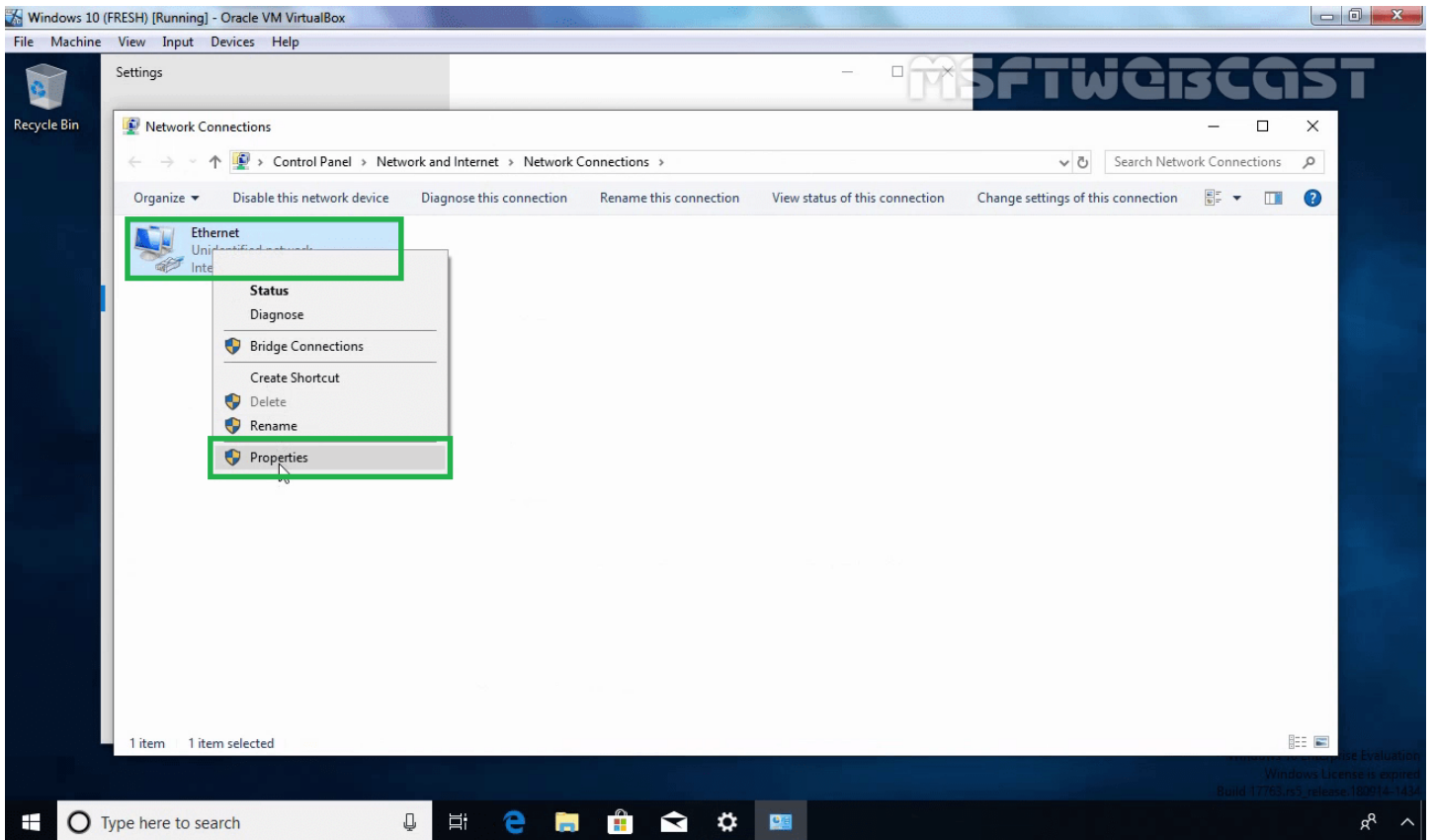
- Go to Windows 10 client machine. Right click on **start button** and select “**Network Connections**”.



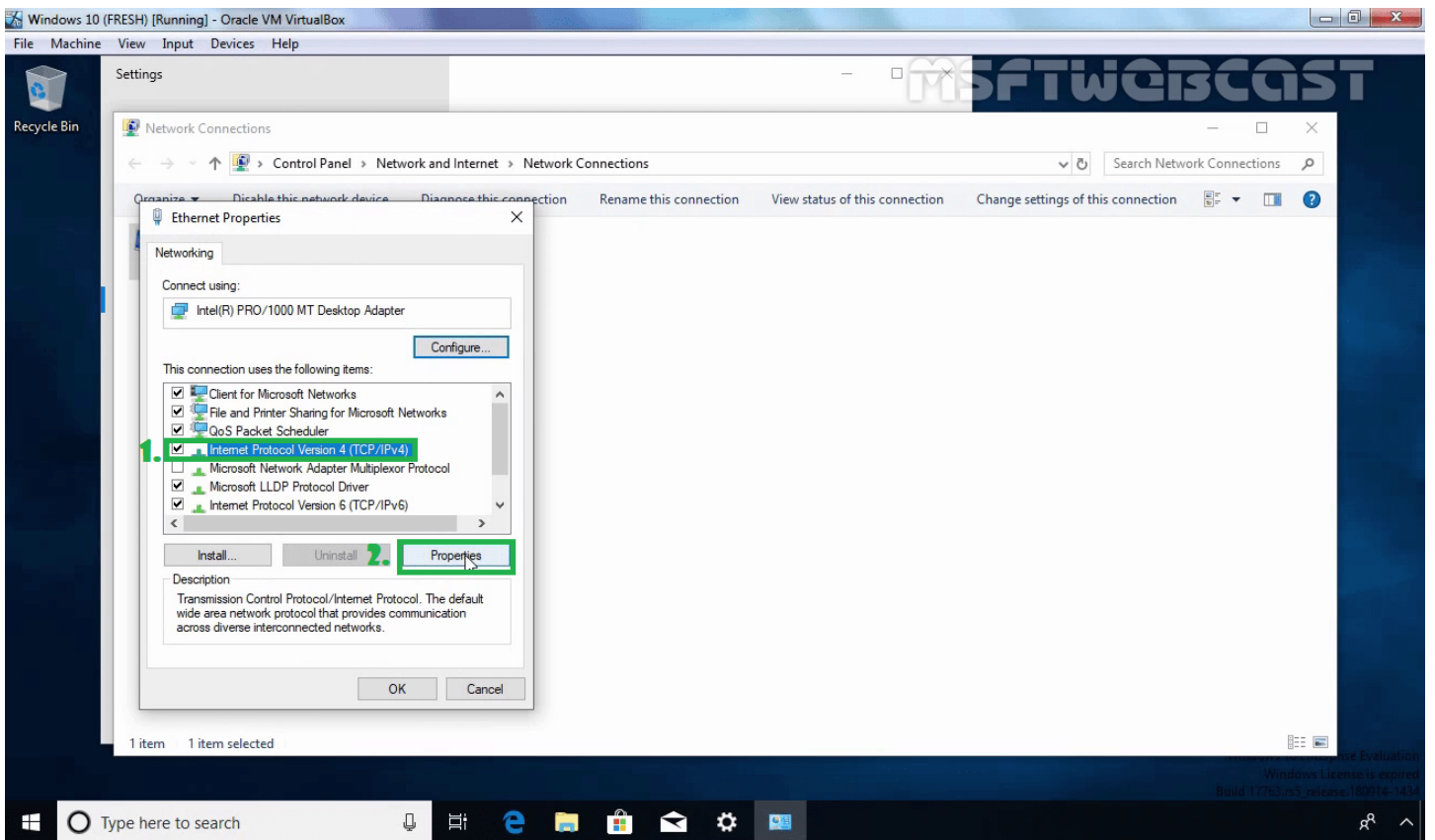
- Under change your network settings, click on **change adapter settings** that will open Network connection console.



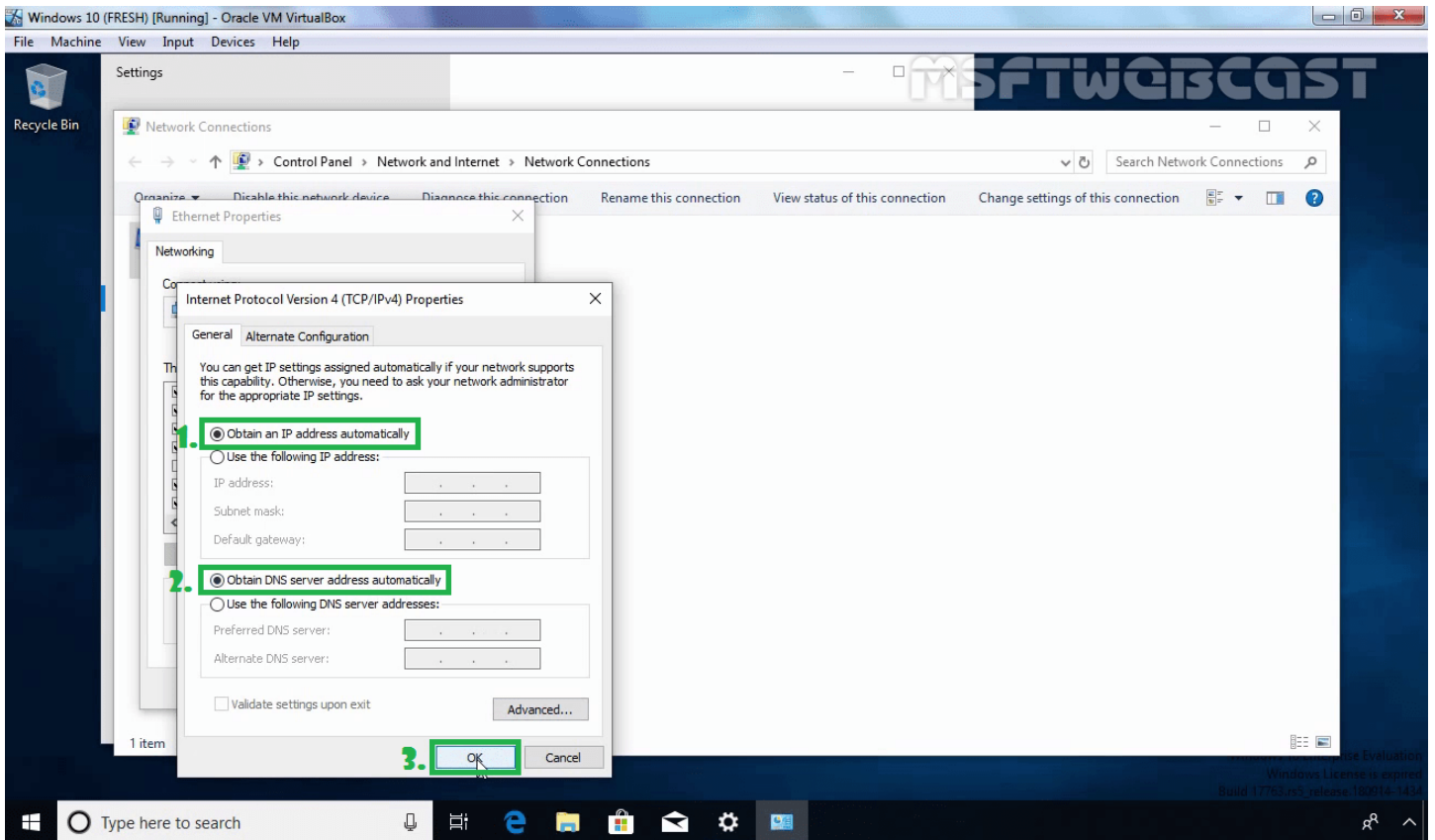
- Select **Ethernet adapter**, Right click on it and select **Properties**.



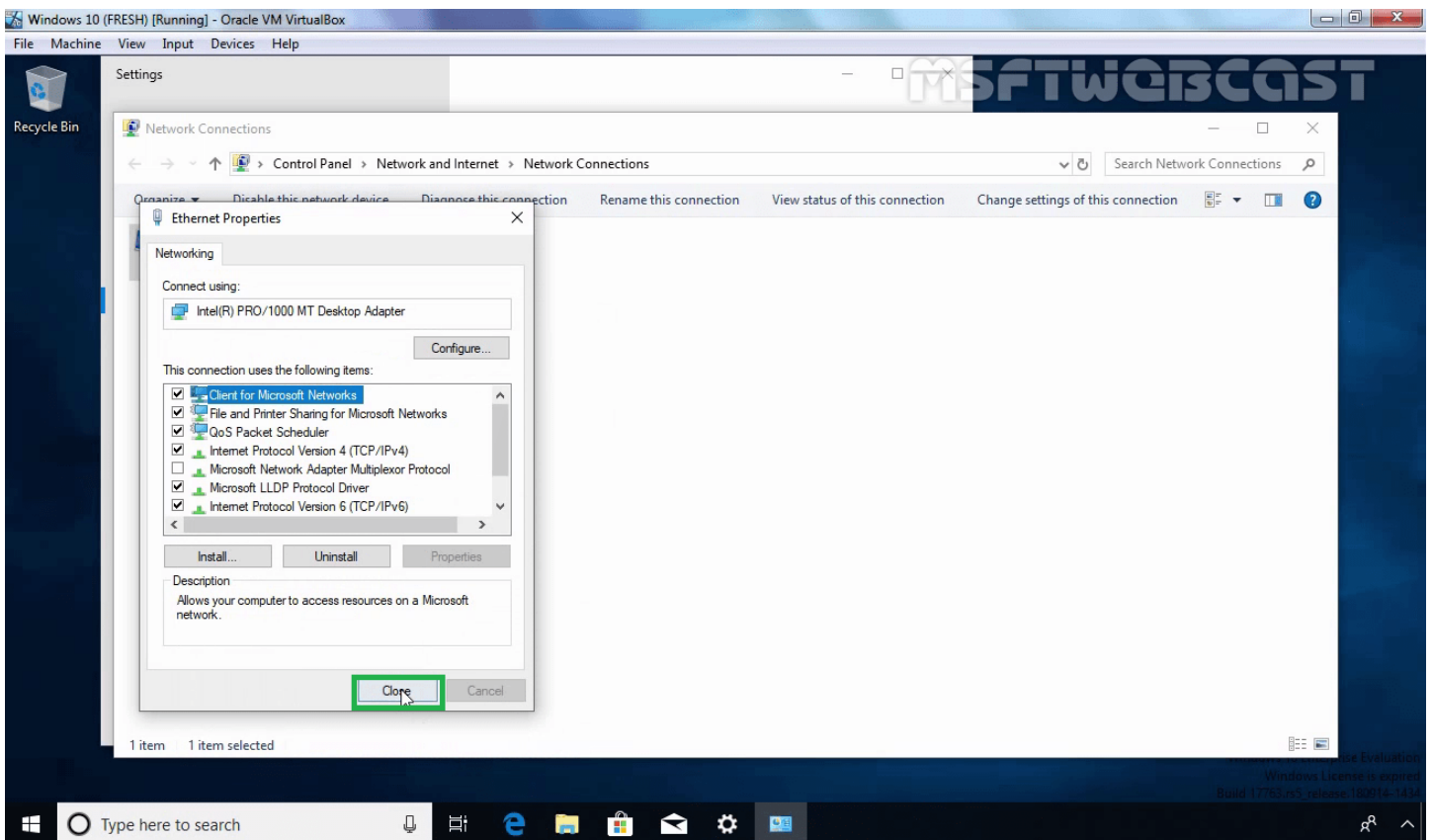
- Select **TCP/IPv4** and click on **properties**.



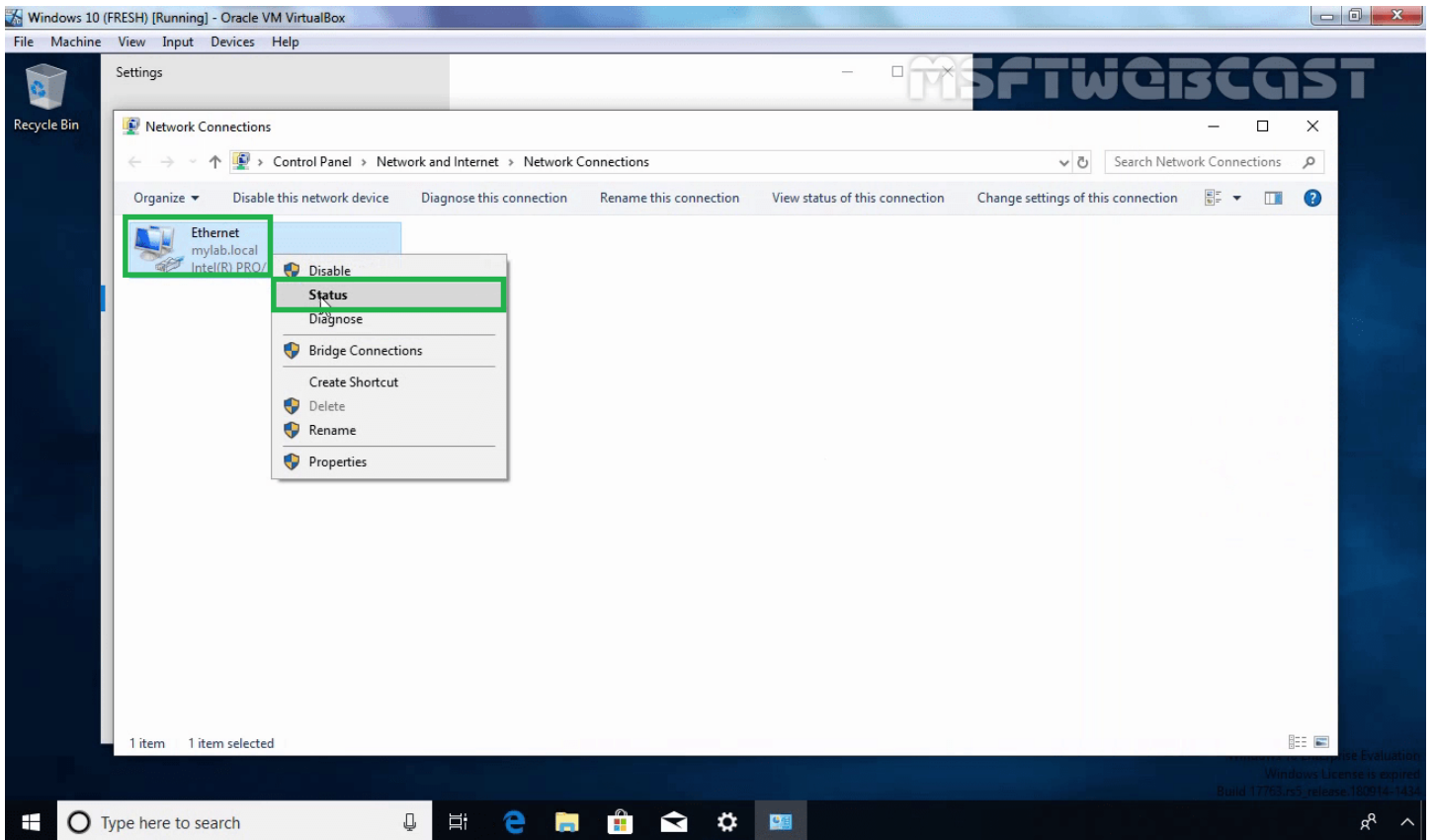
- Make sure you choose **Obtain an IP address automatically**, same goes to **Obtain DNS server address automatically**. Click **OK** button.



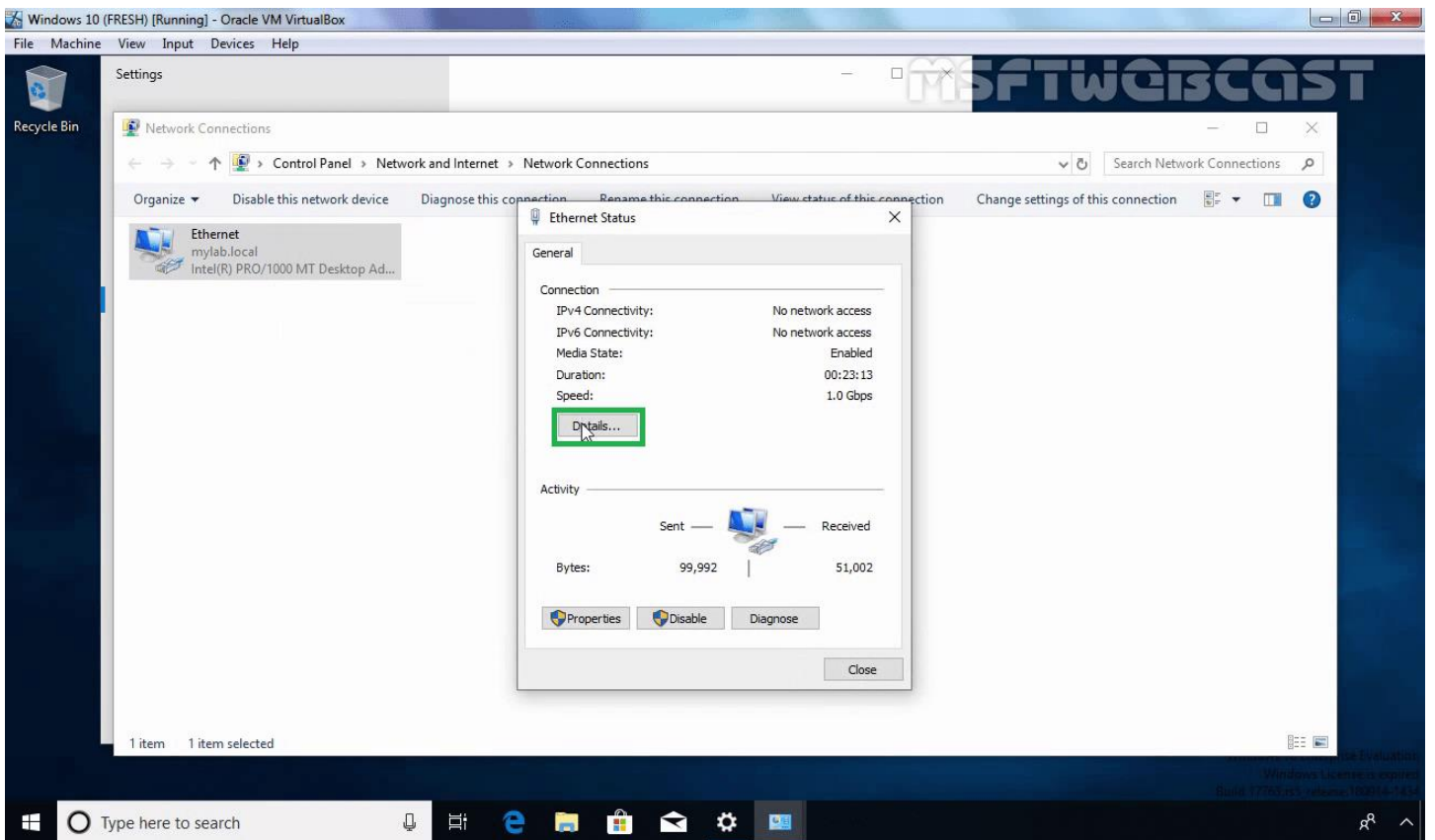
- Click on **Close** to close "Ethernet Properties" console.



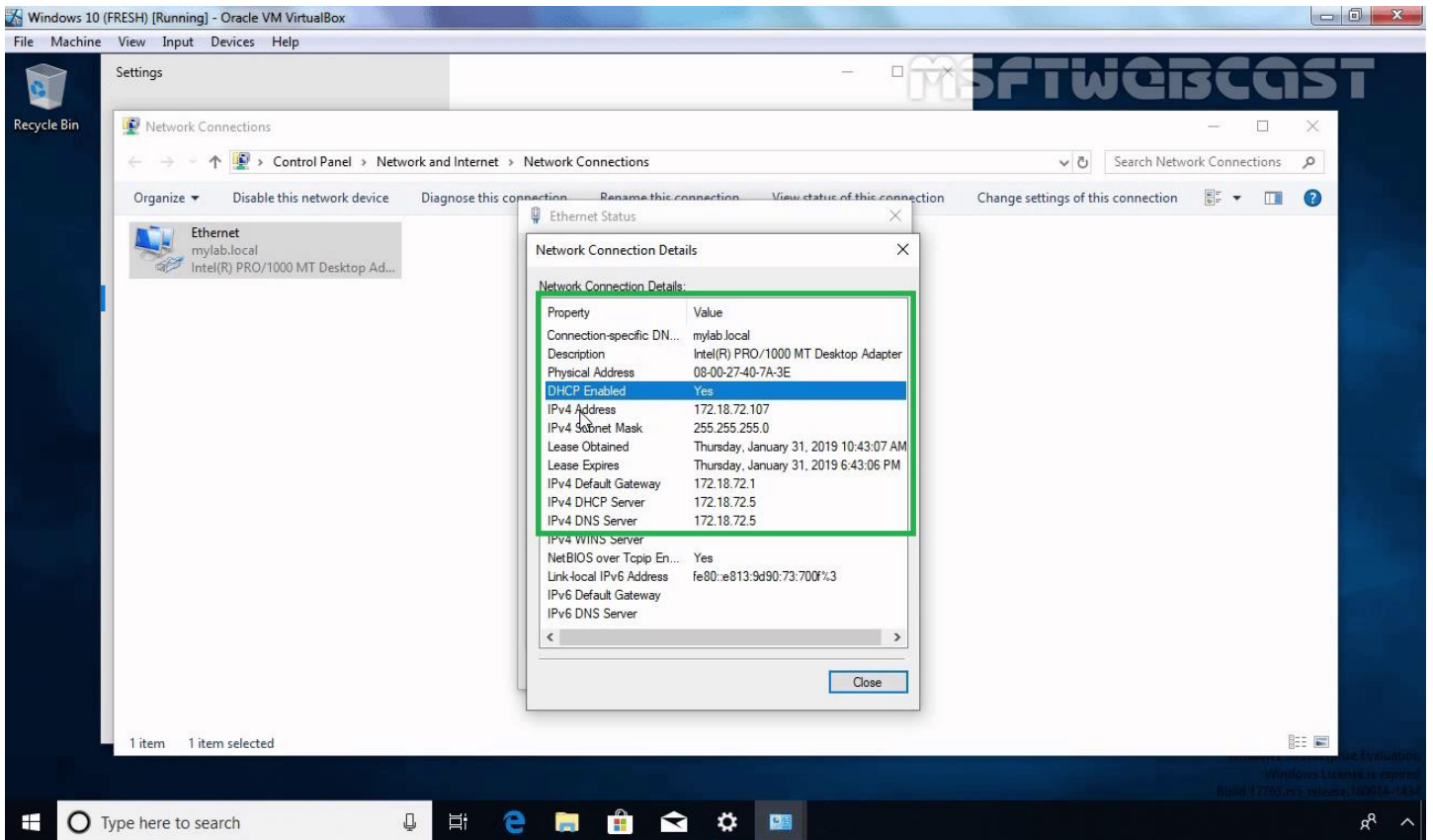
- Right click on **Ethernet adapter** again and select **status**.



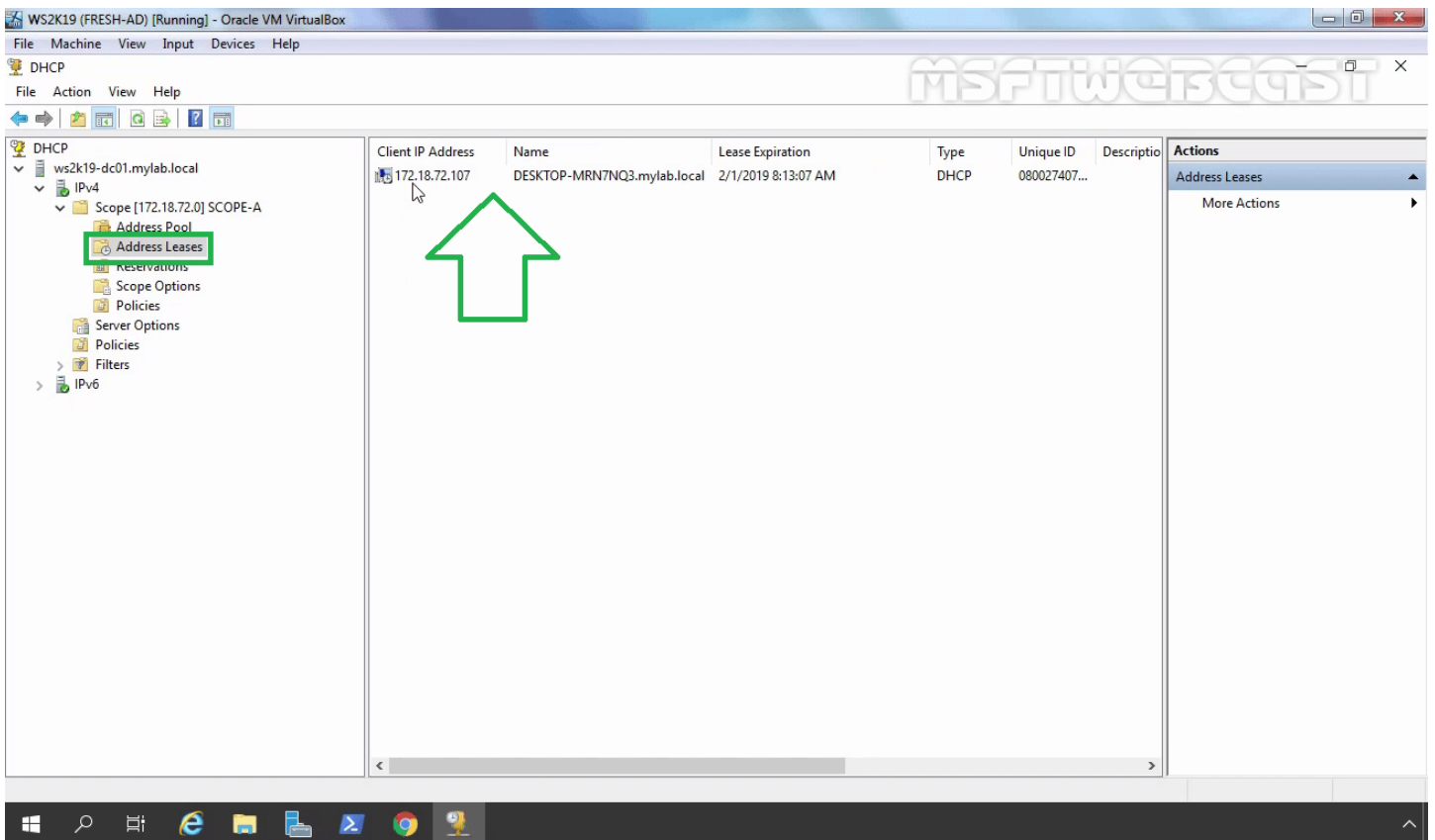
- Click on **details** option.



- Here you can verify that our windows 10 client is getting IP address from DHCP Server that you just configured.

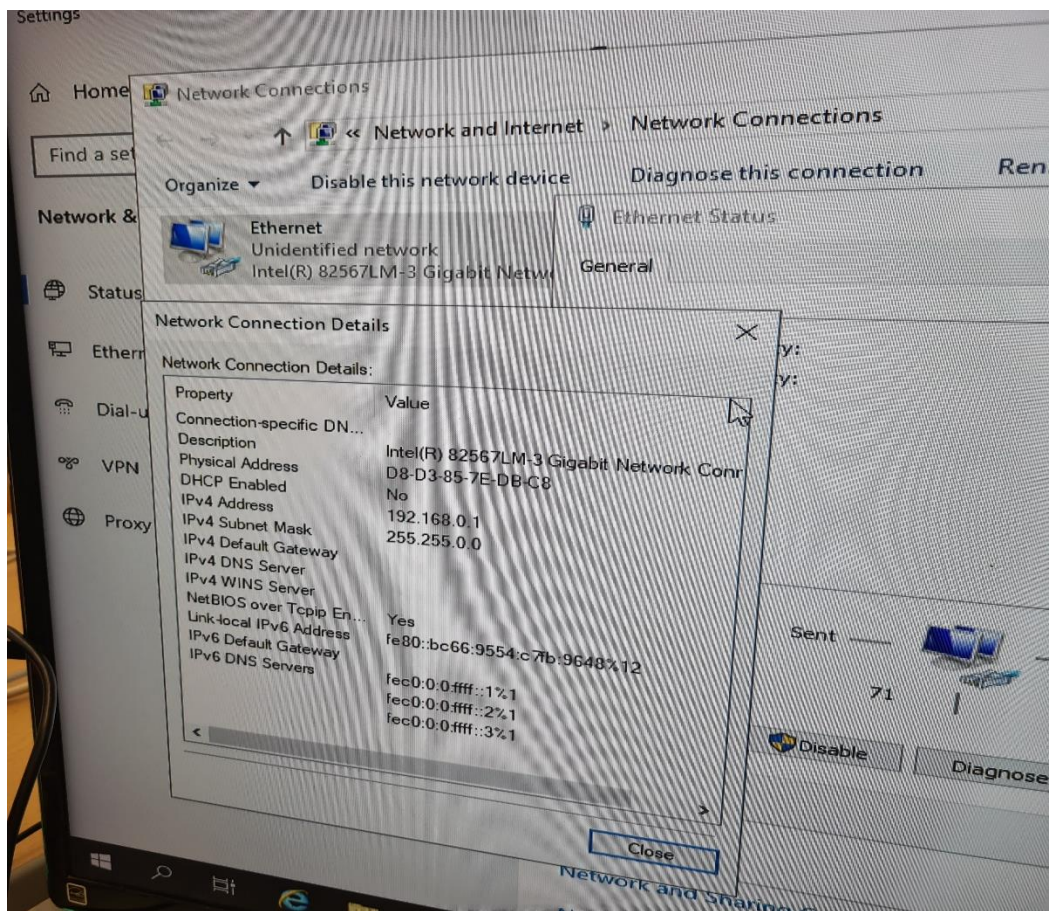


- Even from DHCP management console you can verify that clients are getting IP's from DHCP server.

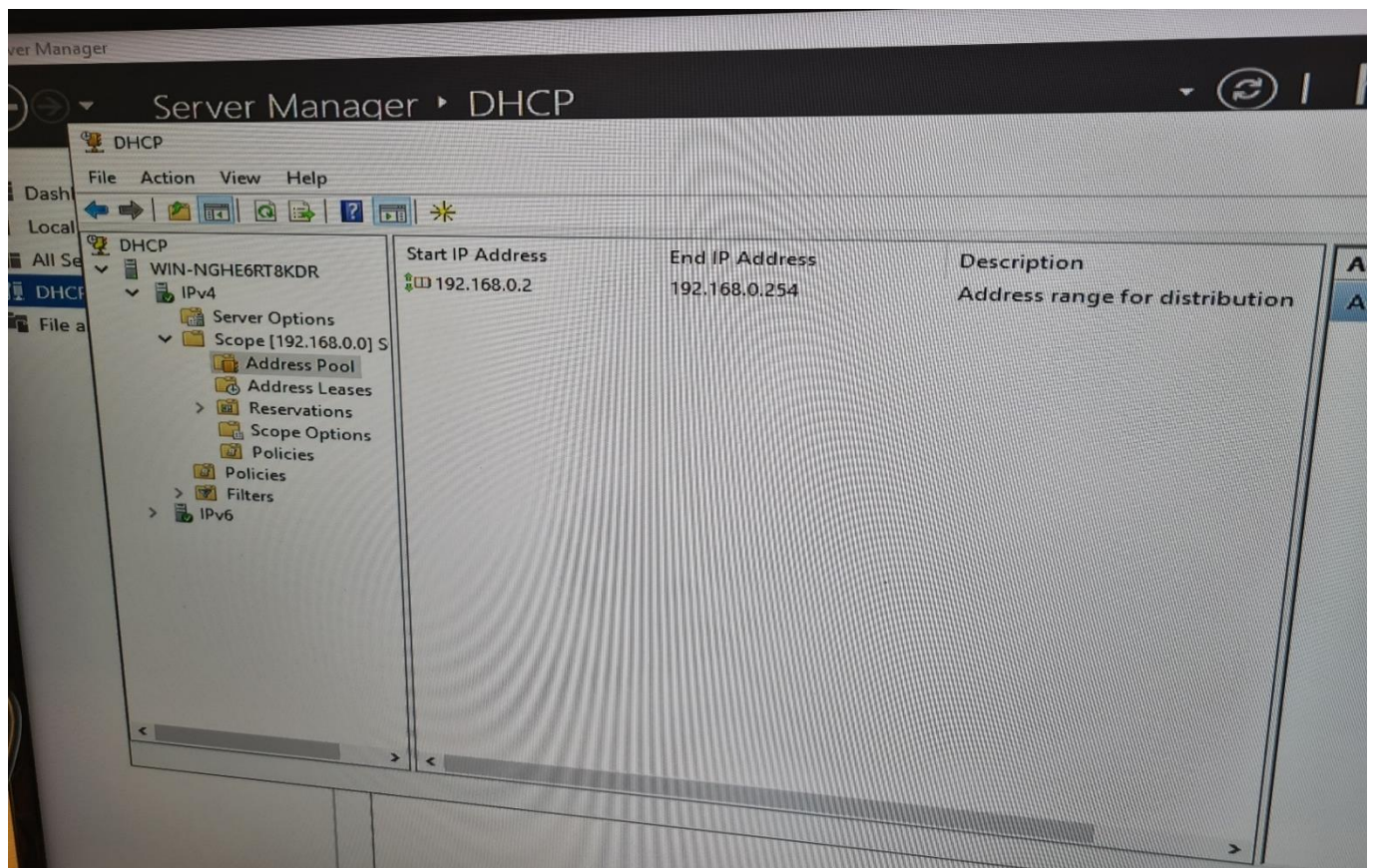


After this we can safely say that our DHCP server is configured and ready to allocate TCP/IP settings to the DHCP clients.

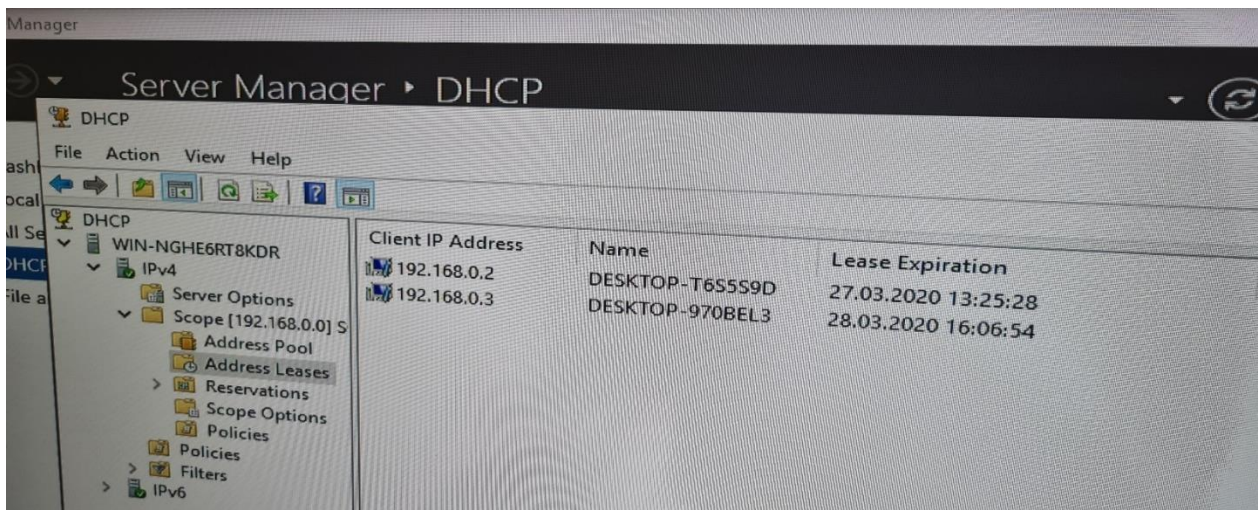
Weitere Bilder als Hilfe für die Installation folgen:



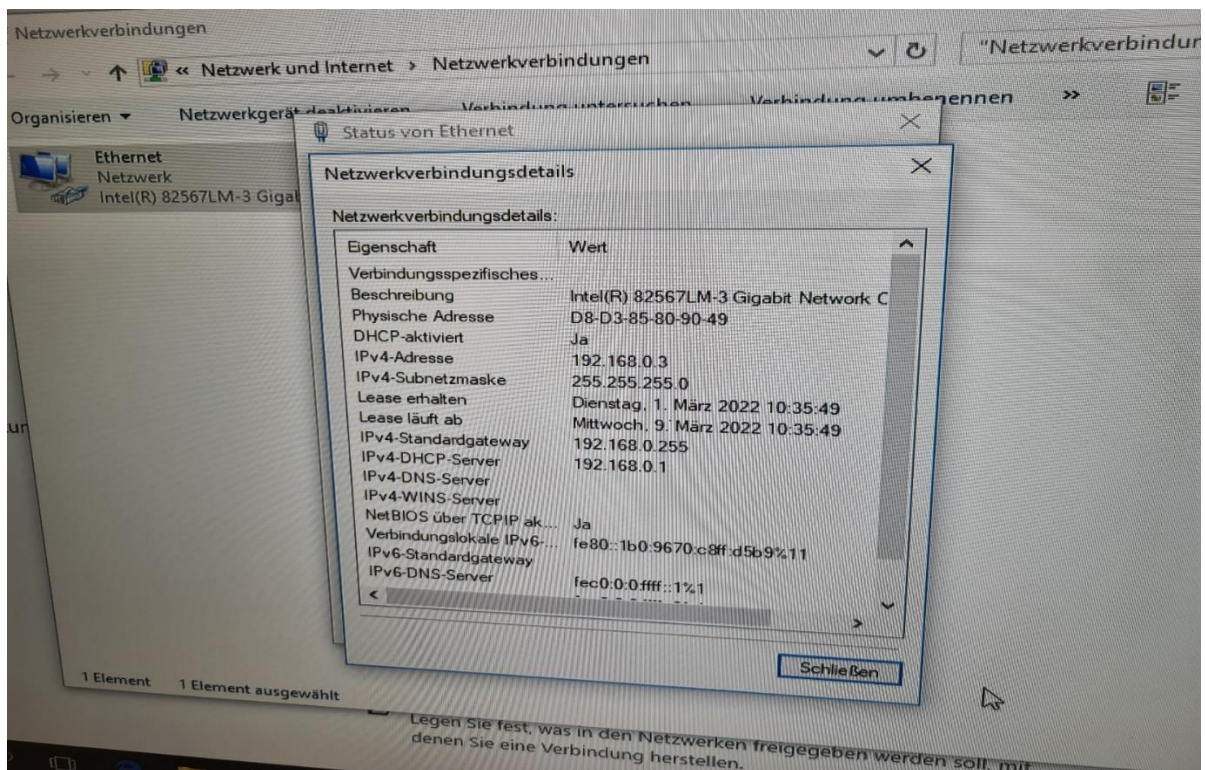
Der DHCP-Server hat folgende statische IP-Adresse, siehe Bild oben.



Der zu vergebende IP-Pool beginnt mit 192.168.0.2, siehe Bild oben.



Die Address Leases zeigt an, welche IP-Adressen an welche Client vergeben worden sind, siehe Bild oben.



Der Client, hat die IP-Adresse 192.168.0.3 automatisch vom DHCP-Server erhalten, siehe Bild oben.

Eine andere Möglichkeit wäre per Software-Installation mit „**DHCPsrv2.5.2**“ als App auf einem Windows 10 PC folgenden Windows-DHCP-Server zu installieren, siehe Bild unten:

