

# WIPRO NGA Program – Datacenter

## Batch

Capstone Project Presentation – 06 April 2024

Project Title Here - CAPSTONE PROJECT

Presented by – Arghyarupa Rout



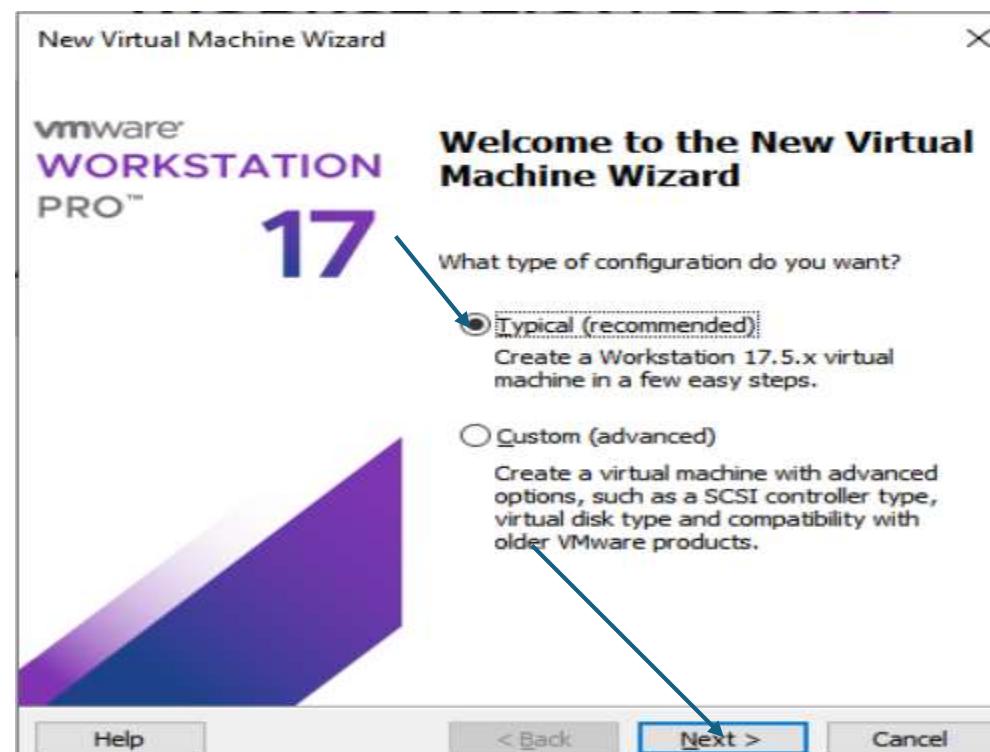
**PROJECT TASK1:-** Create a domain name as yourname.training and create a shared NFS folder(c:\sharable) on domain controller machine with read-only permission and access this folder on the member machine.

**Steps:**

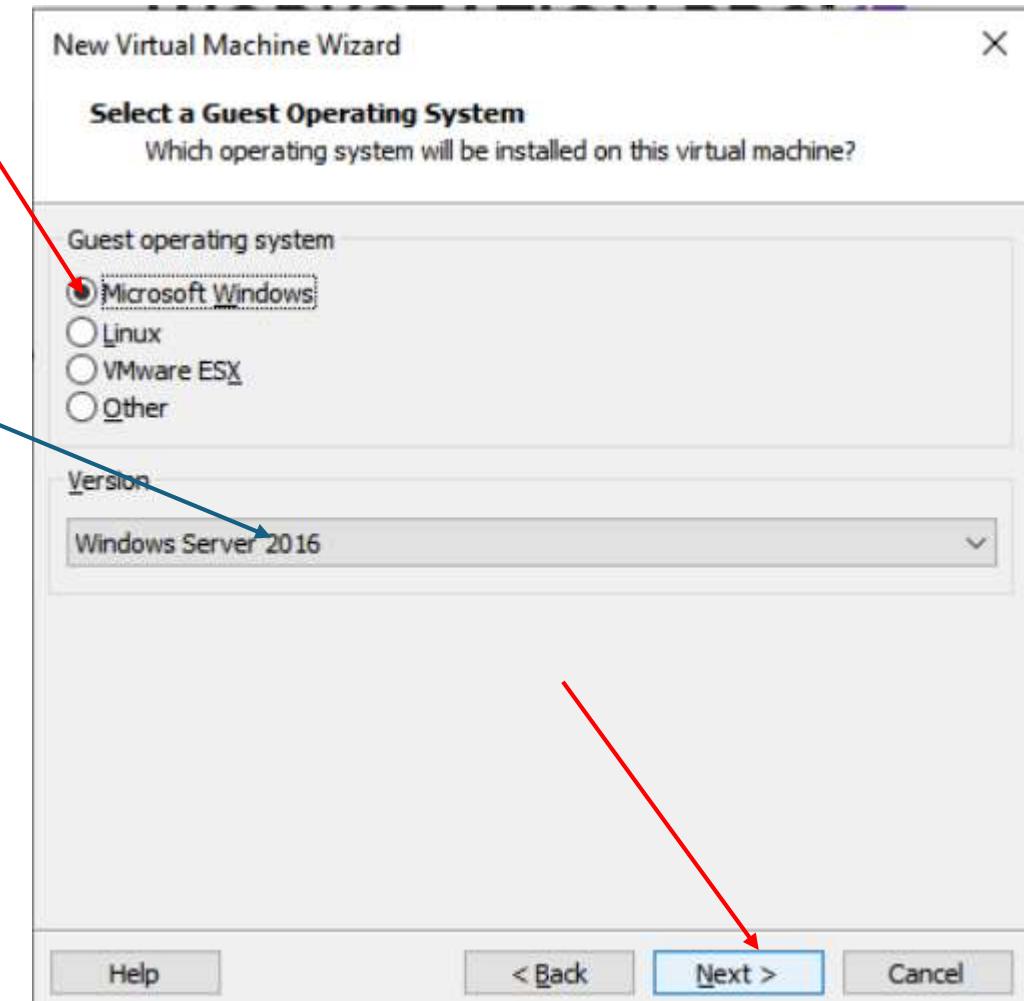
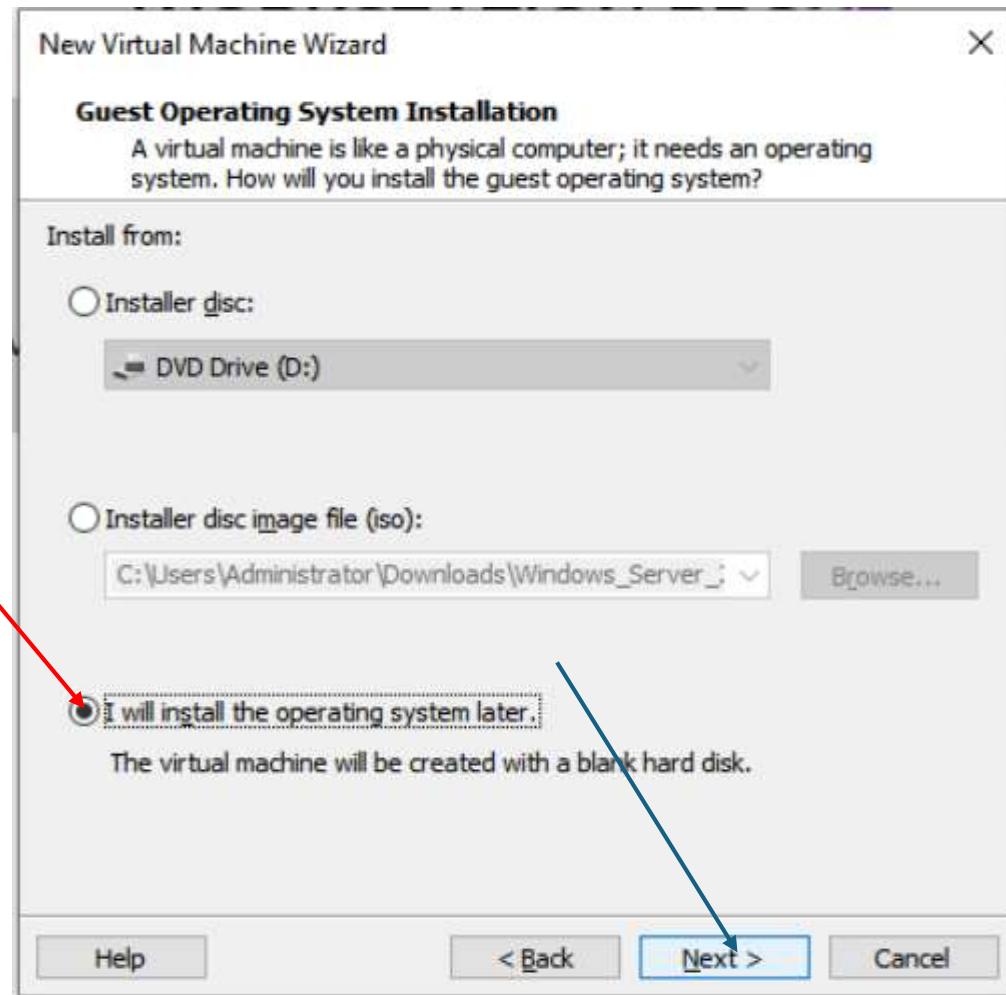
**Step 1: Domain Controller Setup**

Install Windows Server on the designated machine.

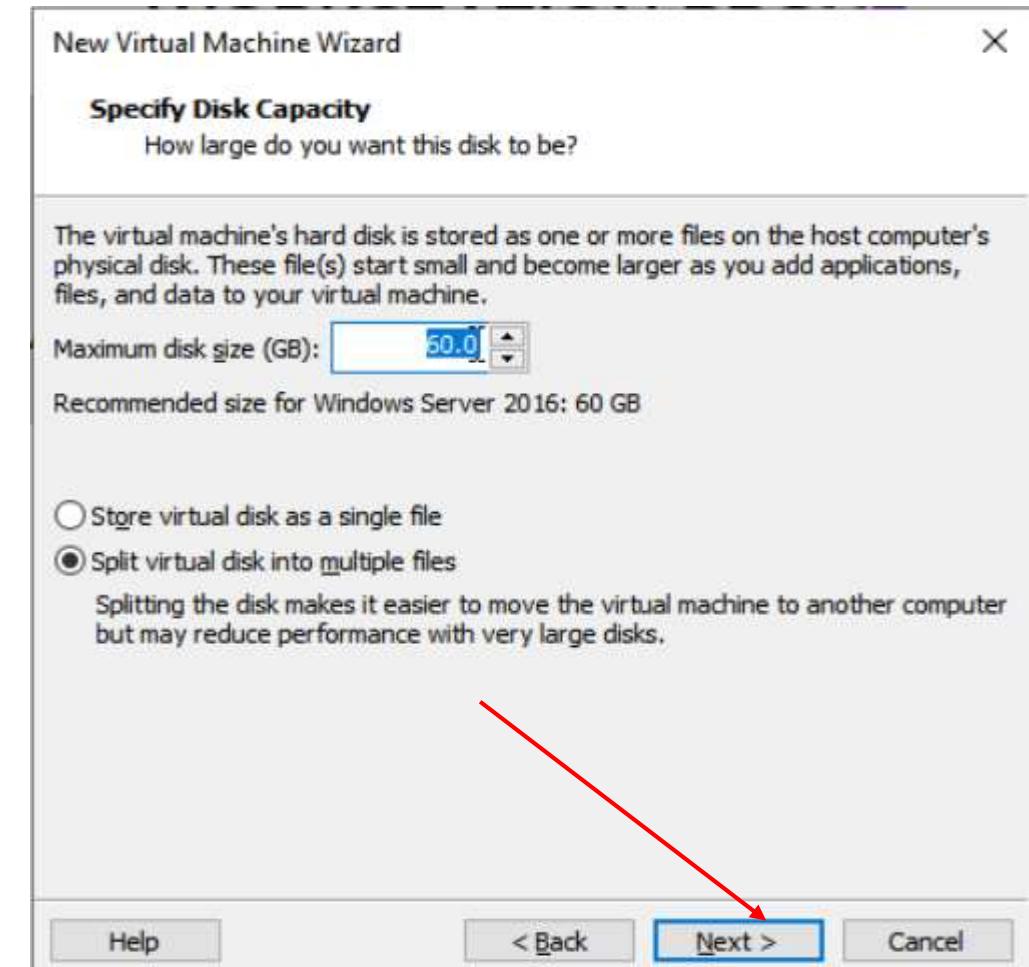
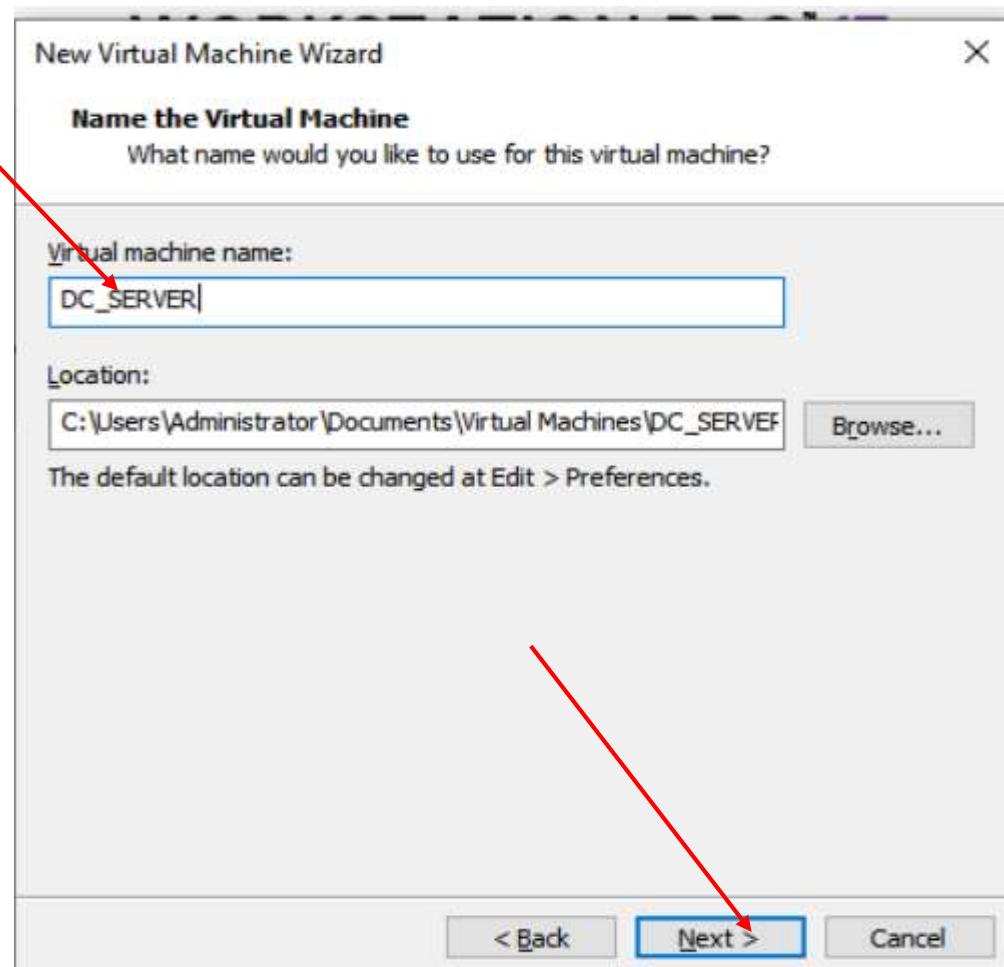
Open virtual machine and create a new virtual machine.



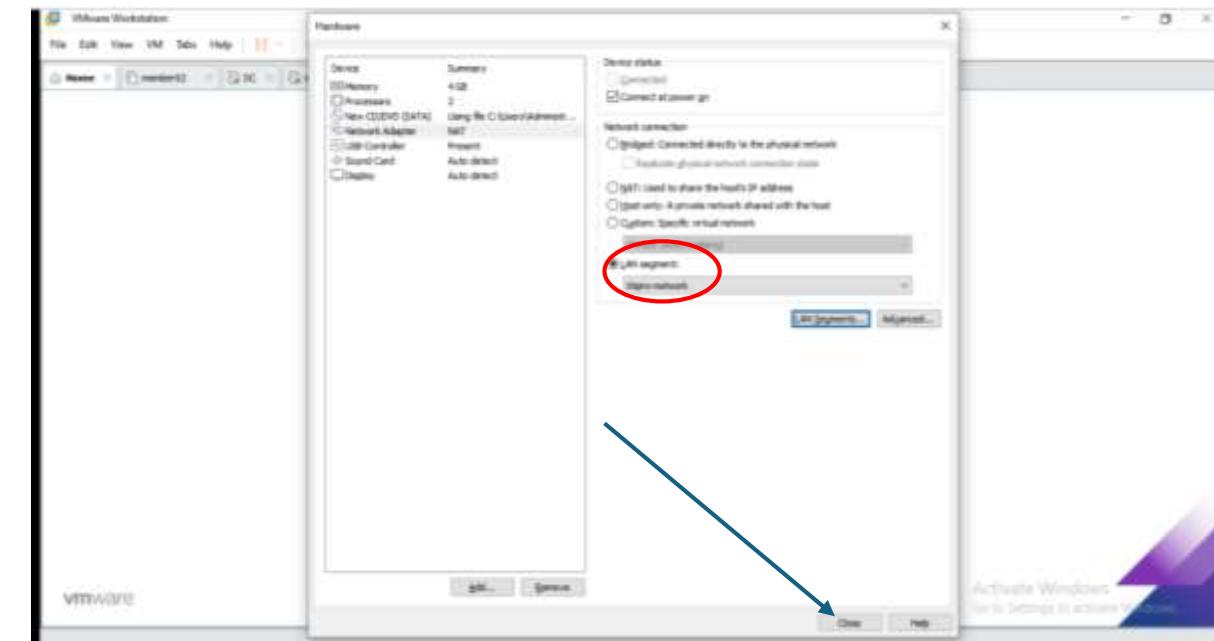
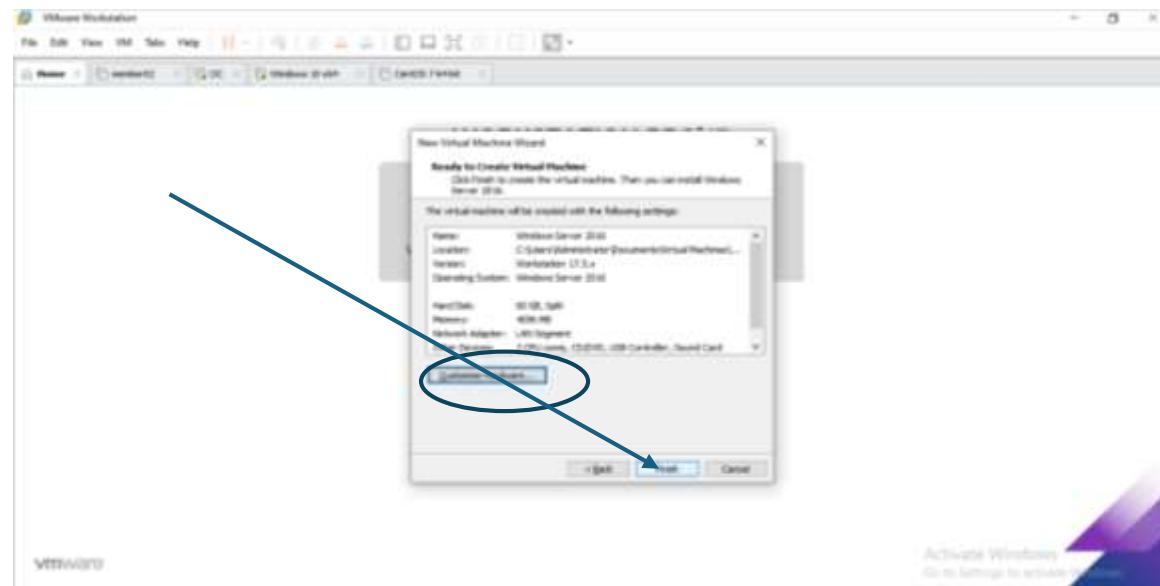
Click on next and choose Microsoft operating system and choose window server 2016 as a version.



Type virtual machine name and click on next and disk size is maximum

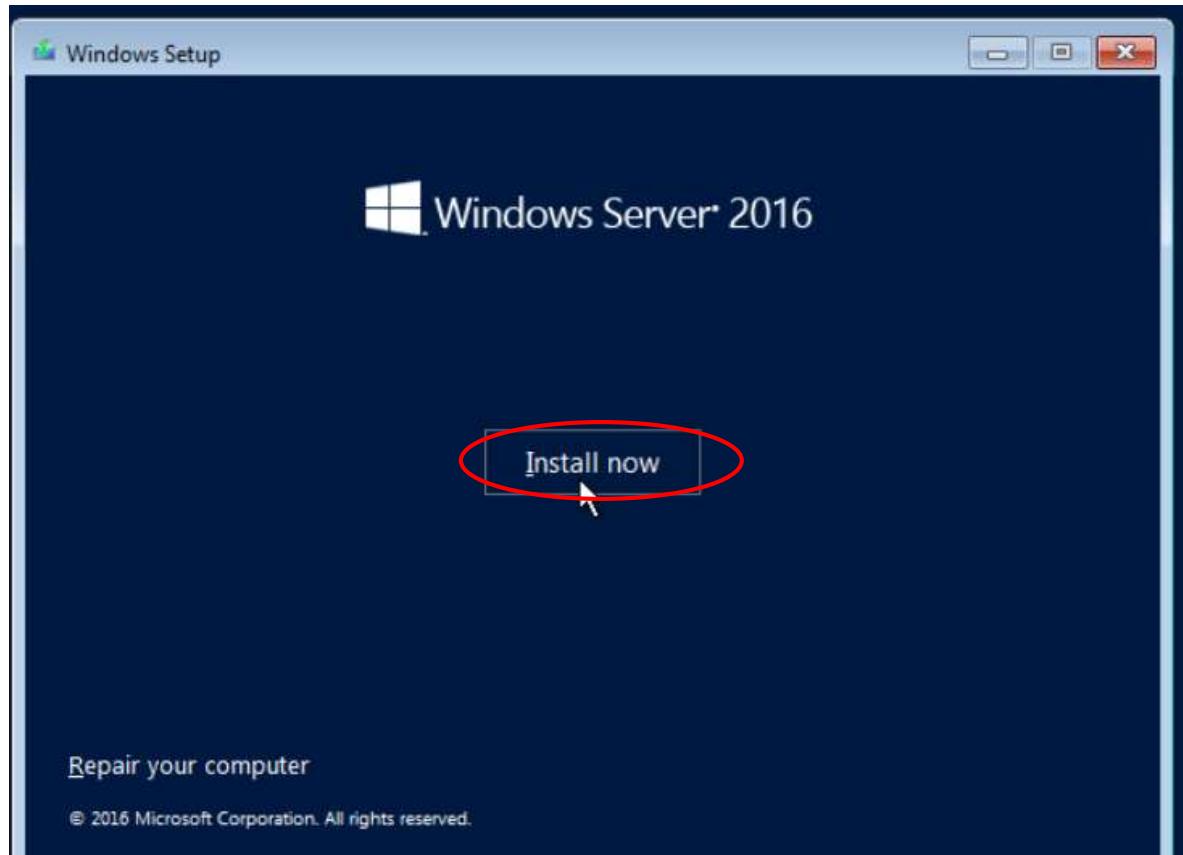
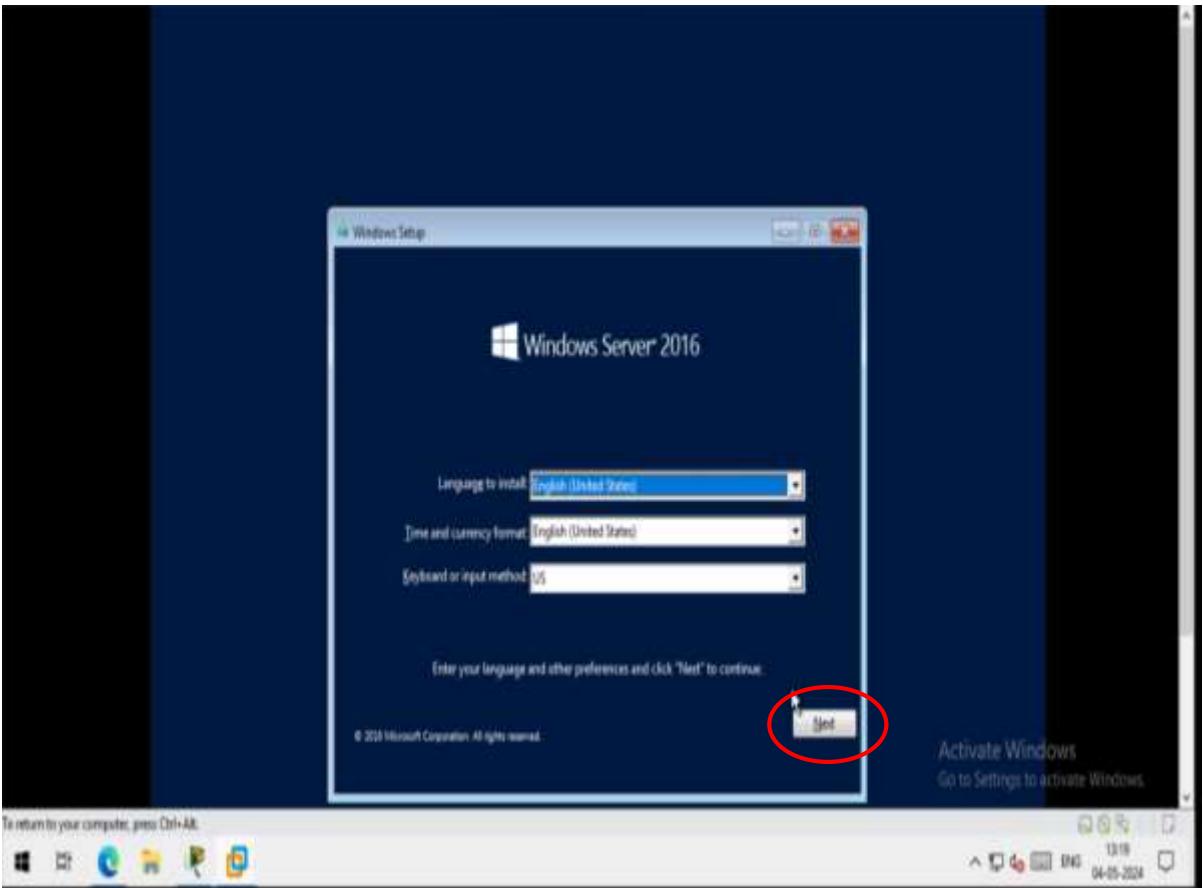


Click on costume hardware and add memory , processor, ISO file, LAN as shown below picture and close it ,go to next

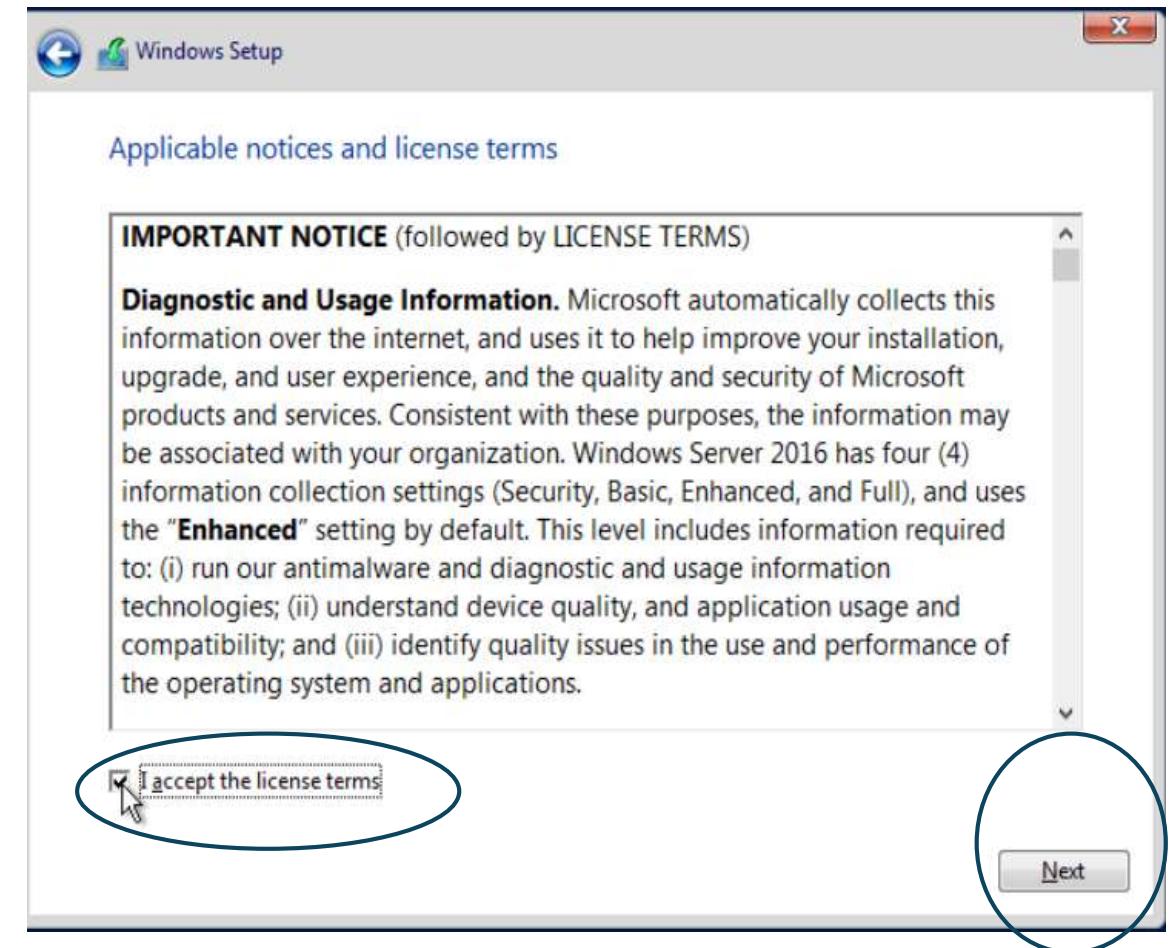
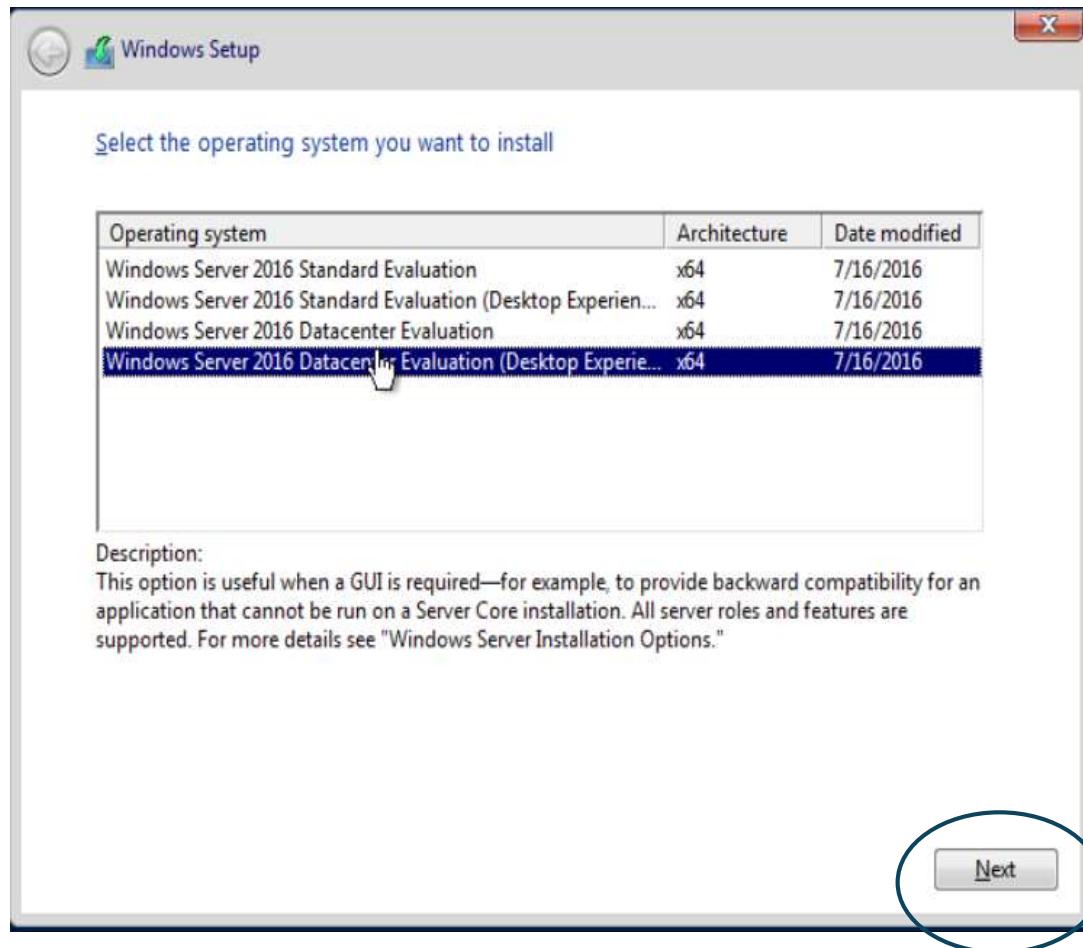




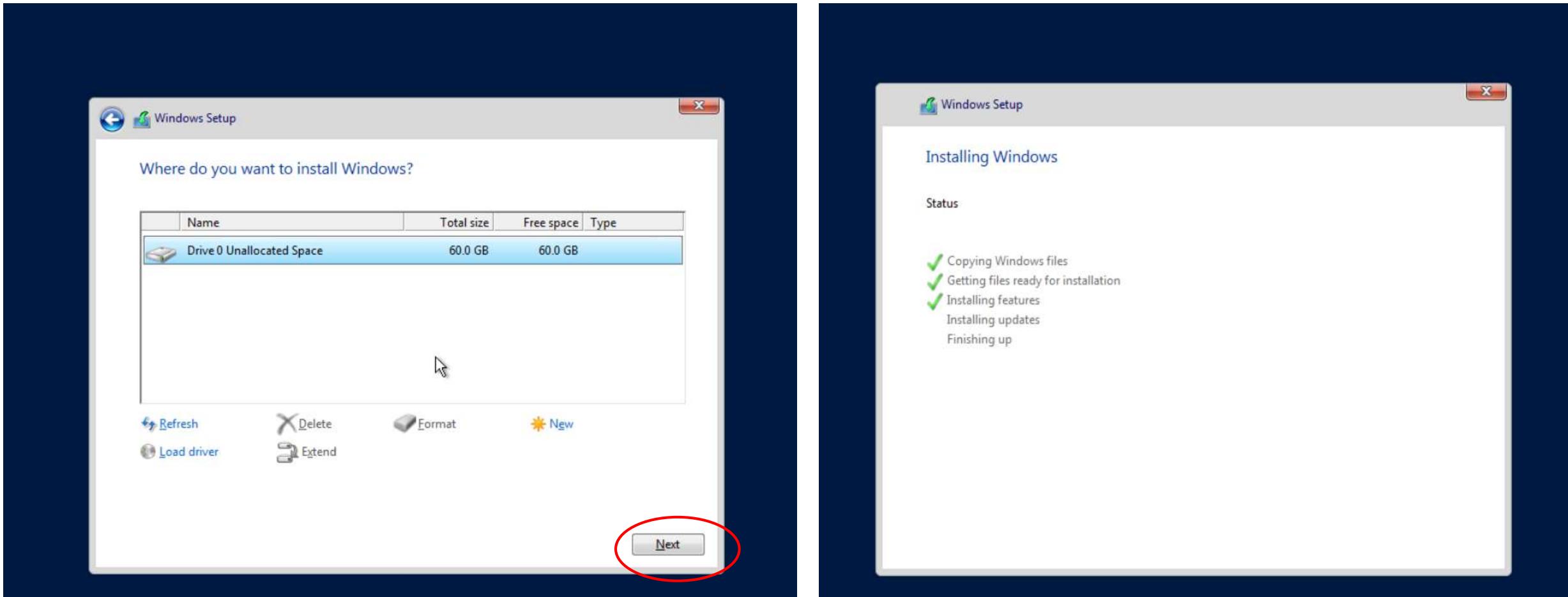
Click on Next and install now



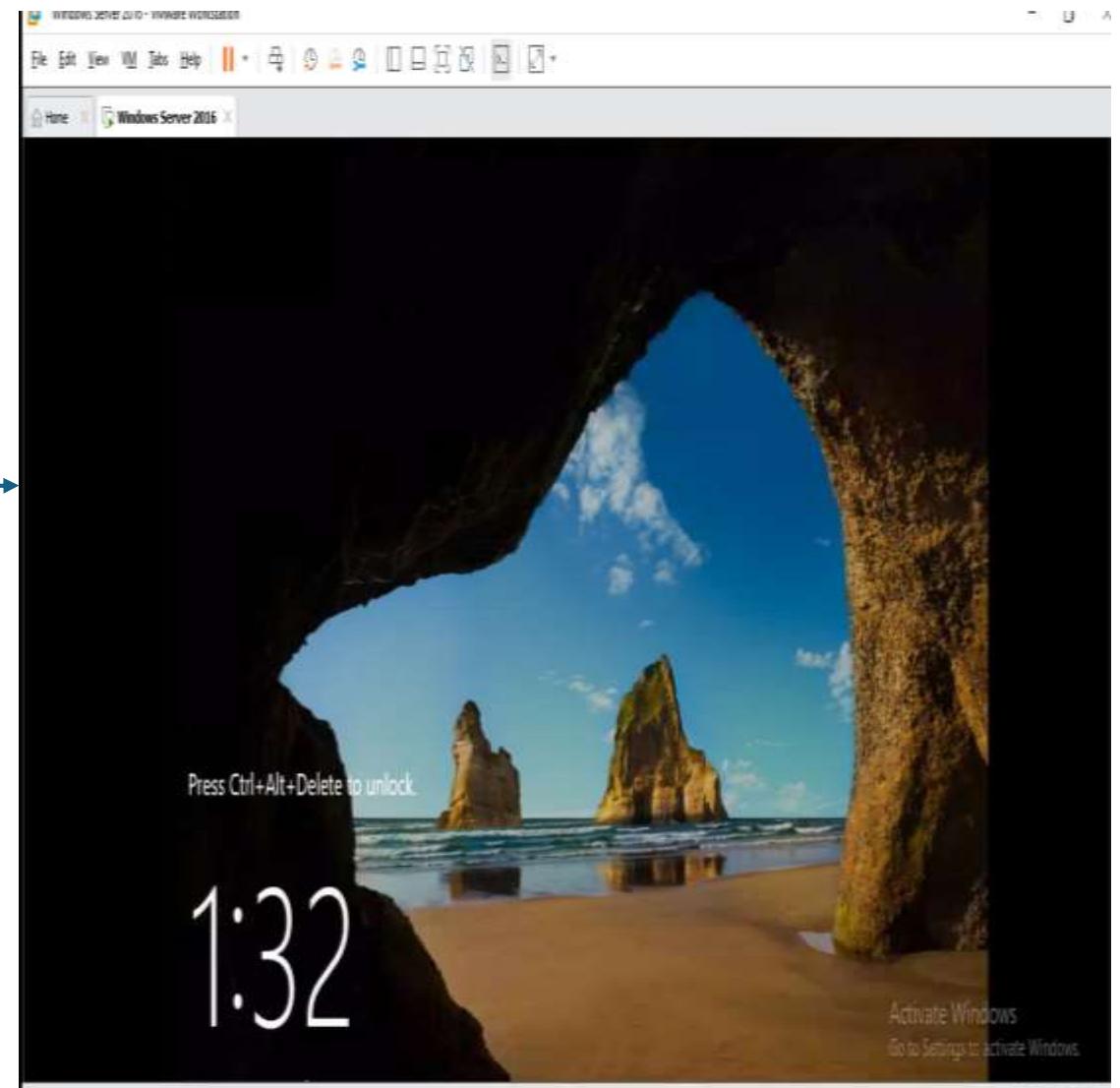
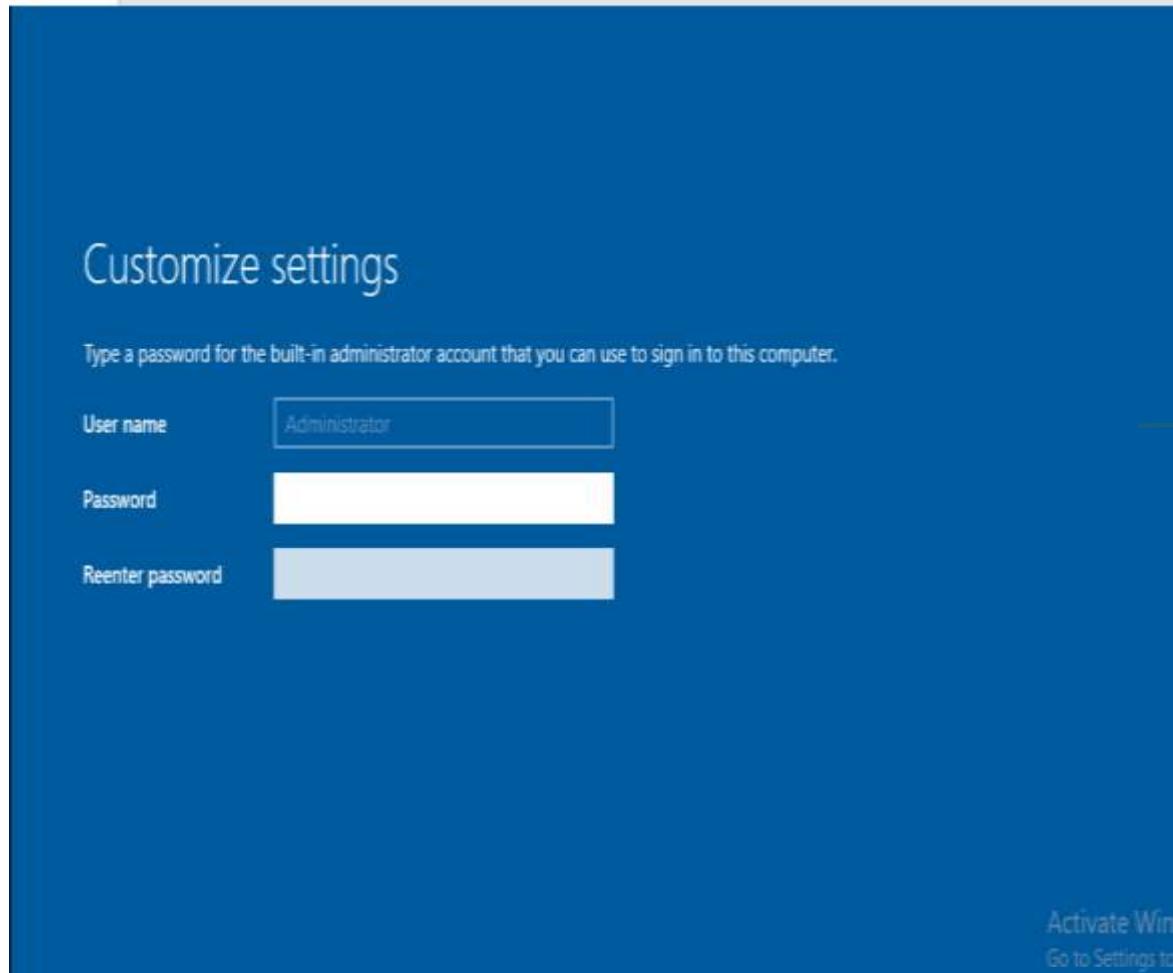
Now as per the question we have to create GUI machine so I choose 4<sup>th</sup> one because its for GUI configuration, no click on check box and next it.



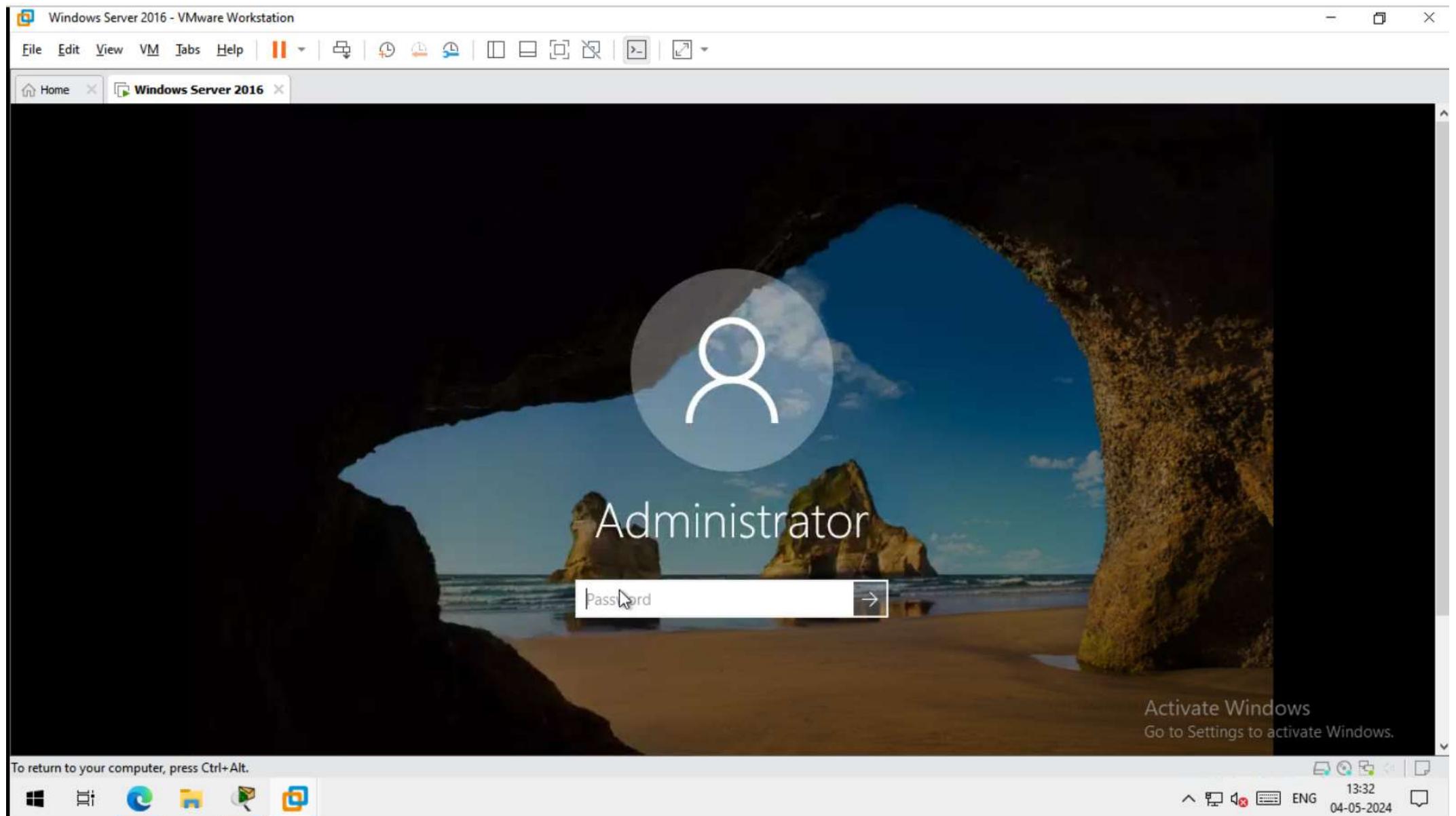
Click on next now installation is start after over the installation it will ask for id and password



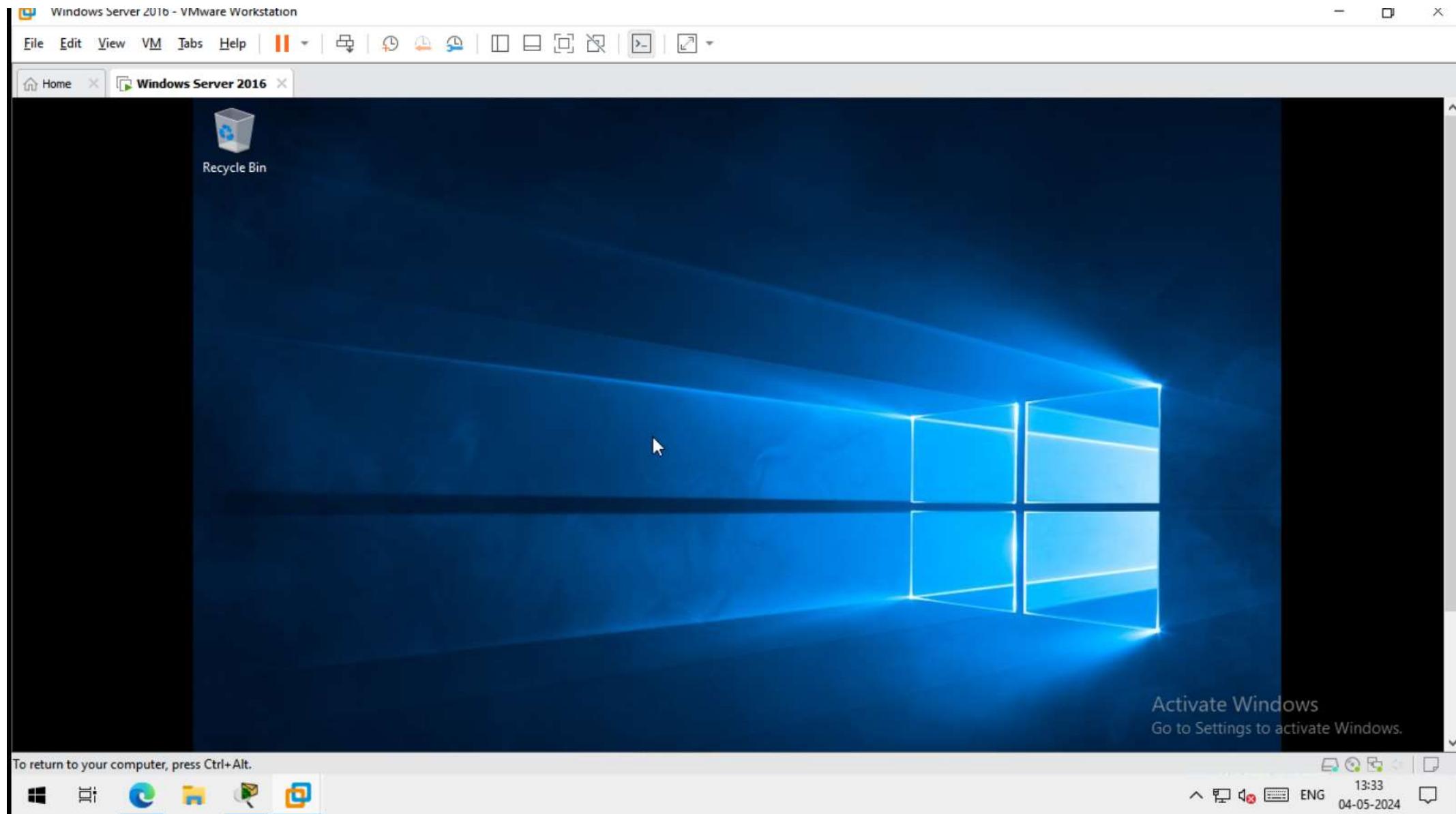
Enter the username as administrator(it will take automatically), gives the password and now vm is created completely.



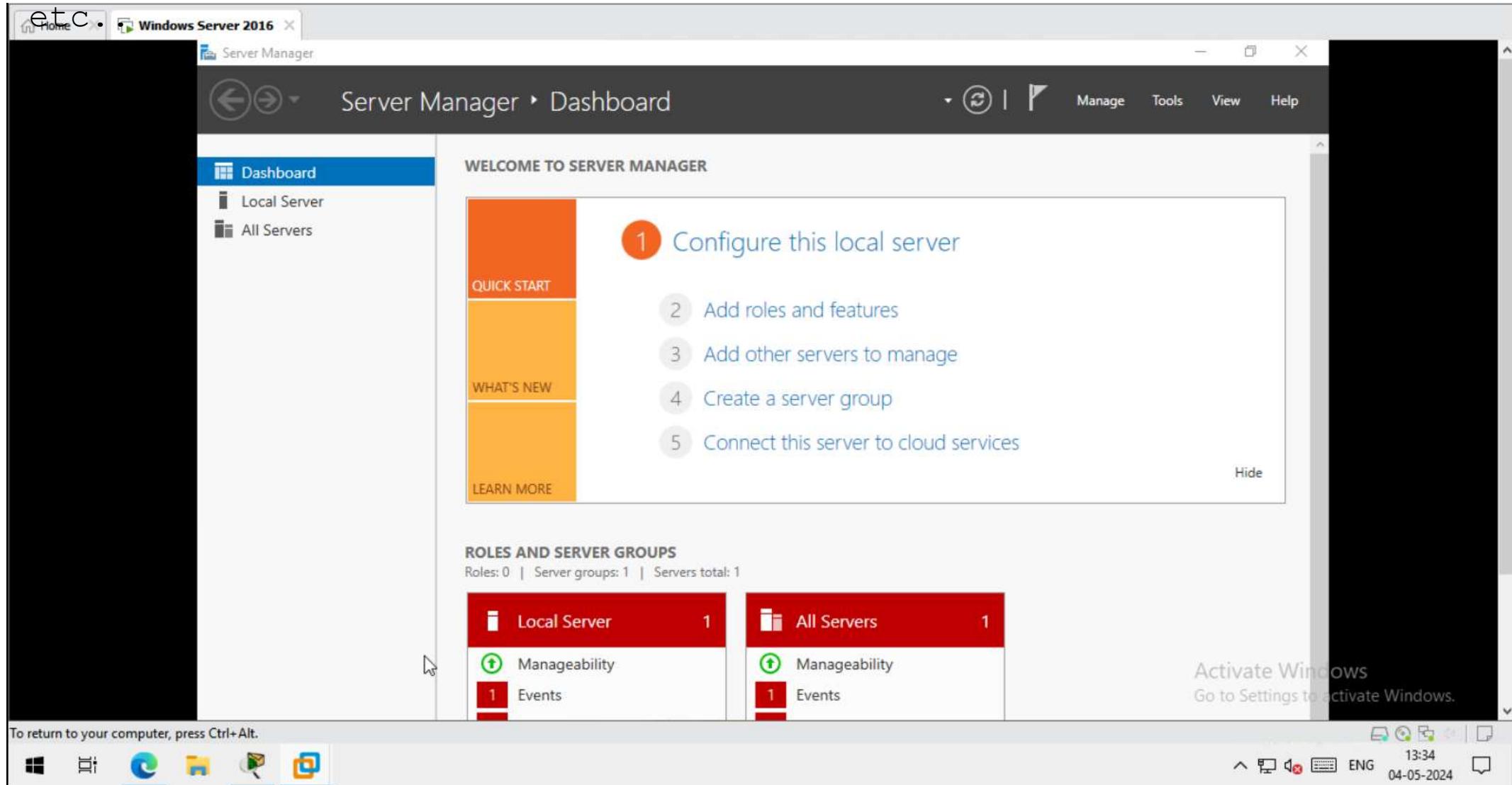
Now workspace is open ,type your password.



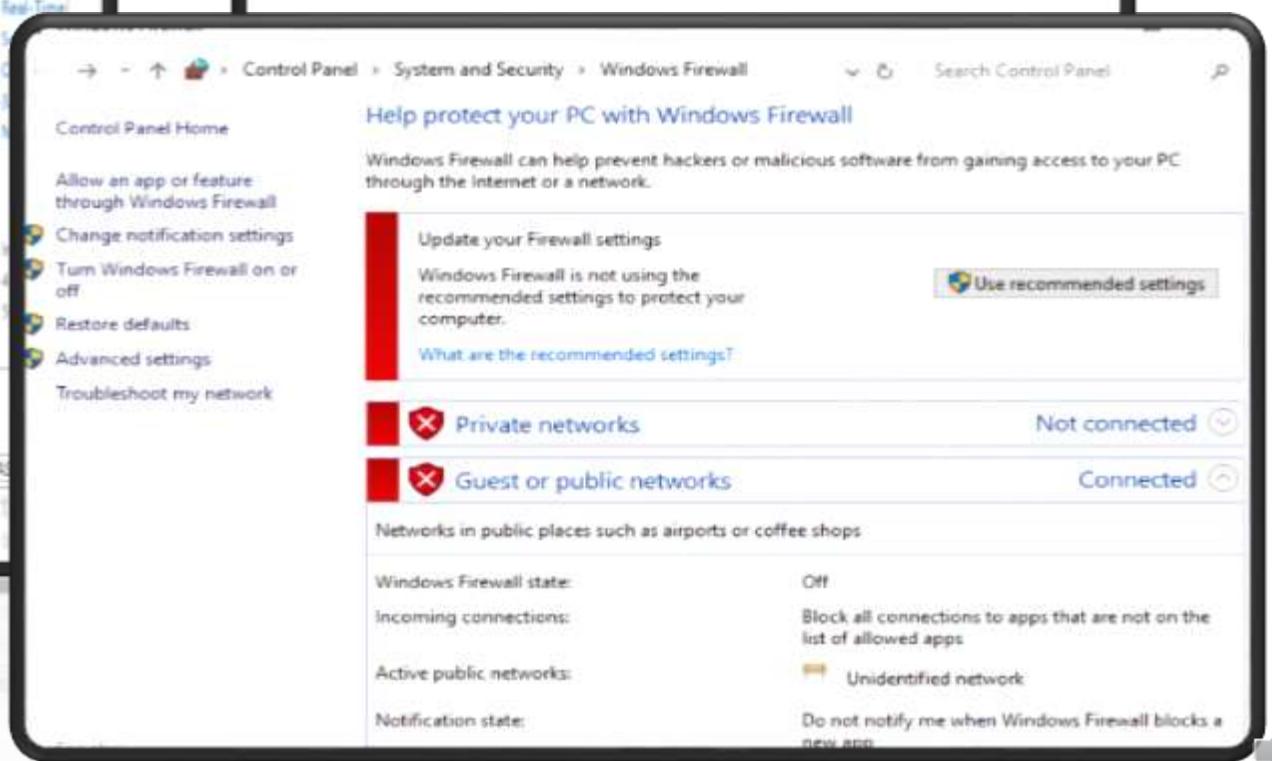
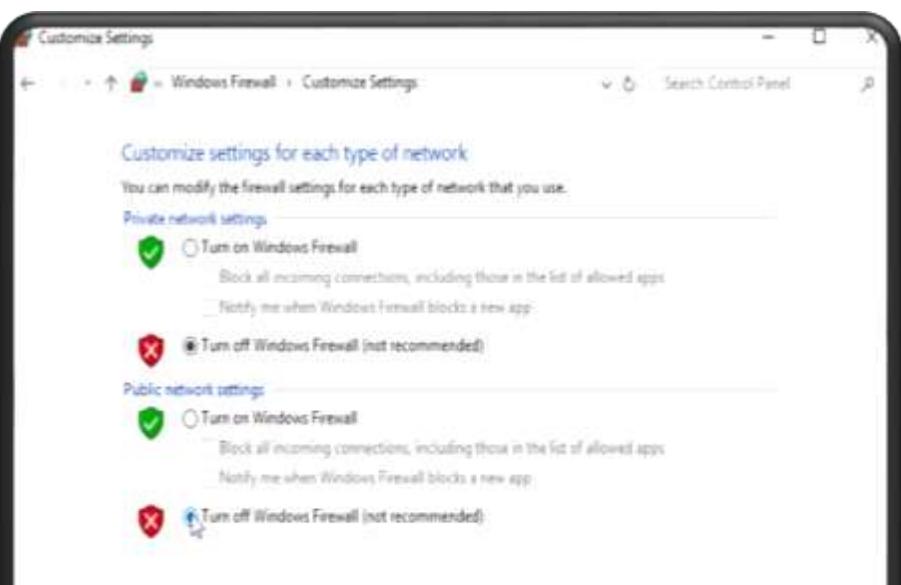
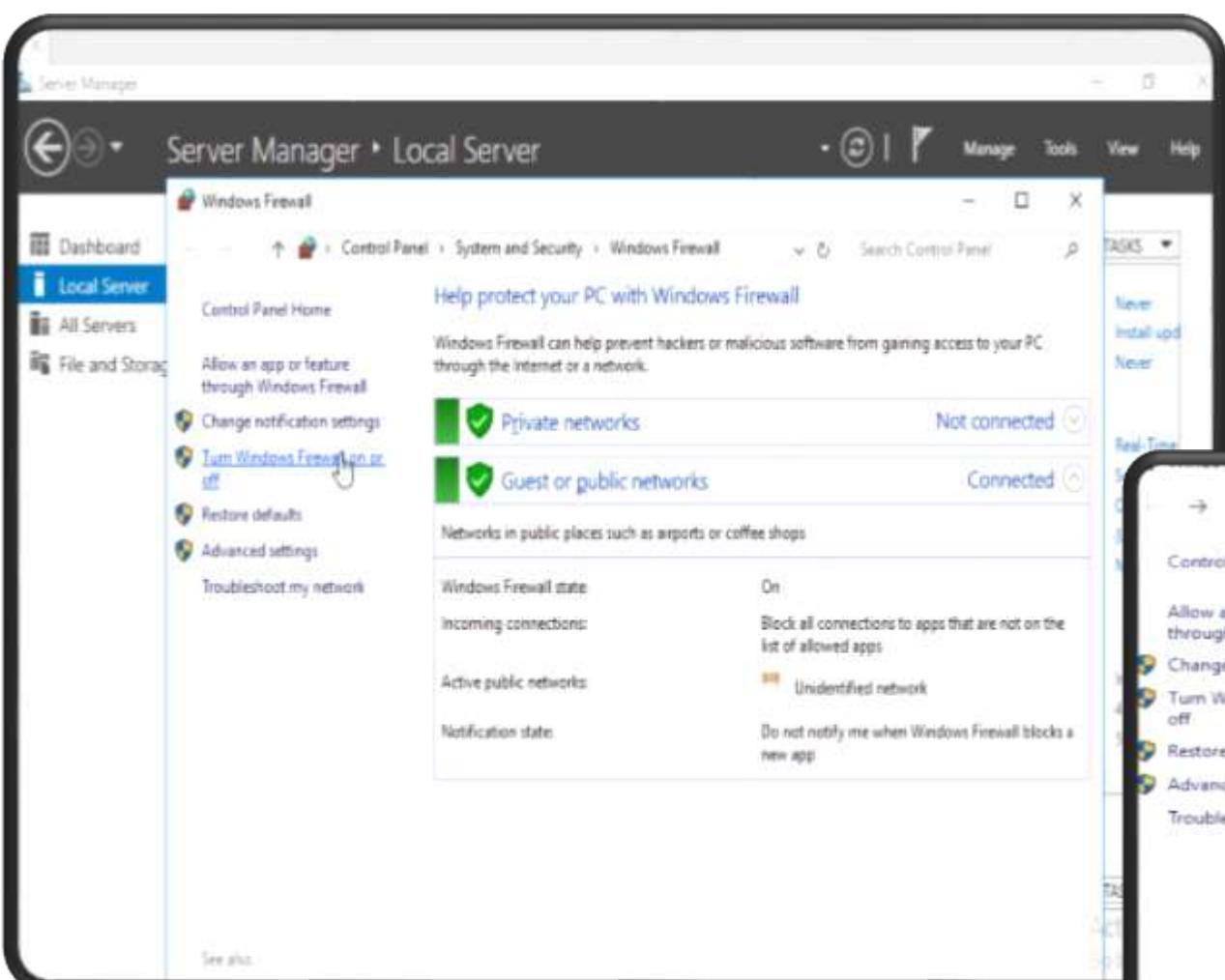
## **POST INSTALLATION PART**



Now open local server and change computer name, ip address



# Turnoff the fire well



Turn off IE configuration and open ethernet0 for ip add and DNSs add

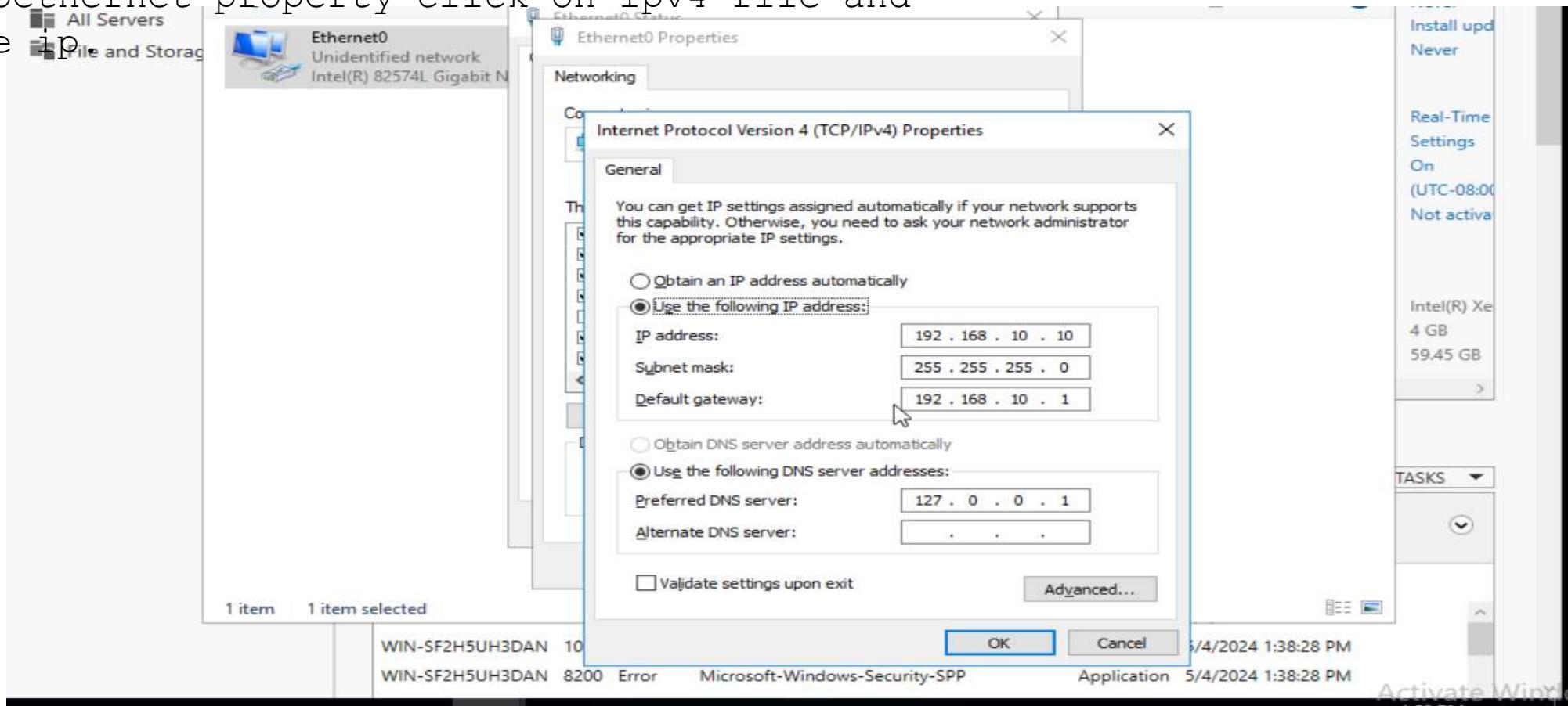
The screenshot shows the 'Server Manager' interface for a local server. The left sidebar has 'Local Server' selected. The main area displays 'PROPERTIES For WIN-SF2HSUH3DAN'. It includes sections for Computer name, Windows Firewall, Remote management, Remote Desktop, NIC Teaming, and Ethernet0. The Ethernet0 section is circled in red, highlighting the status 'IPv4 address assigned by DHCP, IPv6 enabled'. Other details shown include Workgroup (WORKGROUP), Last installed updates (Never), Windows Update (Install update), Last checked for updates (Never), Windows Defender (Real-Time), Feedback & Diagnostics (Settings), and IE Enhanced Security Configuration (On). The right side of the interface shows 'EVENTS' with 23 total events.

The screenshot shows the 'Network and Internet' settings in the Control Panel. Under 'Network Connections', the 'Ethernet0' connection is selected. A detailed 'Ethernet0 Status' window is open. The 'General' tab shows 'IPv4 Connectivity' and 'IPv6 Connectivity' both set to 'No network access', 'Media State' as 'Enabled', 'Duration' as '00:11:21', and 'Speed' as '1.0 Gbps'. Below this, the 'Activity' tab shows packet counts: Sent 111, Received 0. At the bottom of the status window, the 'Properties' button is highlighted with a red circle. The background shows other network connections like 'File and Storage' and 'Local Server'.

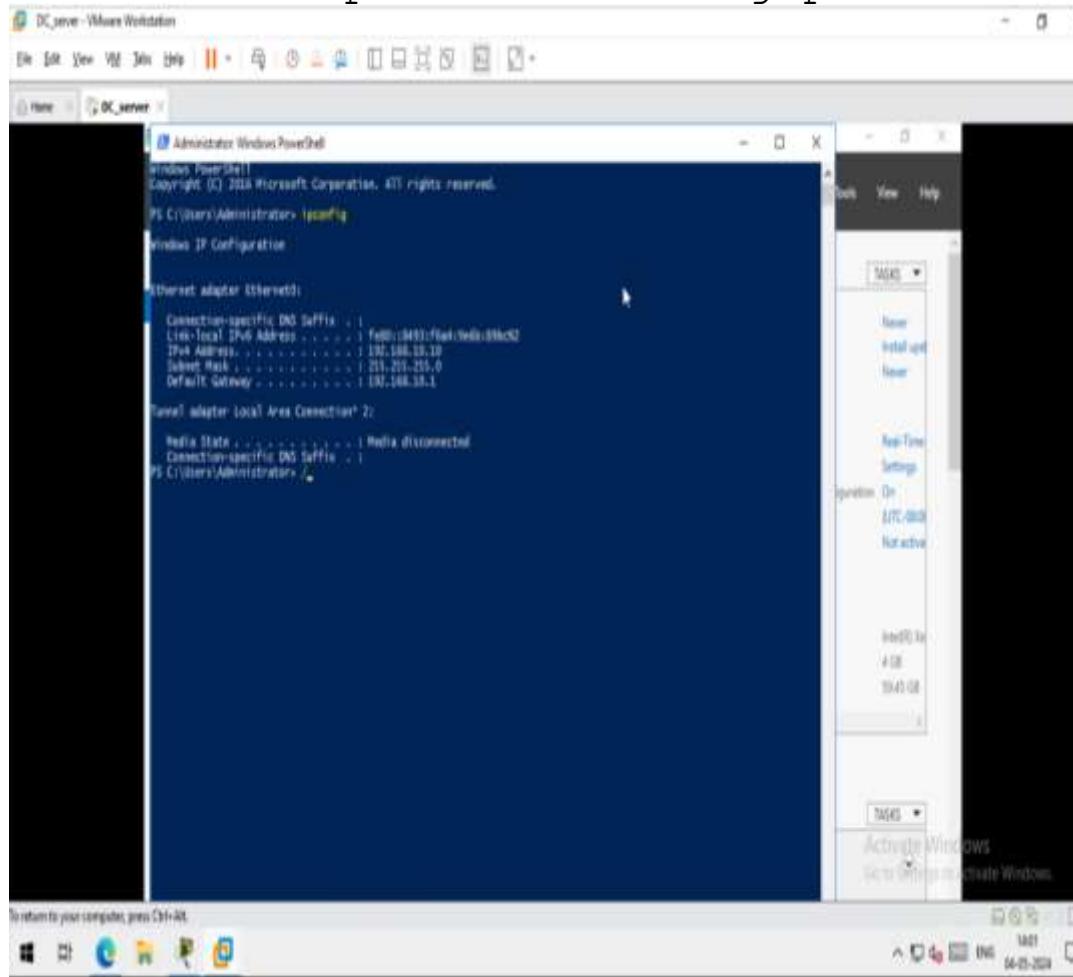
Go to Ethernet and click on properties



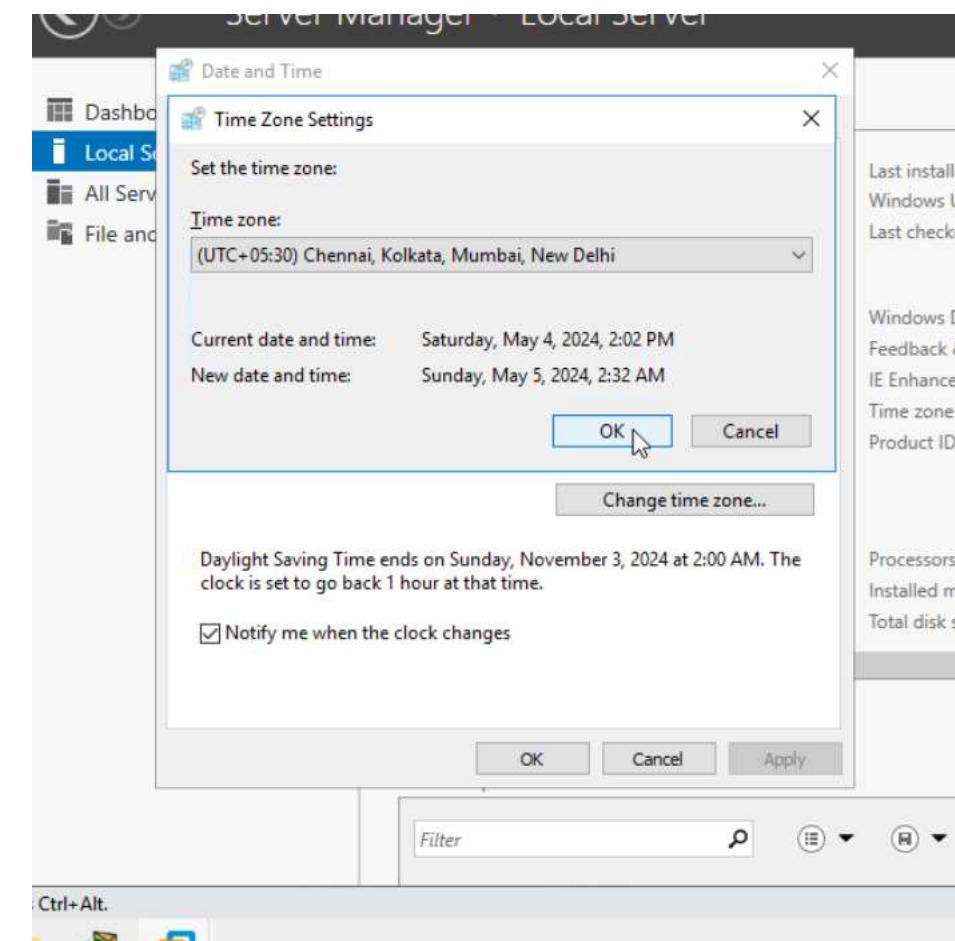
Add ip address, default address, and dns server  
go to ethernet property click on ipv4 file and  
write ip



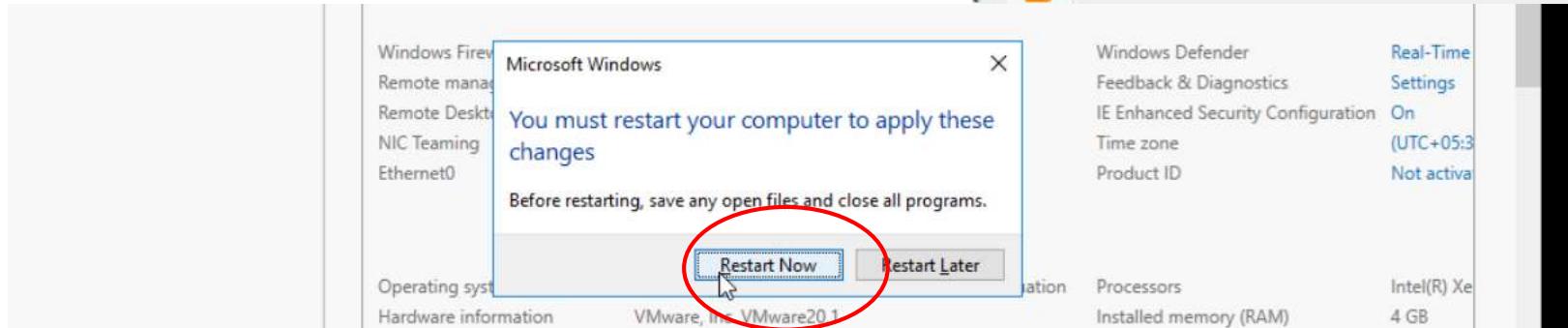
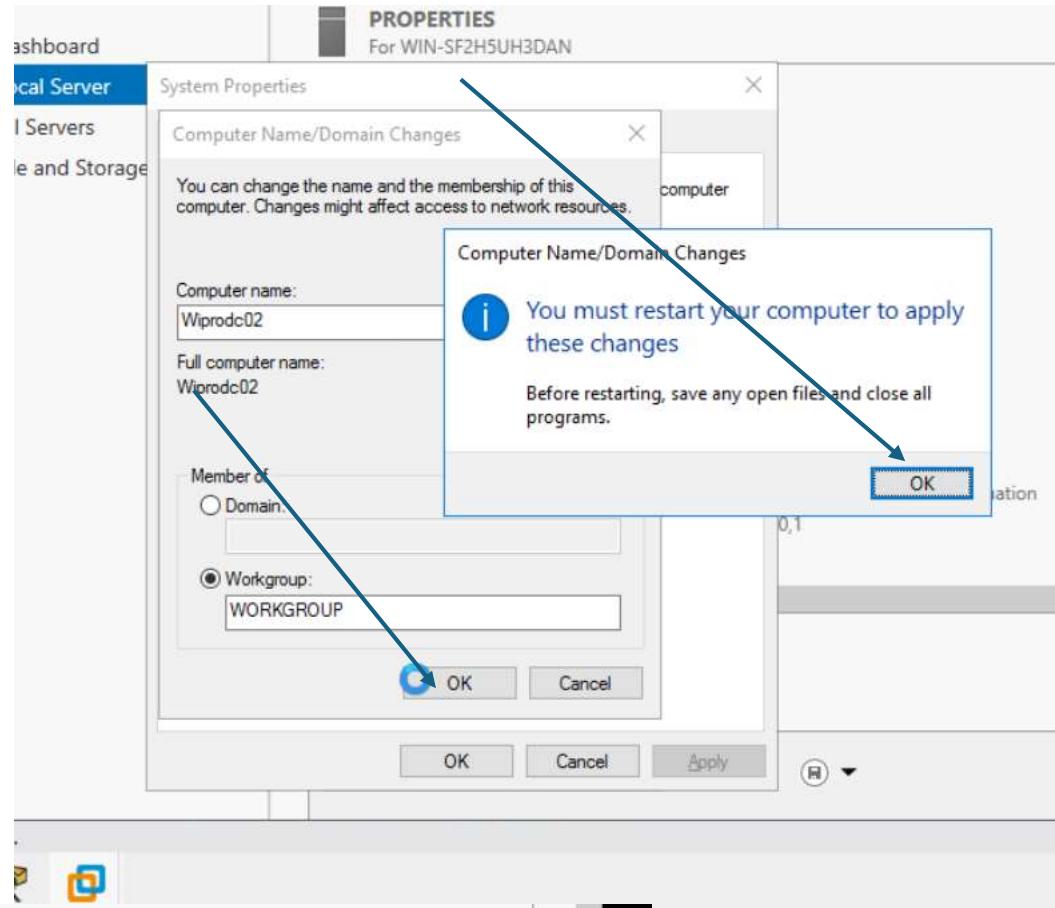
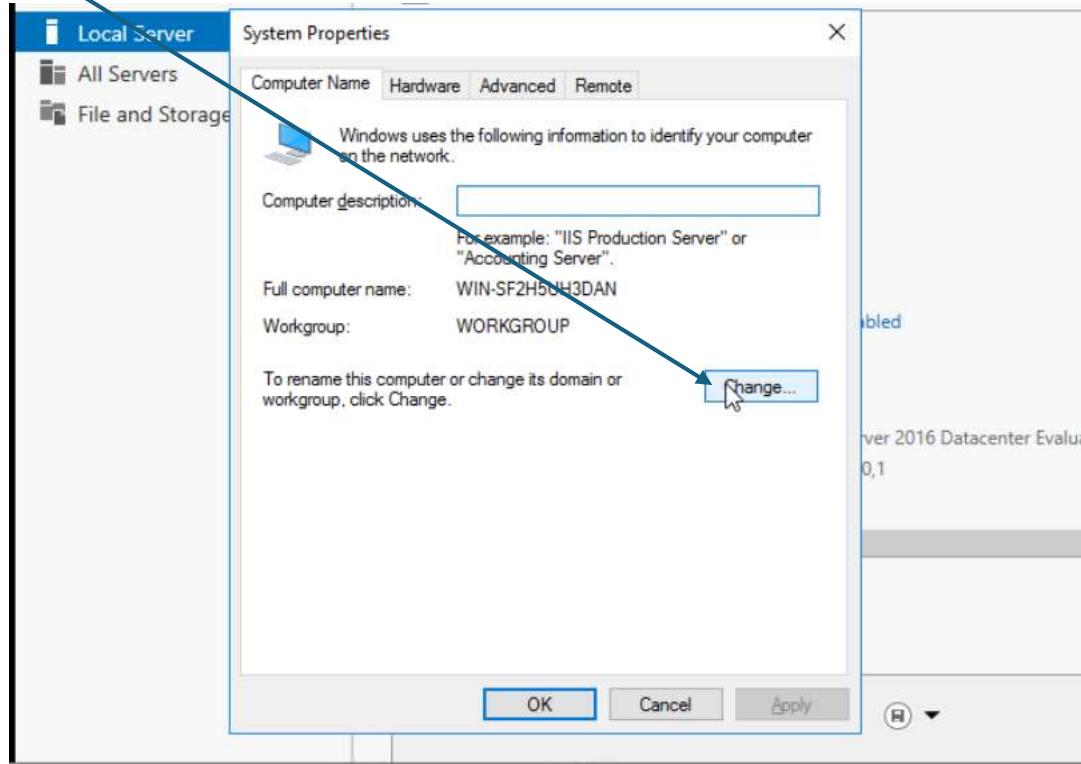
Check the ip address using powershell



Change the time as UTC+05:30

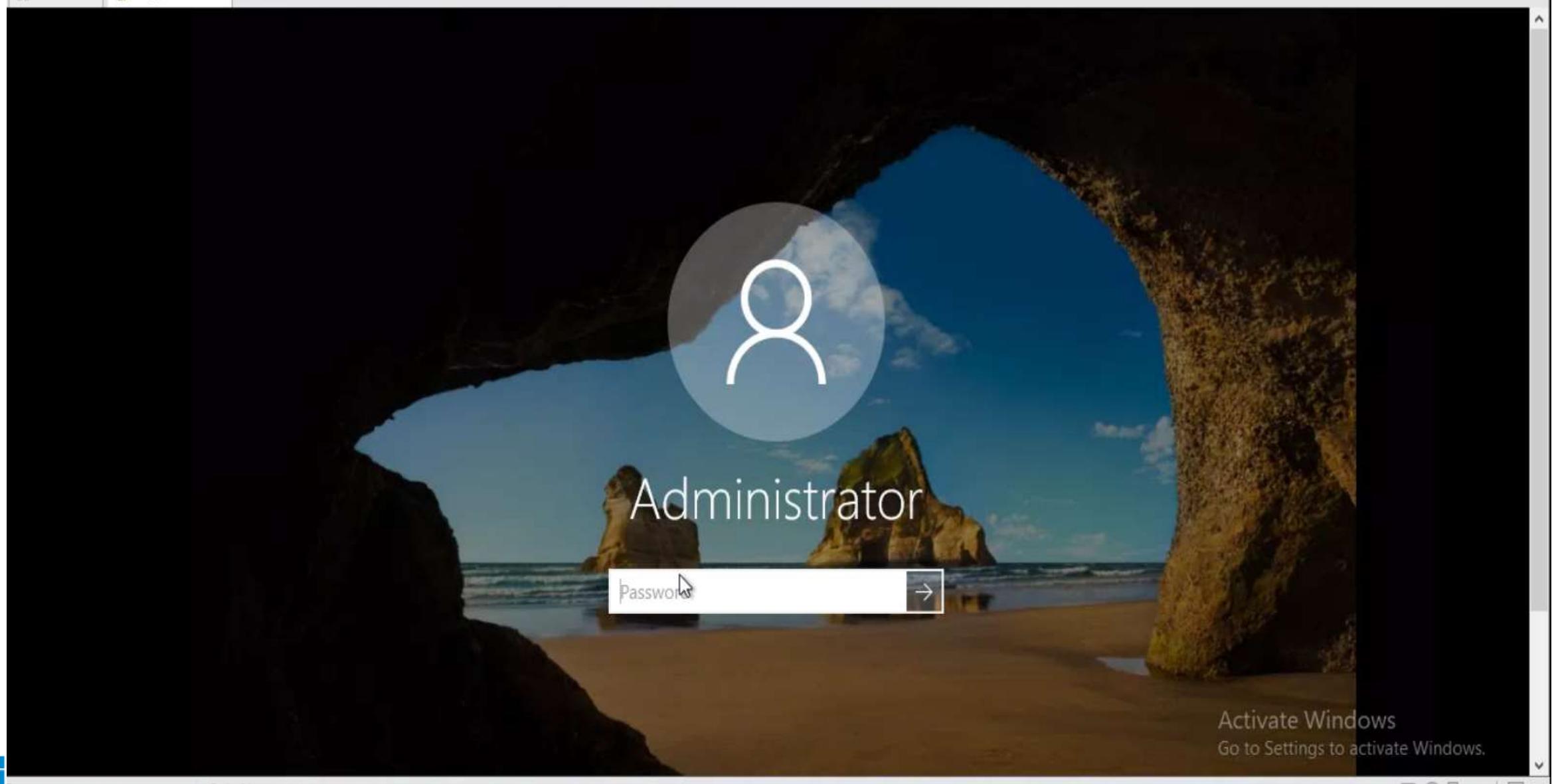


Go to the computer name and change it and it will ask for restart.restart now



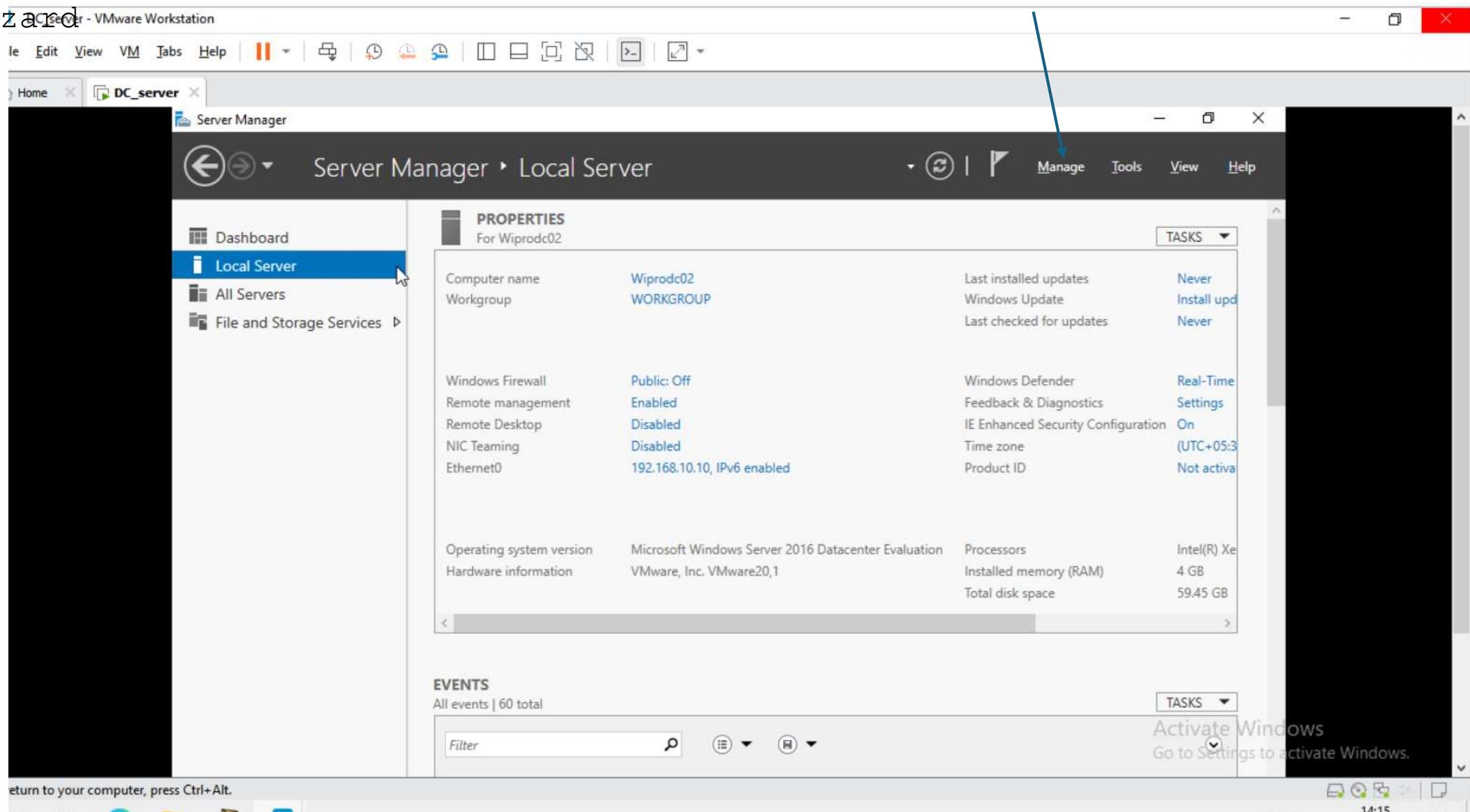
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Open manage click on add roles and feature

wizard



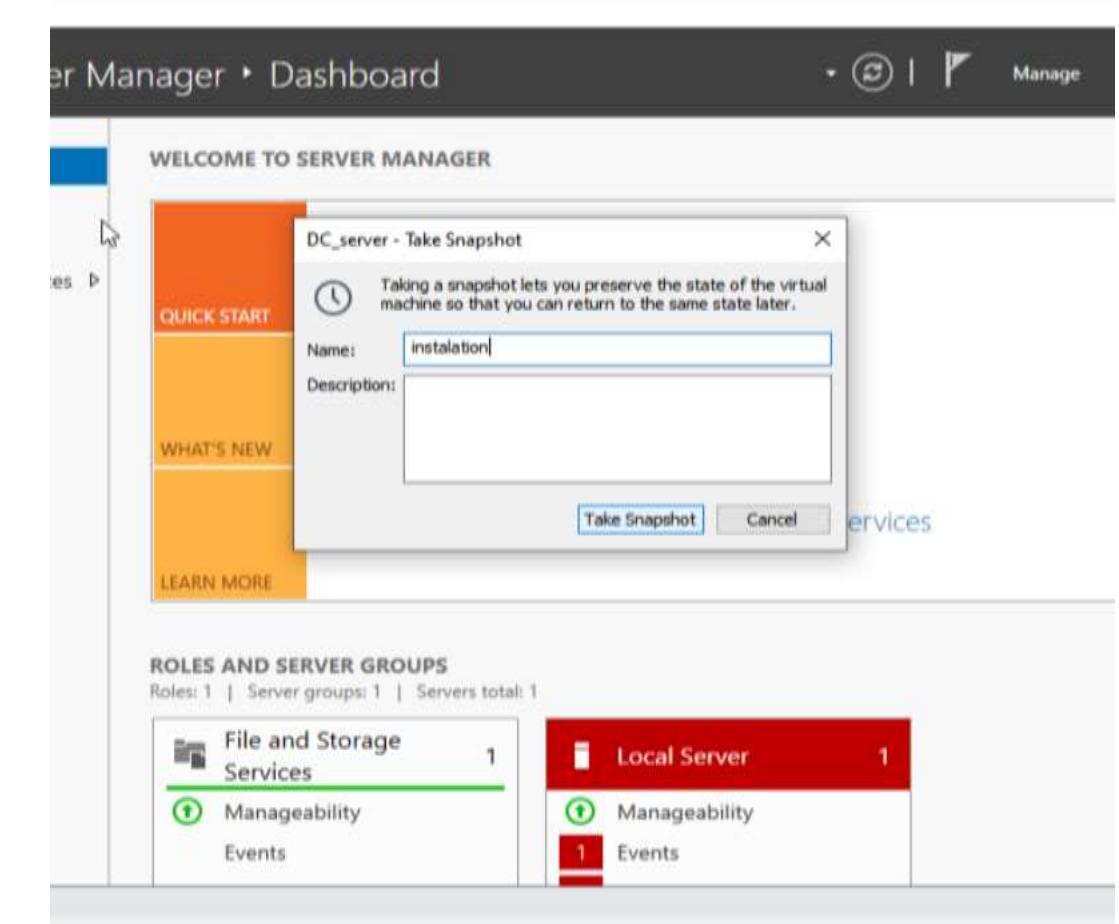
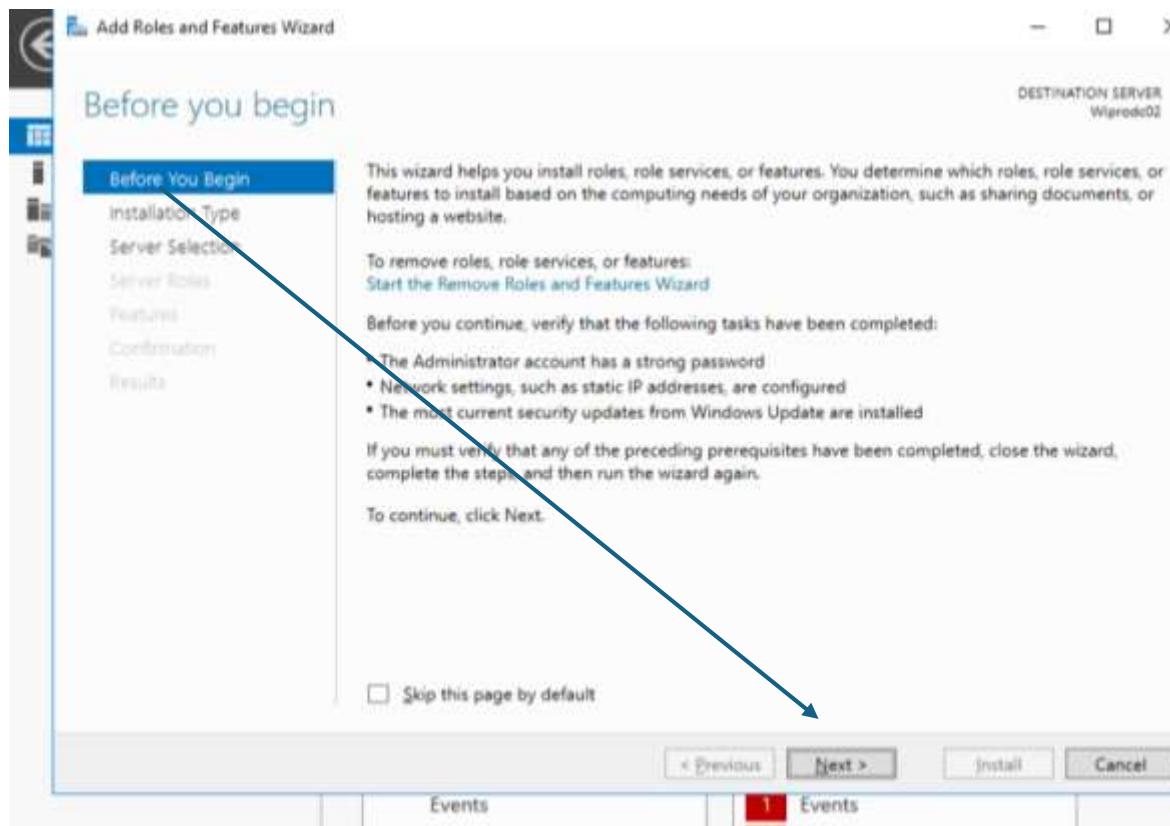
# Install Active Directory Domain Services (ADDS)

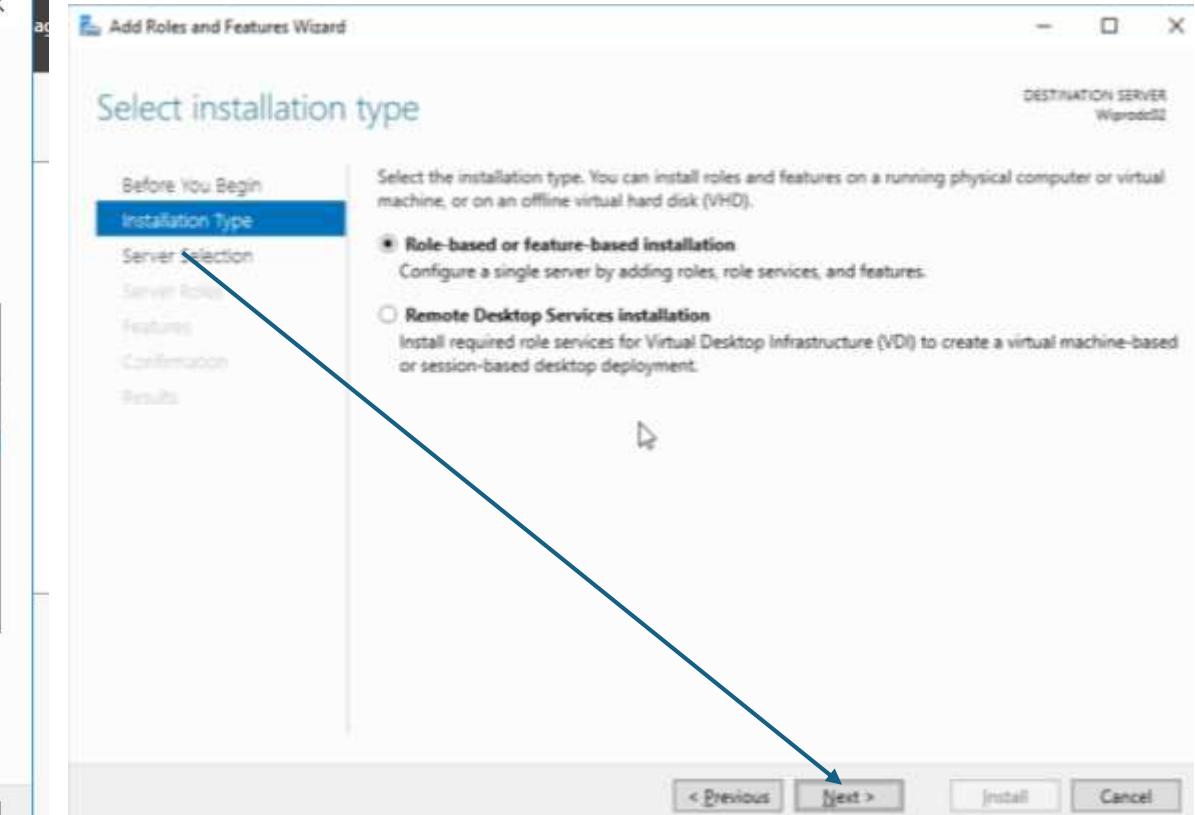
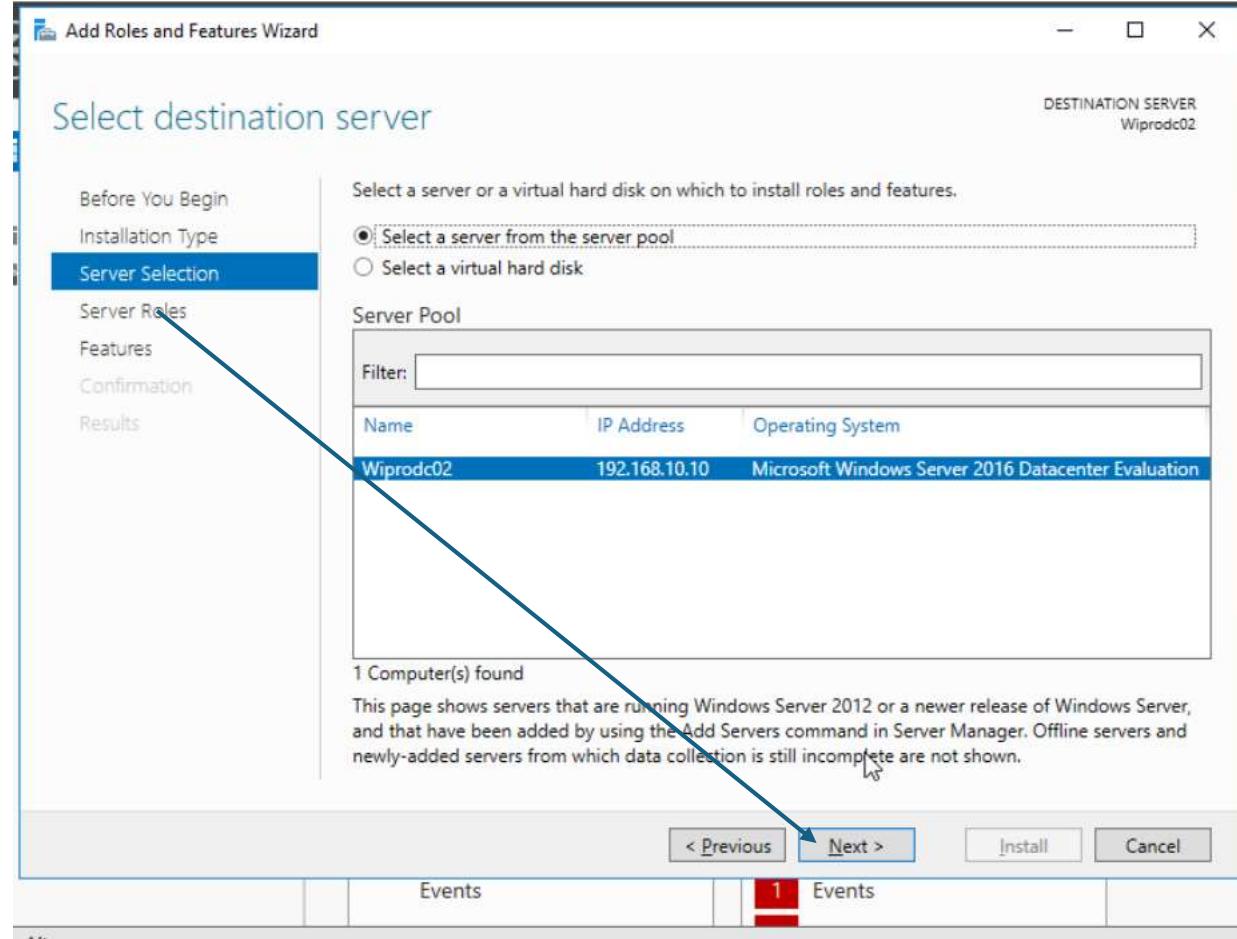
Log into your Active Directory Server with administrative credentials.

Open Server Manager → Roles Summary → Add roles and features

1. The "Before you begin" screen, which pops up next, is purely for an informational purpose. You may read through it and click "next".

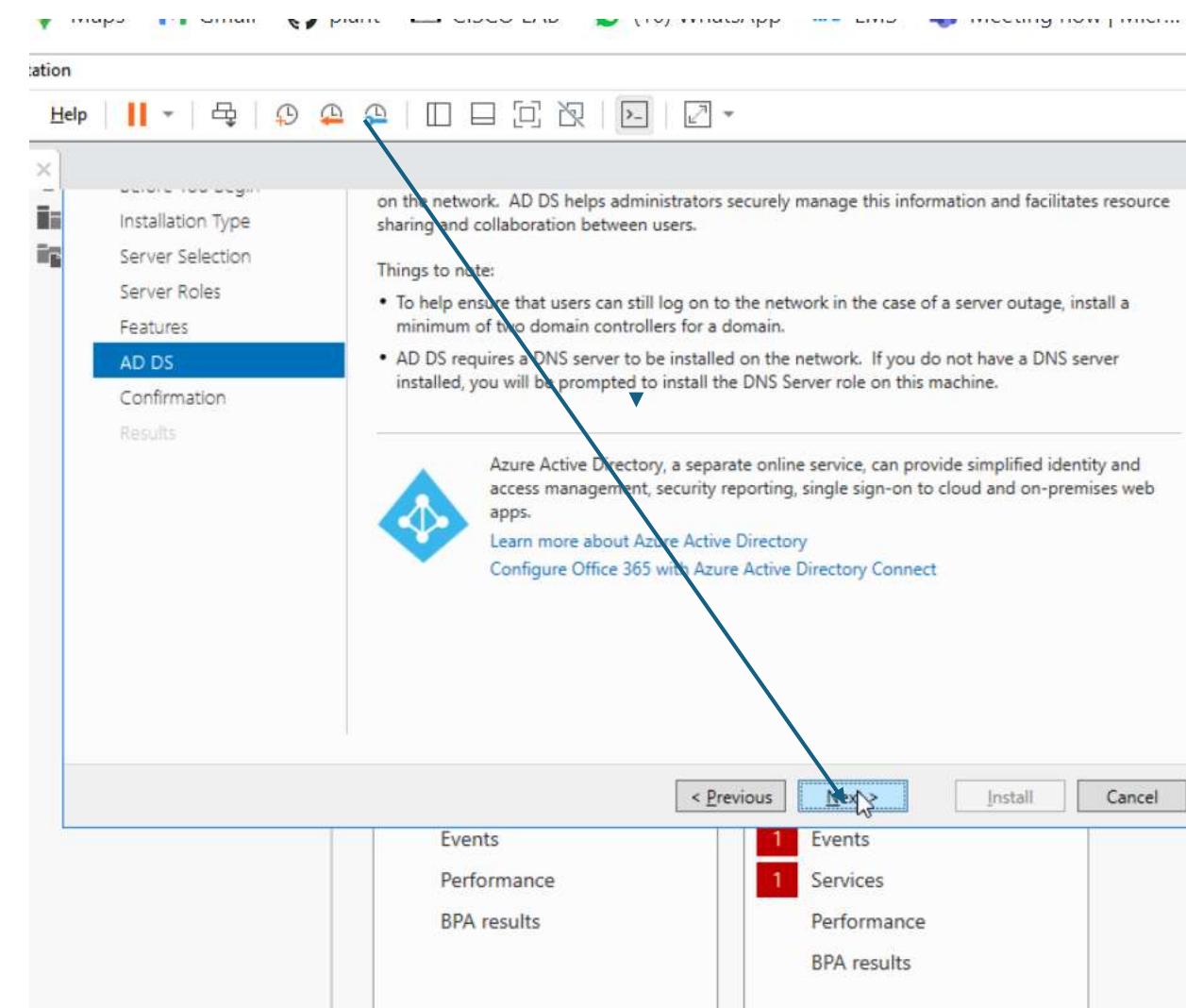
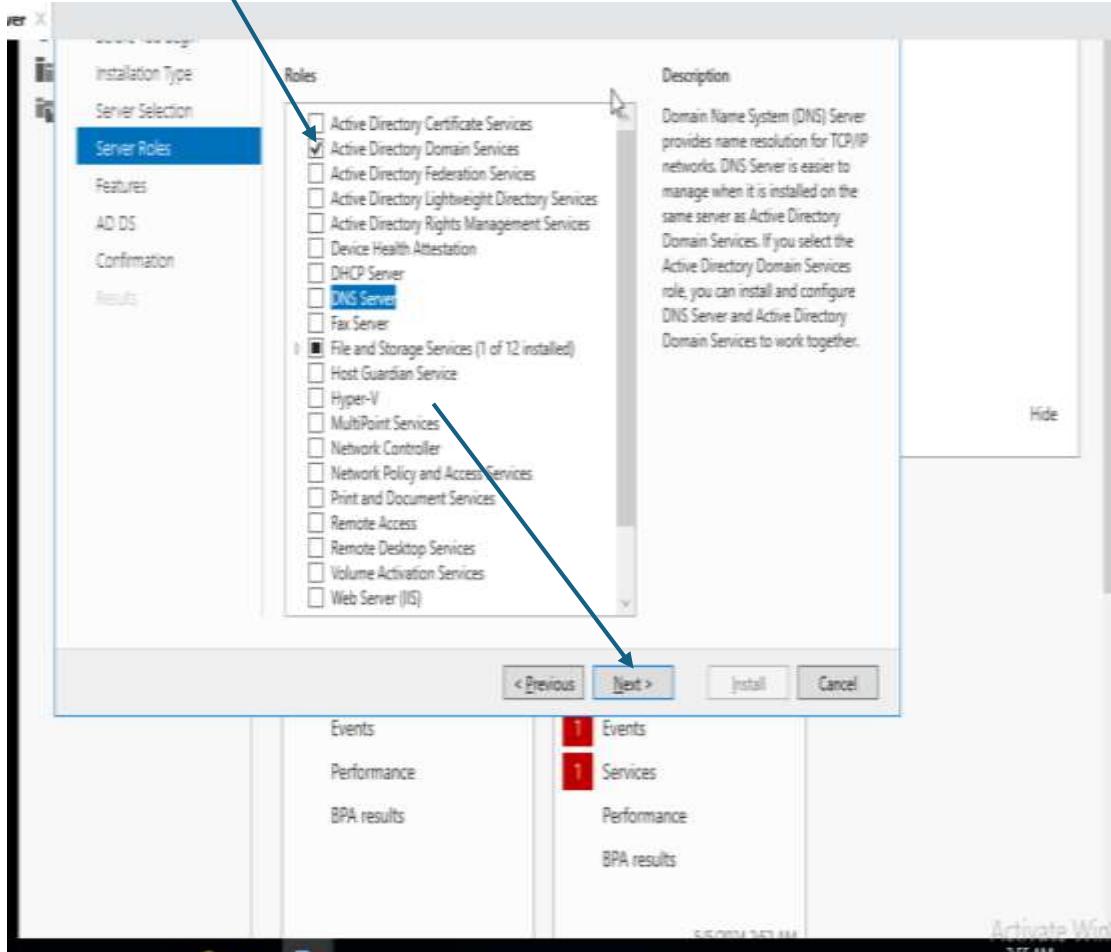
2. Select the installation type. If you're going to deploy your DC in a virtual machine, choose Remote Desktop Services installation. Else, choose Role-based or Feature-based installation. Take a snapshot for backup

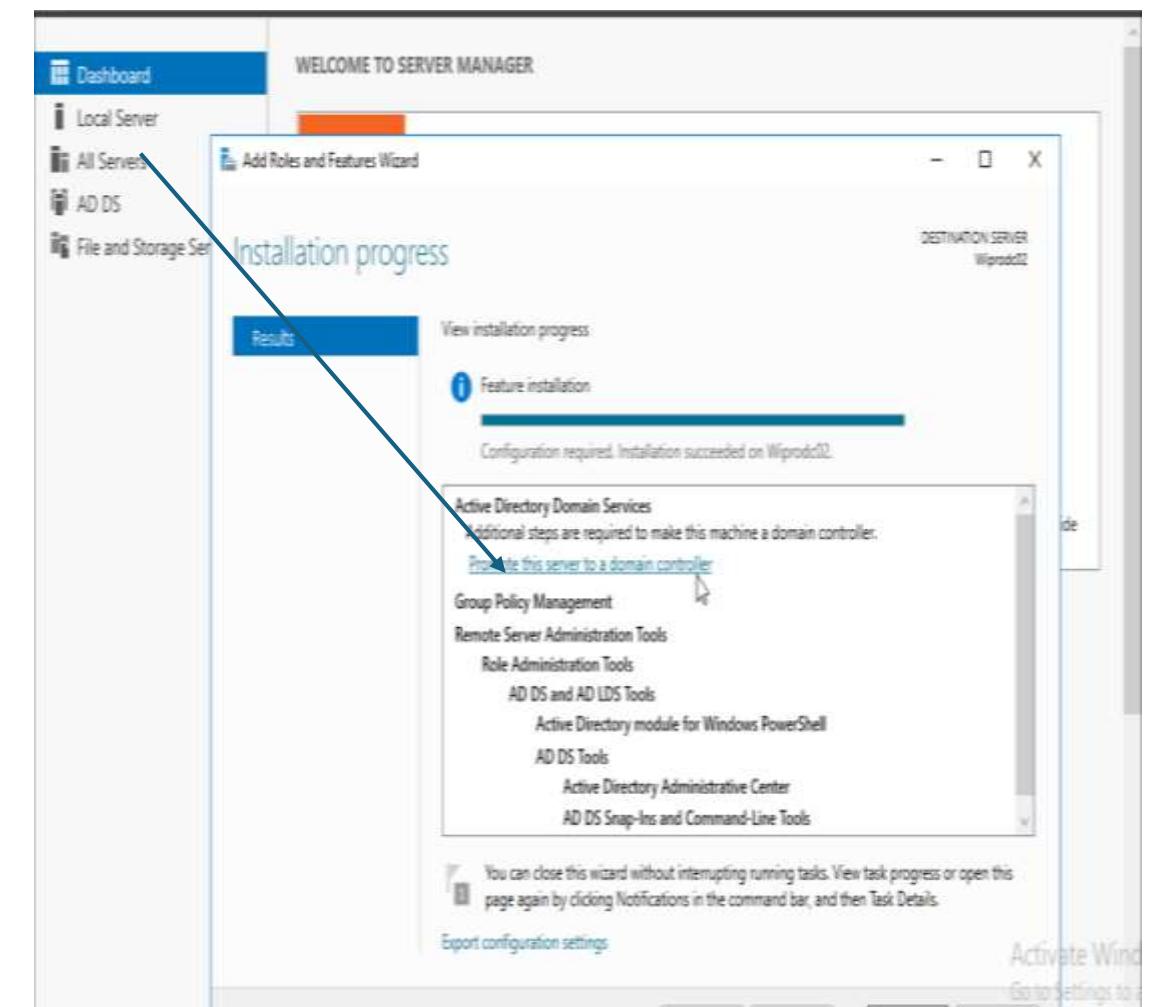
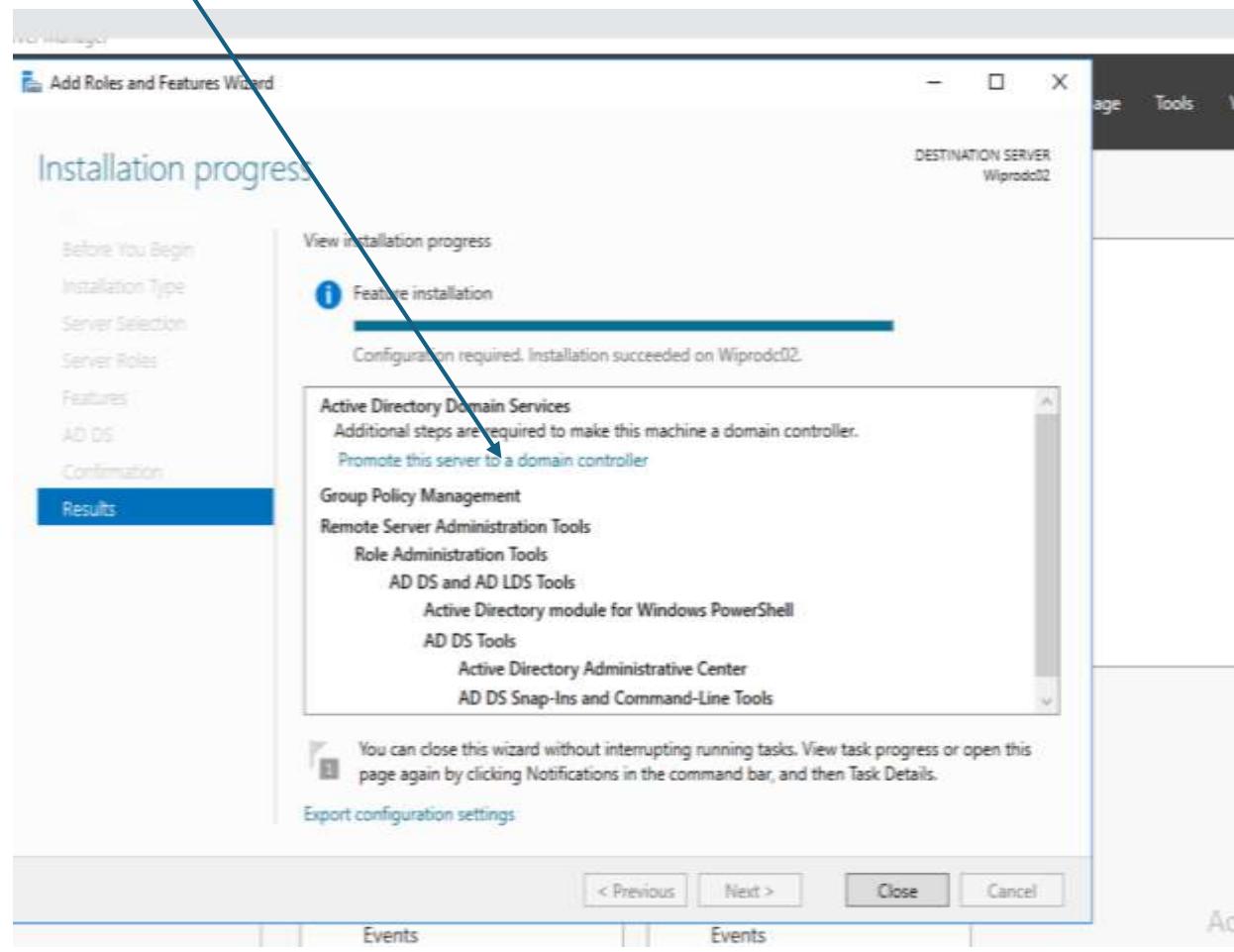




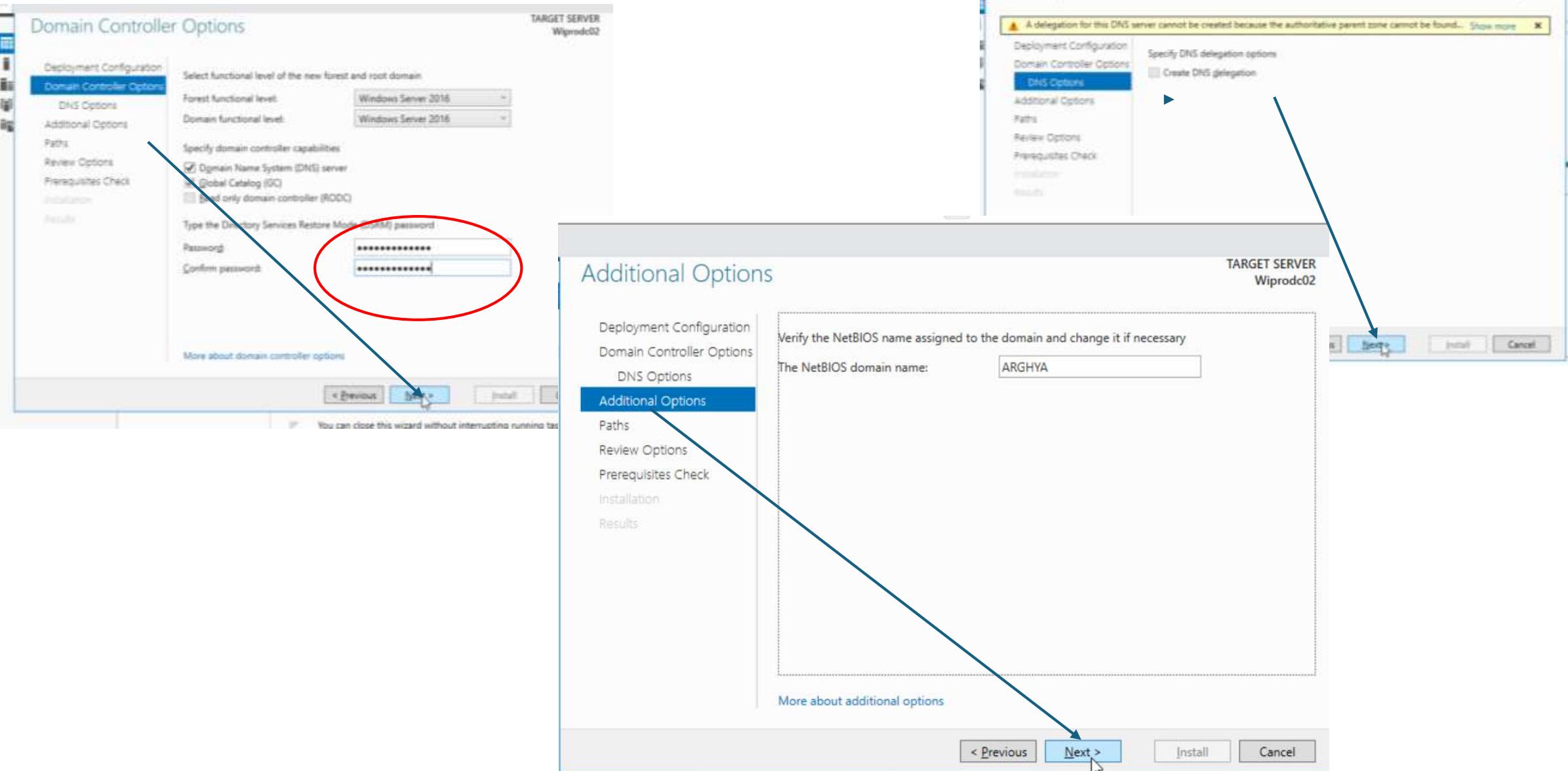
Select the roles you want to install on this server. The basic requirements to promote this server into a domain controller is Active Directory Domain Services.

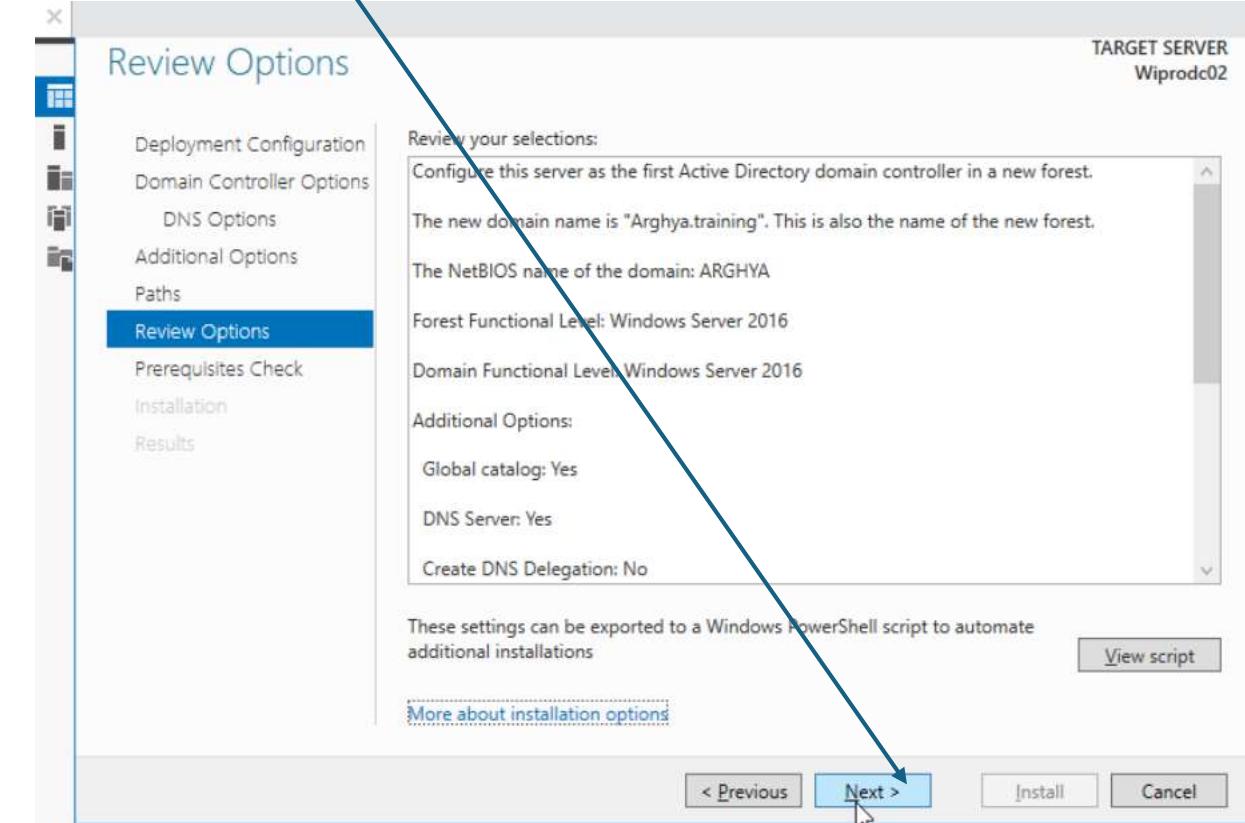
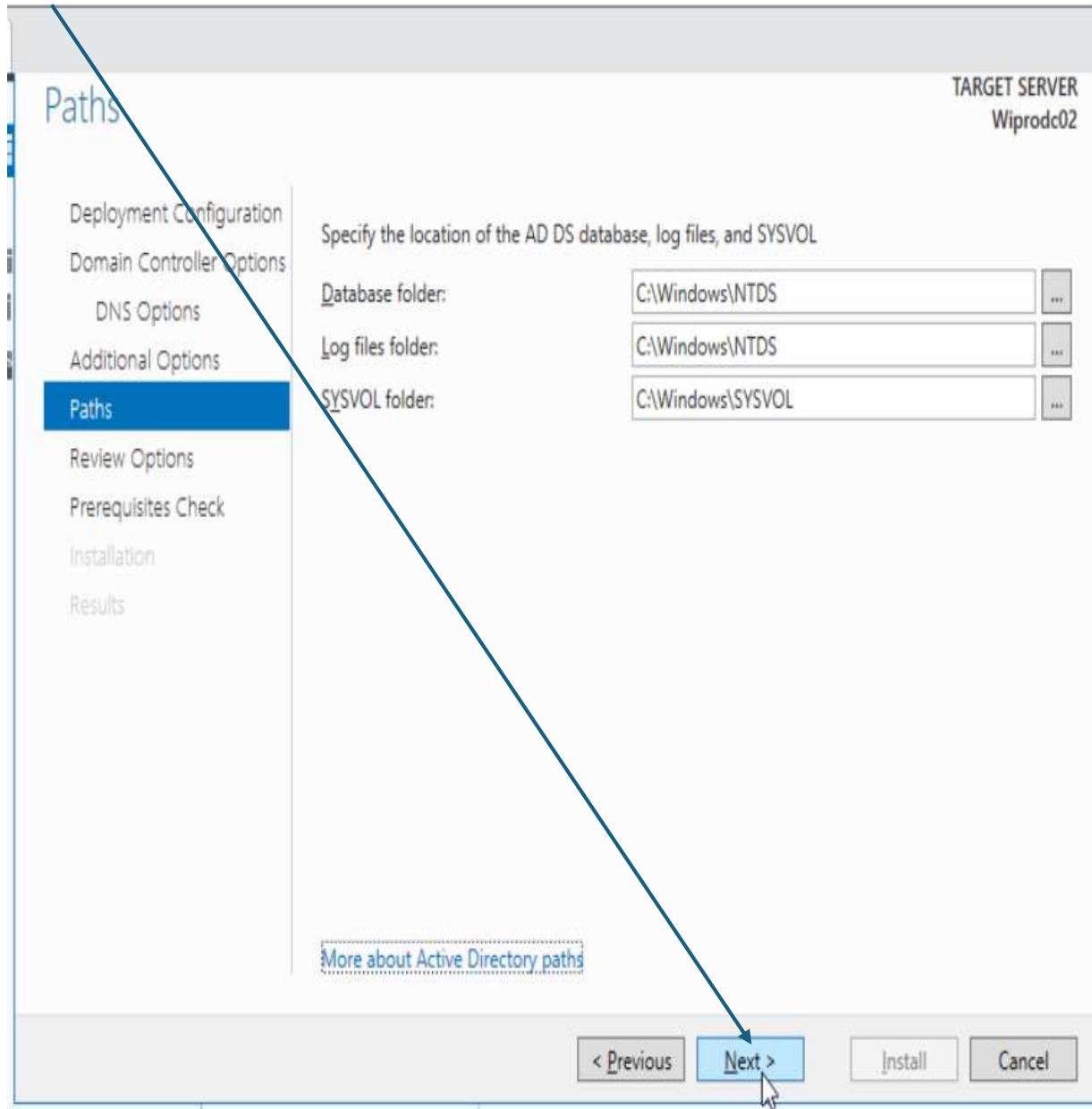
The basic features required for proper functioning of this role are selected by default. Click next to install them.





# Add domain name as Arghya.training





## Prerequisites Check

TARGET SERVER  
Wiprod02

All prerequisite checks passed successfully. Click 'Install' to begin installation. [Show more](#) [X](#)

Deployment Configuration  
Domain Controller Options  
DNS Options  
Additional Options  
Paths  
Review Options  
**Prerequisites Check**  
Installation  
Results

Prerequisites need to be validated before Active Directory Domain Services is installed on this computer.

Rerun prerequisites check

[View results](#)

**Windows Server 2016 domain controllers have a default for the security setting named "Allow cryptography algorithms compatible with Windows NT 4.0" that prevents weaker cryptography algorithms when establishing security channel sessions.**

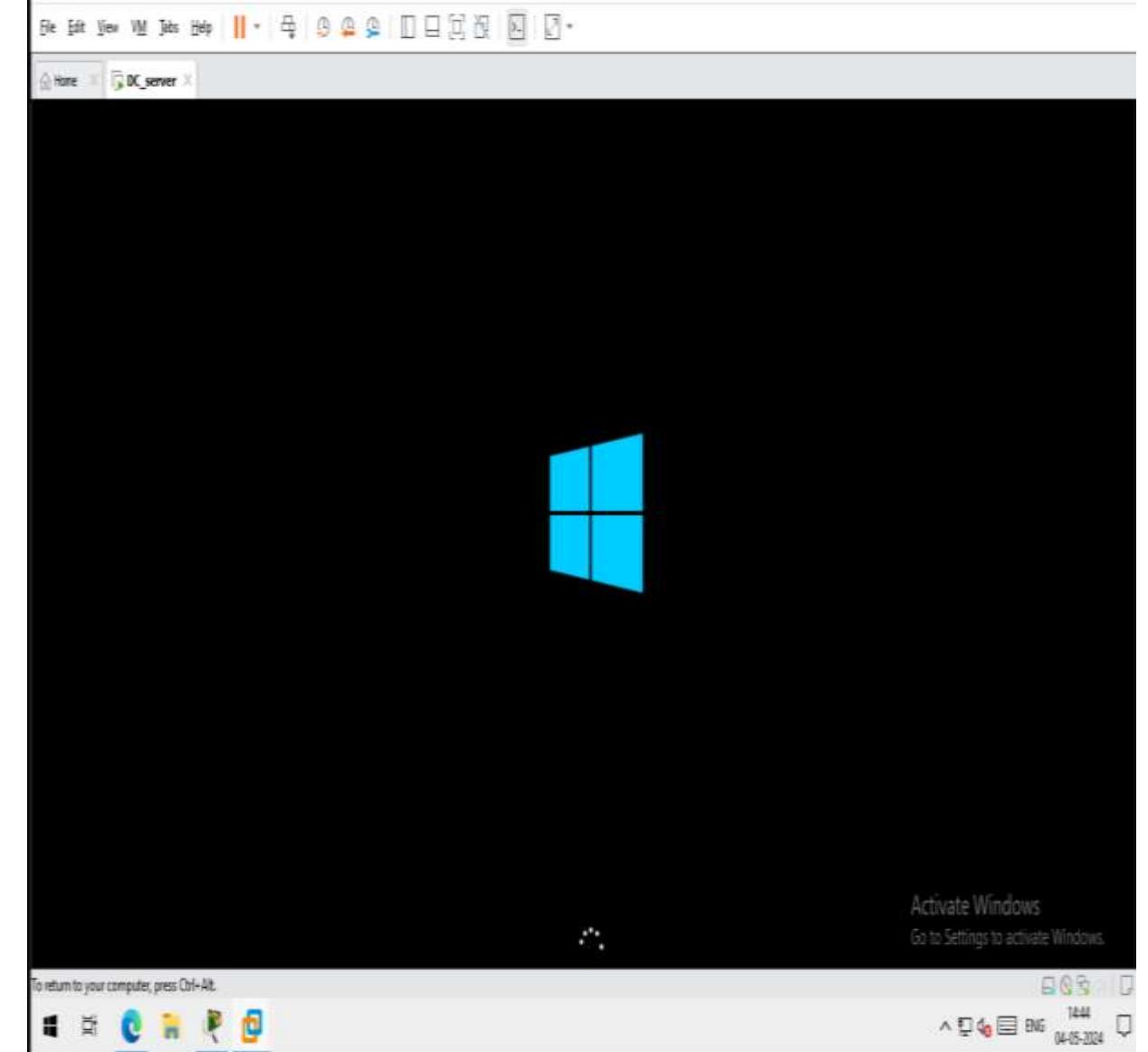
For more information about this setting, see Knowledge Base article 942564 (<http://go.microsoft.com/fwlink/?LinkId=104751>).

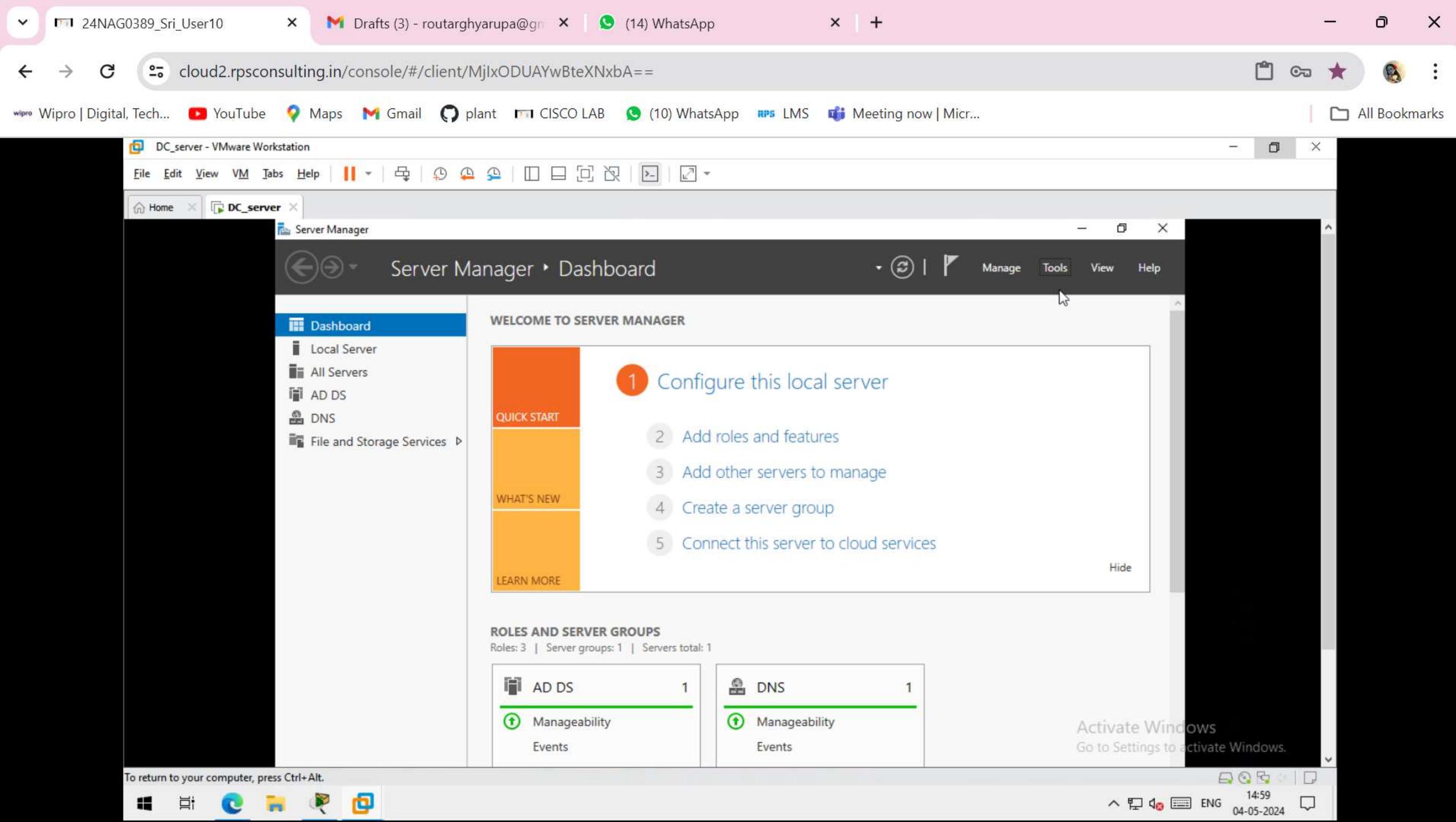
**A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found or it does not run Windows DNS server. If you are integrating with an existing DNS infrastructure, you should manually create a delegation to this DNS server in the parent zone to ensure reliable name resolution from outside the domain "Arghya.training". Otherwise, no action is required.**

If you click Install, the server automatically reboots at the end of the promotion operation.

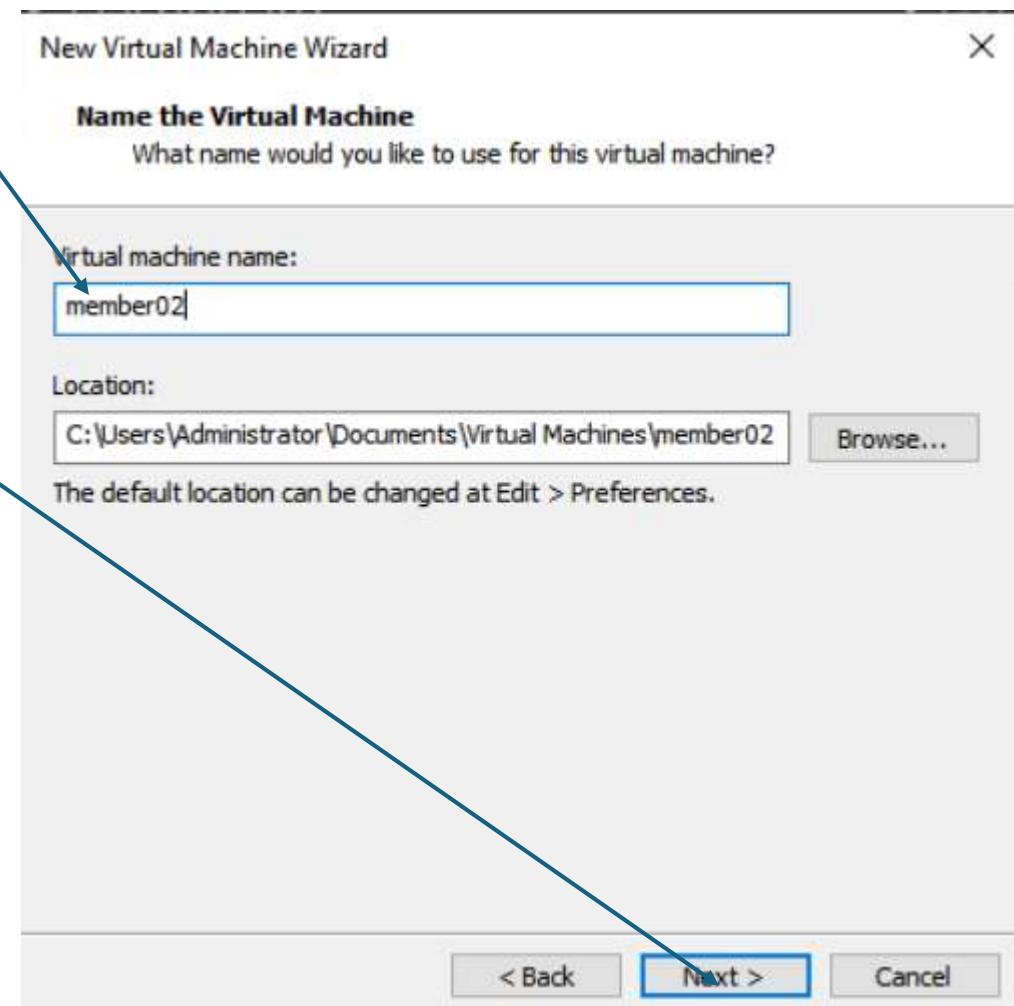
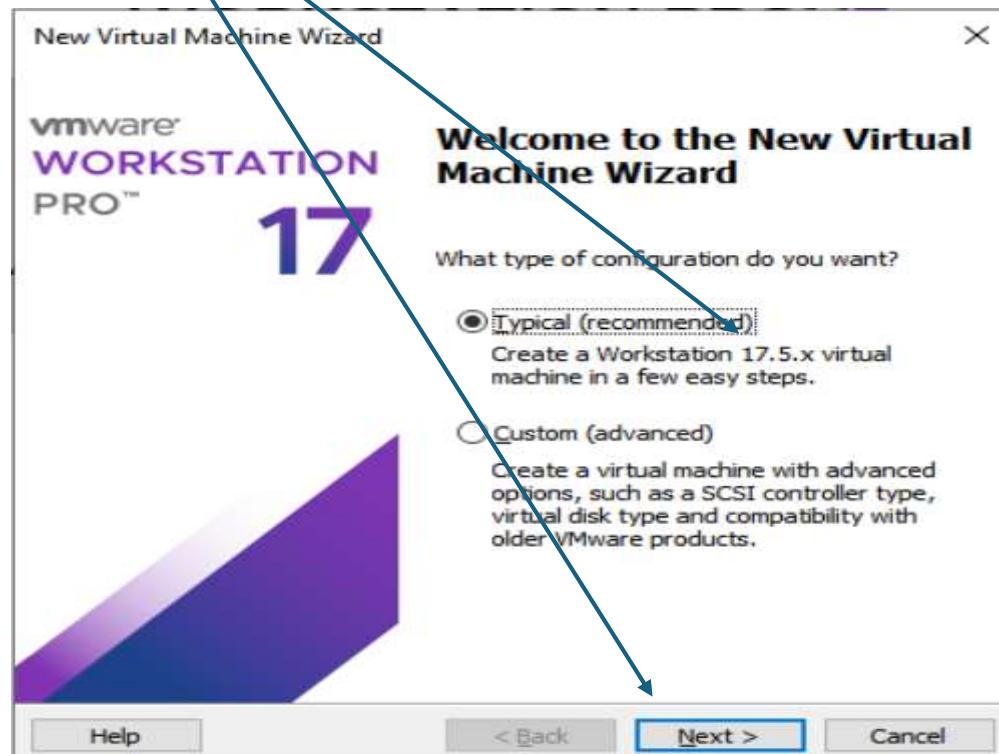
[More about prerequisites](#)

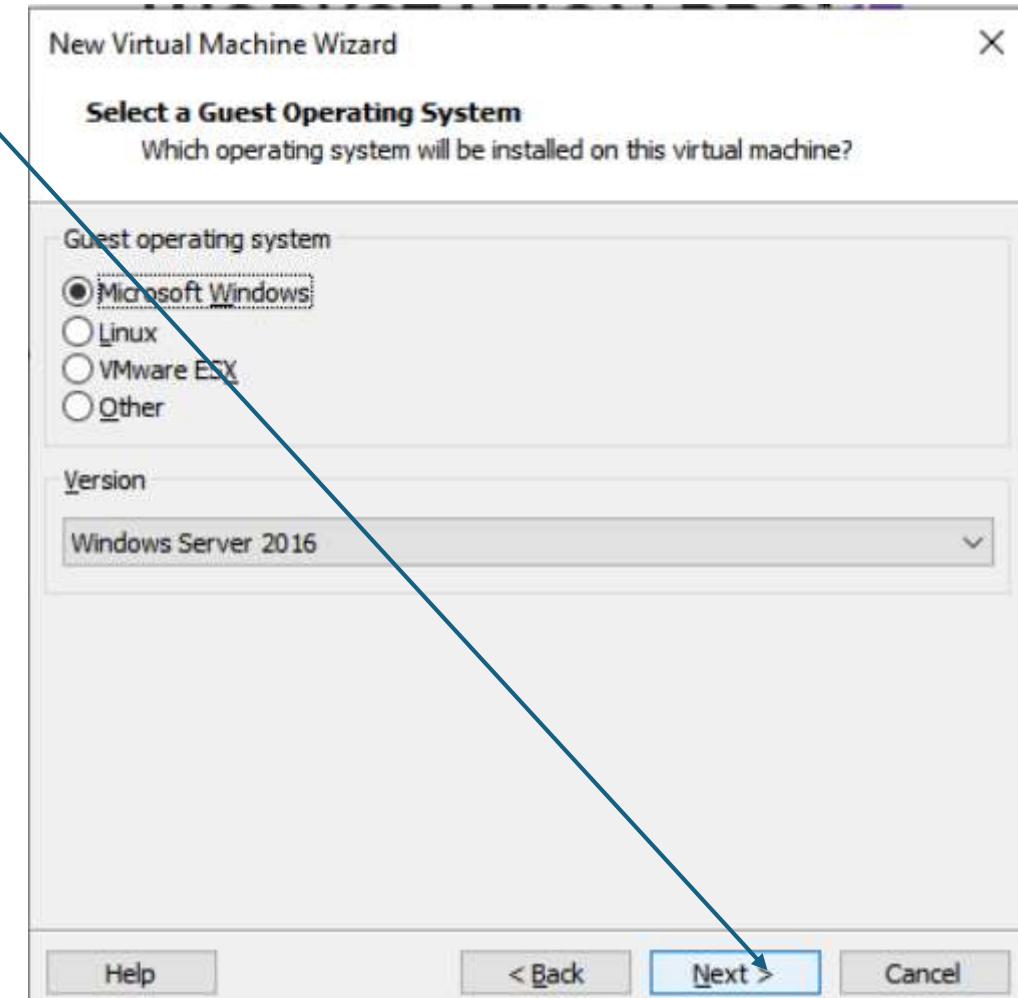
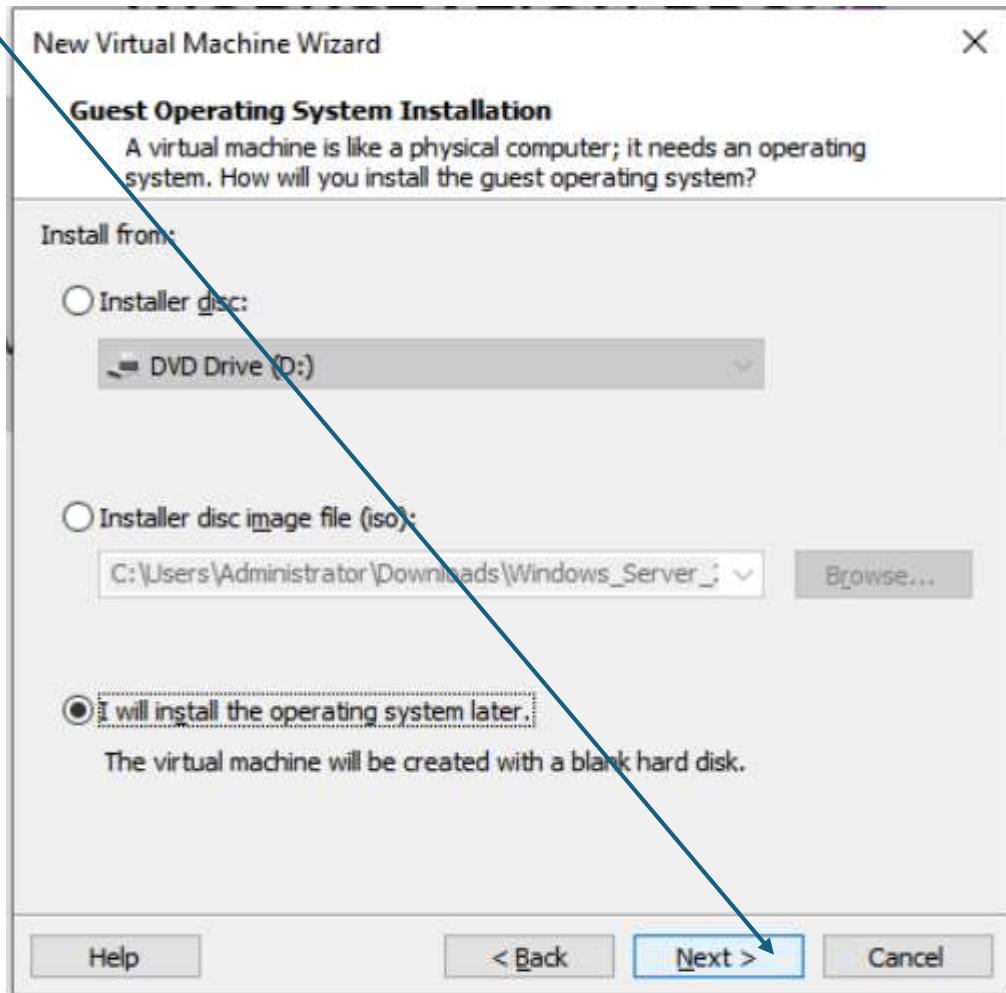
[< Previous](#) [Next >](#) [Install](#) [Cancel](#)

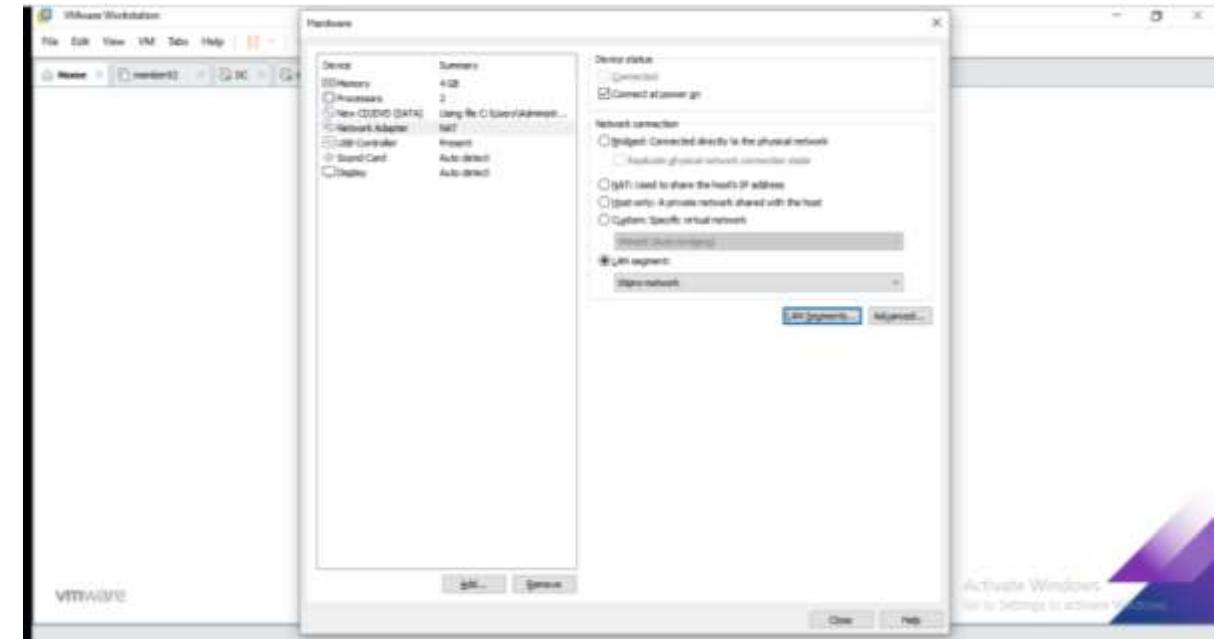
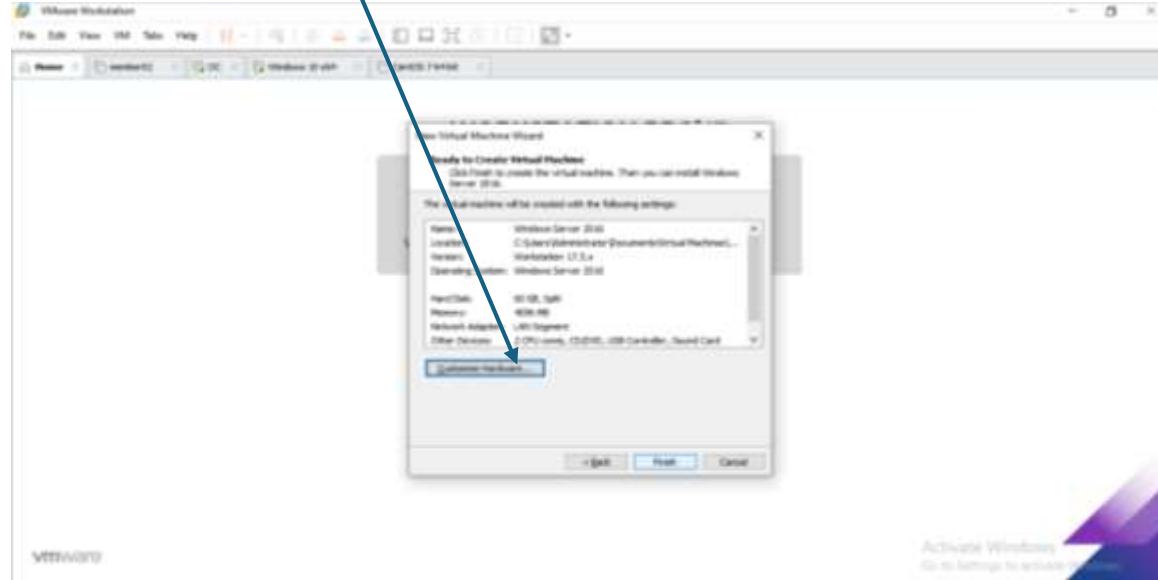


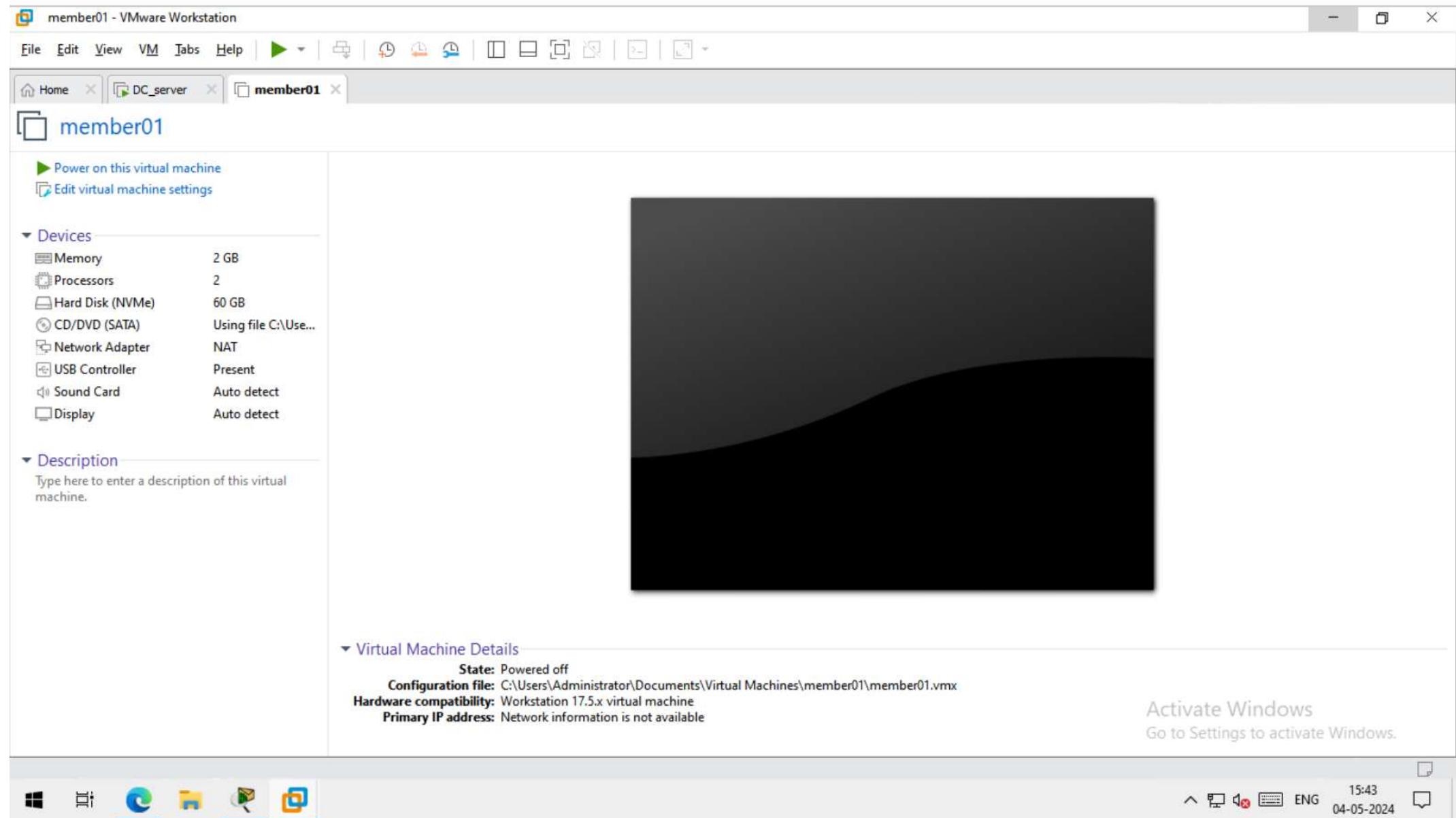


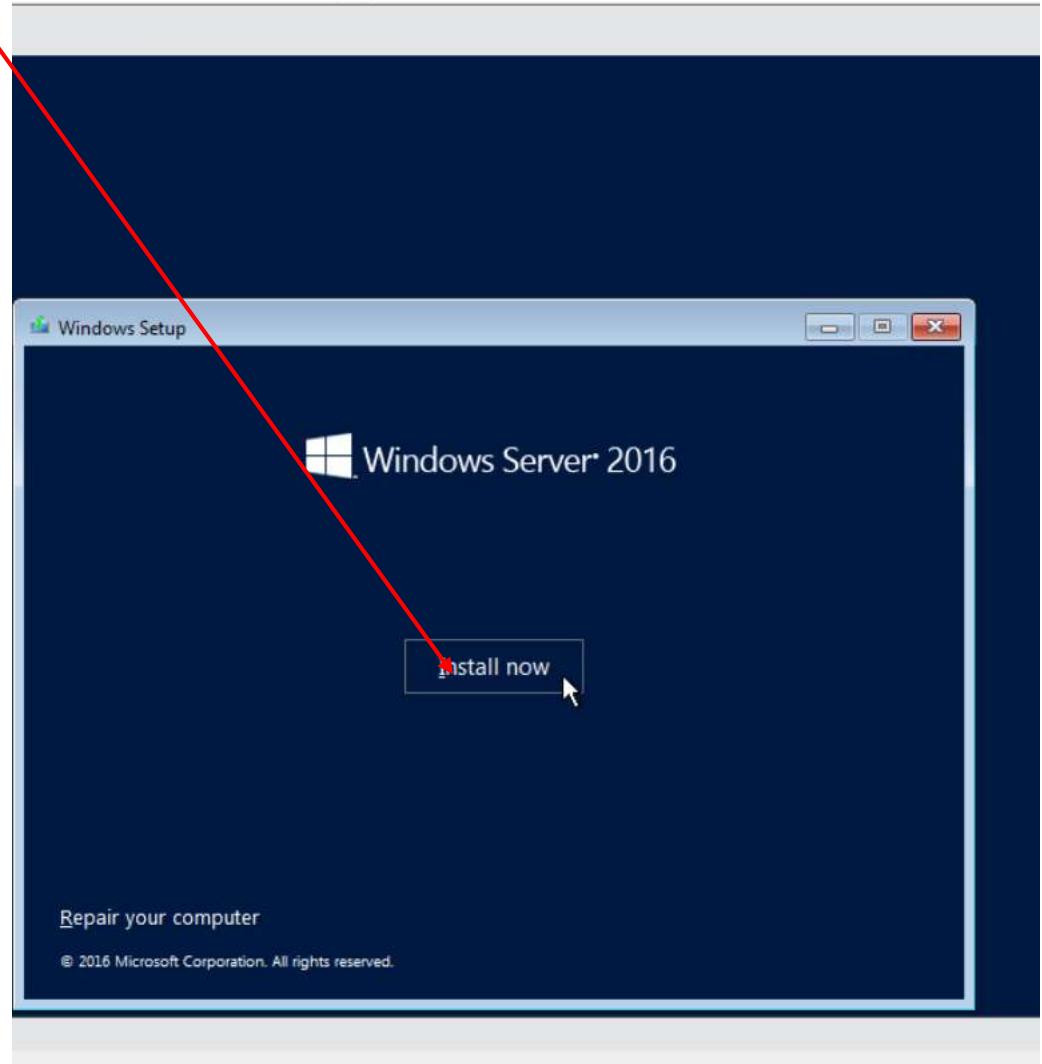
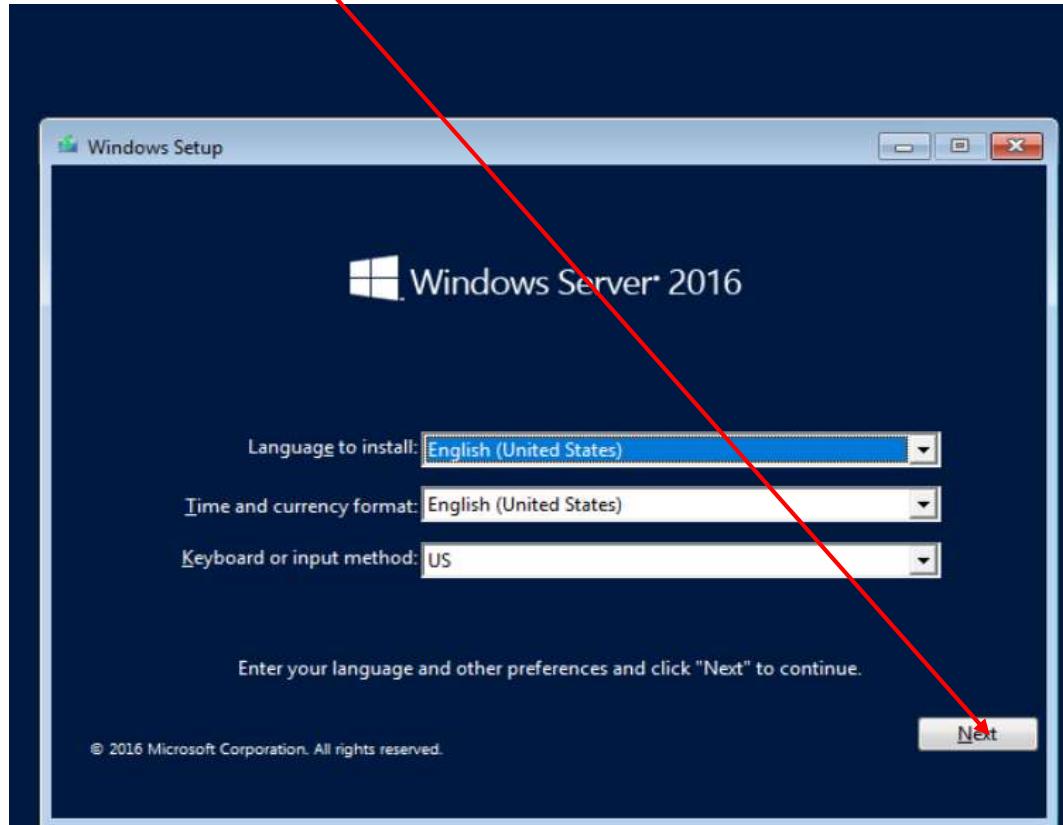
## **ADD A MEMBER MACHINE "MEMBER01"**

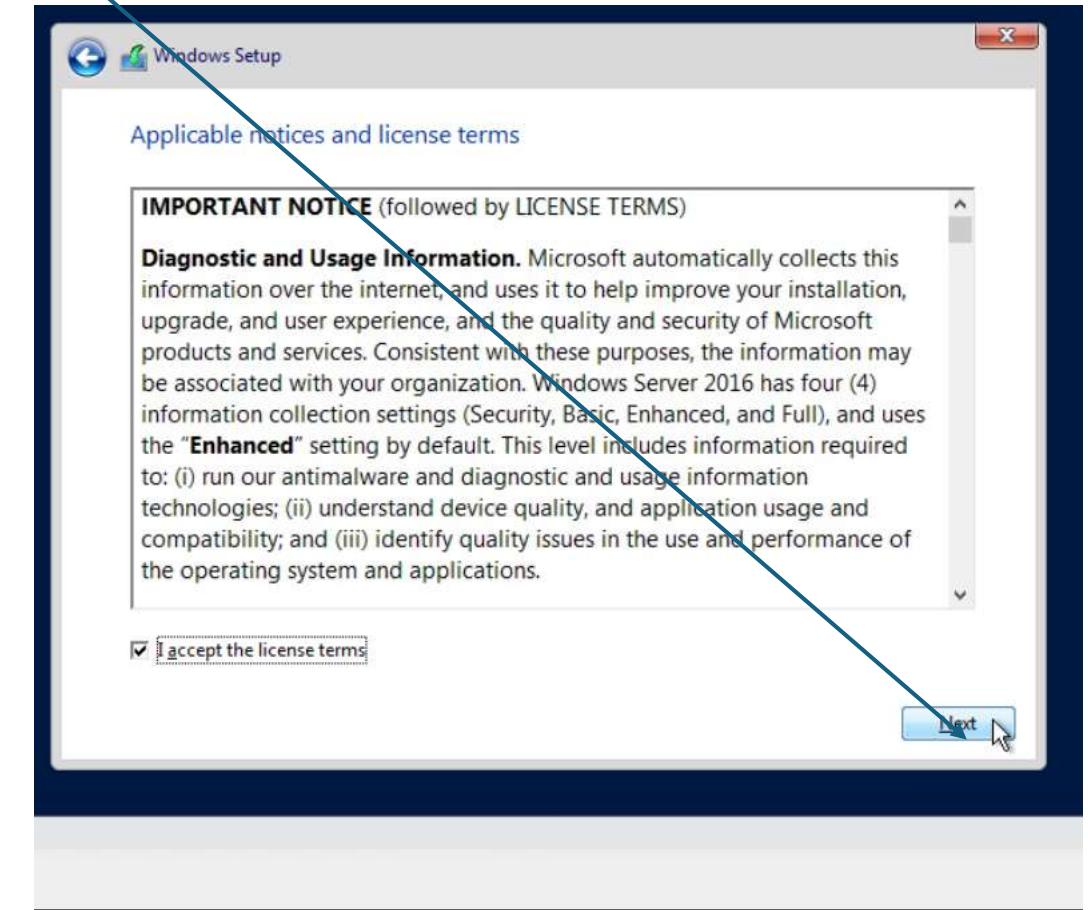
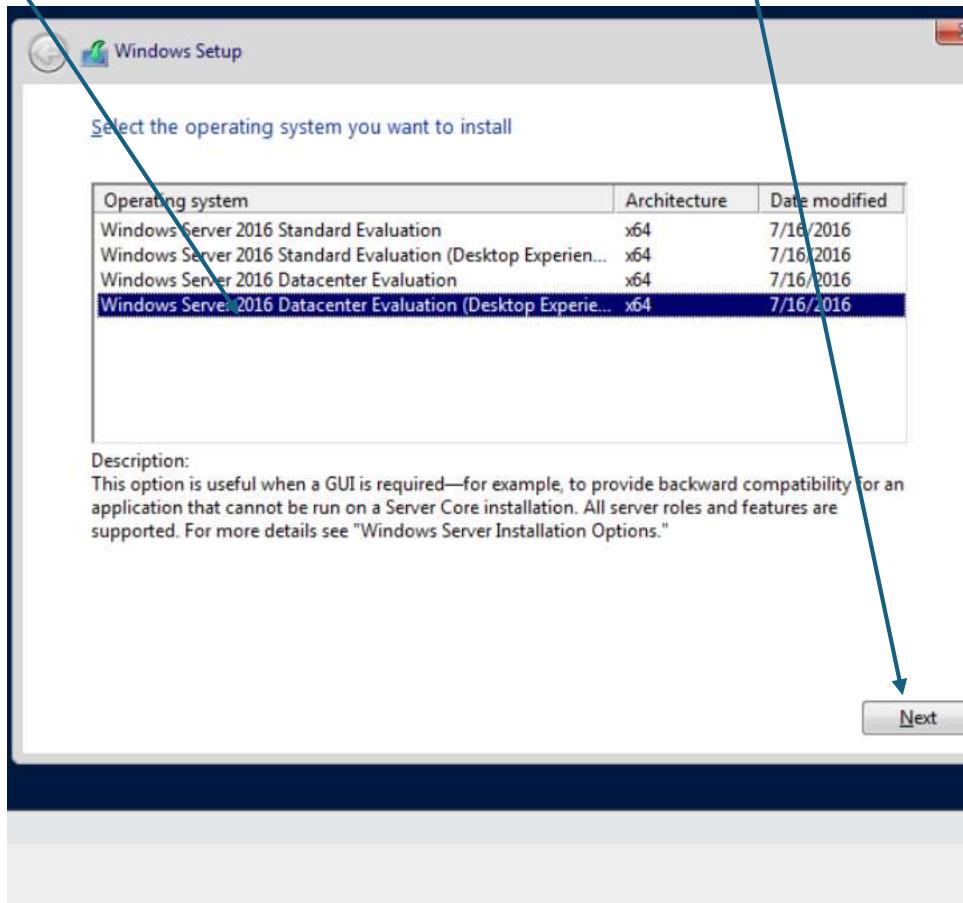




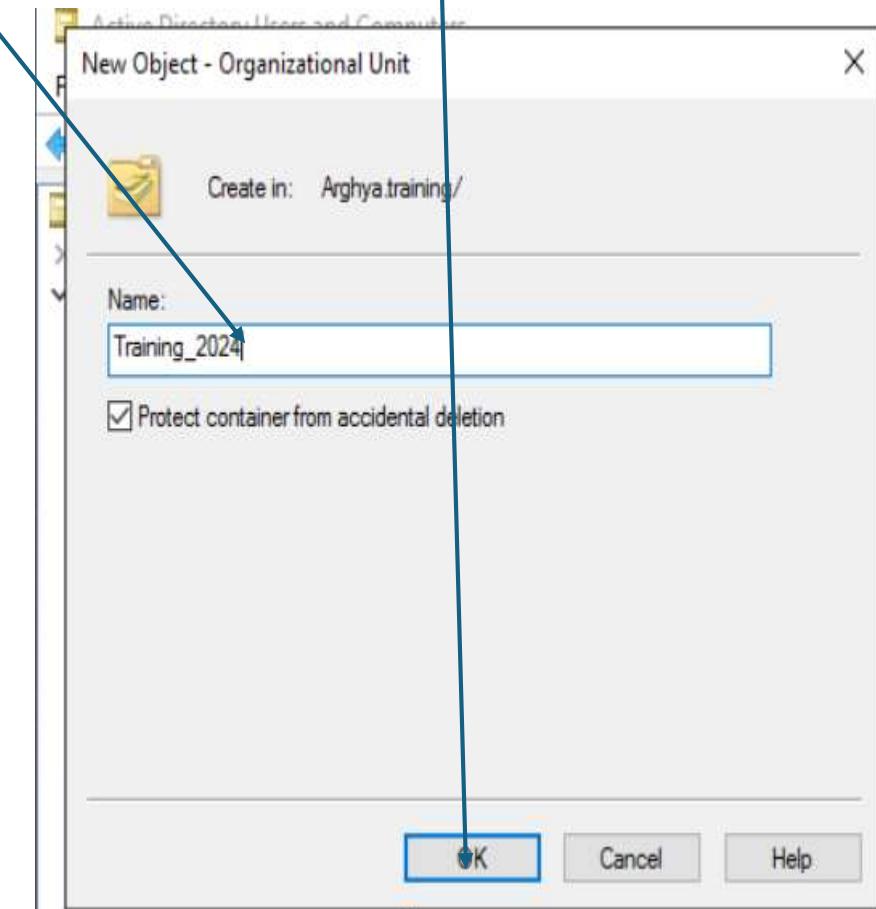
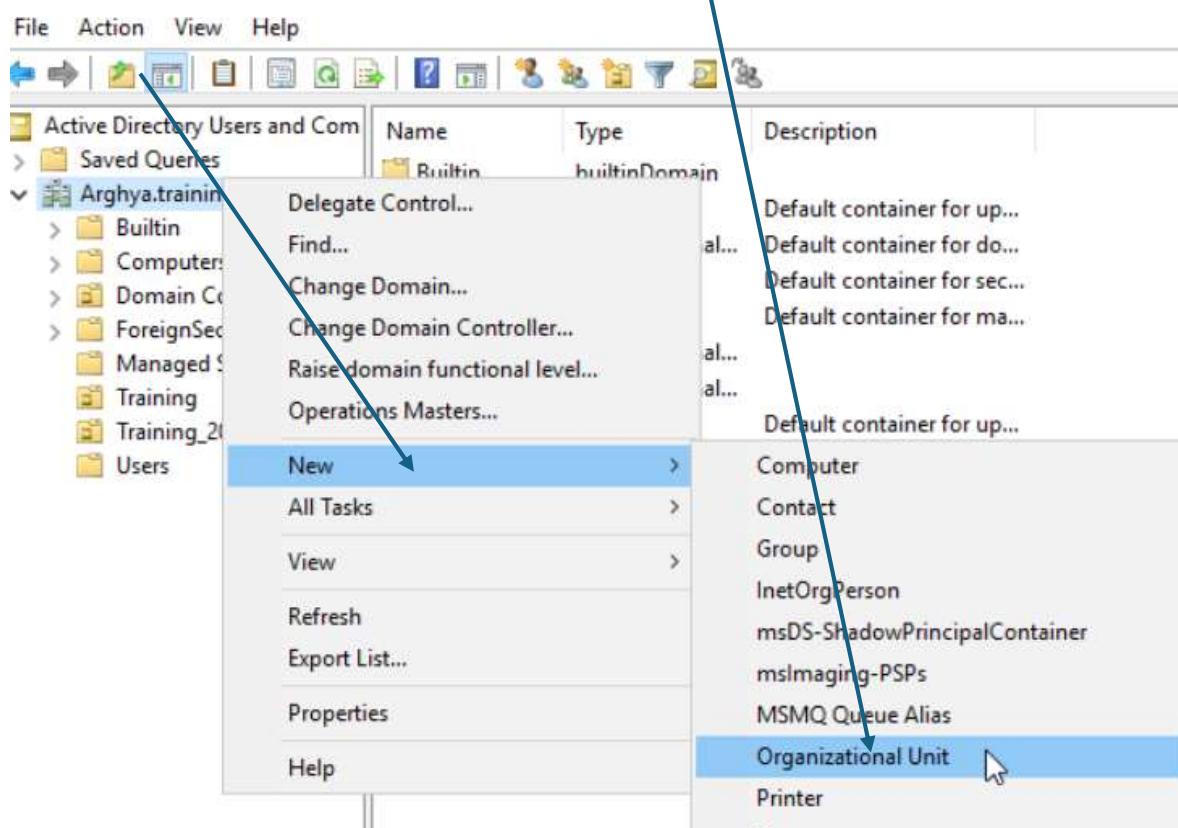








Add group on domain and create a 2 user  
in with the domain admin permission



Add group on domain and create a 2 user in with the domain admin permission

The screenshot shows two windows of the Active Directory Users and Computers management console.

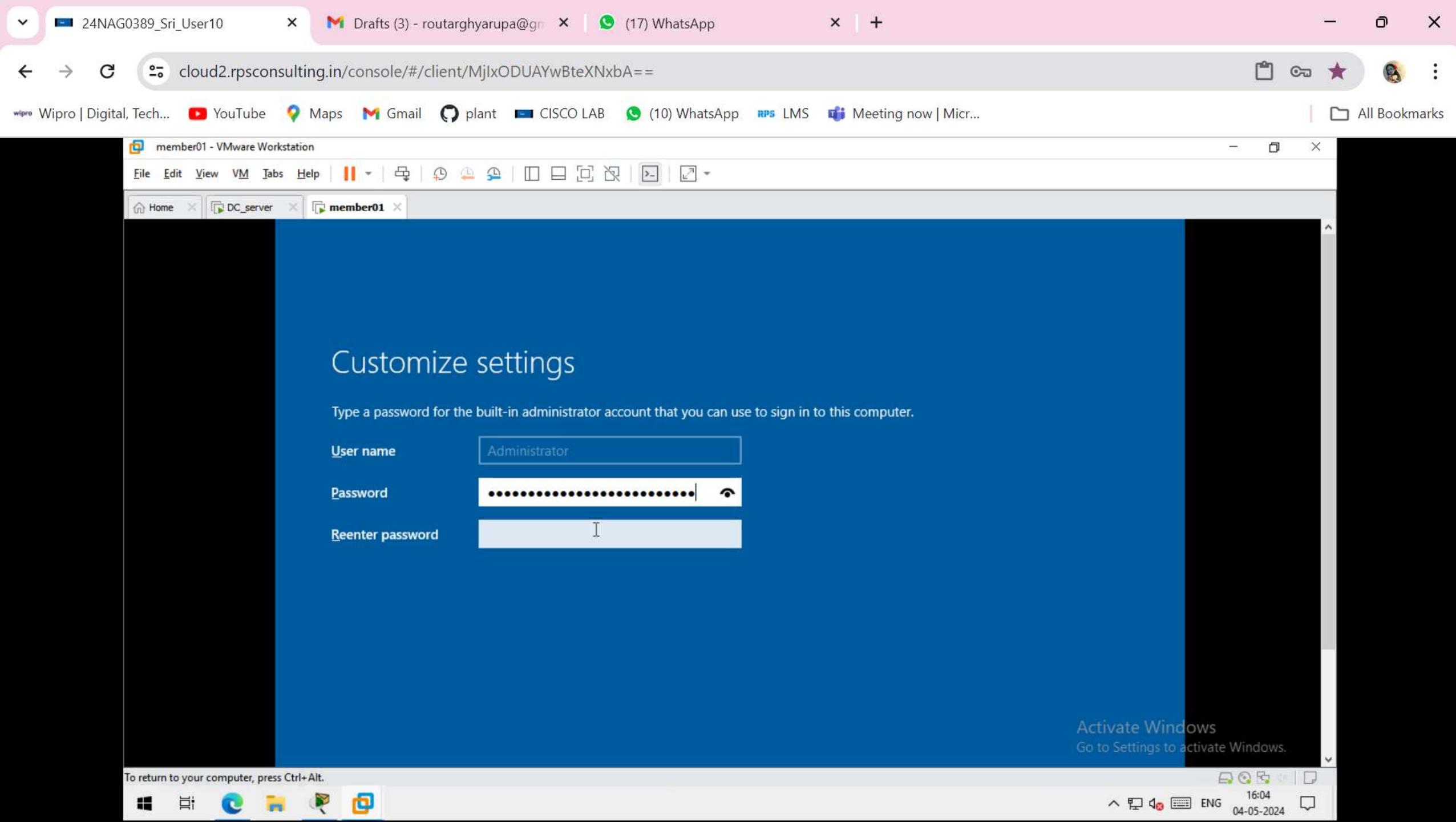
**Left Window: dadmins Properties**

- General Tab:** Shows the group type as "Security Group..." and its description as "Default container".
- Members Tab:** Displays the members of the group:
  - Name: Active Directory Domain Services Folder
  - Bawa (Arghya.training/Users)
  - Lipun (Arghya.training/Users)
- Buttons:** Add..., Remove, OK, Cancel, Apply.

**Right Window: Active Directory Users and Computers**

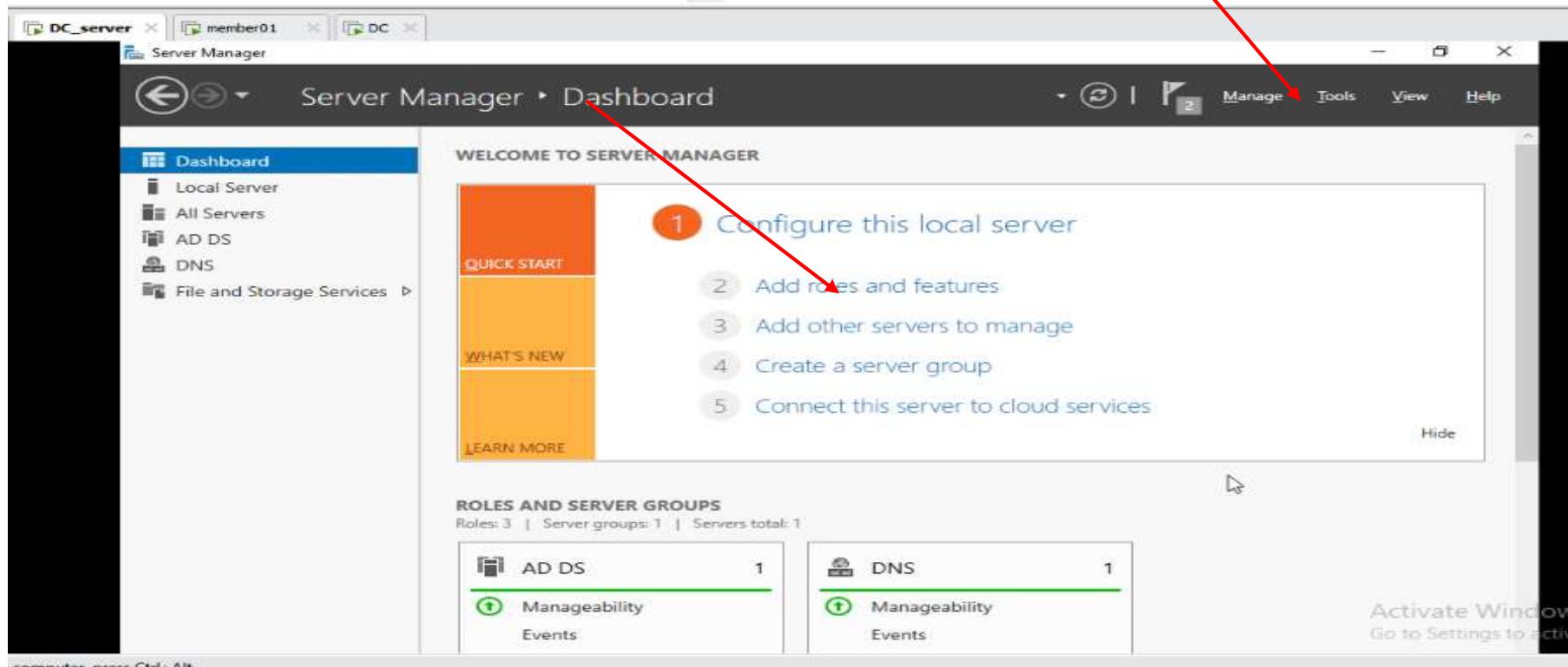
- Navigation pane:** Shows the hierarchy: Active Directory Users and Computers > Saved Queries > Arghya.training.
- Table View:** Lists objects in the Arghya.training container.

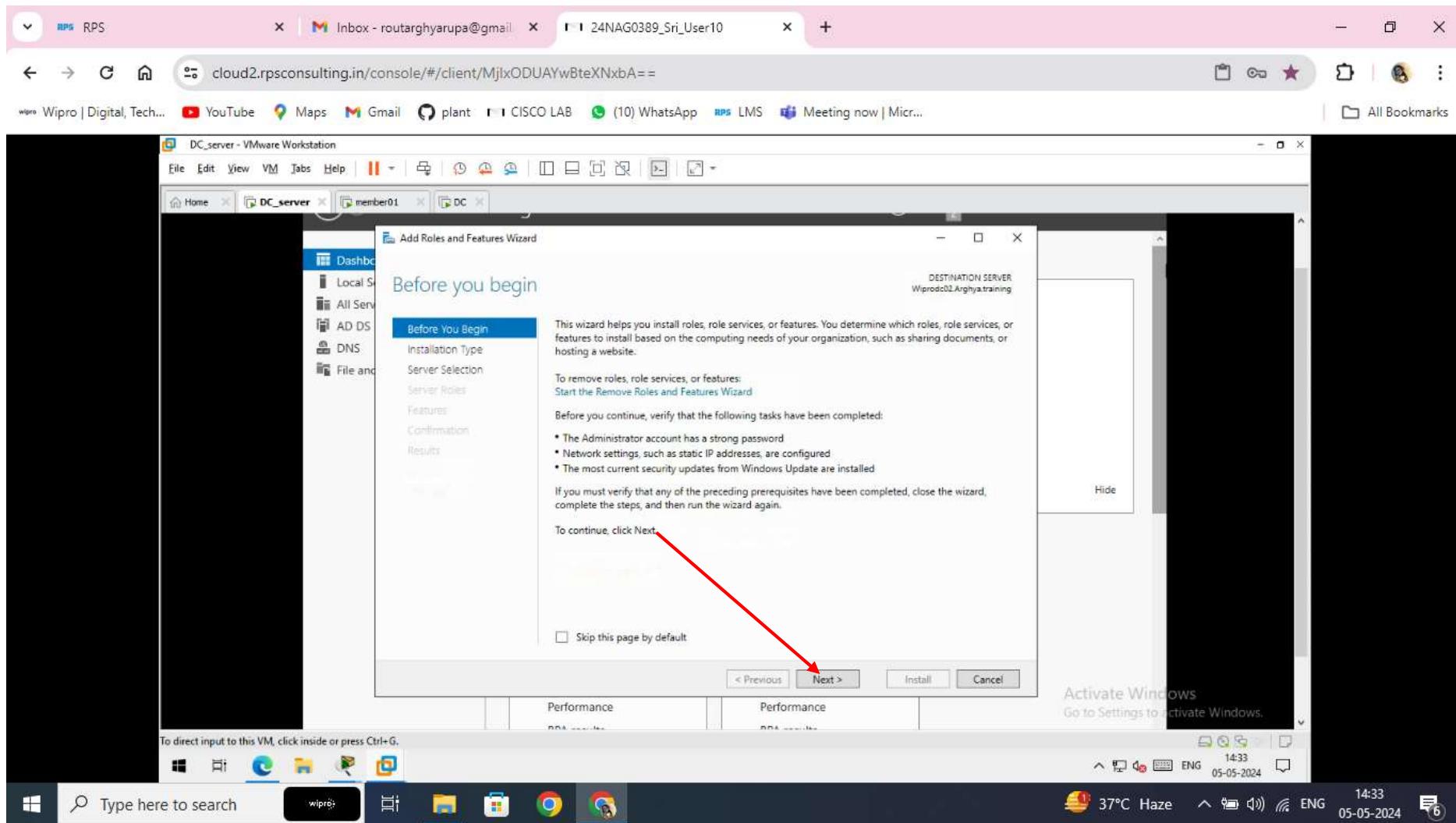
Name	Type	Description
Builtin	builtinDomain	Default container
Computers	Container	Default container
Domain Controllers	Organizational...	Default container
ForeignSecurityPrincipals	Container	Default container
Managed Service Accounts	Container	Default container
Training	Organizational...	Default container
Training_2024	Organizational...	Default container
Users	Container	Default container
<b>dadmins</b>	Security Group...	Security Group...

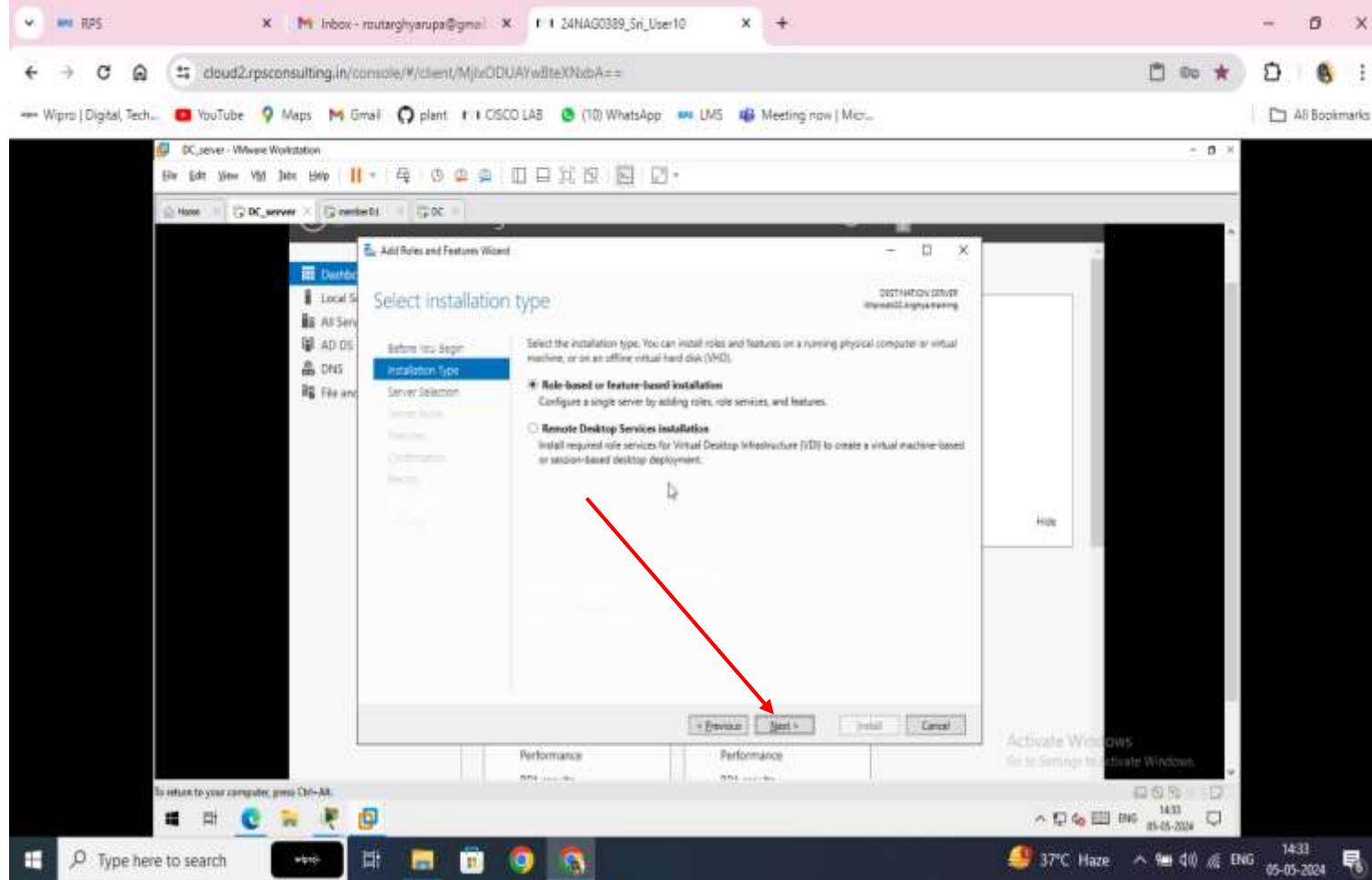


## NFS SHARED FOLDER

Go to the Manage icon showing on the top  
Then click on the Add roles and features.

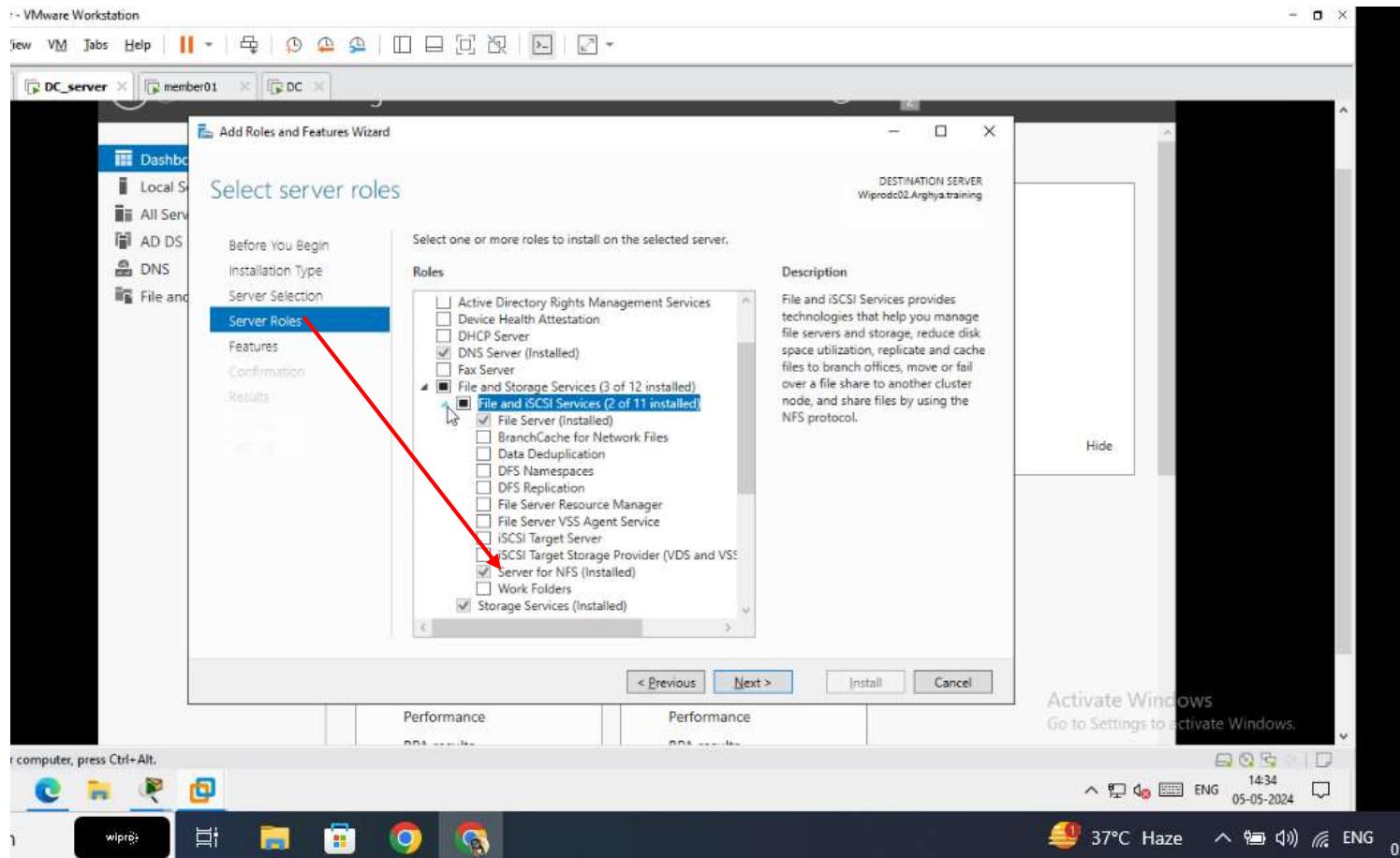


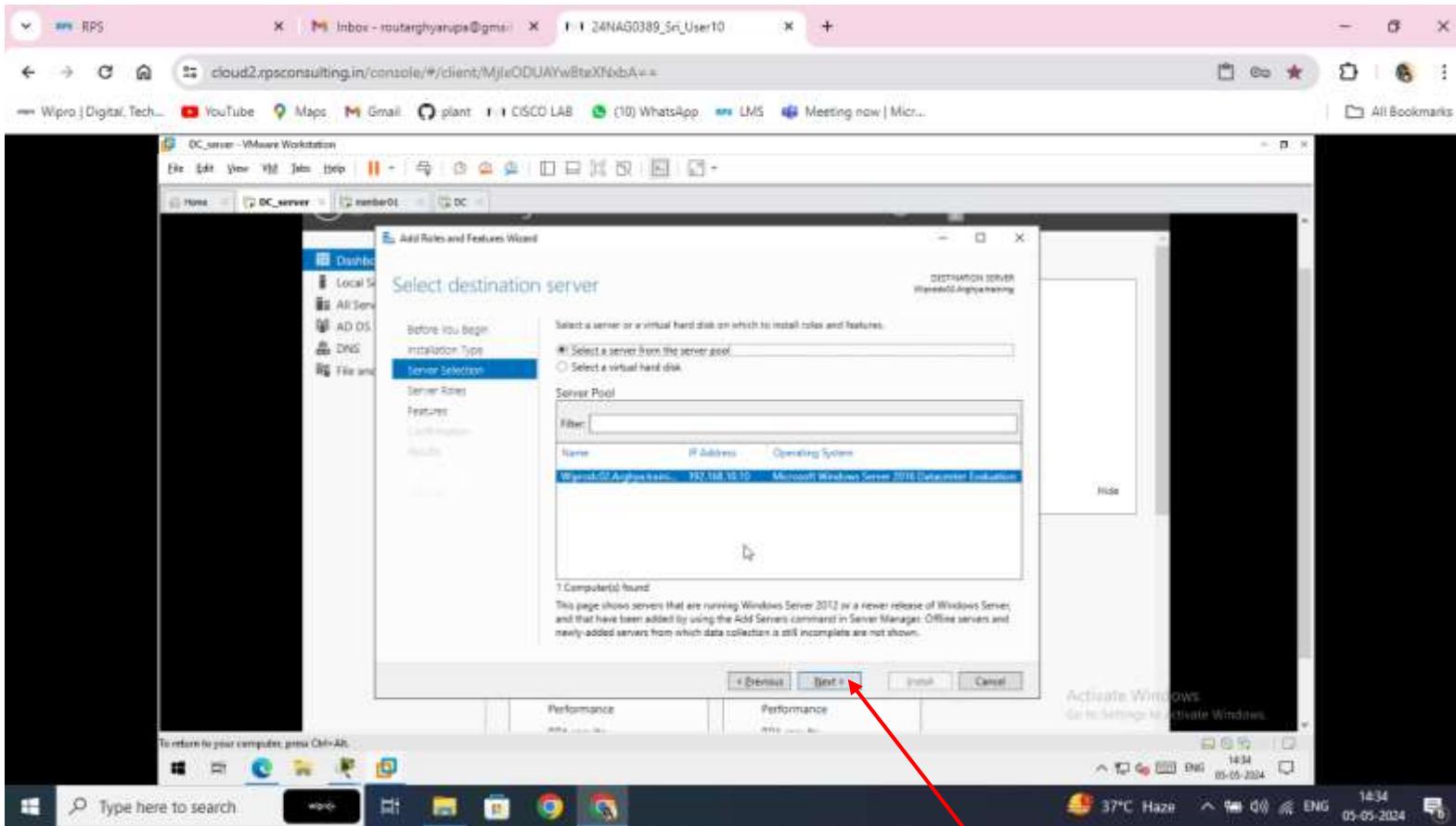


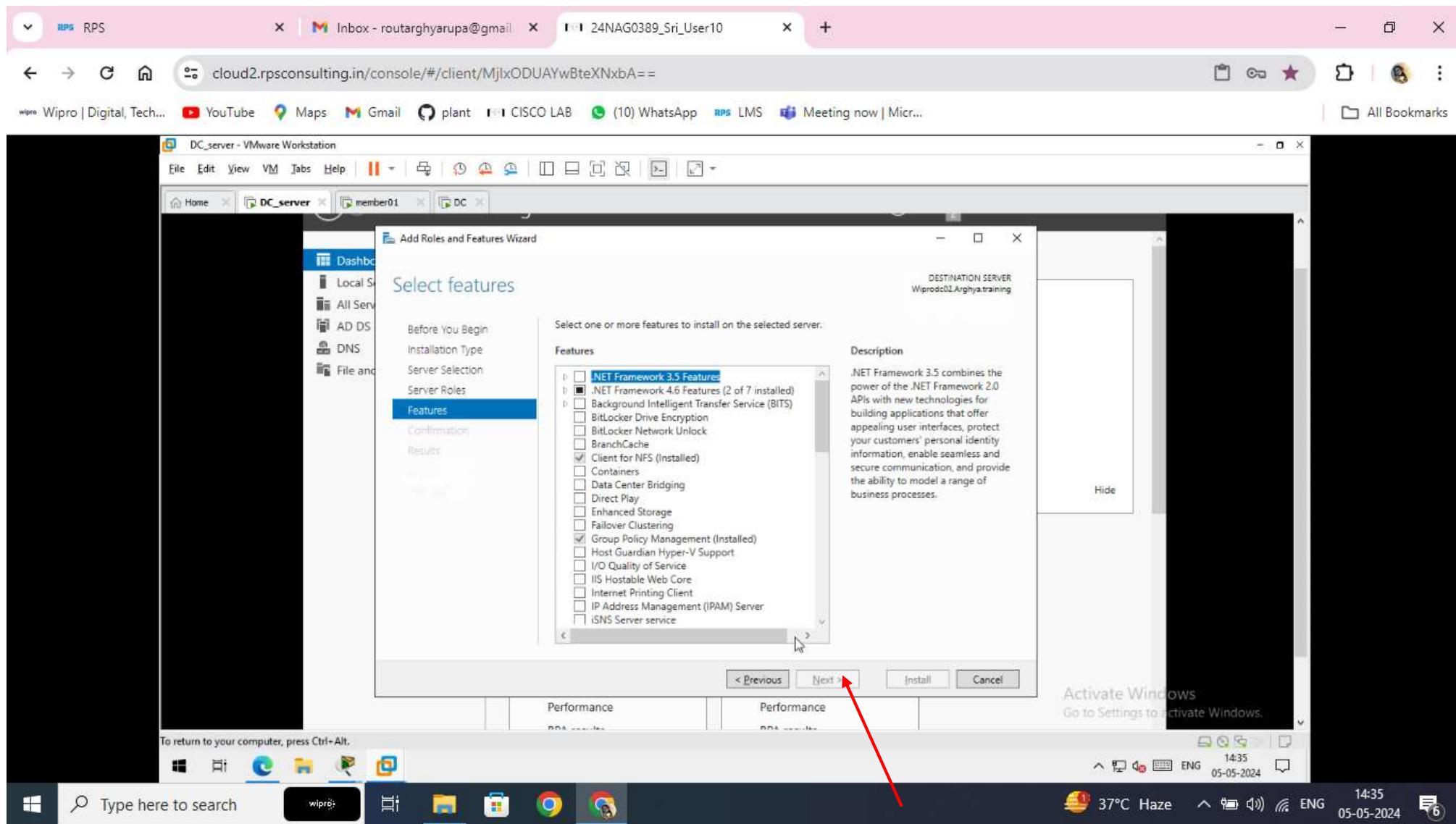


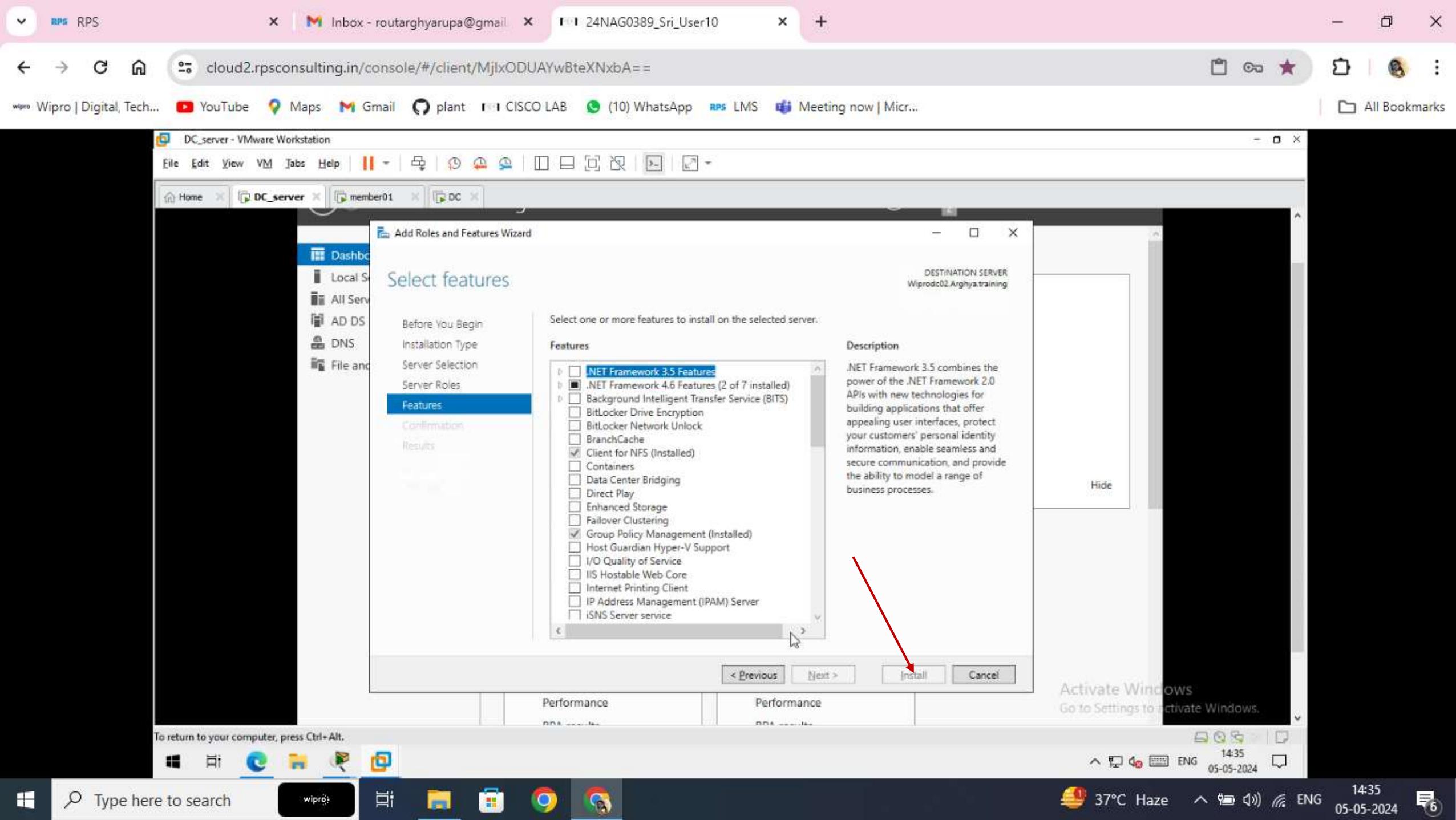
Here we can select some additional roles.

Click on the server for NFS and then hit the next button.

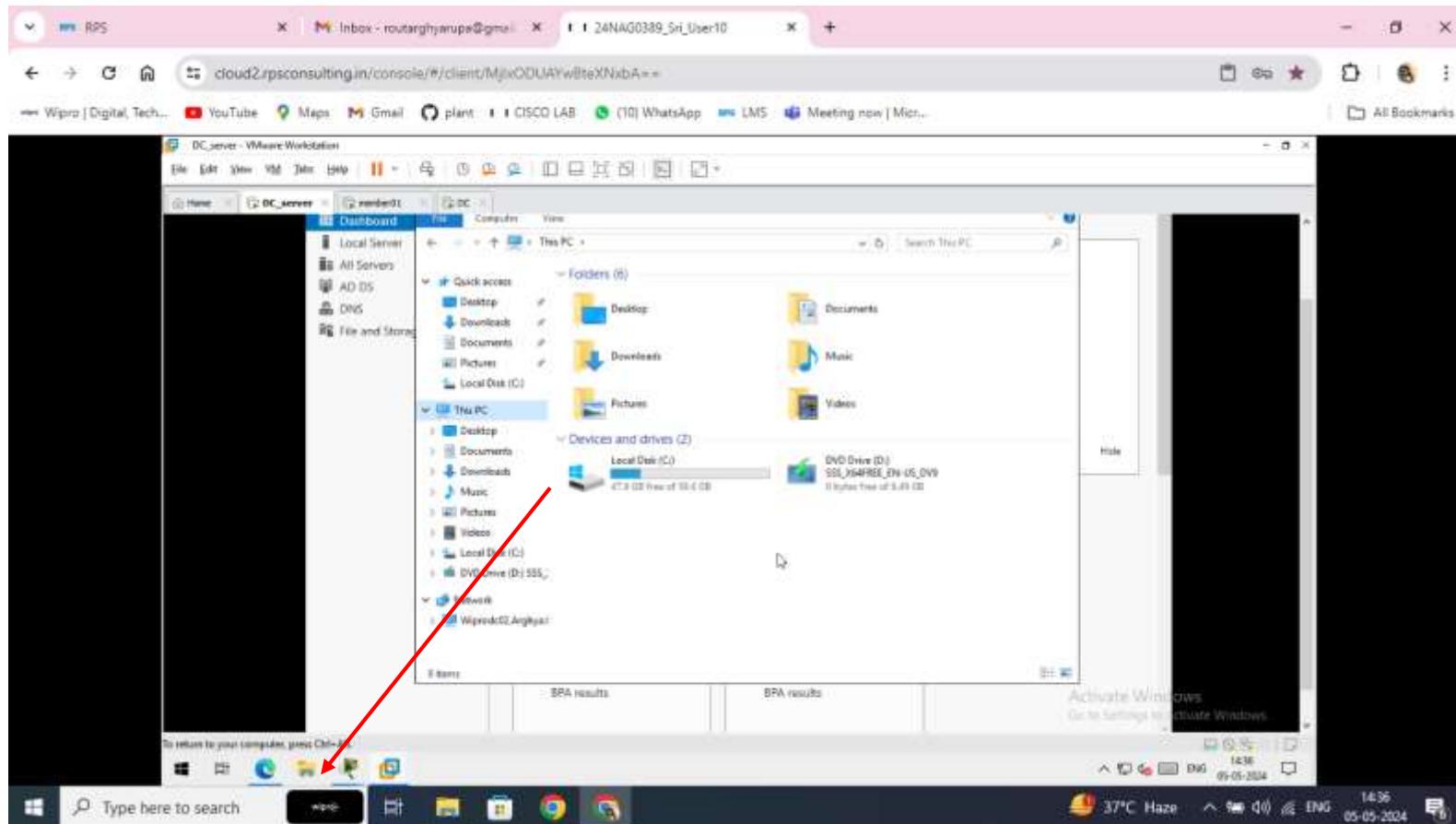




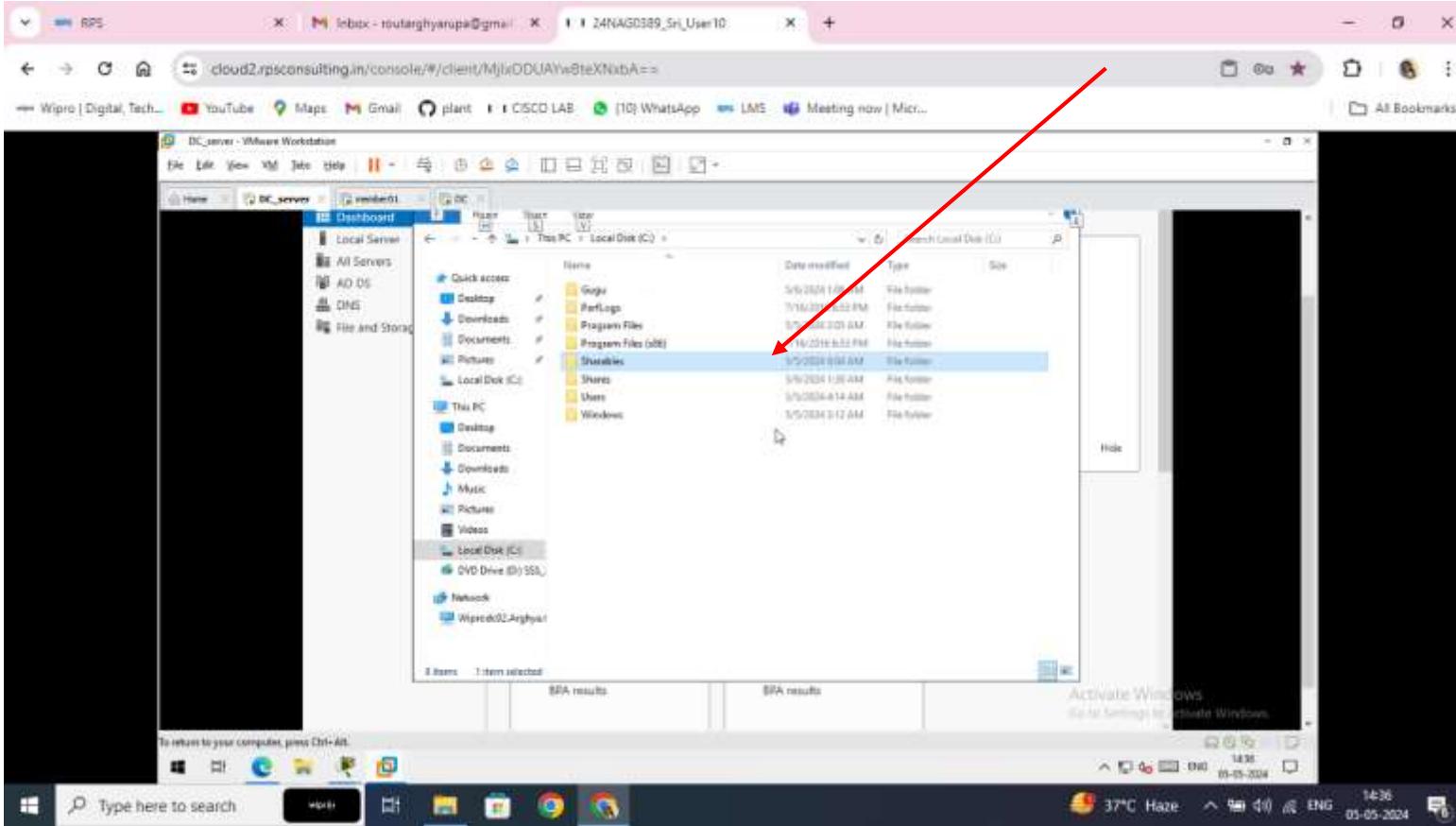




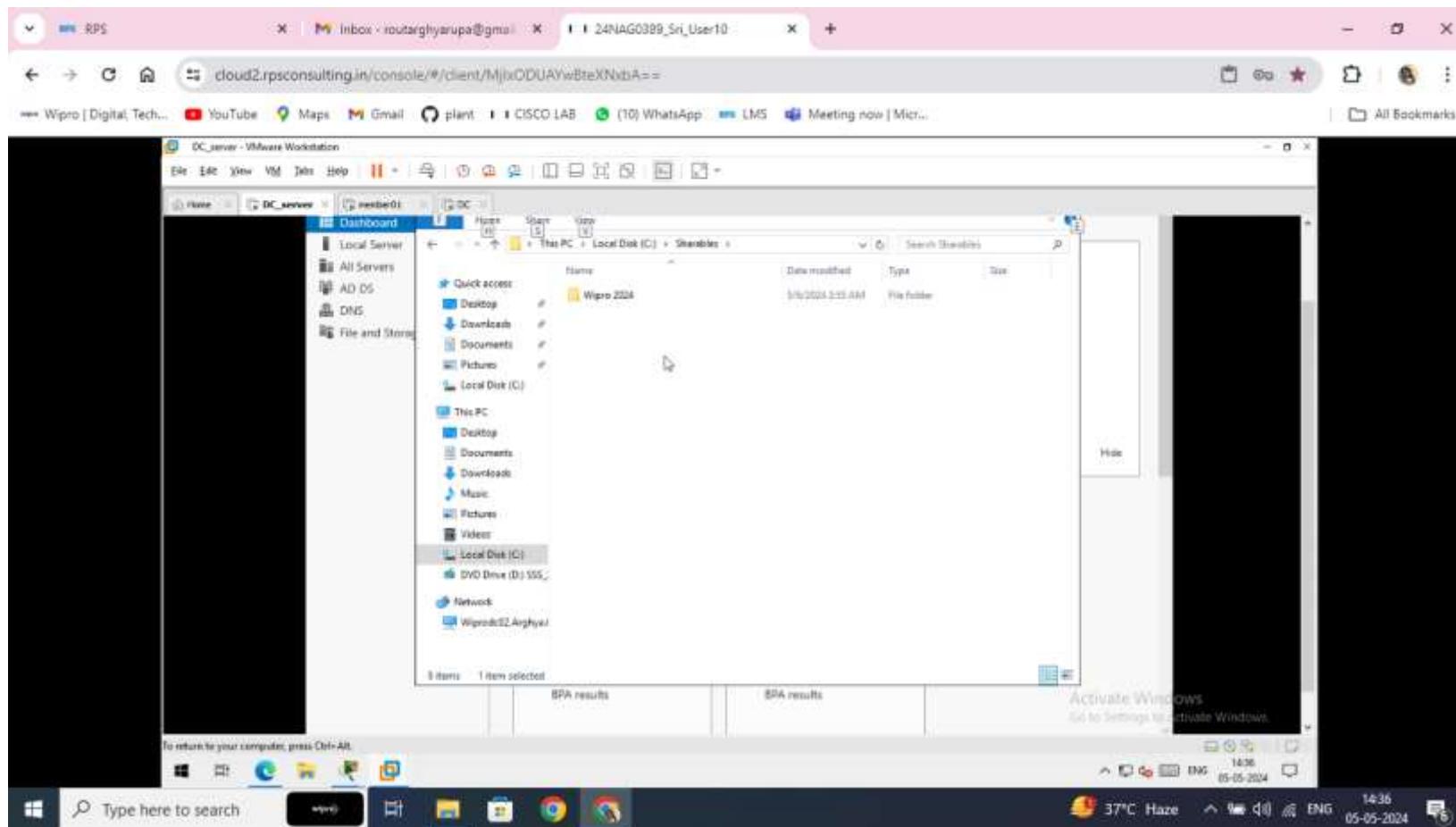
Go to the file explorer.

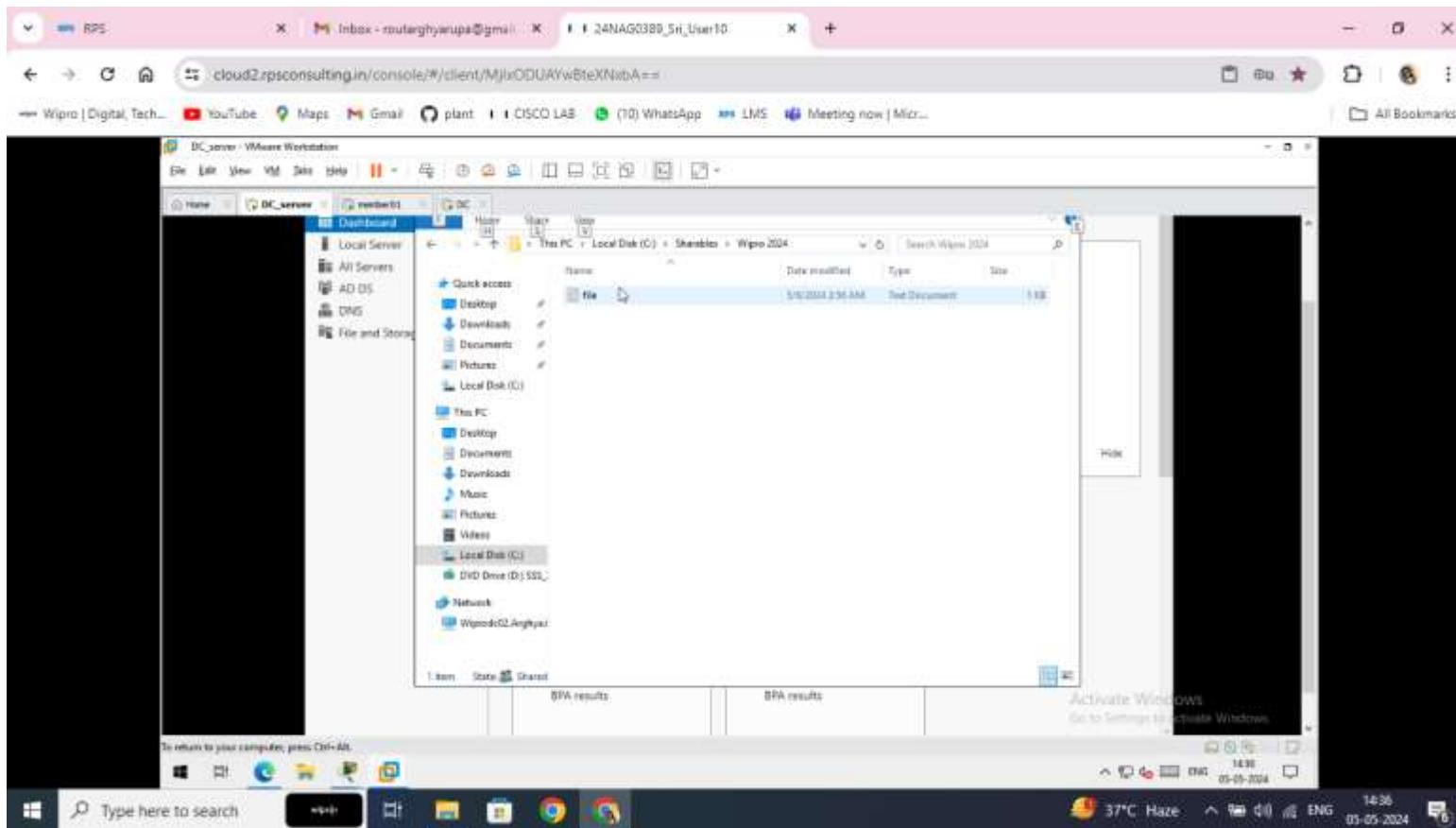


Create a new folder named as sharables.

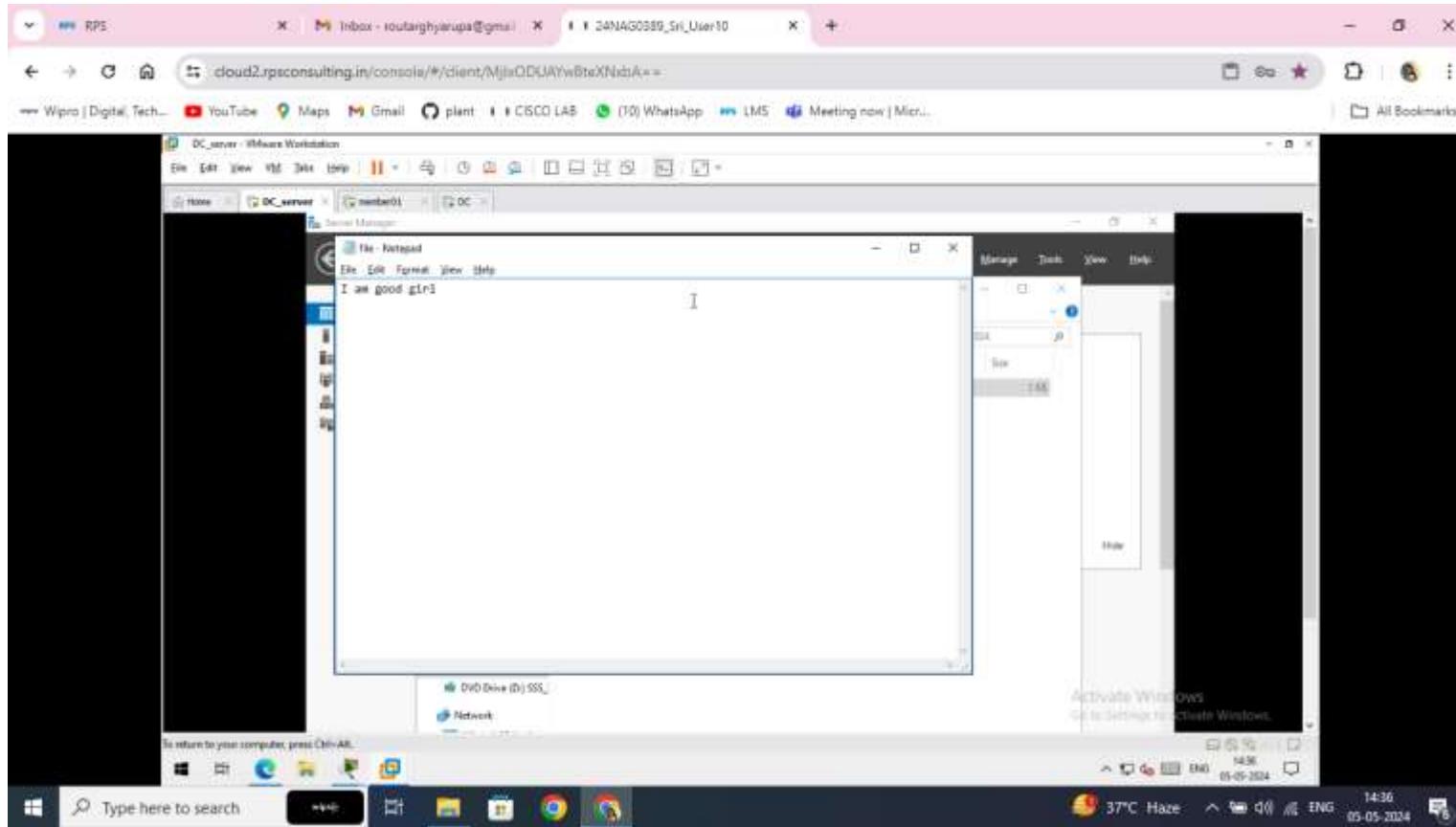


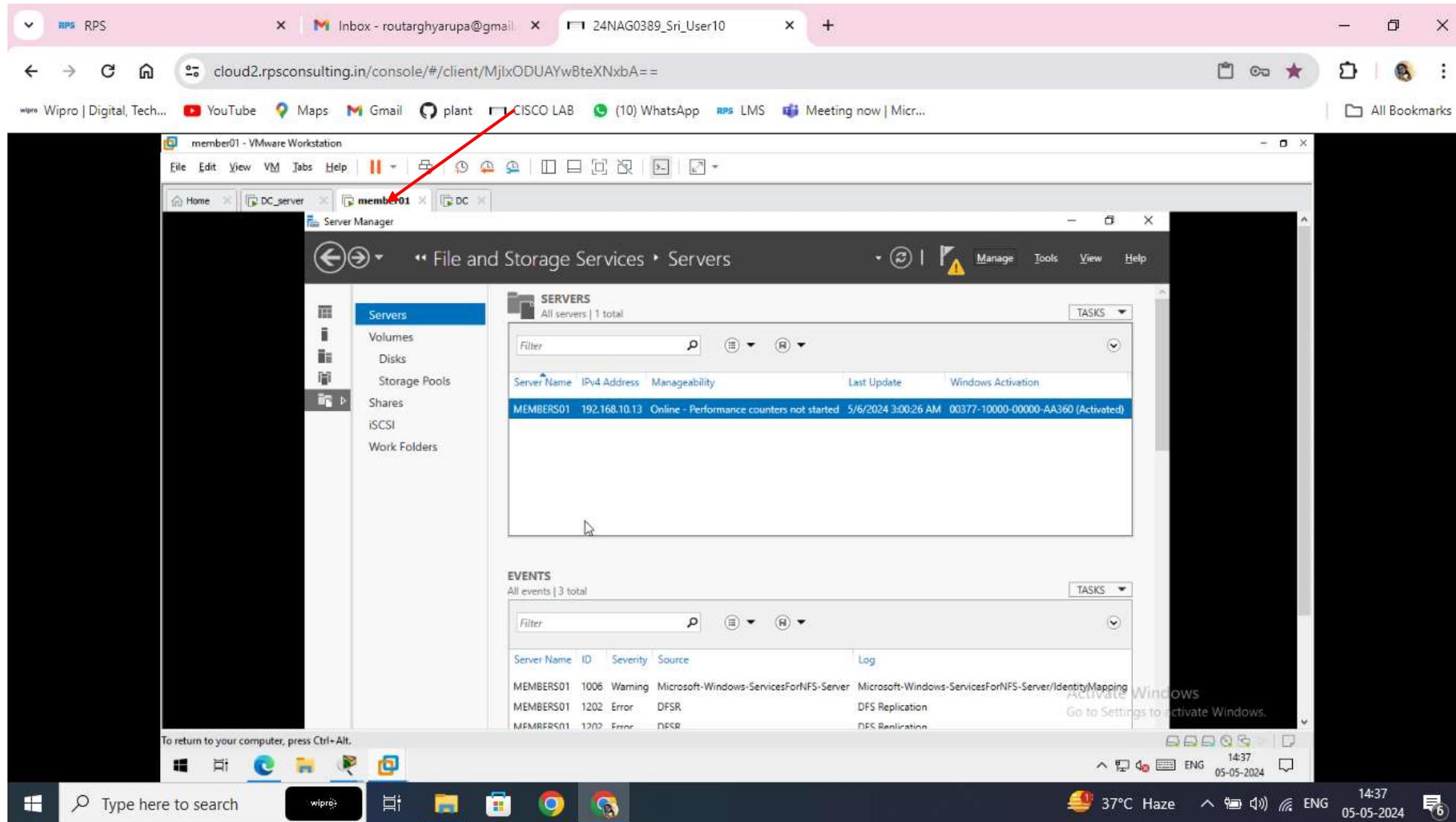
Here we can create a file as Wipro\_2024 for testing purpose.

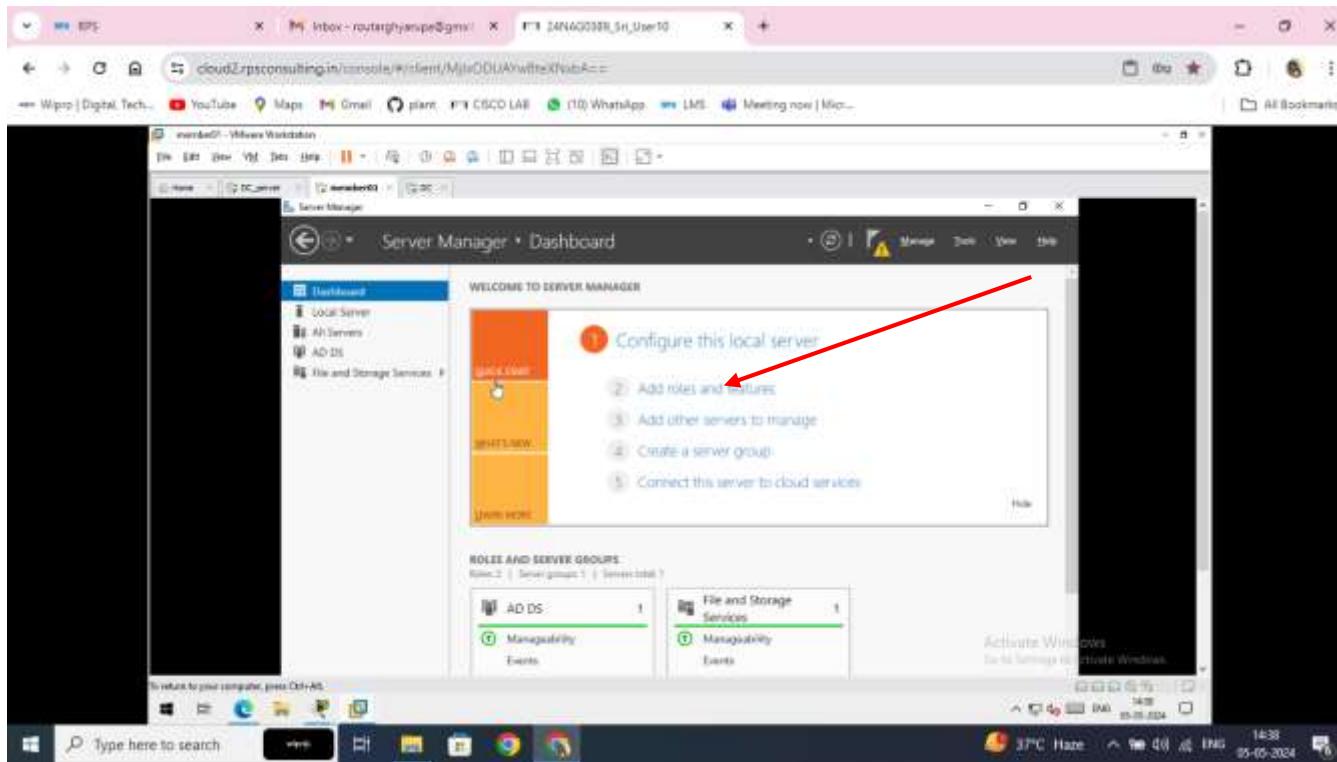


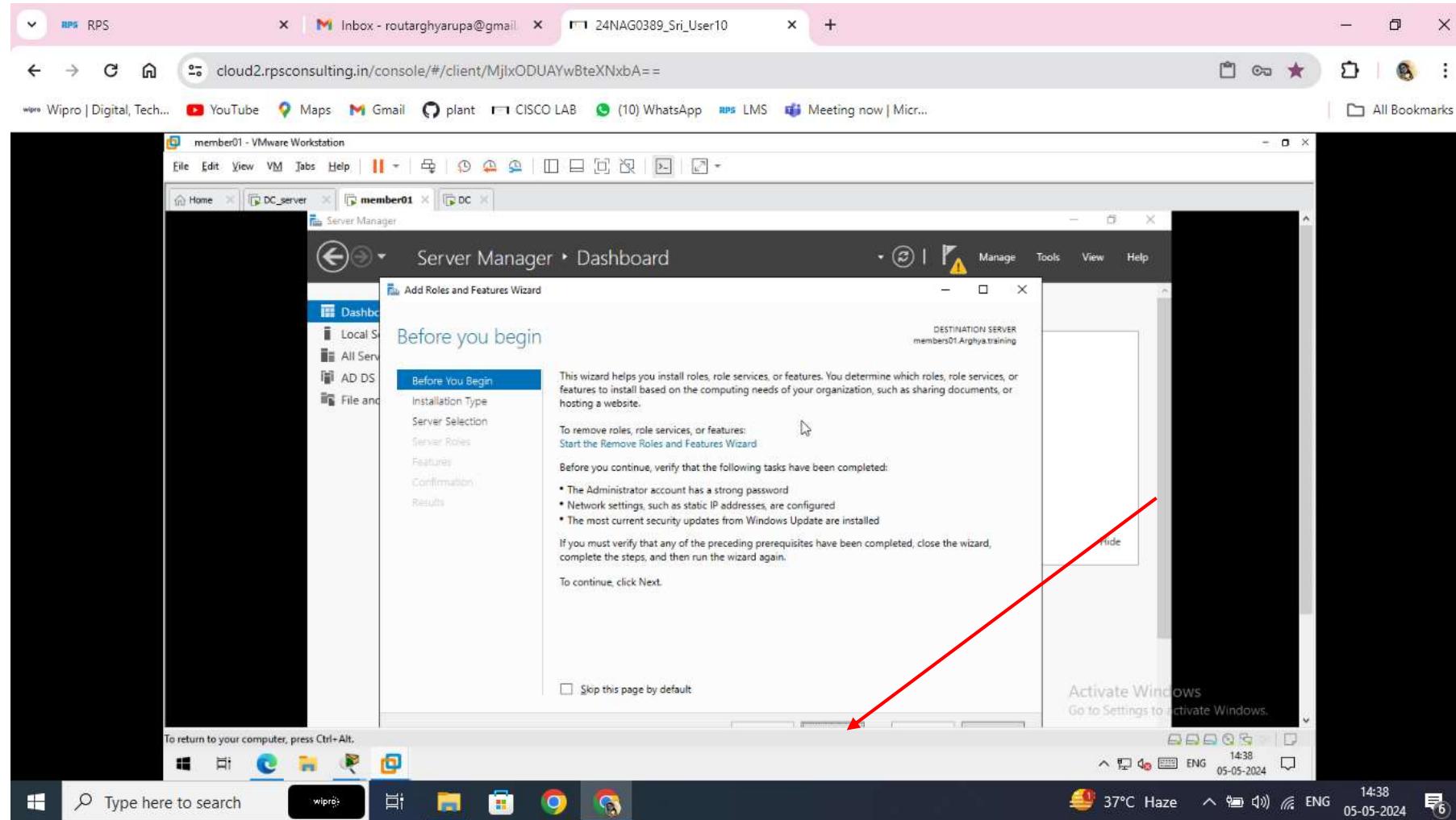


Here we can written some line to show, whether it is reflecting in the server or not.

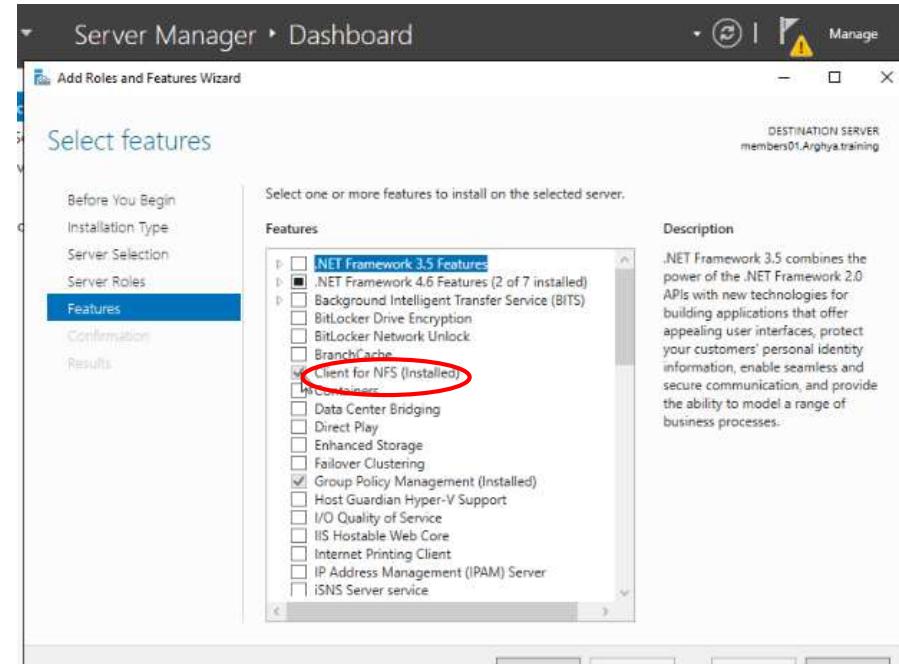


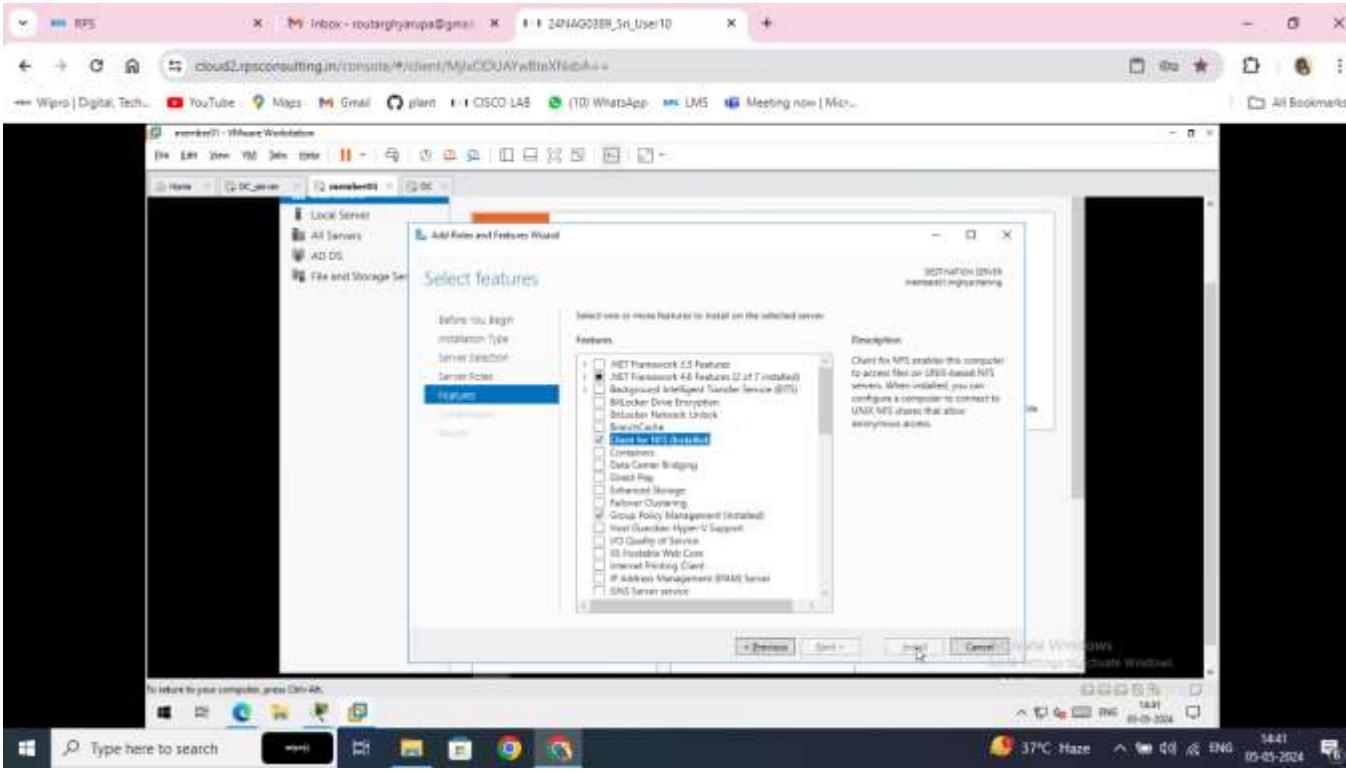




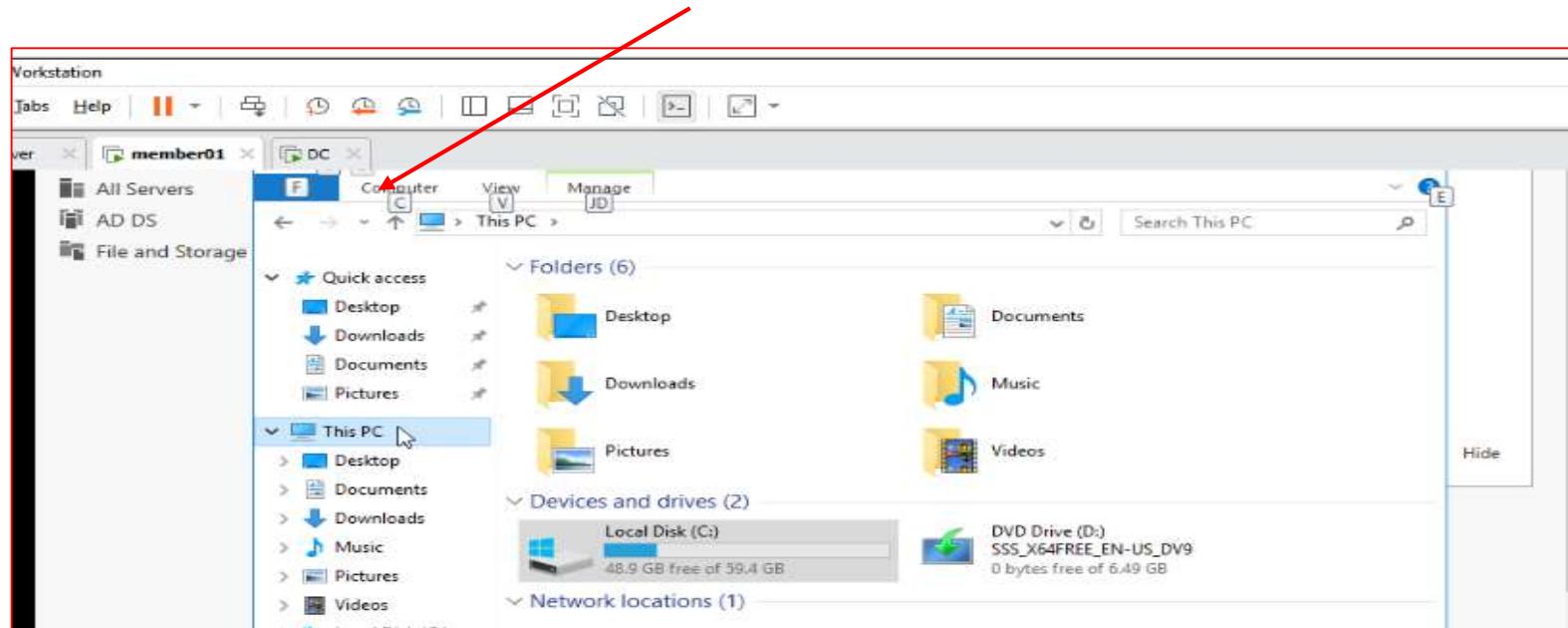


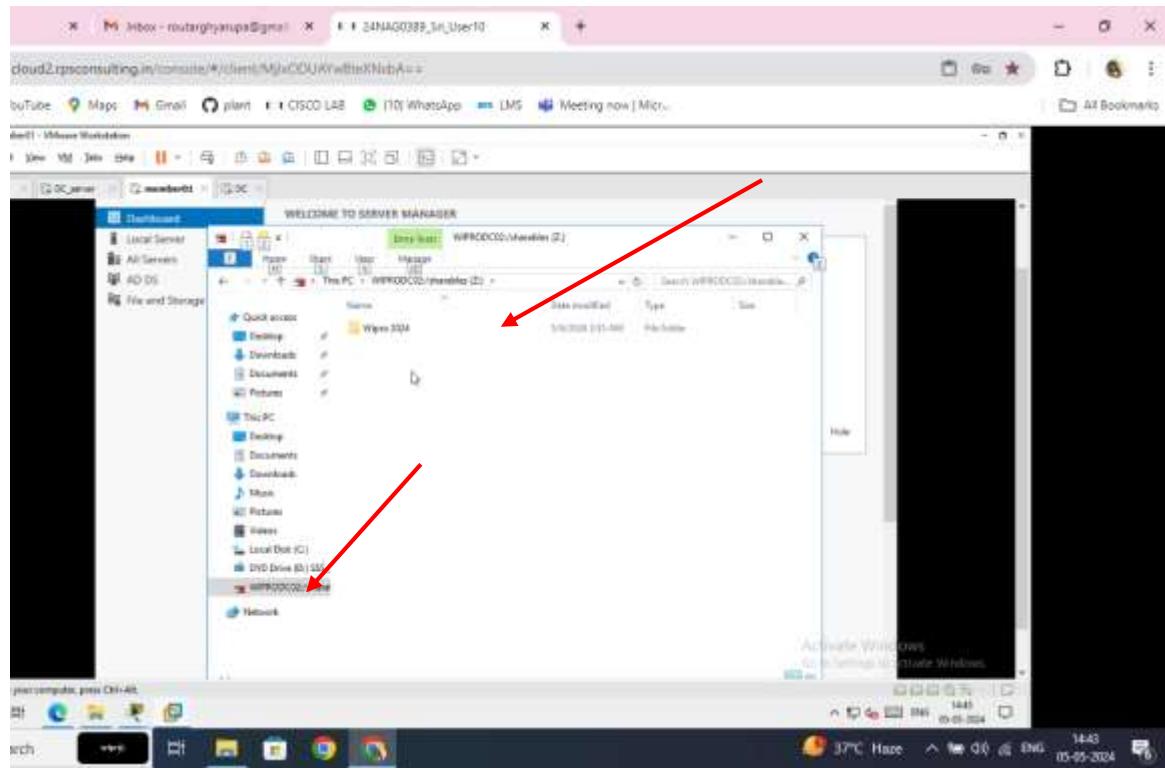
We can click the client for NFS in the member machine and click to install.

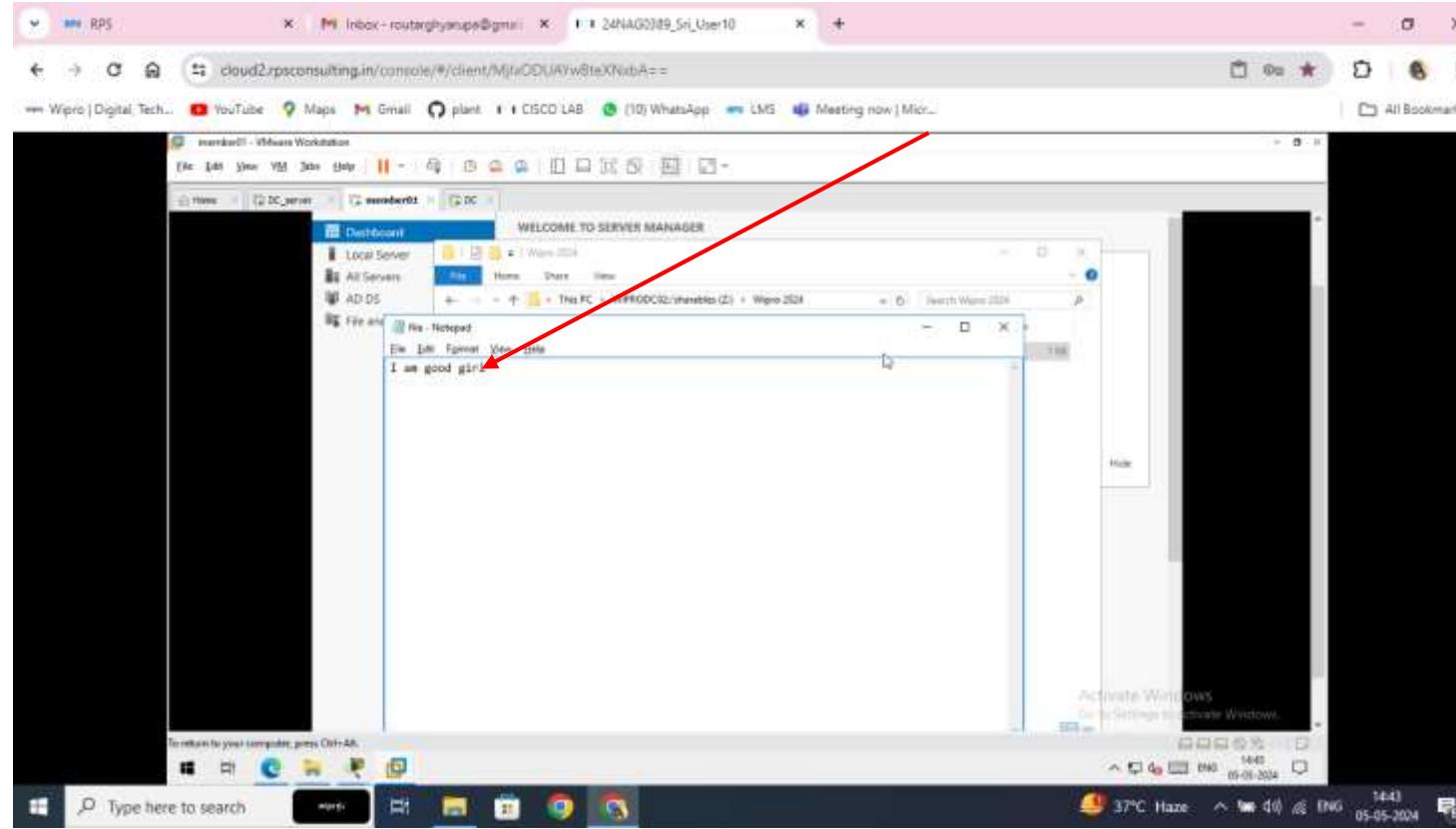




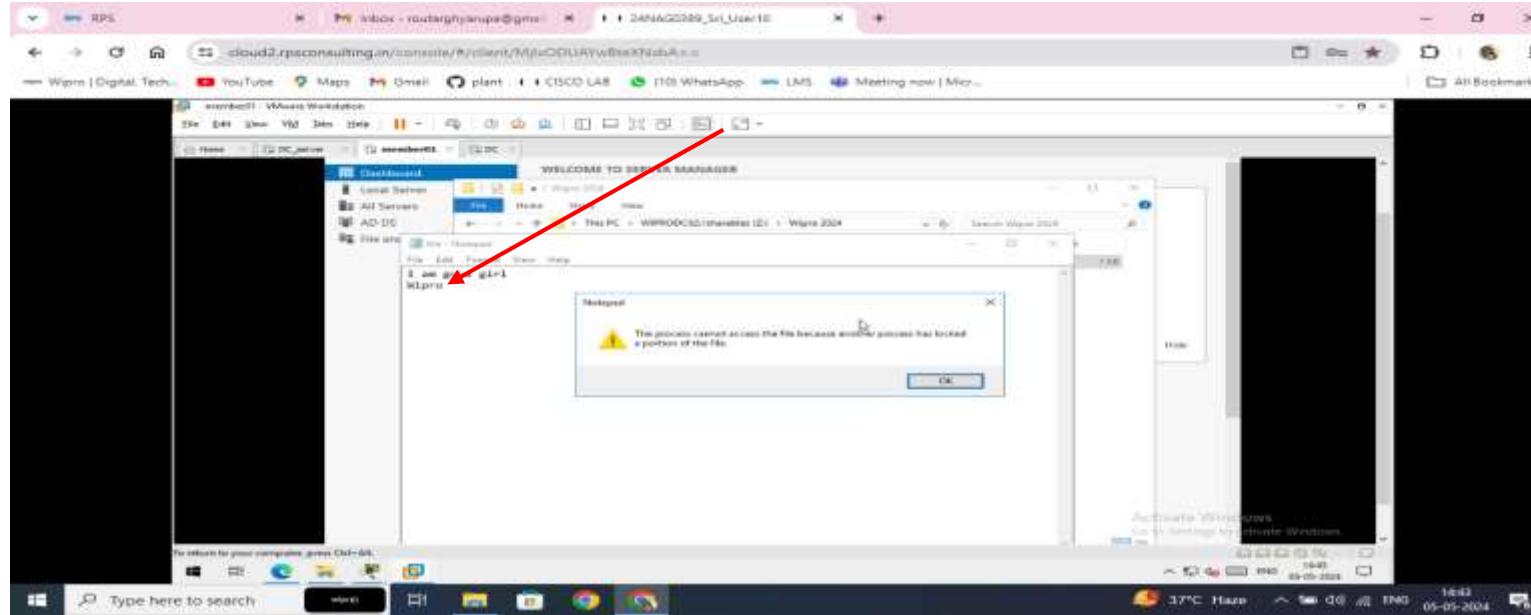
Click on the this pc in the member01 machine. And mapped the Z drive.



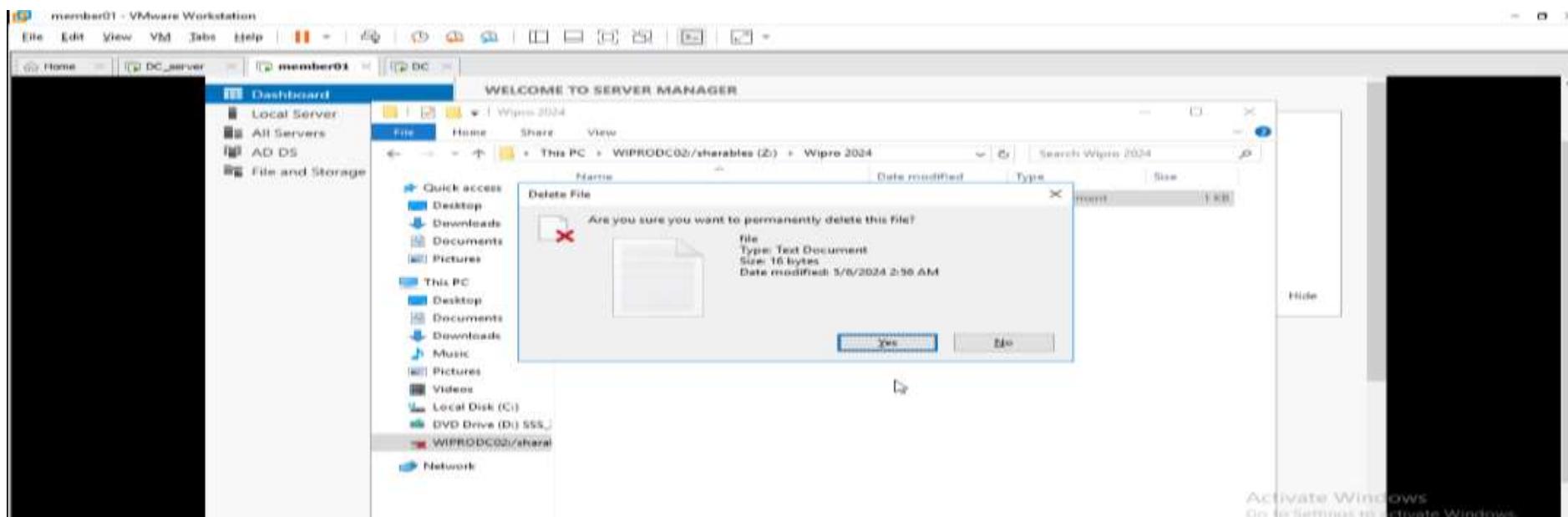


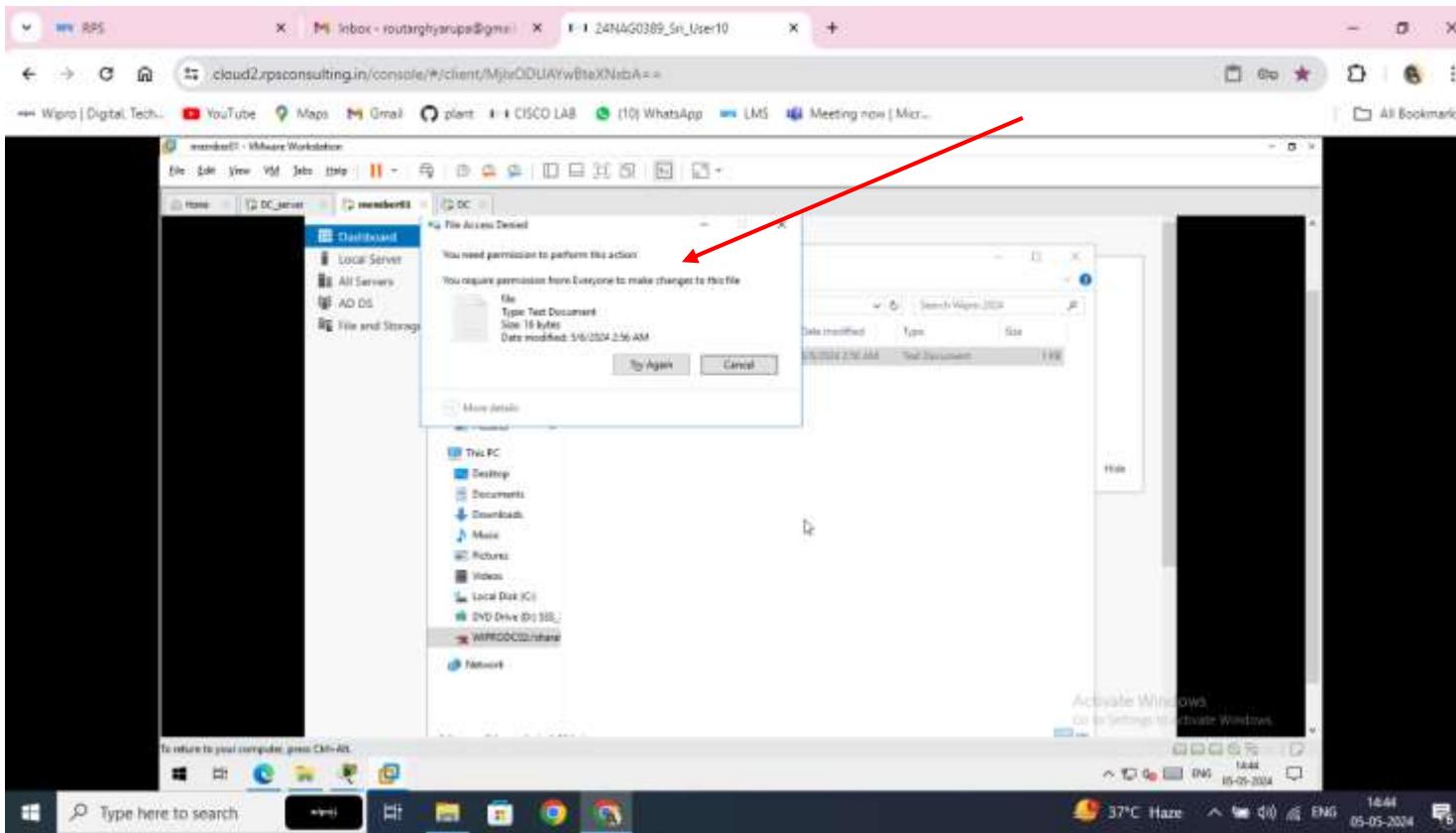


When I try to written something in the file, it is showing the below error. Because the file is only having the read only access.



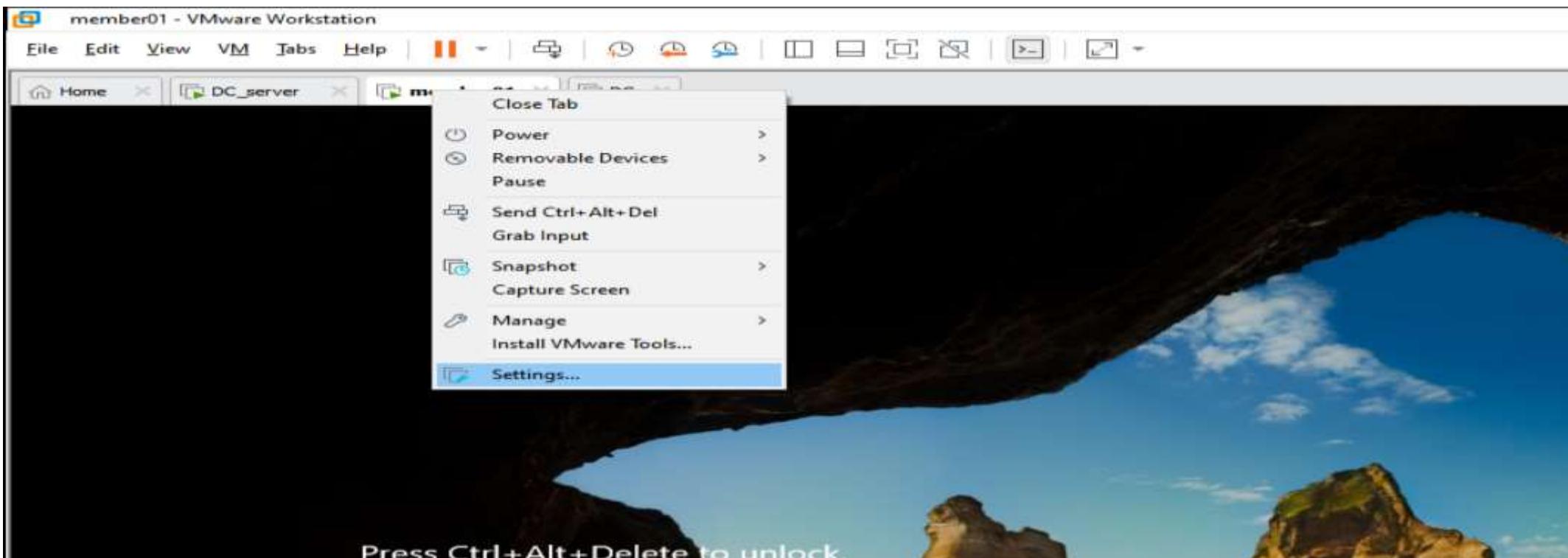
We are going to delete this file, still it is showing some error, because we don't have the modification access.





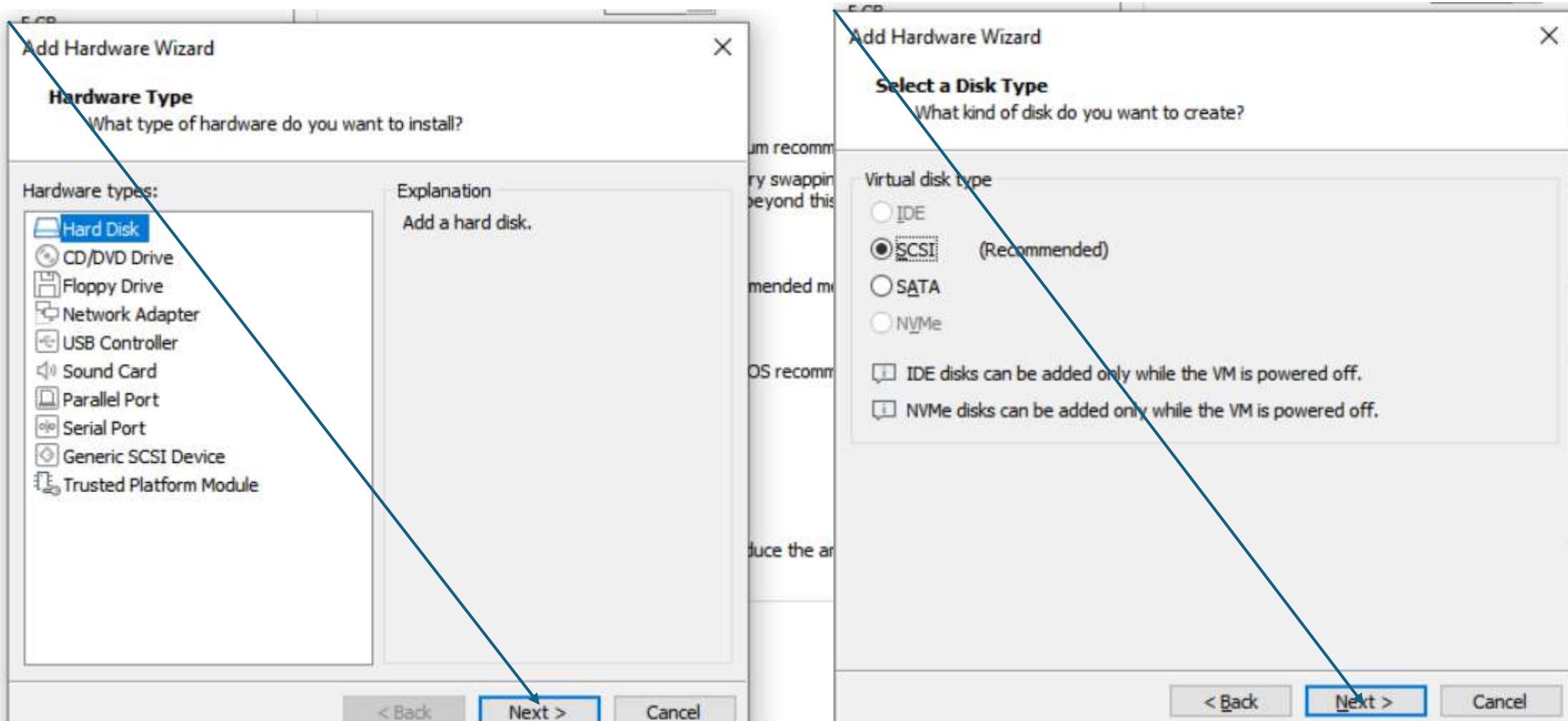
**PROJECT TASK2:-** Use domain controller machine to create 10 users in bulk using custom made powershell script and store users with an organizational unit (training) and verify. While creation of users, ensure that you provide the password for users and user account must be enabled and must change password at first time log on. Attach 2 HDD (of 5GB each) on the member01 and create RAID 0 using these HDDs and verify.

STEP1: Open member01 machine right click on the member01 go to settings.

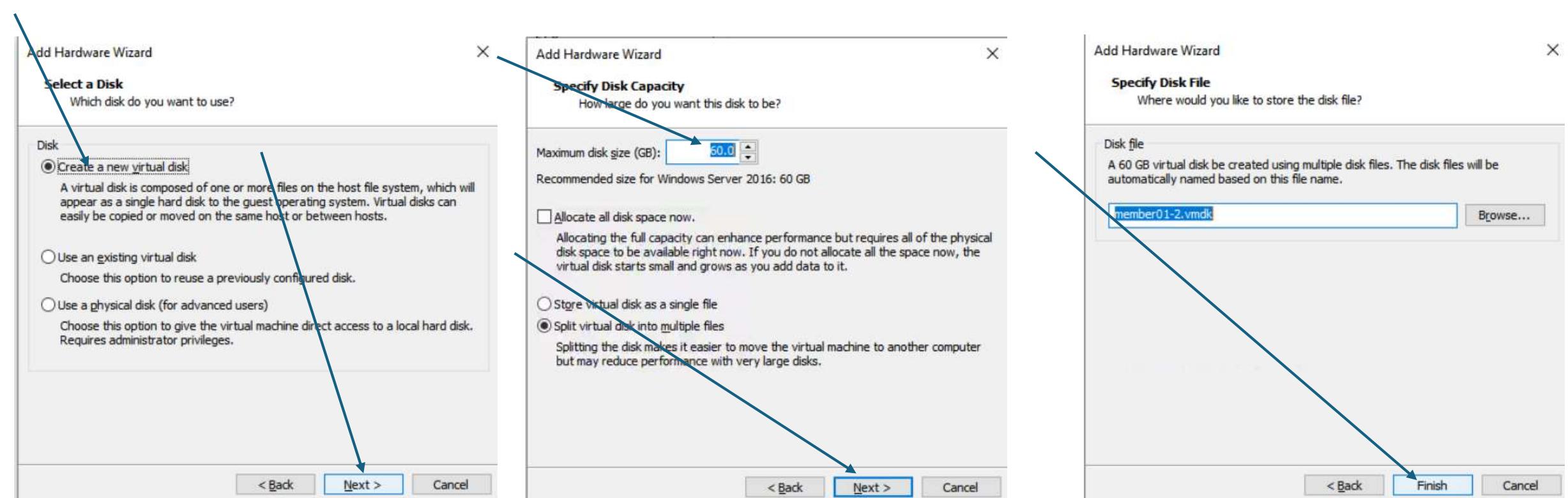


STEP2 : CLICK on add then create 2 hdd of 5GB.

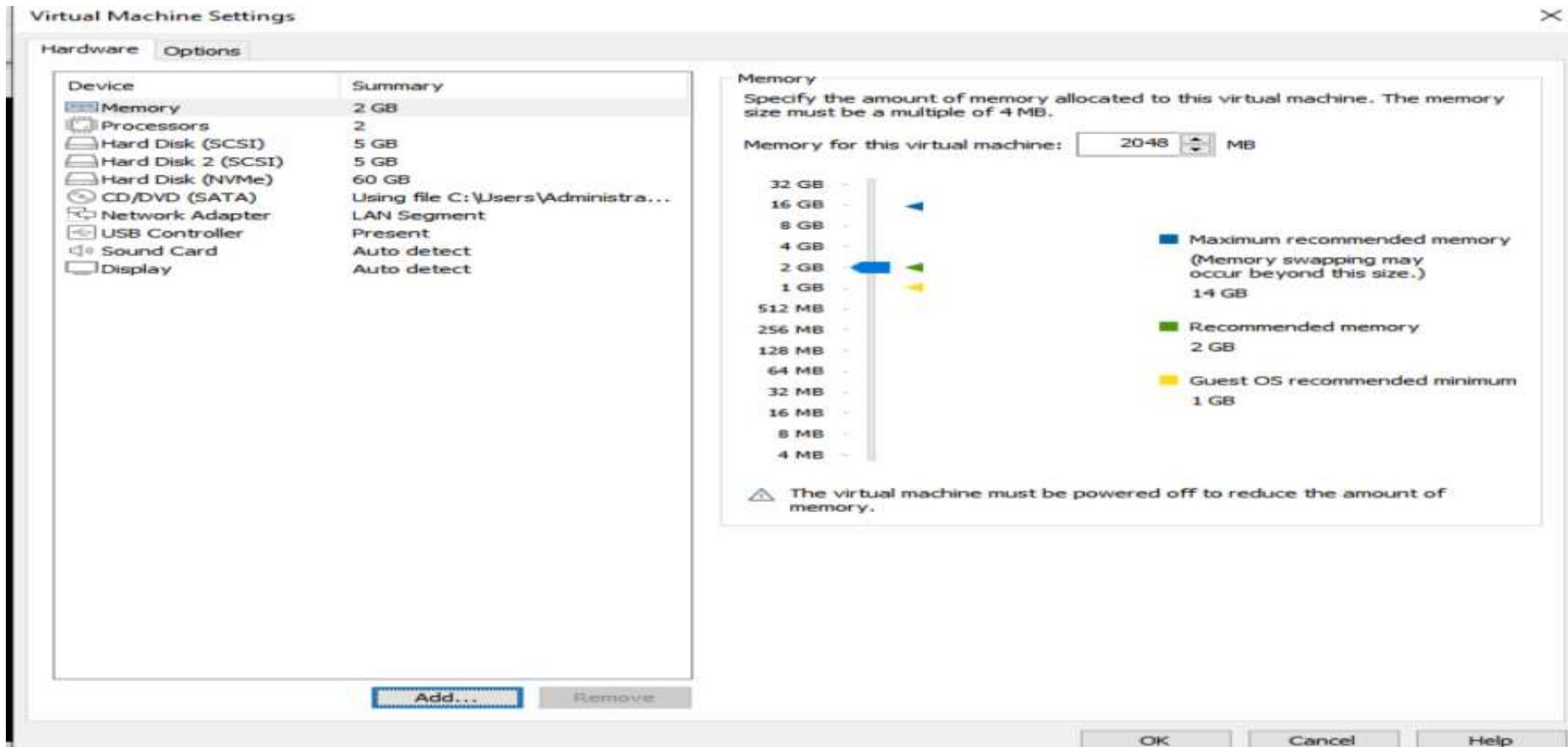
Click on next, select SCSI and select next



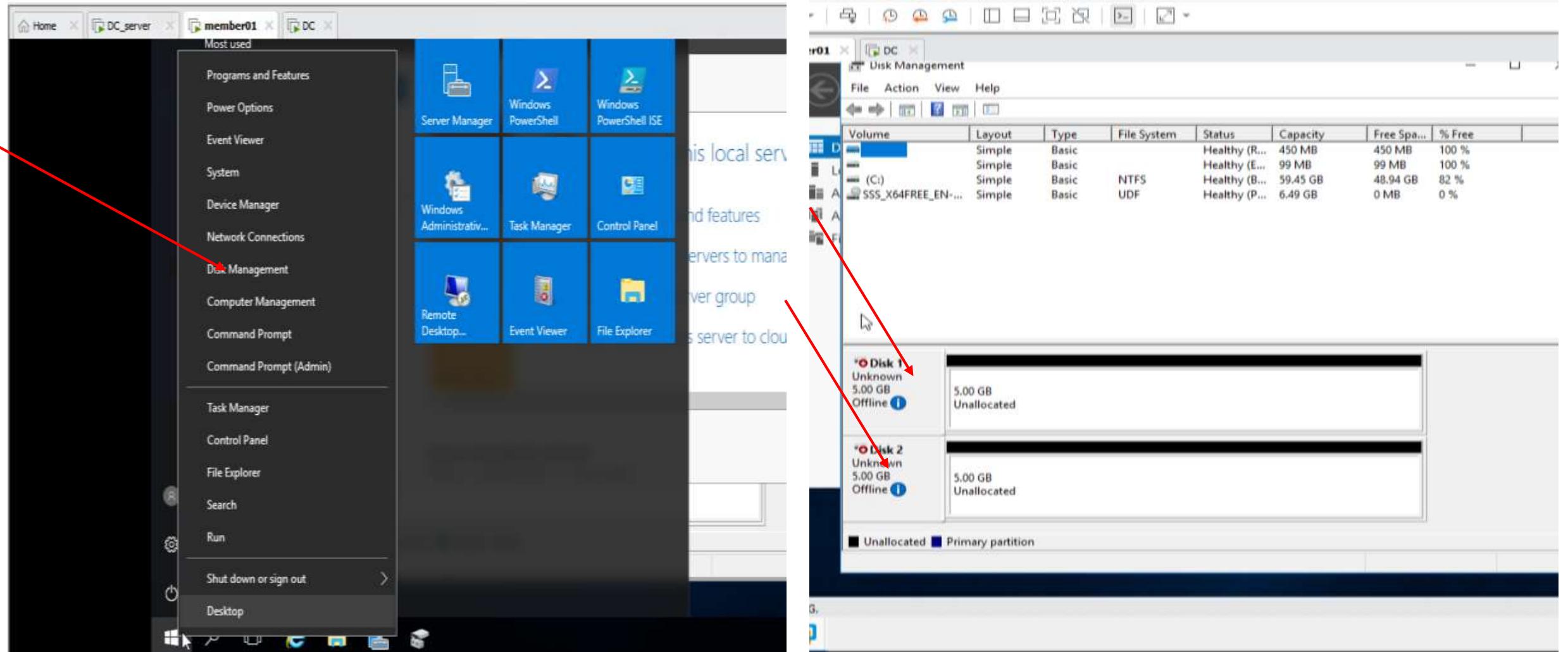
Select create a new virtual machine and add 5gb maximum disk size and finish it. And make another 5gb HDD



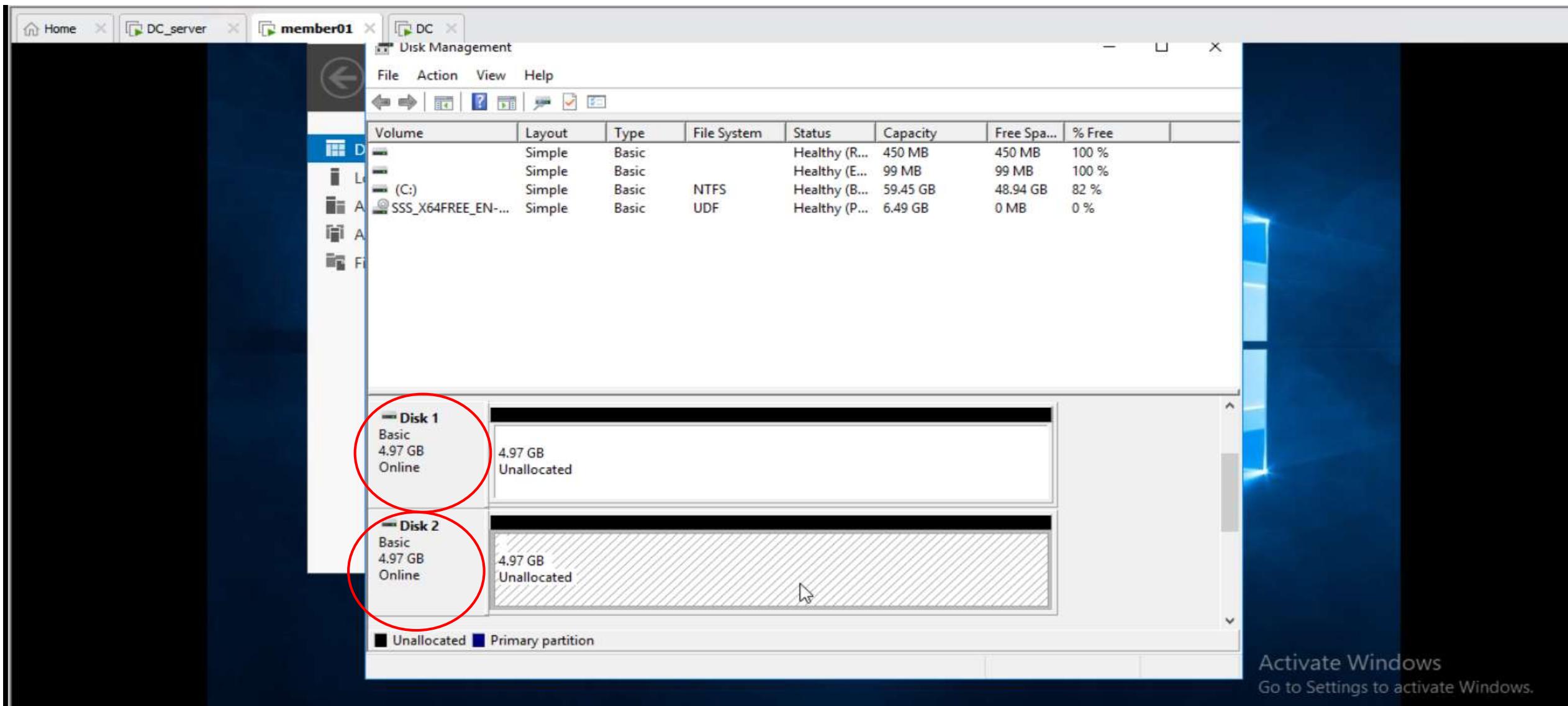
Now 2 HDD is created



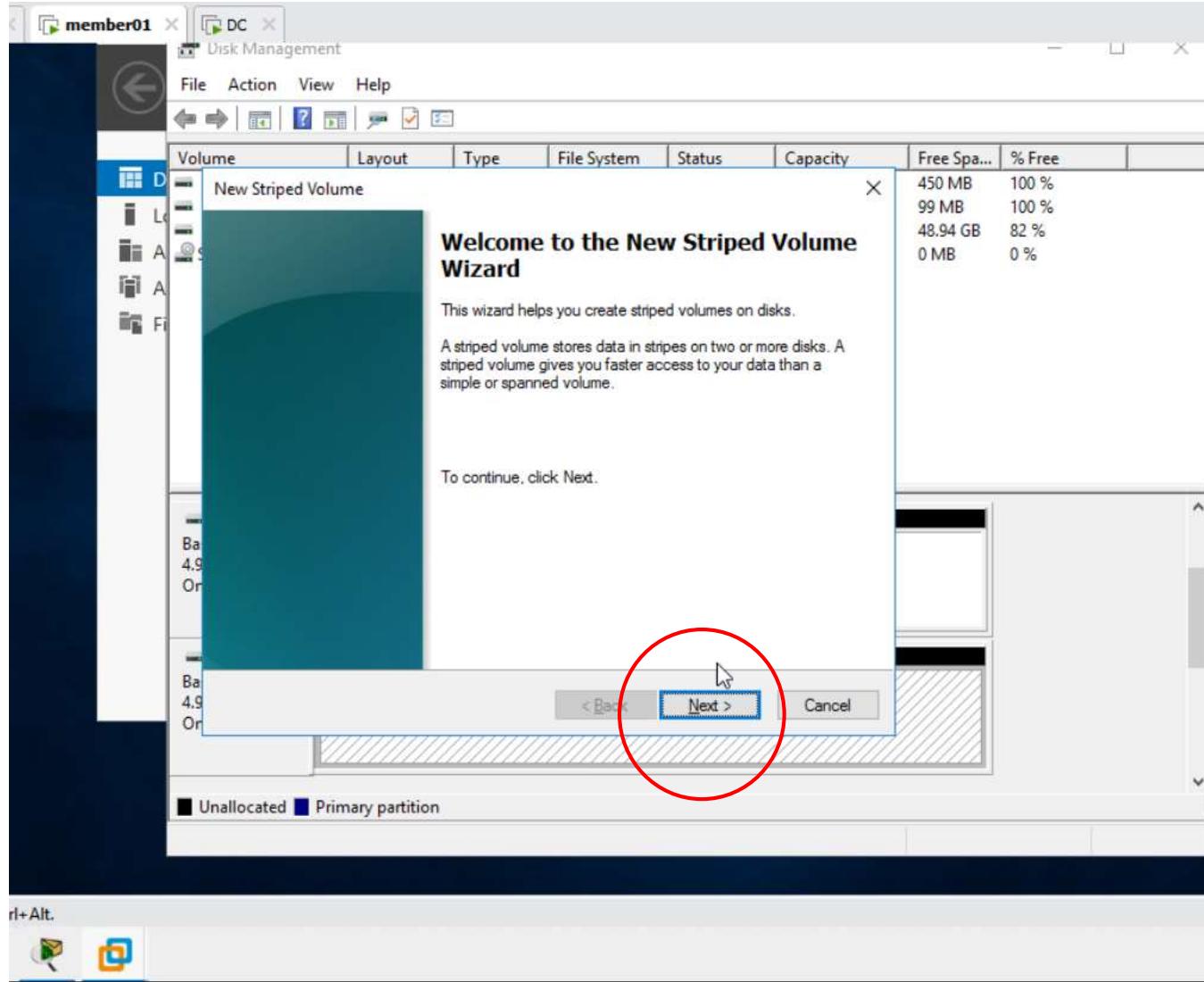
Right click on start menu and go to disk manager now you can see the 2 disk is created if its not showing then try to recan it or restart it.



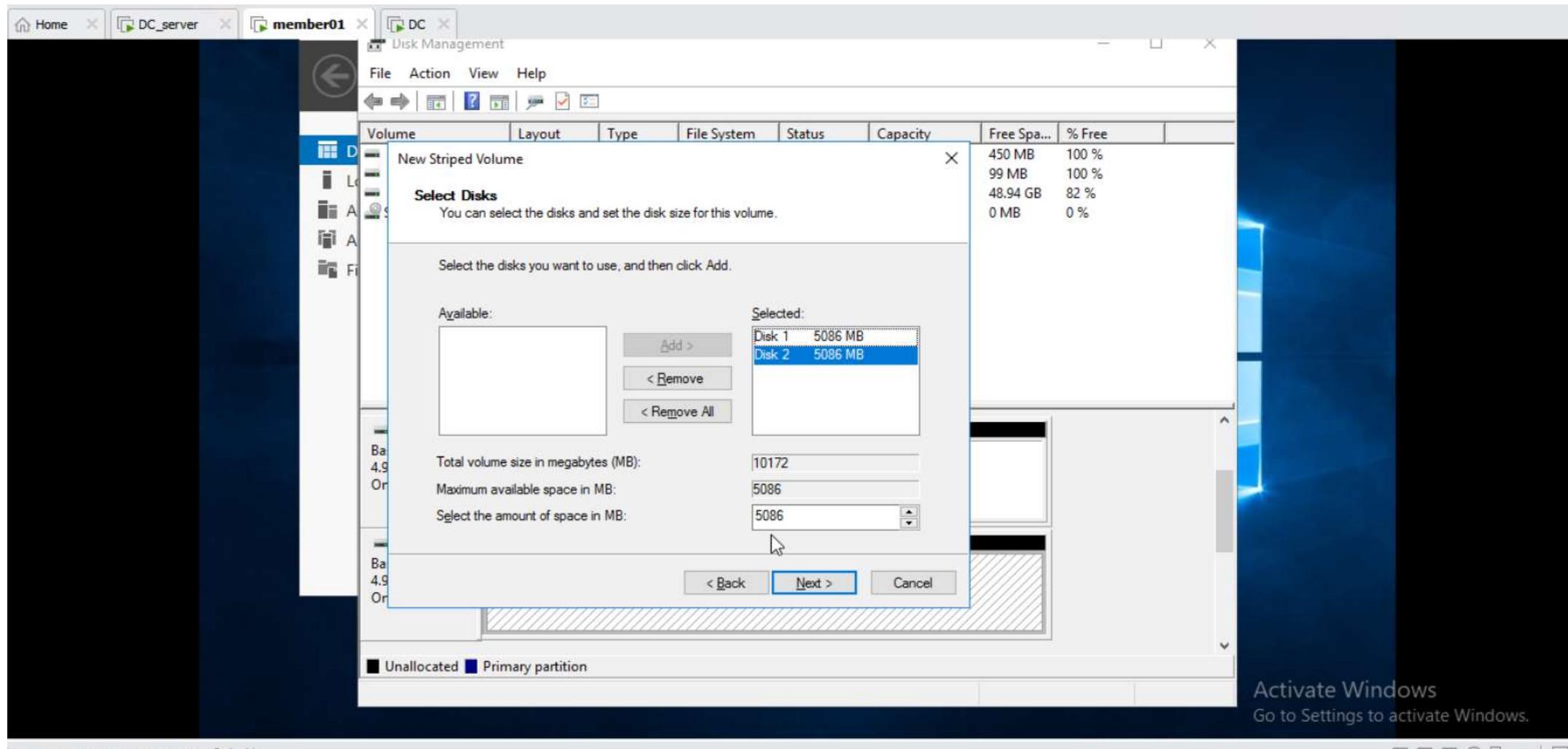
Now right click on disk 1 and disk2 make it online and initialized.



Now go to new stripped volume click next

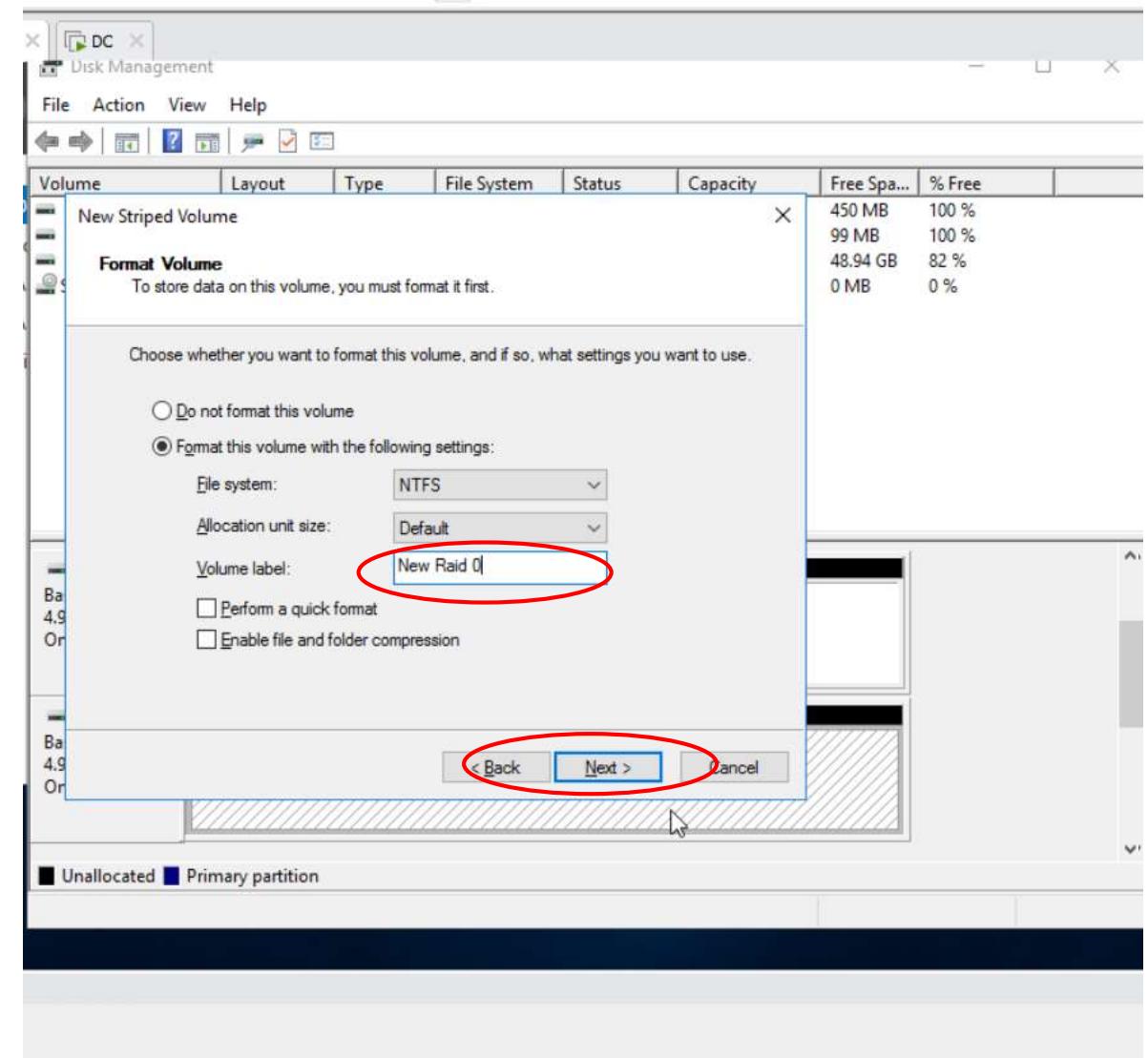
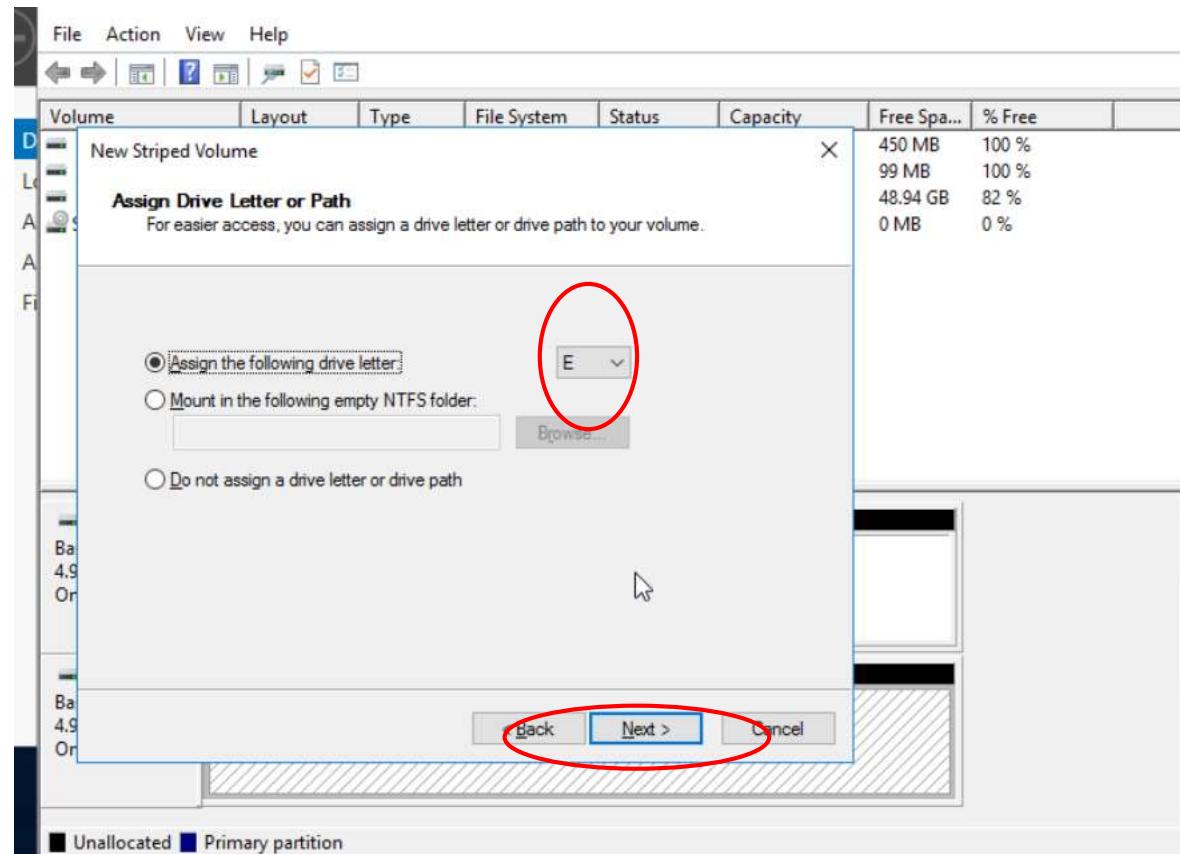


Add 2 disk and click next

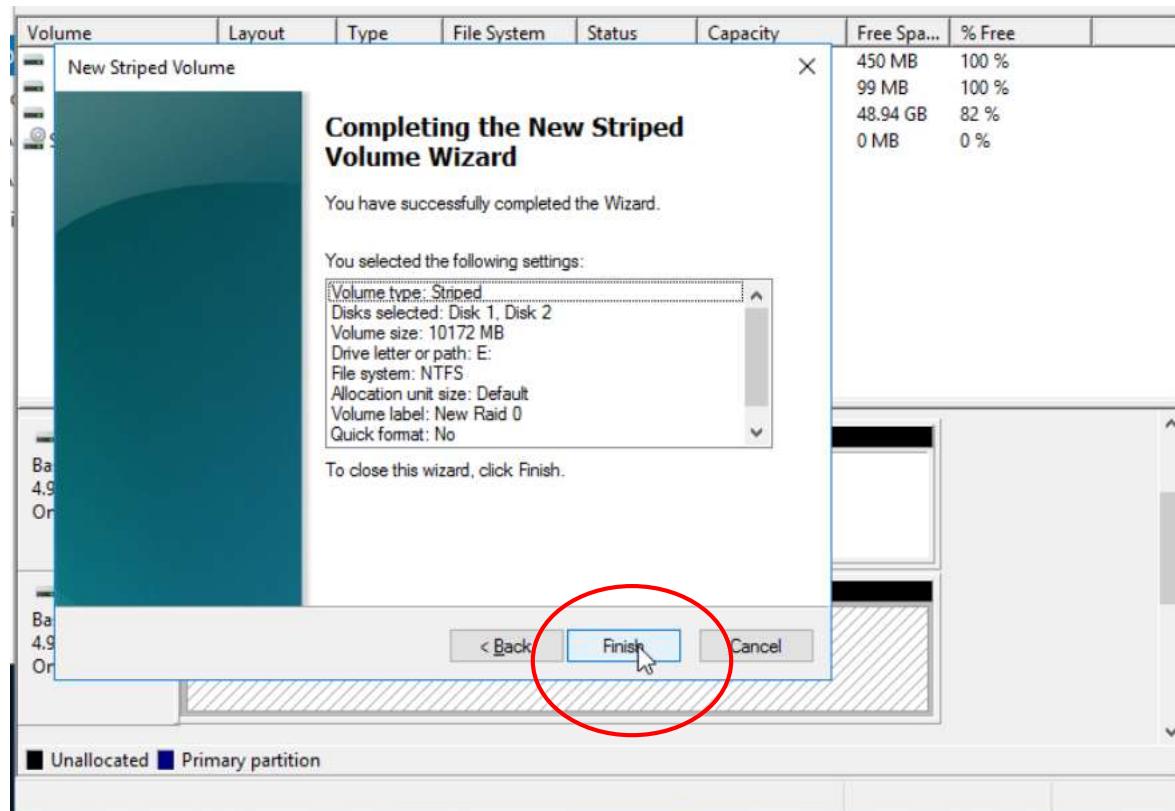


Activate Windows  
Go to Settings to activate Windows.

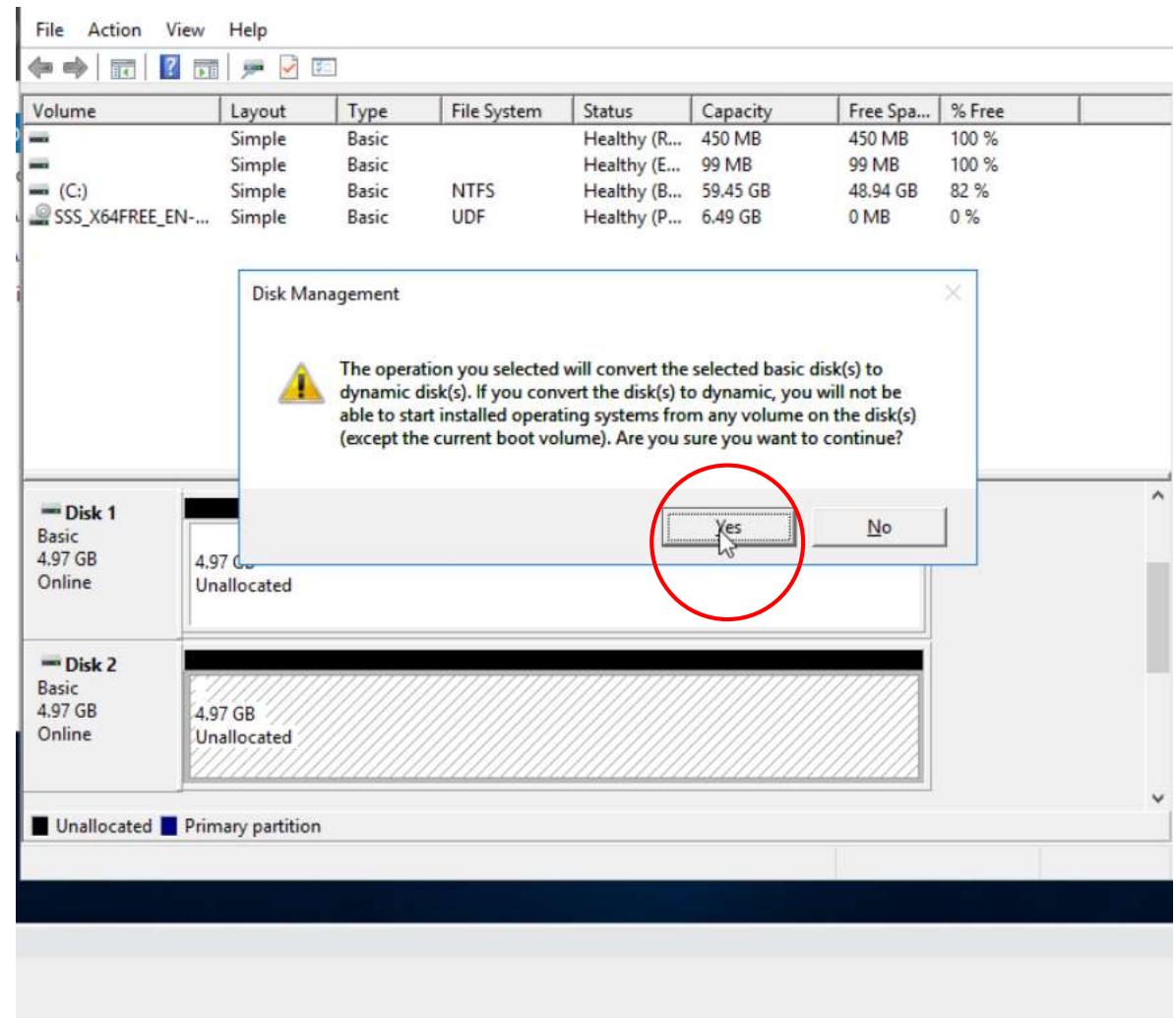
Select "E" click on next and give the volume label name as RAID0 and finish it



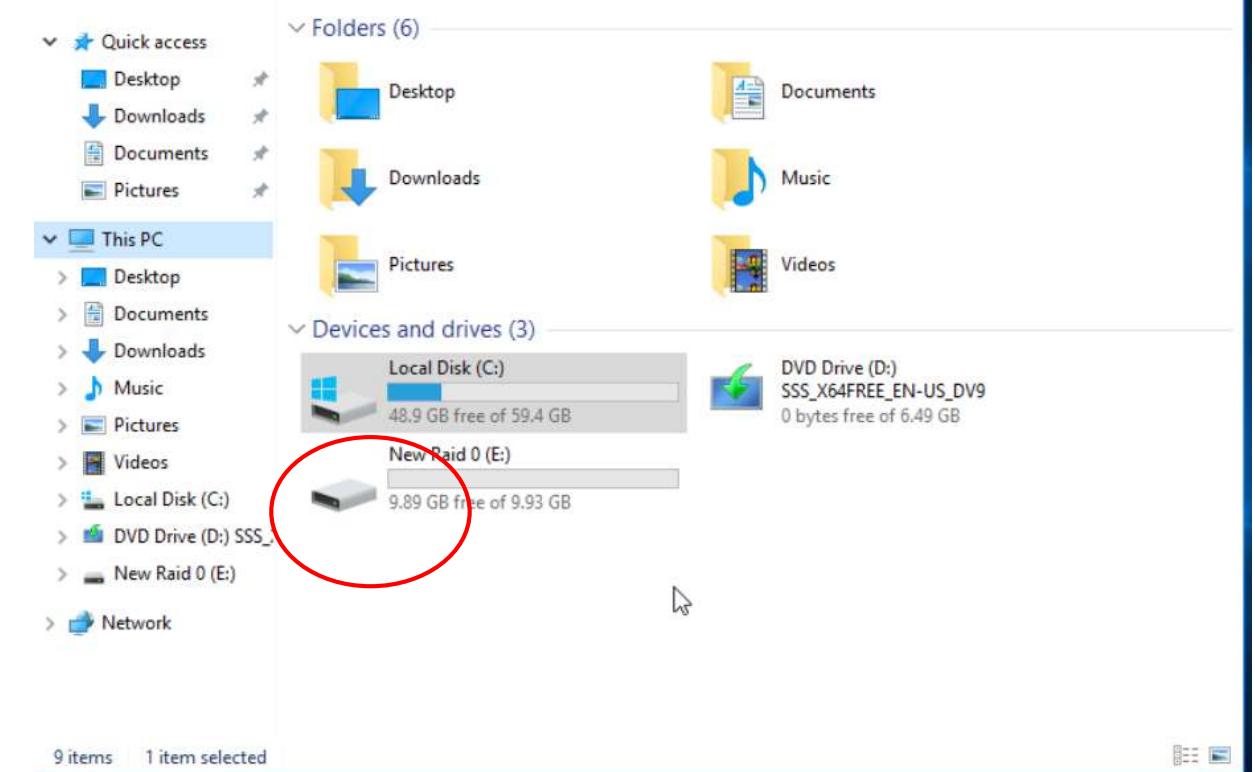
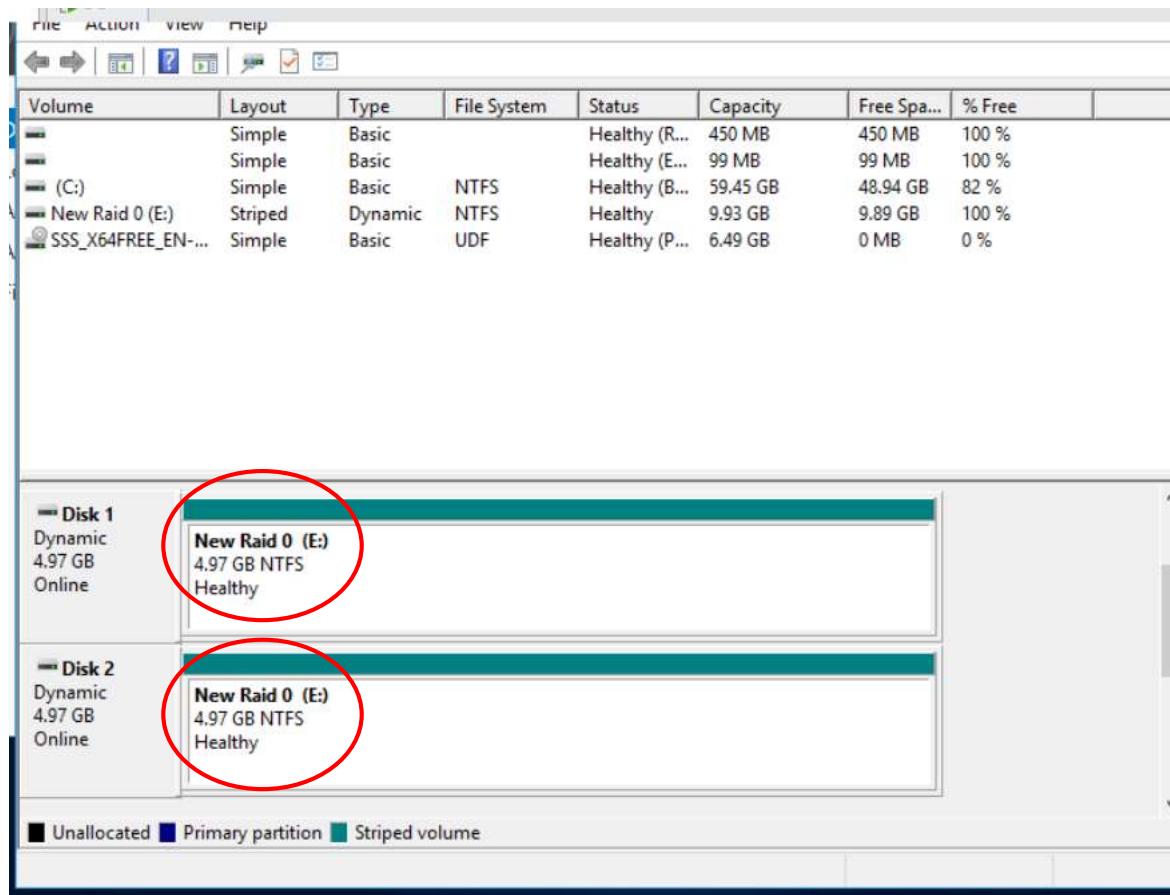
now disk management showing a message about converting to dynamic , click on yes.



about converting to dynamic , click on yes.



NOW ITS TIME CHECK WHETHER IT CREATED OR NOT, SO GO TO THIS PC AND CHECK NEW DRIVE CREATED. NOW ITS COMPLETED



## ADD BULK USER USING POWERSHELL

1. **Open PowerShell ISE:** Launch PowerShell ISE from the Start menu or by typing **powershell\_ise** in the Run dialog box.

2. **Connect to Active Directory (AD):** Before performing bulk user operations, you need to connect to your Active Directory. You can do this using the following command:

```
Import-Csv
```

3. **Retrieve Users:** You can retrieve users from Active Directory using cmdlets like **Get-ADUser**. For example:

```
$users = Get-ADUser -F
```

4. **Perform Operations:** Once you have the users, you can perform various operations on them.

```
foreach ($user in $users)
```

5. **Save the Script:** Once you've written your script, you can save it by clicking on File > Save As in PowerShell ISE. Choose a location and give your script a meaningful name with the **.ps1** extension.

6. **Execute the Script:** You can execute the script by clicking on the green play button in the PowerShell ISE toolbar, or by pressing F5.

## Bulk user operation script using powershell ISE

The screenshot shows a Windows PowerShell Integrated Scripting Environment (ISE) window titled "DC\_server - VMware Workstation". The window has multiple tabs at the top: "Home", "DC\_server", "member01", and "DC". The main editor tab is titled "Addbulkps1" and contains the following PowerShell script:

```
1 $users = Import-Csv C:\Users\Administrator\Documents\bulkuser.csv
2 foreach ($User in $users)
3 {
4     $Username = $User.Username
5     $Password = $User.password
6     $Firstname = $User.firstname
7     $Lastname = $User.lastname
8     $OU = $User.ou
9     if (Get-ADUser -Filter {SamAccountName -eq $Username})
10    {
11        Write-Warning "A user account with username $Username already exists"
12    }
13    else
14    {
15        New-ADUser `
16            -SamAccountName $Username `
17            -UserPrincipalName "$Username@Arghya.training" `
18            -Name "$Firstname $Lastname" `
19            -GivenName $Firstname `
20            -Surname $Lastname `
21            -Enabled $True `
22            -DisplayName "$Lastname, $Firstname" `
23            -Path $OU `
24            -AccountPassword (ConvertTo-SecureString $Password -AsPlainText -Force) `
25            -ChangePasswordAtLogon $True
26        Write-Host "A user account $Username is created." -ForegroundColor Yellow
27    }
28 }
```

The status bar at the bottom left says "To return to your computer, press Ctrl+Alt.". A watermark in the bottom right corner reads "Activate Windows Go to Settings to activate Windows.".

## Creating bulk user using csv file in notepad or excel

The screenshot shows a Windows PowerShell ISE window titled "bulkuser.csv - Notepad". The content of the file is a CSV with the following columns: "firstname", "lastname", "username", "password", and "OU". The data consists of ten entries, each representing a user account to be created in the "DC=Arghya,DC=training" domain. The entries are:

firstname	lastname	username	password	OU
Arushi	Patel	arushi.patel	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Lipun	Mohanty	Lipun.Mohanty	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Krishna	Patra	Krishna.Patra	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Dibya	Patel	Dibya.Patel	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Gomathi	Singh	Gomathi.Singh	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Aryan	Das	aryan.Das	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
KL	Rahul	KL.Rahul	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Sam	Rout	Sam.Rout	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Gulu	Nayak	Gulu.Nayak	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Puchi	Patel	Puchi.patel	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Monica	Patel	Monica.patel	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"
Sidd	Asthana	Sid.Asthana	Arghya@03	"OU=training_2024,DC=Arghya,DC=training"

To the right of the Notepad window, a PowerShell command is being run in the background:

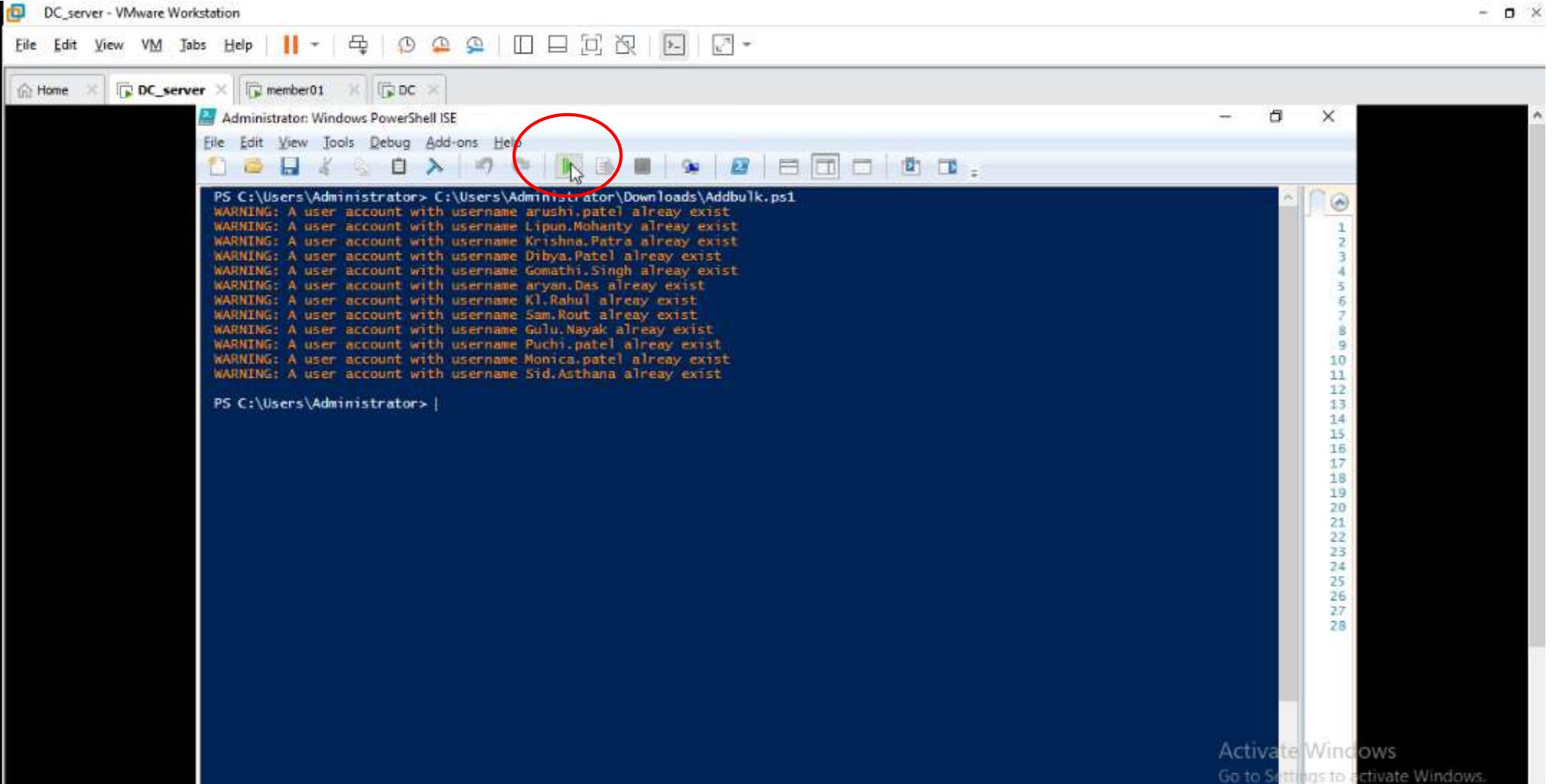
```
-AsPlainText -Force) | ForegroundColor Yellow
```

The output of the command is visible in the bottom right corner, showing error messages for users whose usernames already exist:

```
username alrgay exist
```

At the bottom right of the screen, there are watermark-like messages: "Activate Windows", "Go to Settings to activate", and "74".

Save the script in powershell then click on run button showing on the bellow picture



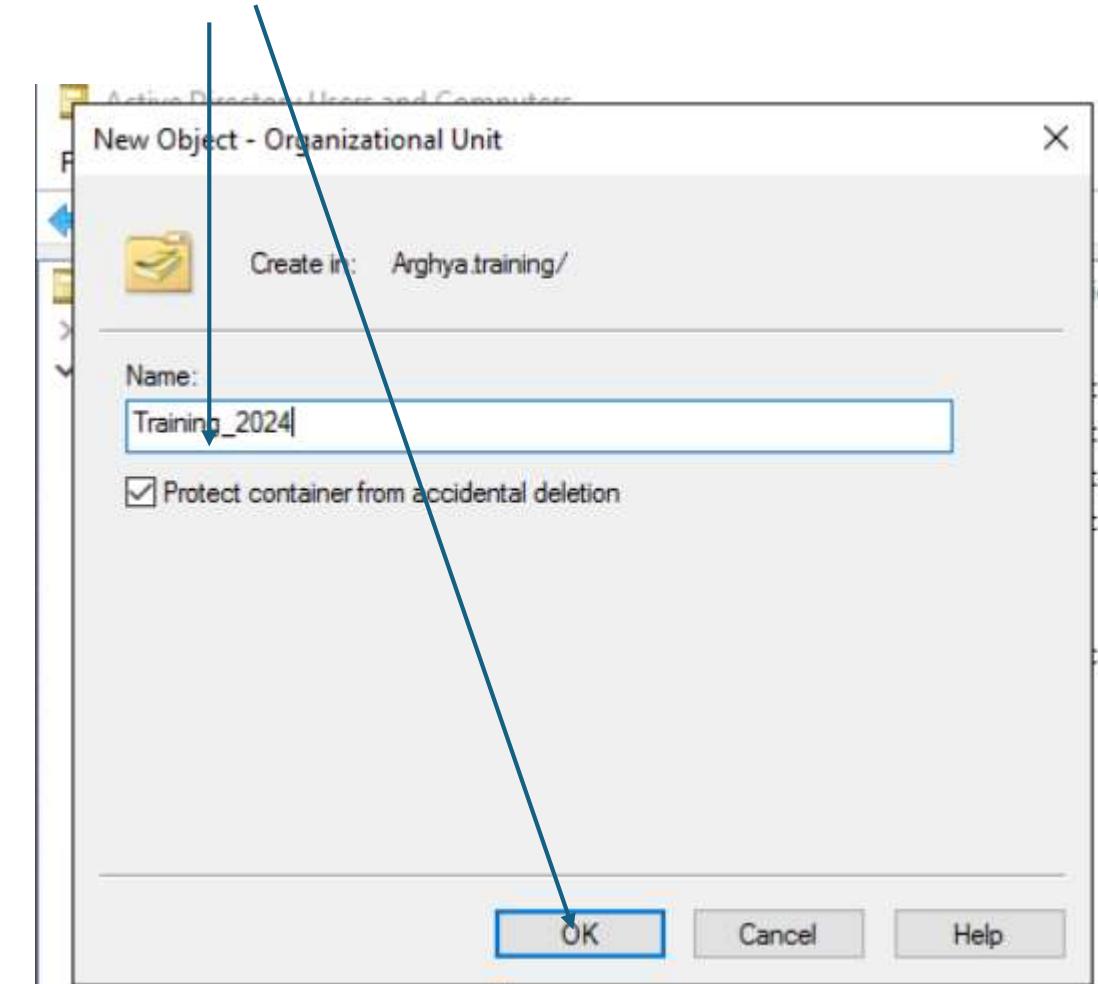
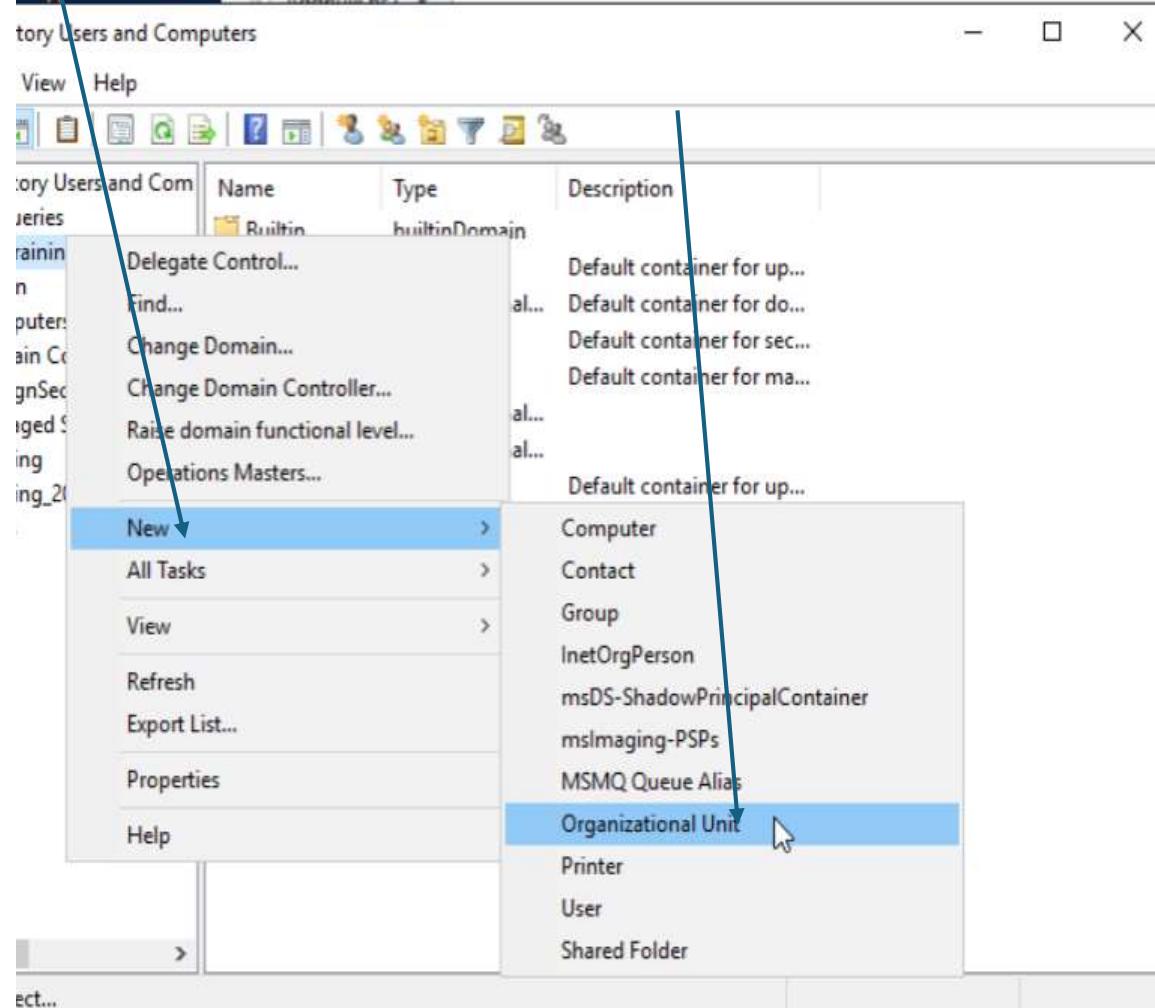
Administrator: Windows PowerShell ISE

```
PS C:\Users\Administrator> C:\Users\Administrator\Downloads\Addbulk.ps1
WARNING: A user account with username arushi.patel already exist
WARNING: A user account with username Lipun.Mohanty already exist
WARNING: A user account with username Krishna.Patra already exist
WARNING: A user account with username Dibya.Patel already exist
WARNING: A user account with username Gomathi.Singh already exist
WARNING: A user account with username aryan.Das already exist
WARNING: A user account with username KI.Rahul already exist
WARNING: A user account with username Sam.Rout already exist
WARNING: A user account with username Gulu.Nayak already exist
WARNING: A user account with username Puchi.patel already exist
WARNING: A user account with username Monica.patel already exist
WARNING: A user account with username Sid.Asthana already exist

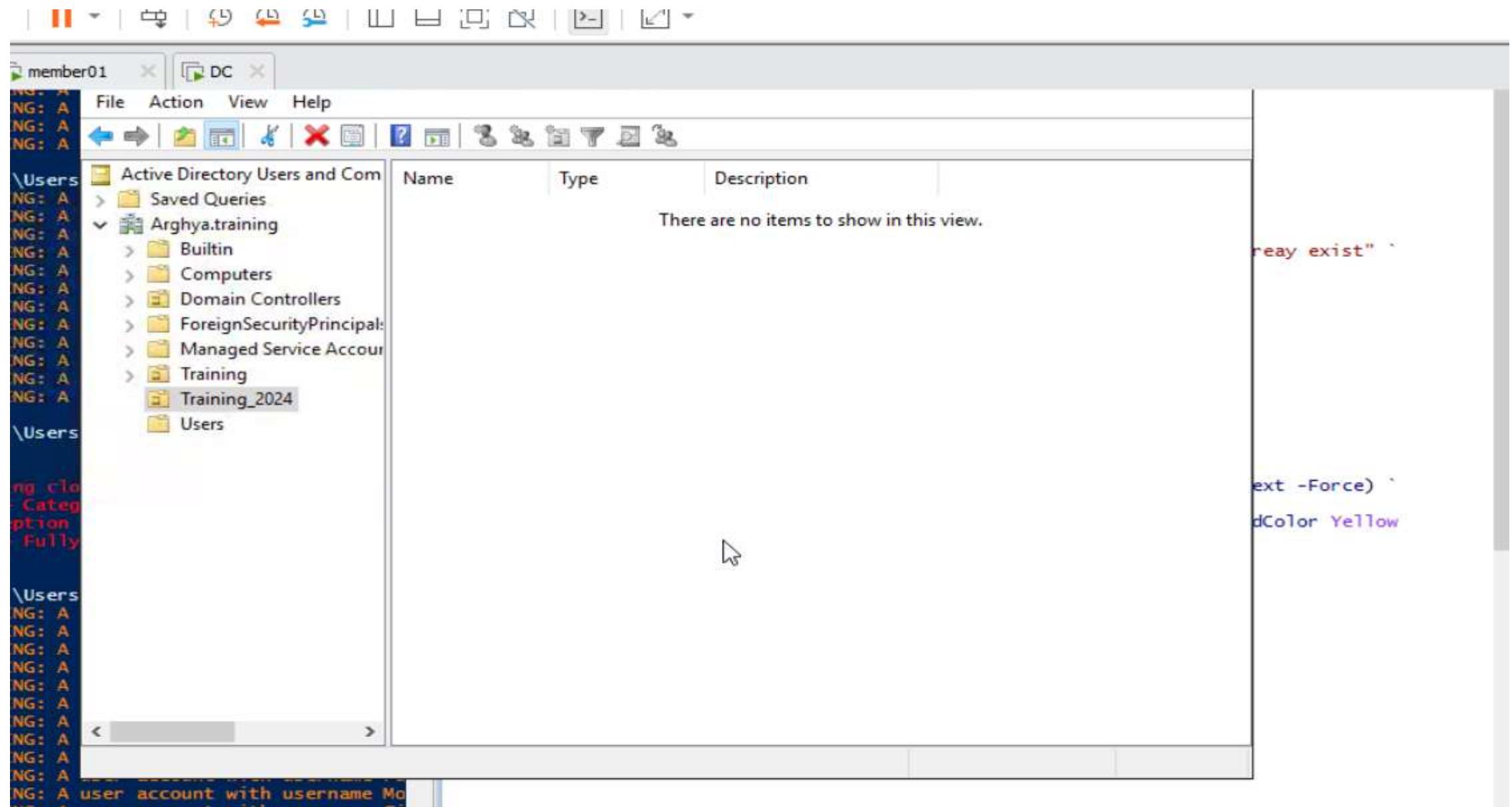
PS C:\Users\Administrator>
```

Activate Windows  
Go to Settings to activate Windows.

go to active directory and create new OU as training\_2024 so right click on domain and go to new add organizational unit



Go to active directoey on training\_2024



The screenshot shows the PowerShell Integrated Scripting Environment (ISE) interface. On the left, the PowerShell command PS C:\Users\Administrator> C:\Users\Administrator\Addbulk.ps1 is run, followed by its output which lists various user accounts being created. On the right, the content of the script file Addbulk.ps1 is displayed, showing the PowerShell cmdlets used to perform the creation.

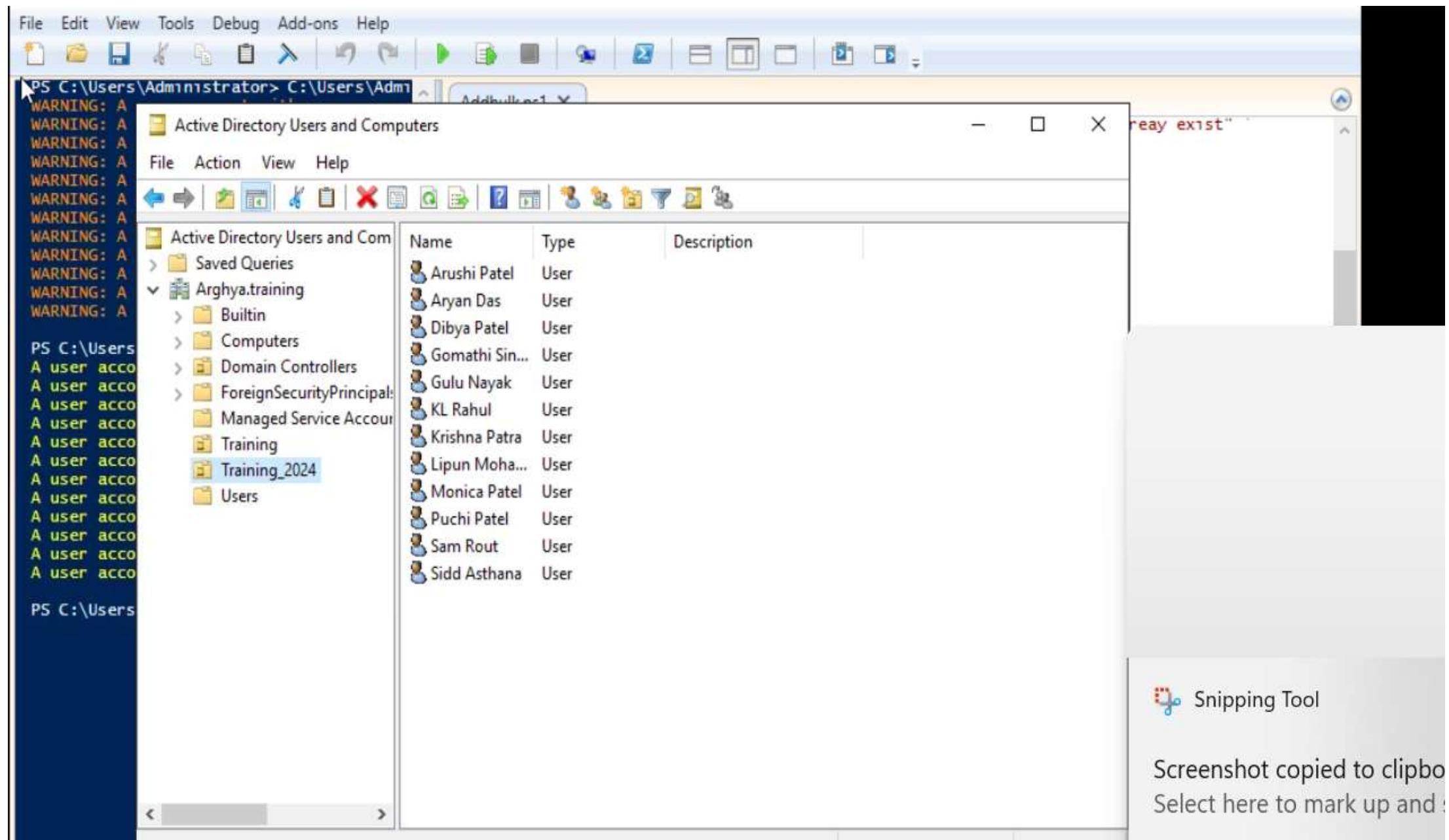
```
PS C:\Users\Administrator> C:\Users\Administrator\Addbulk.ps1
WARNING: A user account with username ar
WARNING: A user account with username Li
WARNING: A user account with username Kr
WARNING: A user account with username Di
WARNING: A user account with username Go
WARNING: A user account with username ar
WARNING: A user account with username Kl
WARNING: A user account with username Sa
WARNING: A user account with username Gu
WARNING: A user account with username Pu
WARNING: A user account with username Mo
WARNING: A user account with username Si

PS C:\Users\Administrator> C:\Users\Administrator\Addbulk.ps1
A user account arushi.patel is created.
A user account Lipun.Mohanty is created.
A user account Krishna.Patra is created.
A user account Dibya.Patel is created.
A user account Gomathi.Singh is created.
A user account aryan.Das is created.
A user account Kl.Rahul is created.
A user account Sam.Rout is created.
A user account Gulu.Nayak is created.
A user account Puchi.patel is created.
A user account Monica.patel is created.
A user account Sid.Asthana is created.

PS C:\Users\Administrator>
```

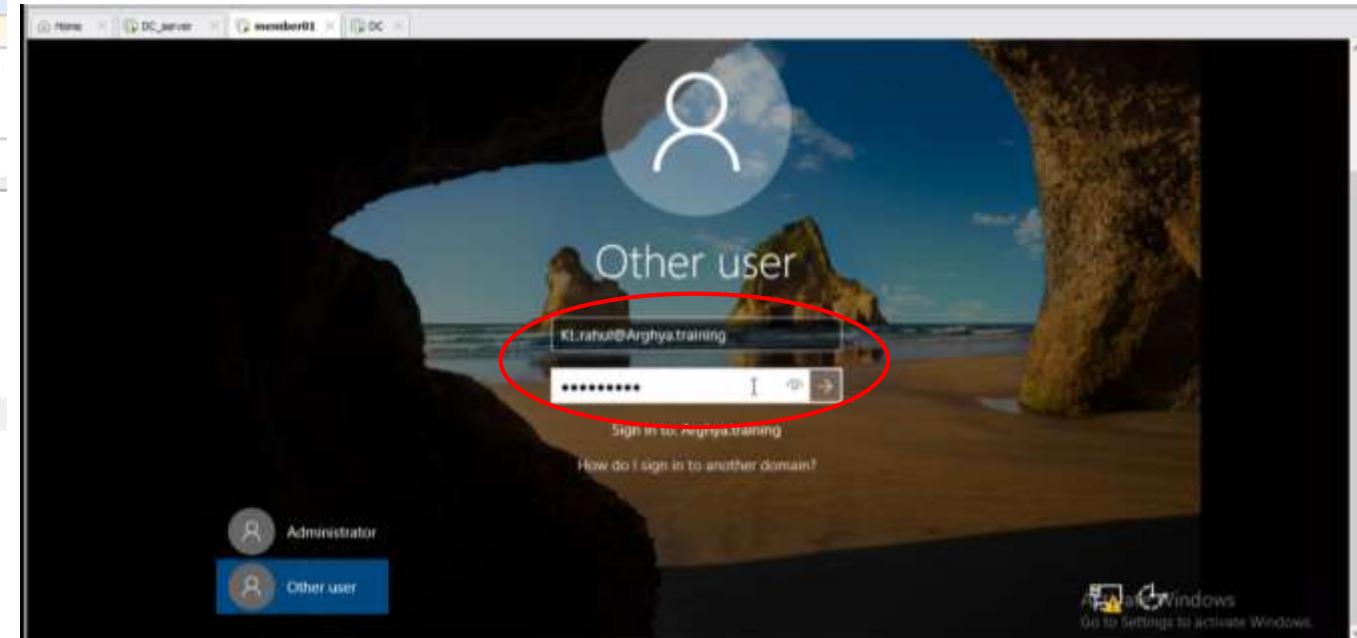
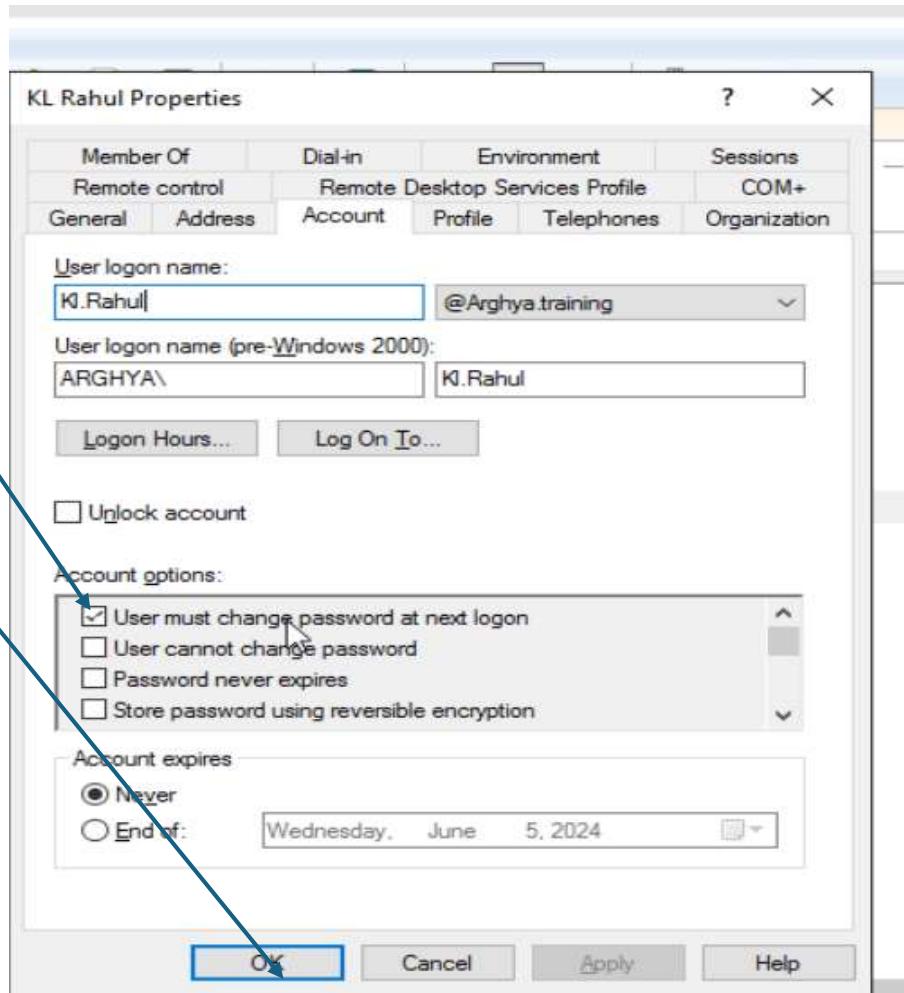
```
11     Write-Warning "A user account with username $Username already exists"
12 }
13 else
14 {
15     New-ADUser
16     -SamAccountName $Username
17     -UserPrincipalName "$Username@Arghya.training"
18     -Name "$Firstname $Lastname"
19     -GivenName $Firstname
20     -Surname $Lastname
21     -Enable $True
22     -DisplayName "$Lastname, $Firstname"
23     -Path $OU
24     -AccountPassword (ConvertTo-SecureString $Password -AsPlainText -Force)
25     -ChangePasswordAtLogon $True
26     Write-Host "A user account $Username is created." -ForegroundColor Yellow
27 }
28 }
```

Now bulk user add on the training file using powershell script.

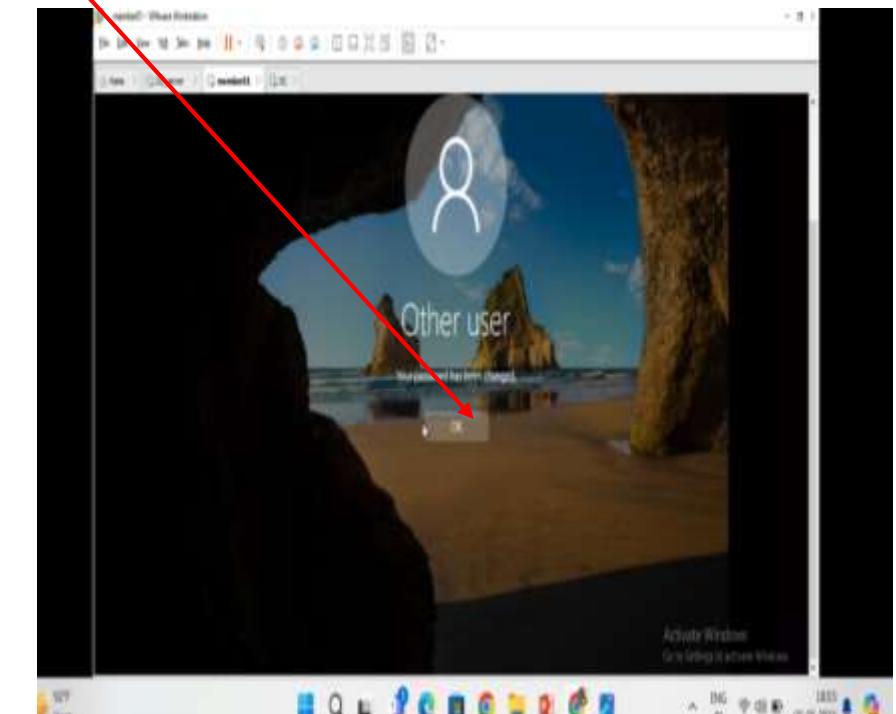
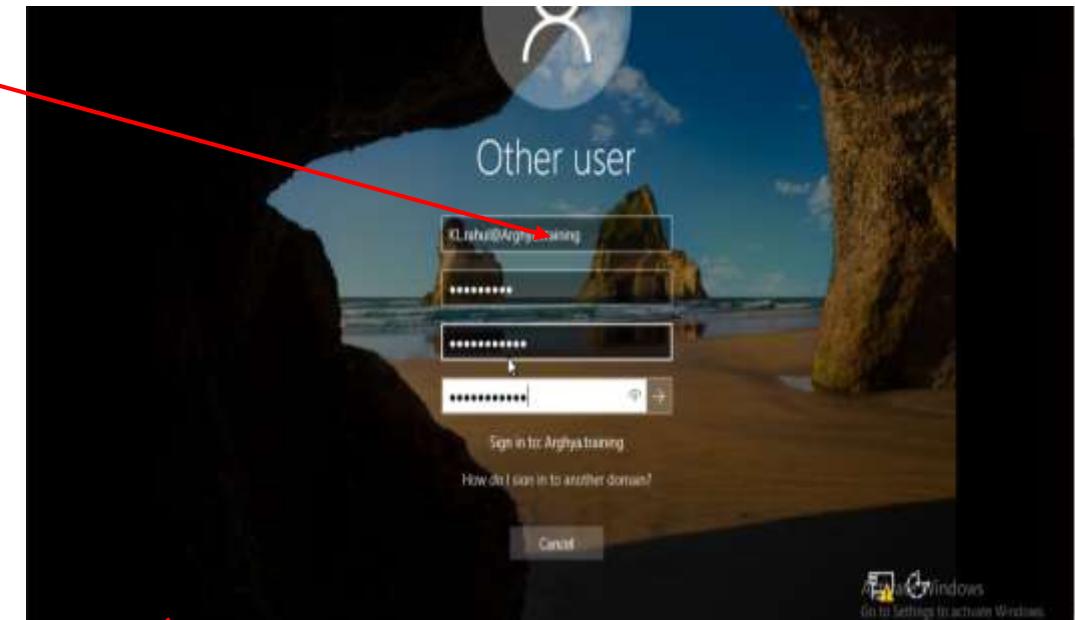
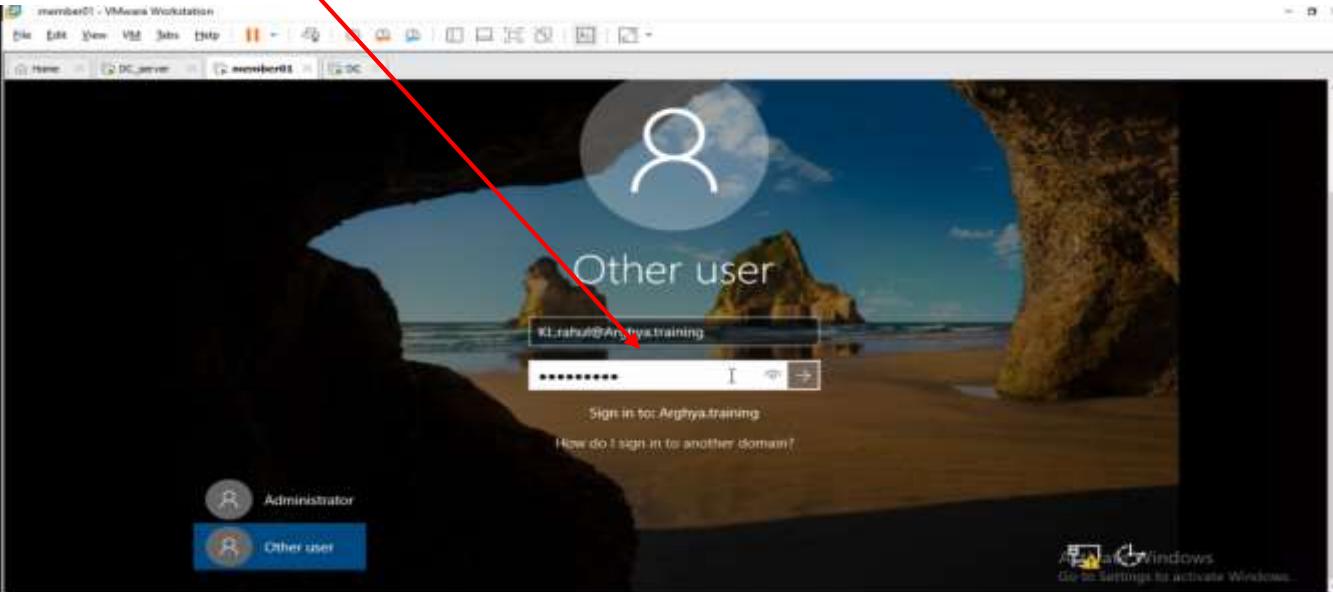


## USER ACCOUNT ENABLED AND PASSWORD CHANGED AT FIRST TIME

Here user is enable as user must changed password at first time login .now im logout the administrator and login the kl Rahul user



When im trying to login the kl user it show me change the password



**PROJECT TASK 3:-** Use Cisco packet tracer and implement static routing and OSPF routing using 3 routers.

## **OSPF WITH 3 ROUTER**

### **Steps to Configure and Setup clan configuration in Cisco Packet Tracer:** -

❖ Step 1: To open Cisco Packet Tracer desktop, follow these steps:-

- Launch Cisco Packet Tracer application on your computer.

Once the application is open, you'll be directed to the Packet Tracer workspace.

To select devices in Cisco Packet Tracer:

- From the left-hand side toolbar, click on the "Devices" tab.

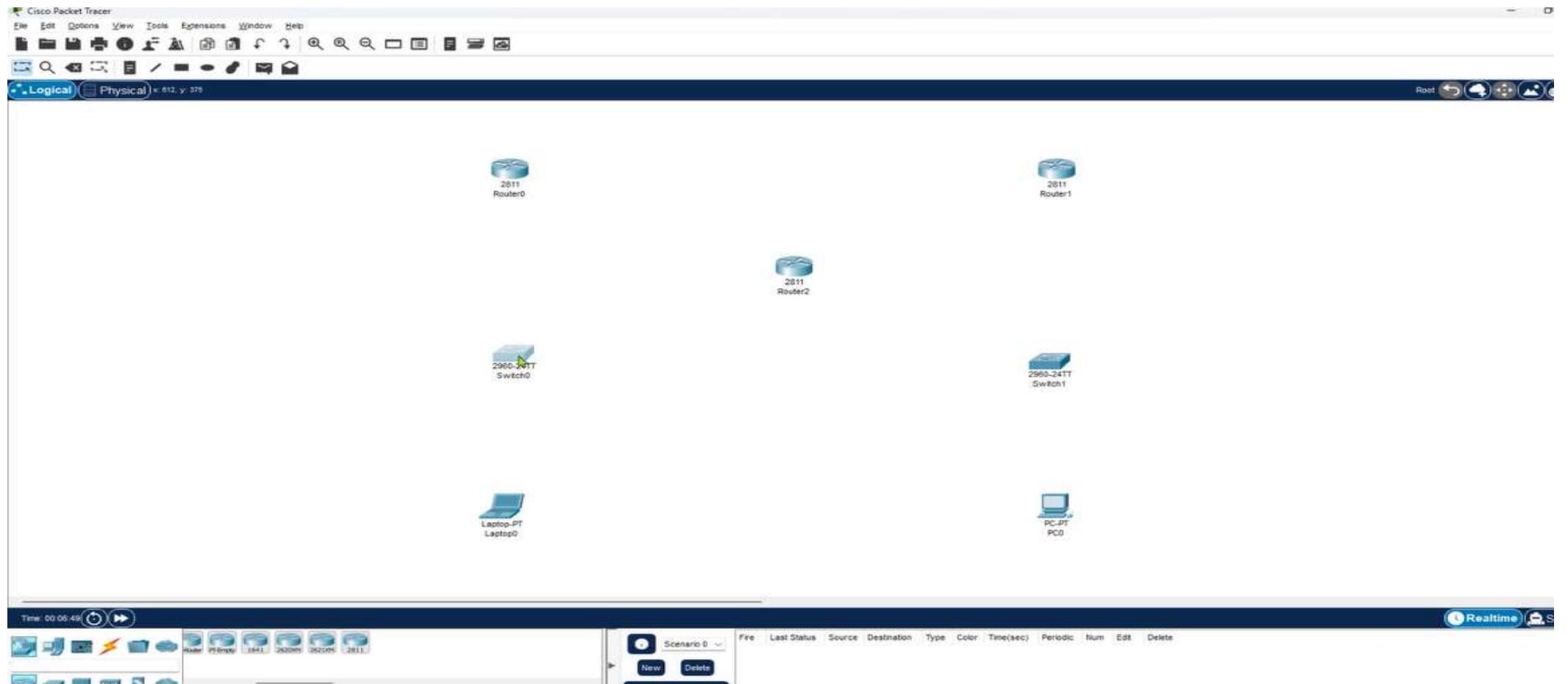
Choose the category of devices you want to select from (e.g., Switches, Routers, Laptop / PC).

Click and drag the desired device onto the workspace area to place it.

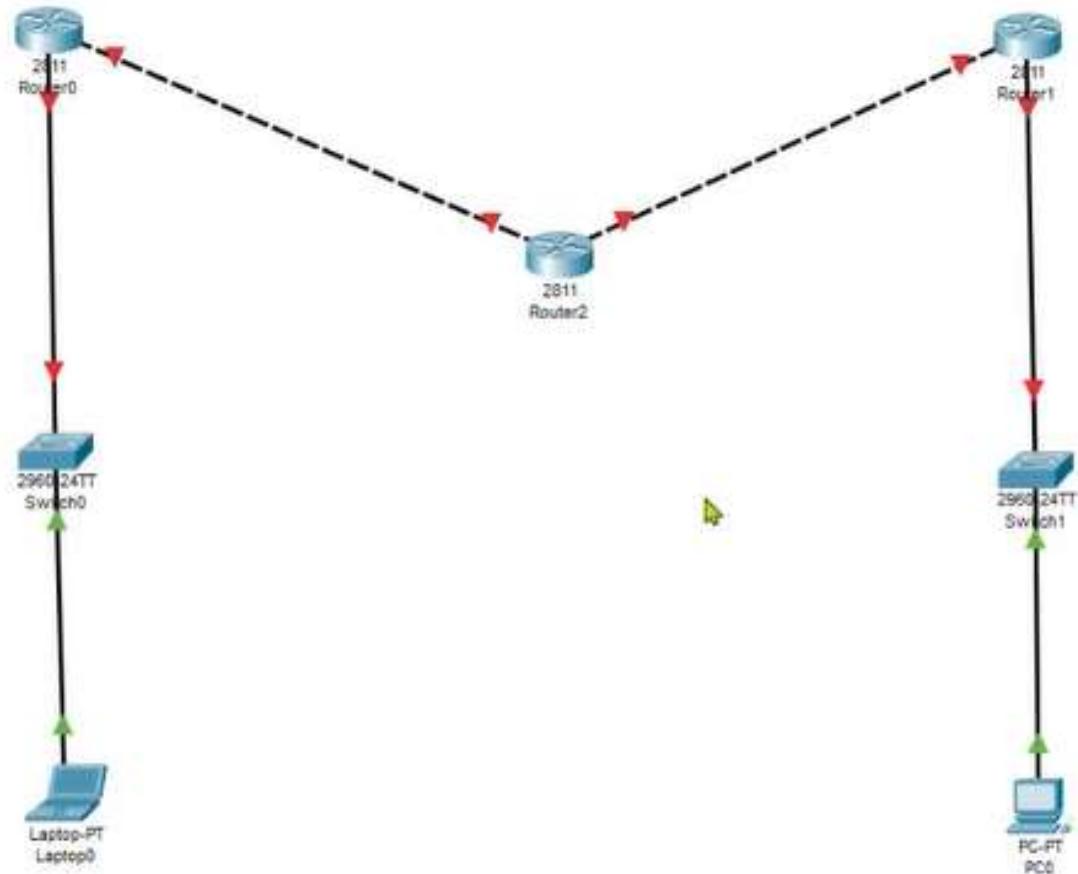
❖ To add devices and configure IP addresses in Cisco Packet Tracer:

Step 2: Add 2 PCs, 3 routers, and 2 switches.

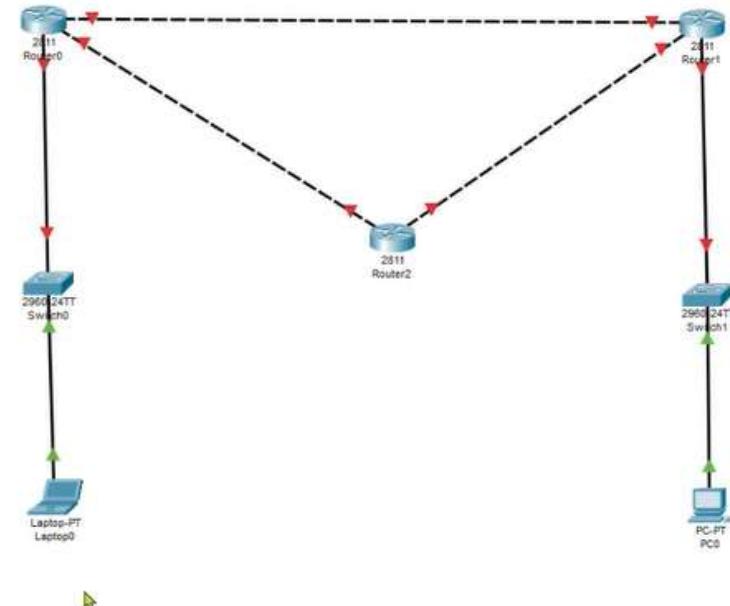
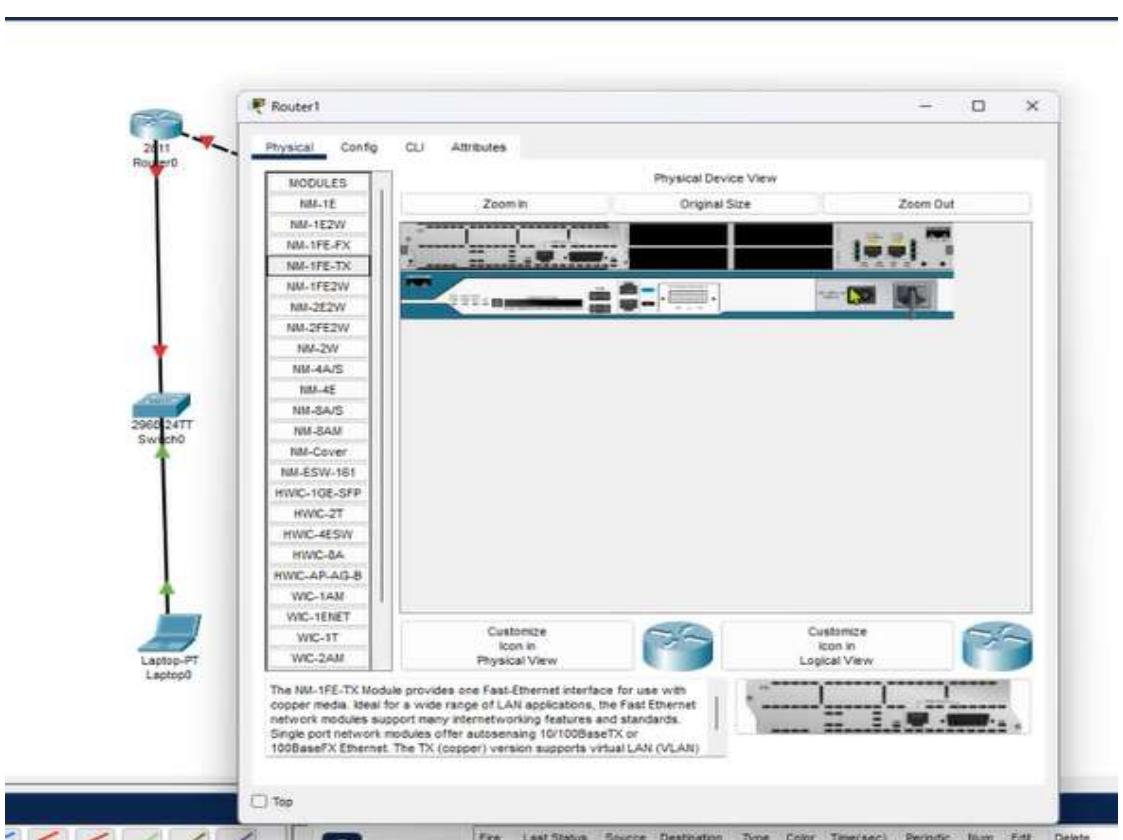
Step 3: Automatically wire PCs to switches and routers.



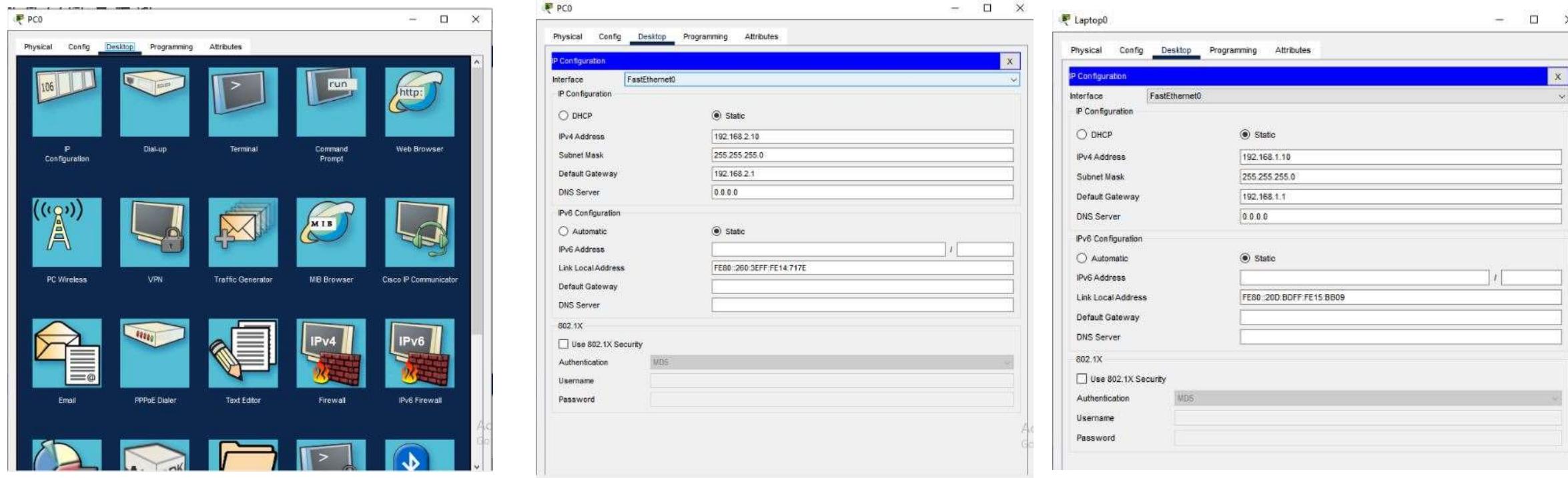
<b>Device</b>	<b>Interface</b>	<b>IP address</b>
Laptop 0	FastEthernet0	192.168.1.10
PC 0	FastEthernet0	192.168.2.10
Switch 0	FastEthernet0/1 FastEthernet0/2	
Switch 1	FastEthernet0/1 FastEthernet0/2	
Router 0	FastEthernet0/0 FastEthernet0/1 FastEthernet1/0	192.168.1.1
Router 1	FastEthernet0/0 FastEthernet0/1 FastEthernet1/0	192.168.2.1
Router 2	FastEthernet0/0 FastEthernet0/1	192.168.3.1



STEP4:- INSERT NM-SFE-TX for connect the wire router1 to router0.do this in both



STEP5:- Add ip addresses on pc and ping it to verify whether it connected or not. So click on pc and go to ip configuration add there ip address respectively and go to run command and ping it



PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time<1ms TTL=128
Reply from 192.168.2.10: bytes=32 time=14ms TTL=128
Reply from 192.168.2.10: bytes=32 time=19ms TTL=128
Reply from 192.168.2.10: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 19ms, Average = 8ms

C:\>
```

Laptop0

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.10

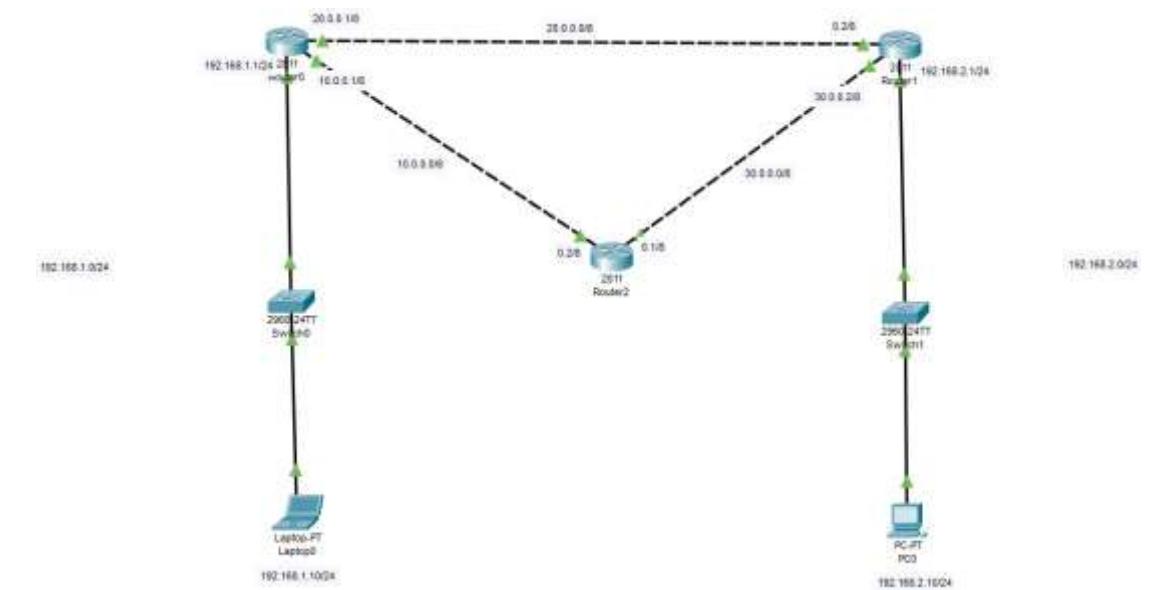
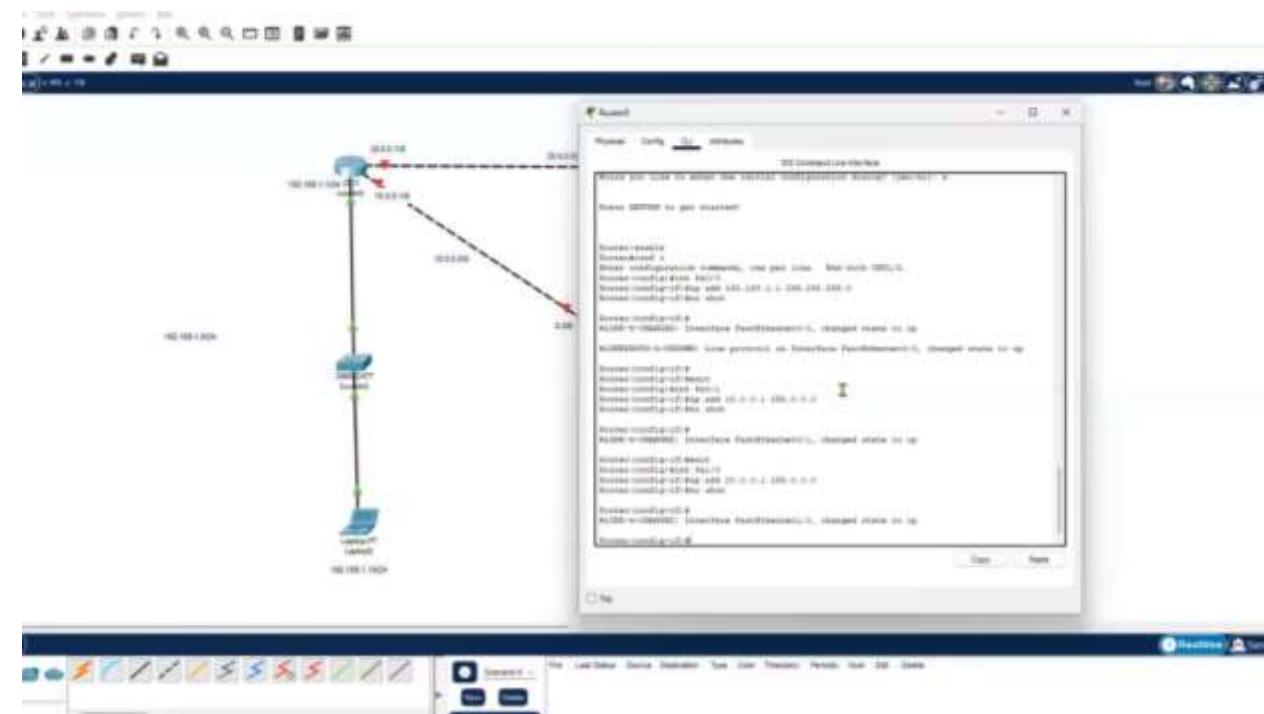
Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=41ms TTL=128
Reply from 192.168.1.10: bytes=32 time=4ms TTL=128
Reply from 192.168.1.10: bytes=32 time=10ms TTL=128
Reply from 192.168.1.10: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 41ms, Average = 16ms

C:\>
```

STEP 5:- use cli for add ip address and Ethernet connection for configuration in routers.



## Configuring Router R0 (all interfaces):

```
Router>enable  
Router#conf t  
Enter configuration commands, one per line. End with  
CNTL/Z. Router(config)#int fa0/0  
Router(config-if)#ip add 192.168.1.1  
255.255.255.0 Router(config-if)#no shut
```

```
Router(config-if)#  
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,  
changed state to up
```

```
Router(config-if)#  
Router(config-if)#exit  
Router(config)#int fa0/1  
Router(config-if)#ip add 10.0.0.1 255.0.0.0  
Router(config-if)#no shut
```

```
Router(config-if)#exit  
Router(config)#int fa1/0  
Router(config-if)#ip add 20.0.0.1 255.0.0.0  
Router(config-if)#no shut
```

```
Router(config-if)#  
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
```

```
Router(config-if)#

```

## Configuring Router R1 (all interfaces):

```
Router>en Router#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#int fa1/0  
Router(config-if)#ip add 20.0.0.2 255.0.0.0  
Router(config-if)#no shut
```

```
Router(config-if)#  
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0,  
changed state to up
```

```
Router(config-if)#exit  
Router(config)#int fa0/1  
Router(config-if)#ip add 30.0.0.2 255.0.0.0  
Router(config-if)#no shut
```

```
Router(config-if)#exit  
Router(config)#int fa0/0  
Router(config-if)#ip add 192.168.2.1 255.255.255.0  
Router(config-if)#no shut
```

```
Router(config-if)#

```

## Configuring Router R2 (all interfaces):

```
Router>en  
Router#co  
nf t  
Enter configuration commands, one per line.  
End with CNTL/Z. Router(config)#int fa0/0  
Router(config-if)#ip add  
10.0.0.2 255.0.0.0  
Router(config-if)#no shut  
Router(config-if)#exit  
  
Router(config)#int fa0/1  
Router(config-if)#ip add  
30.0.0.1 255.0.0.0  
Router(config-if)#no shut  
  
Router(config-if)#[
```

## Configuring OSPF on Router R0:

```
Router>en  
Router#co  
nf t  
Enter configuration commands, one per line.  
End with CNTL/Z. Router(config)#  
Router(config)#router ospf 1  
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0  
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0  
Router(config-router)#network 20.0.0.0  
0.255.255.255 area 0 Router(config-  
router)#exit  
Router(config)  
 )#^Z Router#  
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#wr  
Building  
configuration...  
[OK]  
Router#
```

## OSPF on Router R1:Configuring

```
Router>en  
Router#conf  
t  
Enter configuration commands, one per line.  
End with CNTL/Z. Router(config)#router  
ospf 1  
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0  
Router(config-router)#netowrk 30.0  
00:31:03: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.1.1  
on FastEthernet1/0 from  
% Invalid input detected at '^' marker.  
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0  
Router(config-router)#network 192.168.2.0  
0.0.0.255 area 0 Router(config-router)#exit  
Router(config)#  
^Z Router#  
%SYS-5-CONFIG_I: Configured from console by console
```

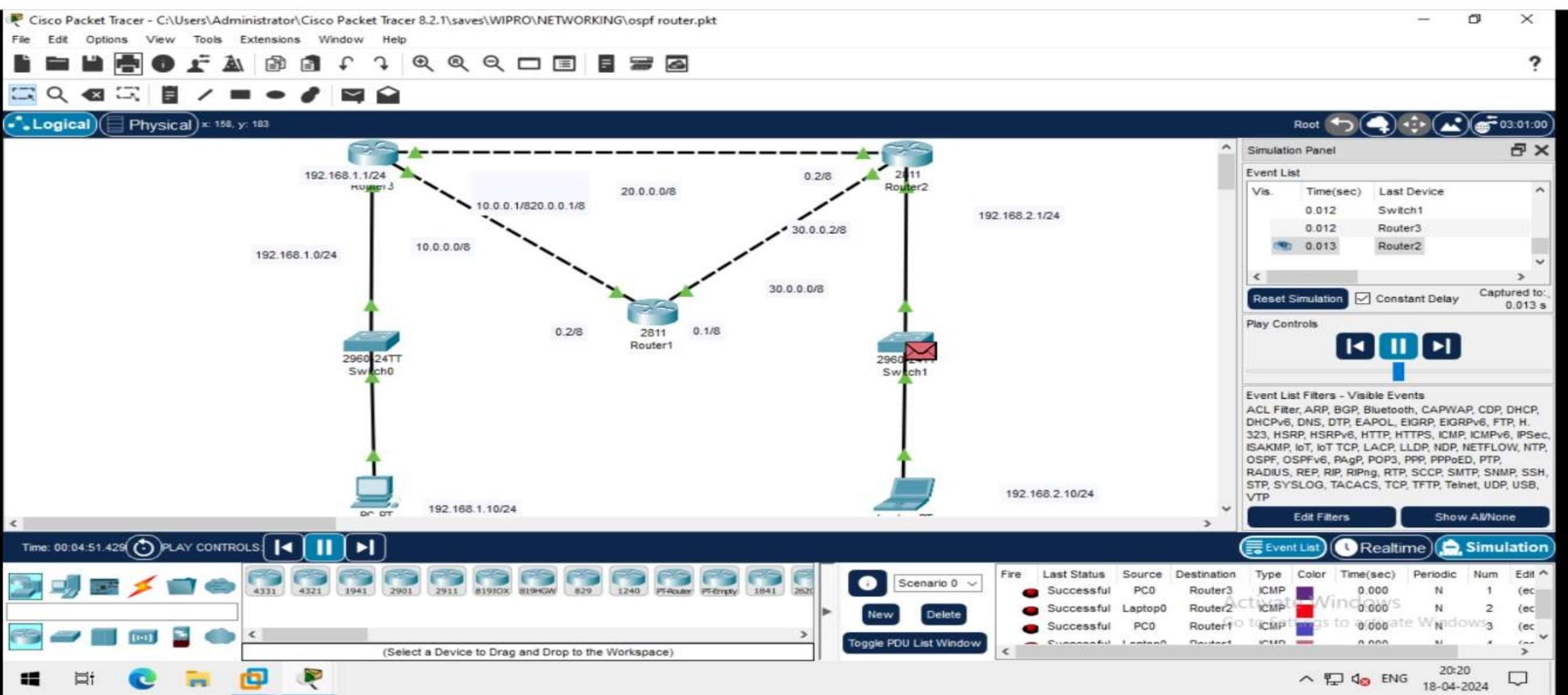
```
Router#wr  
Building  
configuration...  
[OK]  
Router#
```

## Configuring OSPF on Router R2:

```
Router>en  
Router#co  
nf t  
Enter configuration commands, one per line.  
End with CNTL/Z. Router(config)#router  
ospf 1  
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0  
Router(config-router)#network 30.0.0.0  
00:35:58: %OSPF-5-ADJCHG: Process 1, Nbr  
192.168.1.1 on FastEthernet0/0 from LOADING to  
FULL, Loading Done  
  
% Incomplete command.  
Router(config-router)#network 30.0.0.0  
0.255.255.255 area 0 Router(config-  
router)#exit  
Router(config  
)#^Z Router#  
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#wr  
Building  
configuration...  
[OK]
```

After ping to the pc0 to pc1 and router the stimulation is below



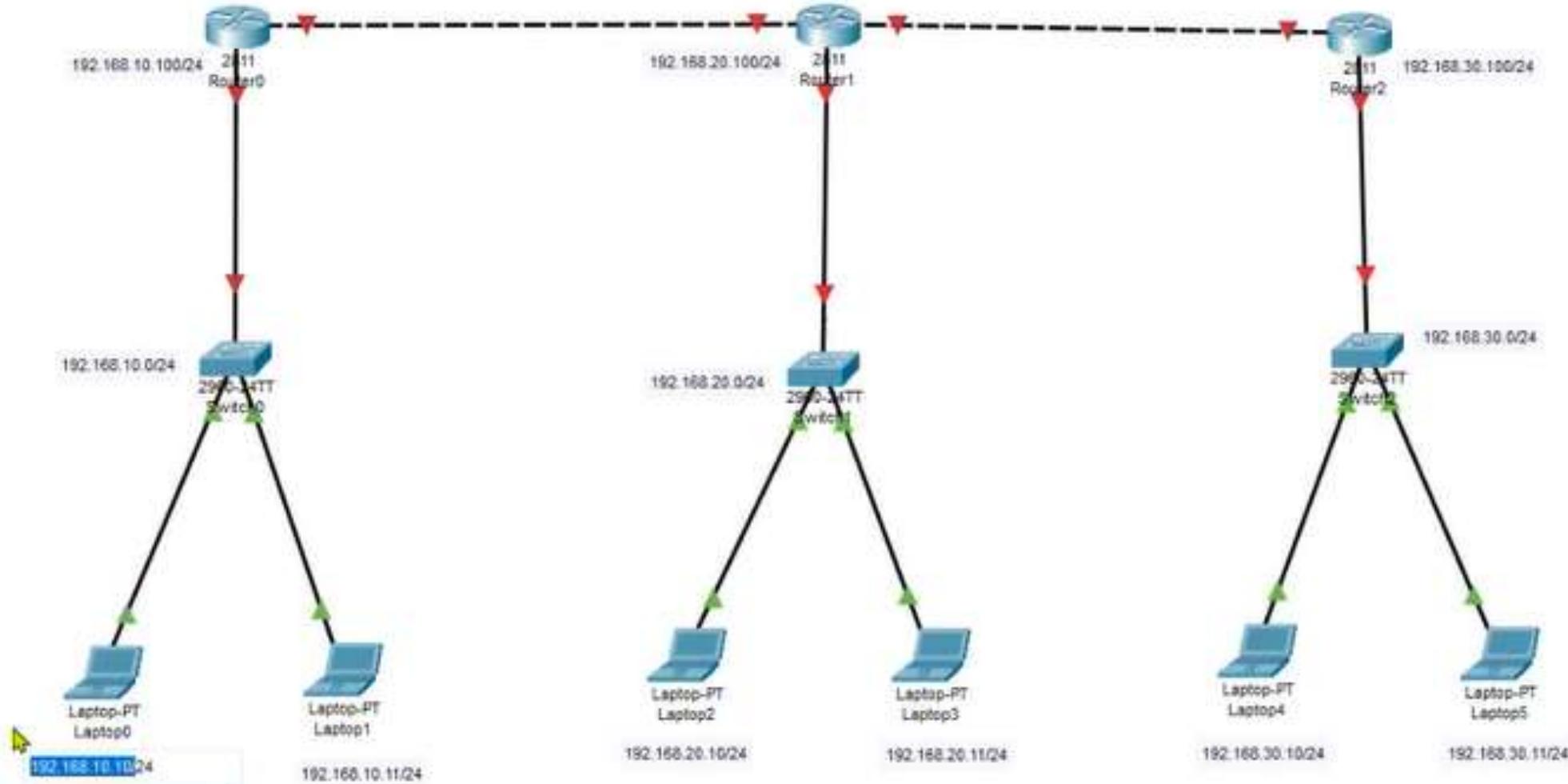
# STATIC WITH 3 ROUTER

Steps to Configure and Setup clan configuration in Cisco Packet Tracer :

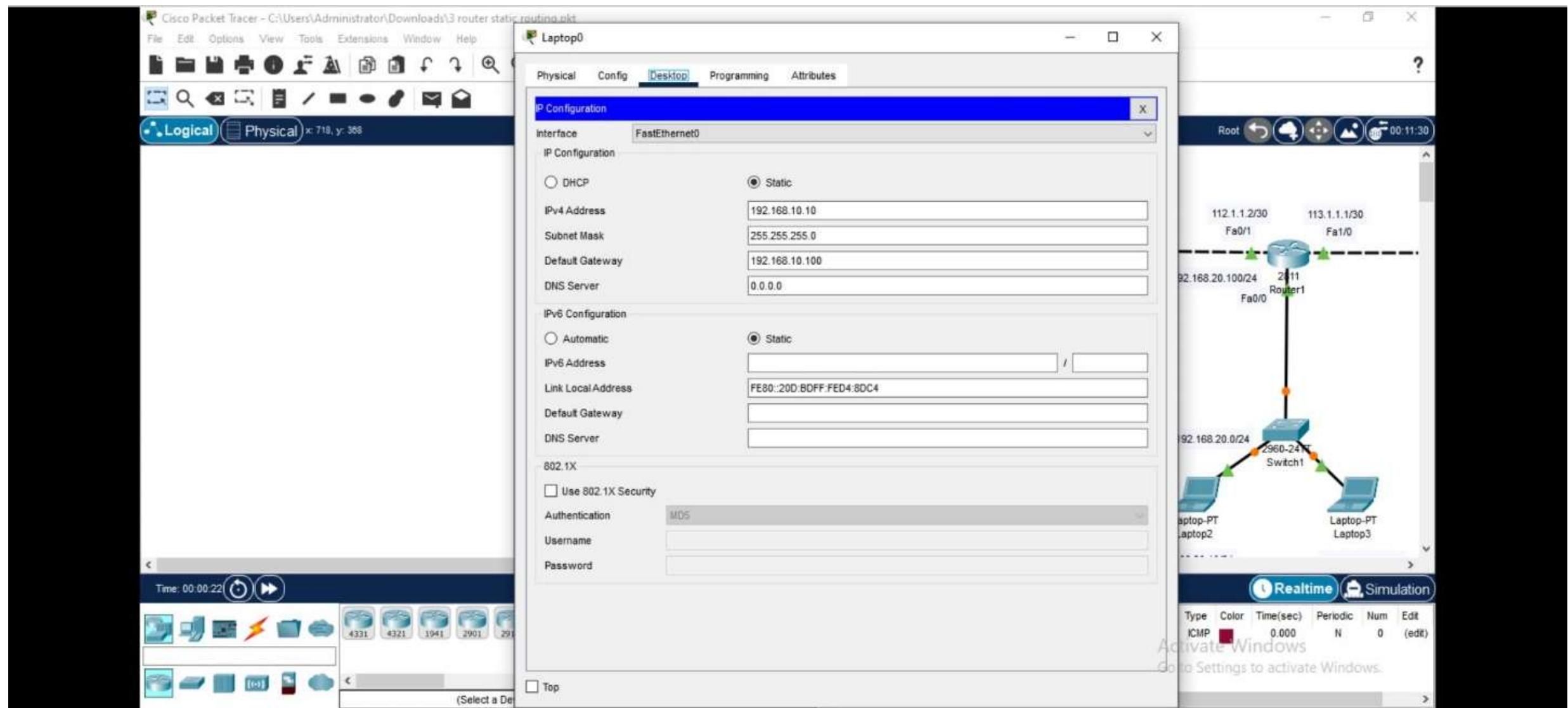
- Step 1: First, open the cisco packet tracer desktop and select the devices.
- Step2-Add 6pc , 3routerAND 3 SWITCHES .
- Ste3-Add automatically wire to pc to switch and router.
- Step4-Add there ip address

•pc0	192.168.10.10/24
•pc1	192.168.10.11/24
•pc2	192.168.20.10/24
•pc3	192.168.20.11/24
•pc4	192.168.30.10/24
•pc5	192.168.30.11/24

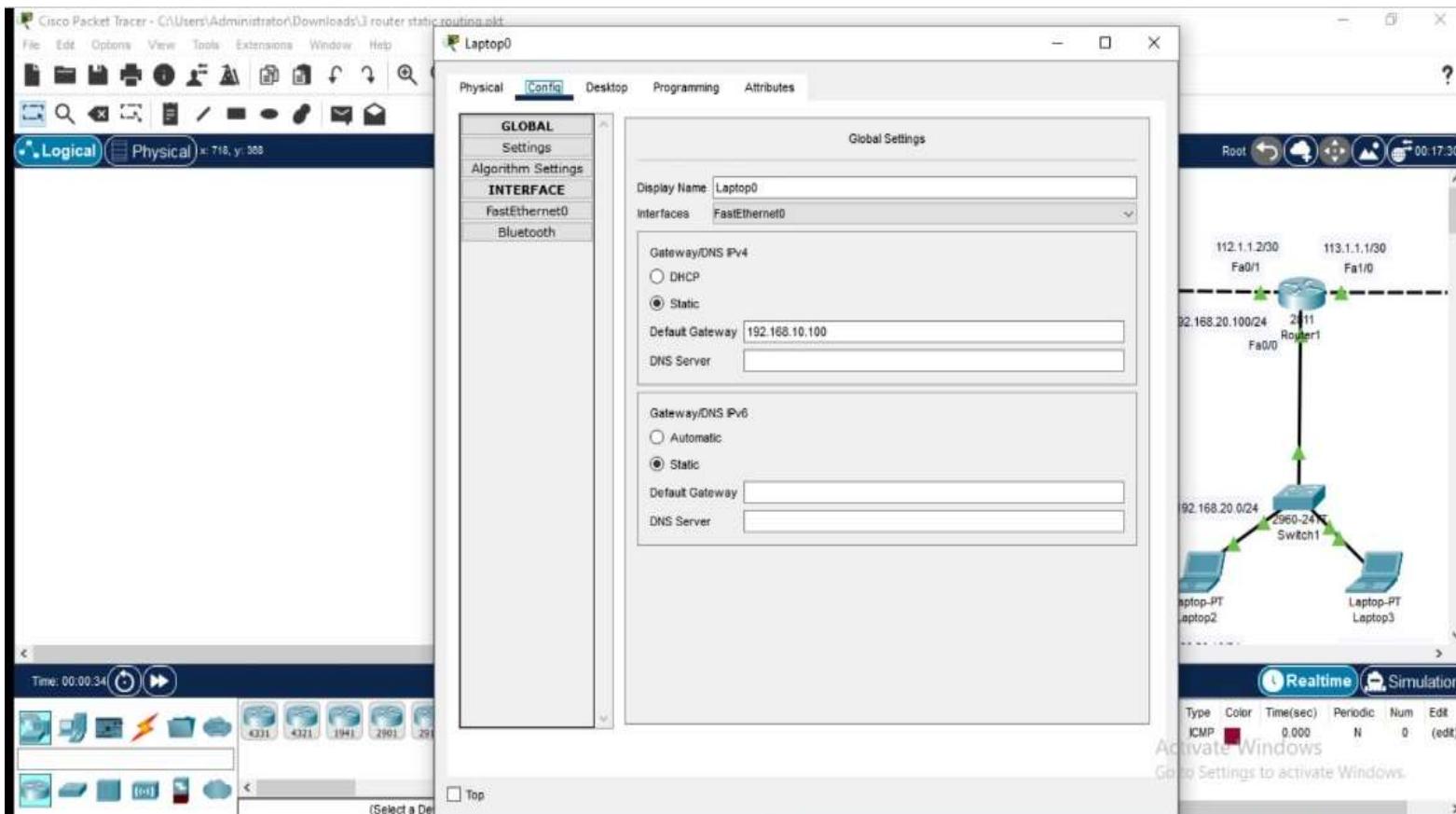
R1	R2	R3
c-192.168.10.0	c-112.1.1.0 c-113.1.1.0	c-113.1.1.0
c-112.1.1.0	c-192.168.20	c-192.168.30



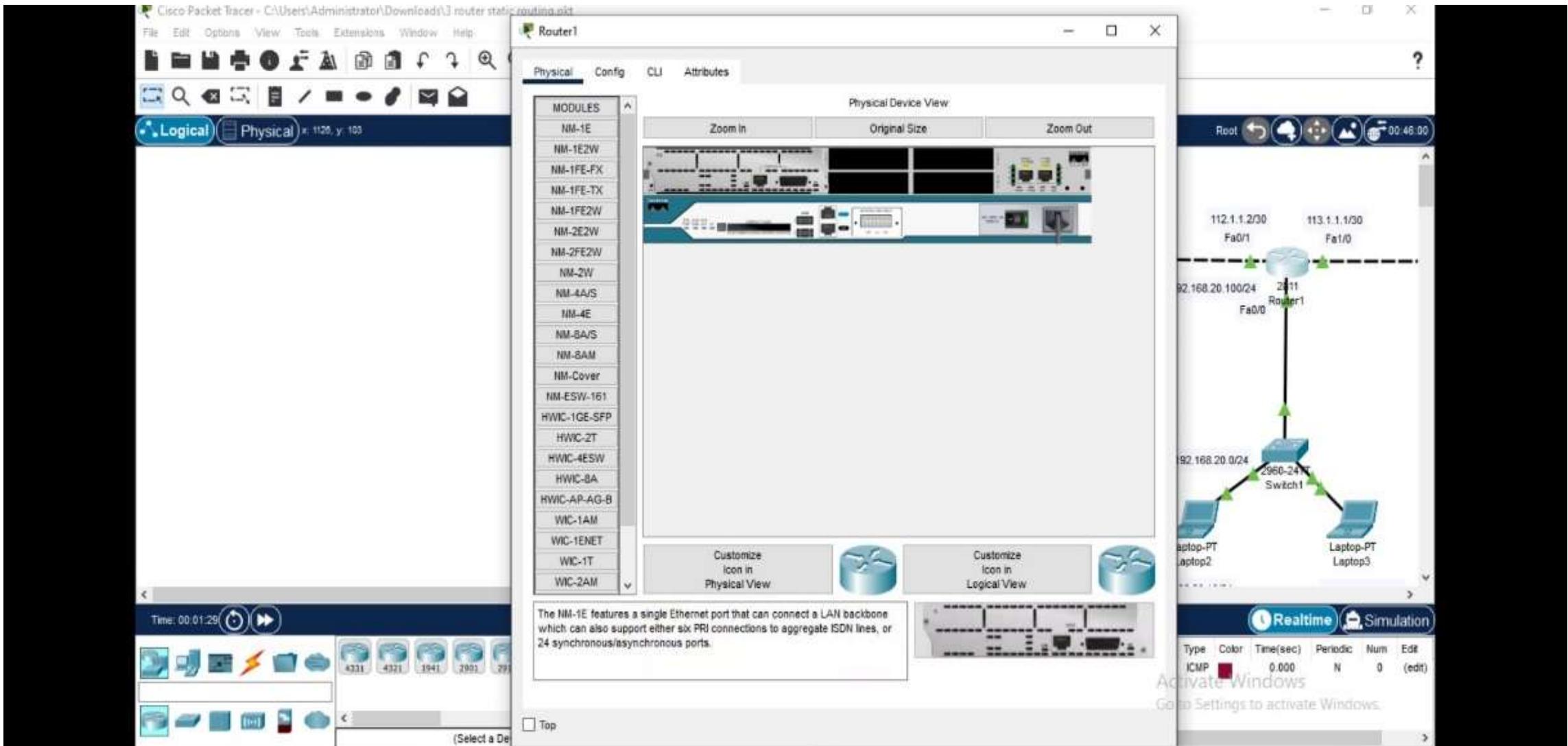
➤ STEP 5 -Then click on pc and go to desktop and click on ip configuration and ip address.



- STEP 6- Then click on config the add default gateways.



➤ STEP 7 - Then go to router then go to physical address ad Ethernet port on NMSPETX.



- STEP 8- NOW ALL WIRES ARE CONNECTED  
MANUALLY
- NOW GO TO ROUTERS AND CLICK ON CLI

Router R1 configuration:

```
Router>enable
Router#conf t
Router(config)#hostname R1
R1(config)#interface fastEthernet 0/0
R1(config-if)#ip address 192.168.10.100 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface fastEthernet 0/1

R1(config-if)#ip address 112.1.1.1 255.255.255.252
R1(config-if)#no shut
R1(config-if)#^Z
R1#wr
Building configuration...
[OK]
```

Router R2 config:

Router>en

Router#conf t

Router(config)#hostname R2

R2(config)#interface fa0/1

R2(config-if)#ip add 112.1.1.2 255.255.255.252

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#interface fa0/0

R2(config-if)#ip add 192.168.20.100 255.255.255.0

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#int fa1/0

R2(config-if)#ip add 113.1.1.1 255.255.255.252

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#^Z

R2#wr

Building configuration...

[OK]

R2#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

## Router R3 config:

```
Router>en
Router#conf t
Router(config)#hostname R3
R3(config)#int fa0/1
R3(config-if)#ip add 113.1.1.2 255.255.255.252
R3(config-if)#no shut
R3(config-if)#exit
R3(config)#int fa0/0
R3(config-if)#ip add 192.168.30.100 255.255.255.0
R3(config-if)#no shut
R3(config-if)#^Z
R3#wr
Building configuration...
[OK]
R3#
```

To config static routing for Router R1:

R1#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#ip route 192.168.20.0 255.255.255.0 112.1.1.2

R1(config)#ip route 192.168.30.0 255.255.255.0 112.1.1.2

R1(config)#ip route 113.1.1.0 255.255.255.252 112.1.1.2

R1(config)#^Z

R1#

%SYS-5-CONFIG\_I: Configured from console by console

R1#wr

Building configuration...

[OK]

R1#

To config static routing for Router R2:

R2#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R2(config)#

R2(config)#ip route 192.168.10.0 255.255.255.0 112.1.1.1

R2(config)#ip route 192.168.30.0 255.255.255.0 113.1.1.2

R2(config)#^Z

R2#

%SYS-5-CONFIG\_I: Configured from console by console

R2#wr

Building configuration...

[OK]

R2#

To config static routing for Router R3:

R3>

R3>en

R3#conf t

Enter configuration commands, one per line. End with

CNTL/Z.

R3(config)#ip route 192.168.10.0 255.255.255.0 113.1.1.1

R3(config)#ip route 192.168.20.0 255.255.255.0 113.1.1.1

R3(config)#ip route 112.1.1.0 255.255.255.252 113.1.1.1

R3(config)#^Z

R3#

%SYS-5-CONFIG\_I: Configured from console by console

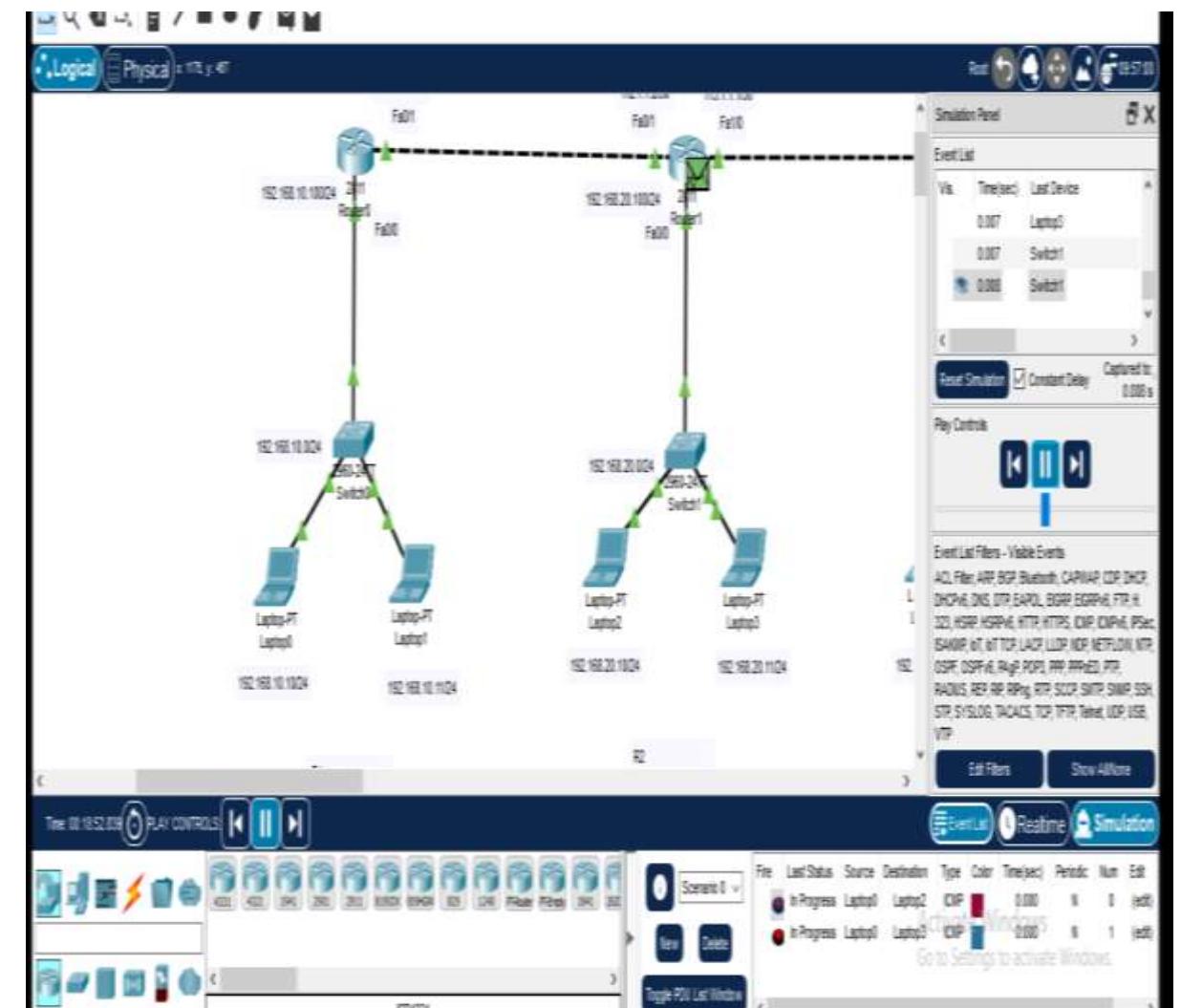
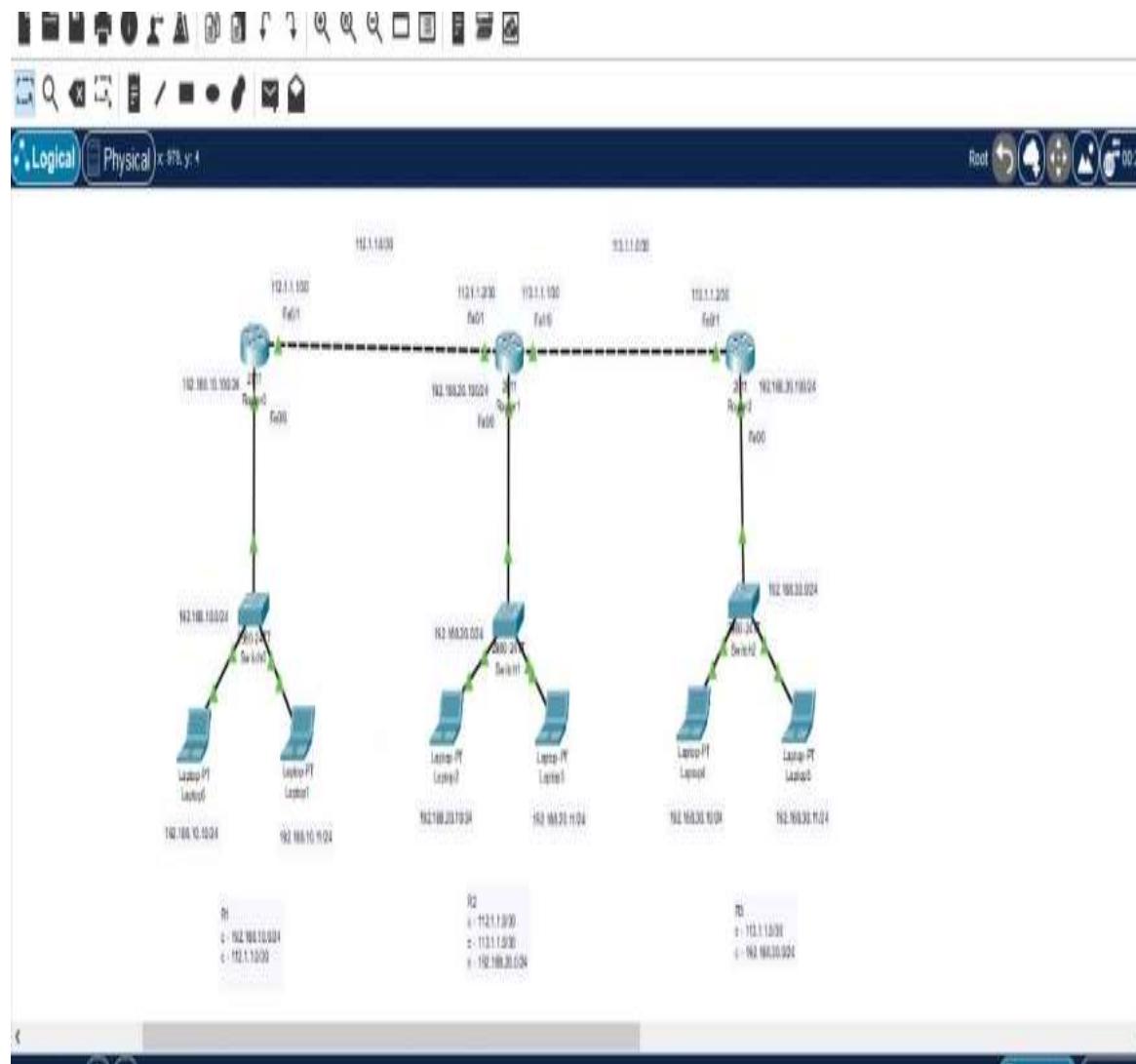
R3#wr

Building configuration...

[OK]

R3#

❖ NOW ALL PROCESS ARE DONE AND WHEN WE PING TO PC TO ANOTHER PC IT WILL .



# THANK YOU

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