

WIPRO NGA Program – Datacenter Batch

Capstone Project Presentation – 06 April 2024

Project Title Here - Capstone Project

Presented by - Biswajit Mishra

Project -2

Objective: Install the CentOS 7 server (*after installation GUI must be present*). Attach 3 disks of 5GB each & create 2 LVMs from these disks of 7GB (/lvm1) and 8GB (/lvm2) with XFS and EXT4 file systems respectively and verify. Install the following RPM packages using the package manager of your choice using a single command.

VSFTPD

PHP

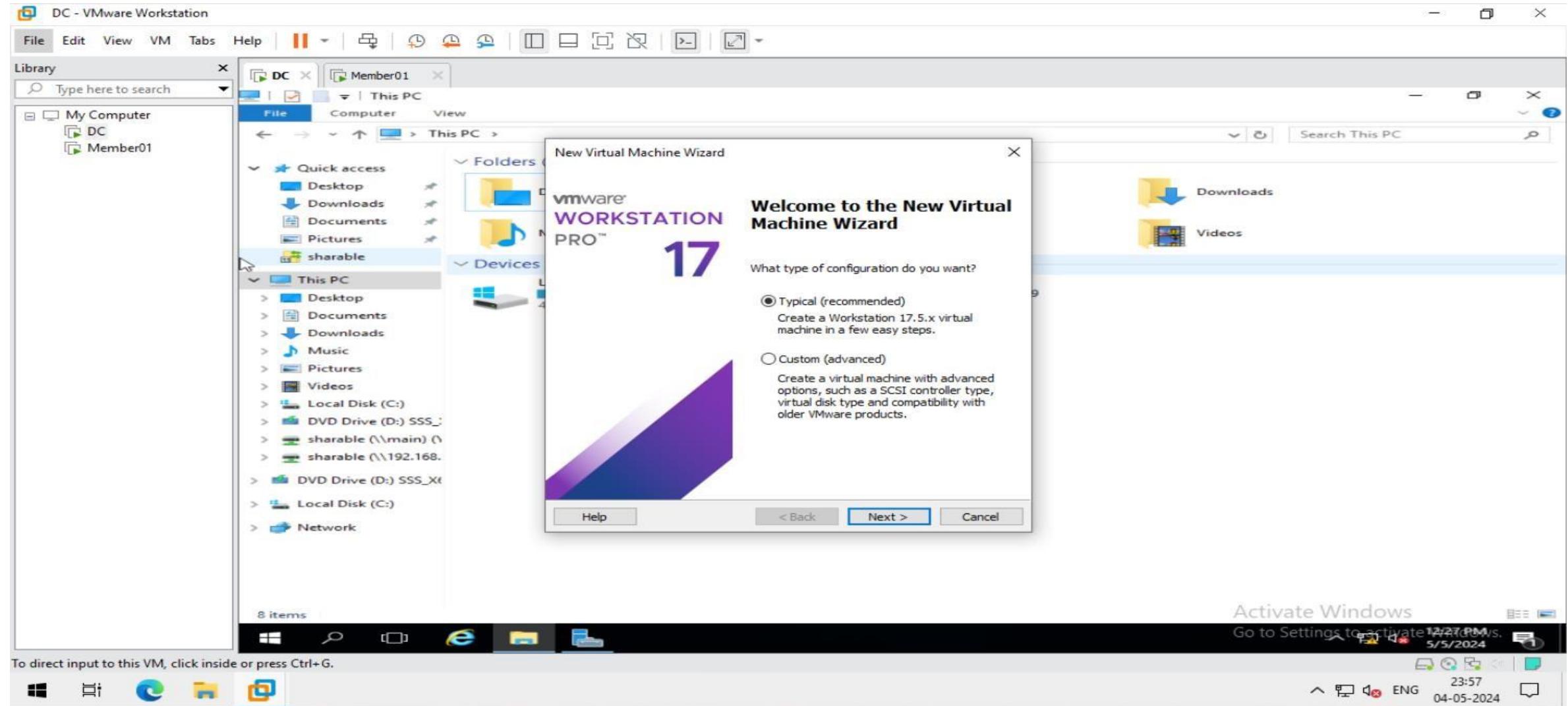
System-Config-Kickstart
finger.

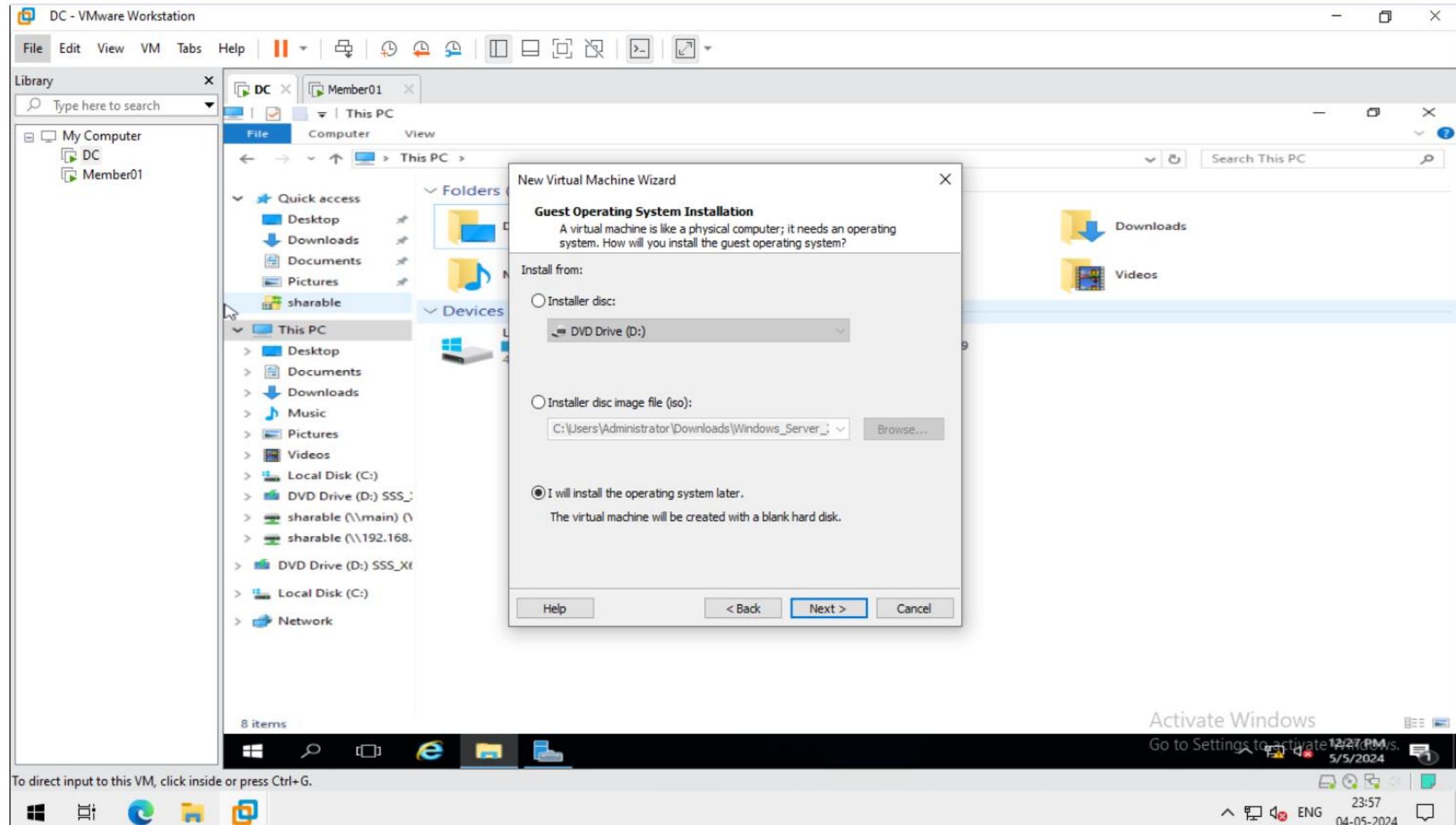
Start “YES” process and use the TOP command to kill this process.

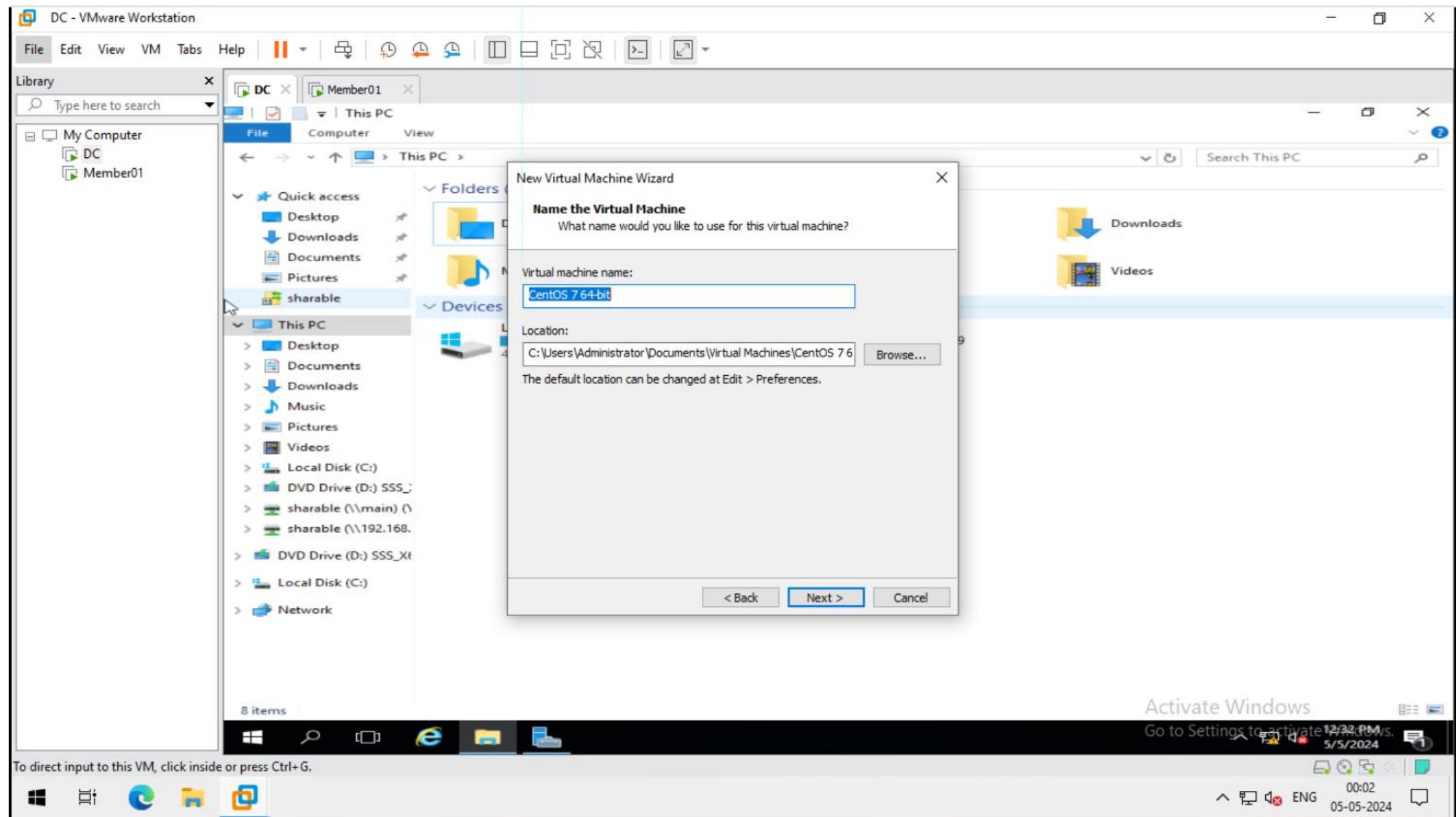
CONTENT

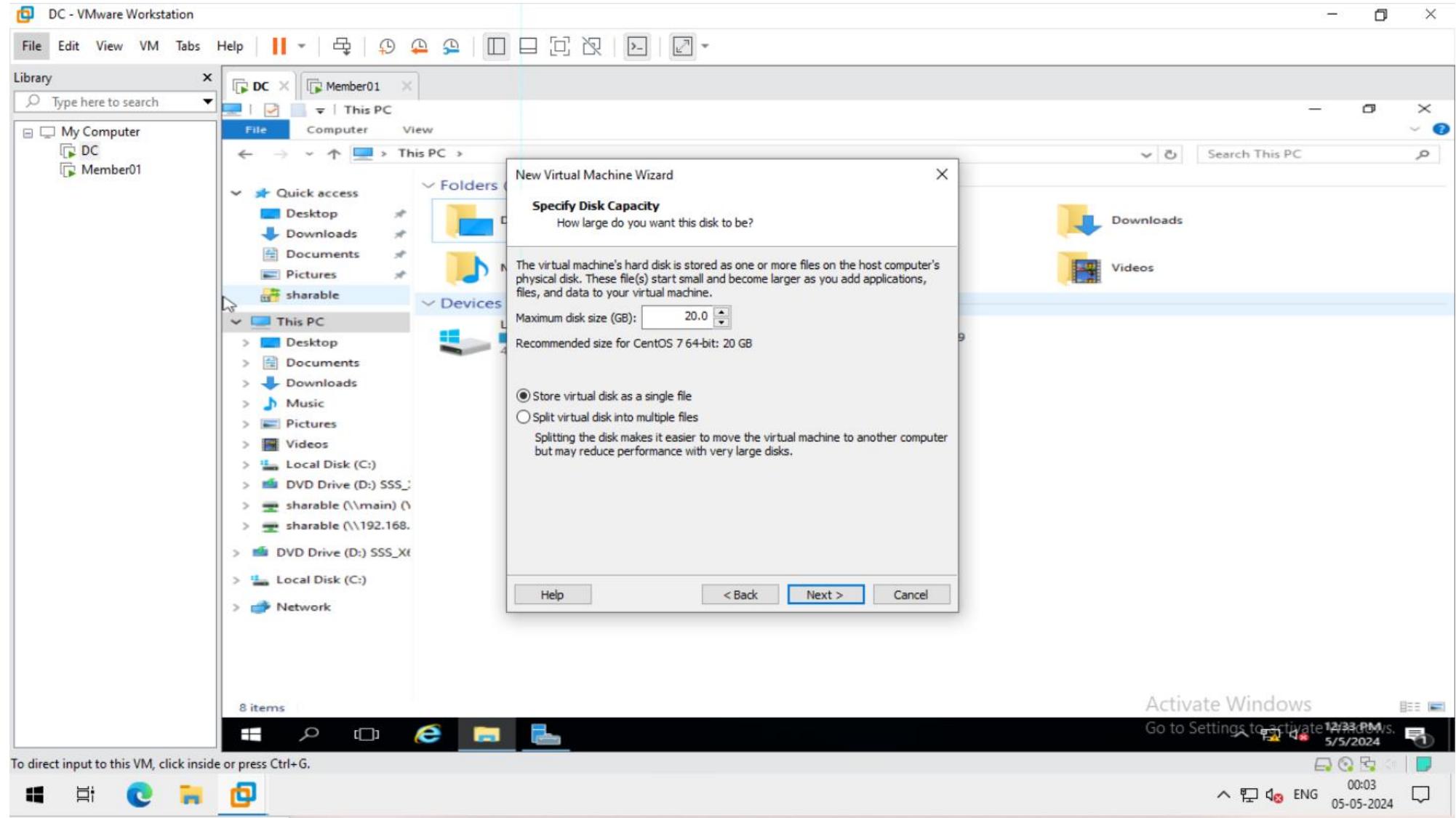
Sl No	Functions
1	Installing CentOS 7 using the text-mode installation
2	Change settings and start the installation
3	Change cli to gui using init 5
4	Change the ip and host name using nmtui command
5	Creation of LVM – Add 3 disk , creation physical disk, physical volume, volume group and 2 logical volume with xfs and ext4 file system. And verify it
6	Start yes process and kill it using top command
7	Installing the packets using yum in single command

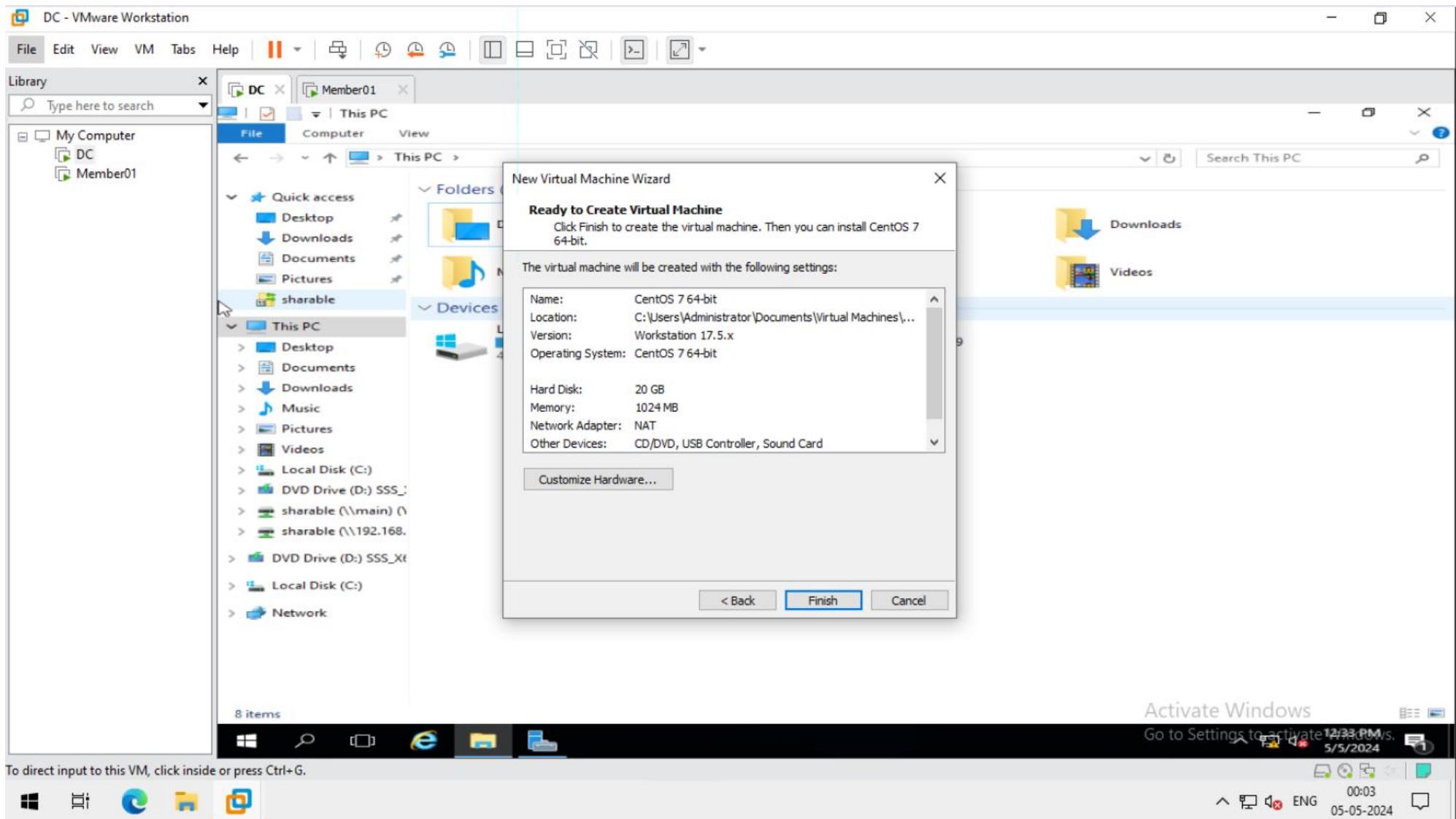
1. creating a new CentOS 7 using text-mode installation.

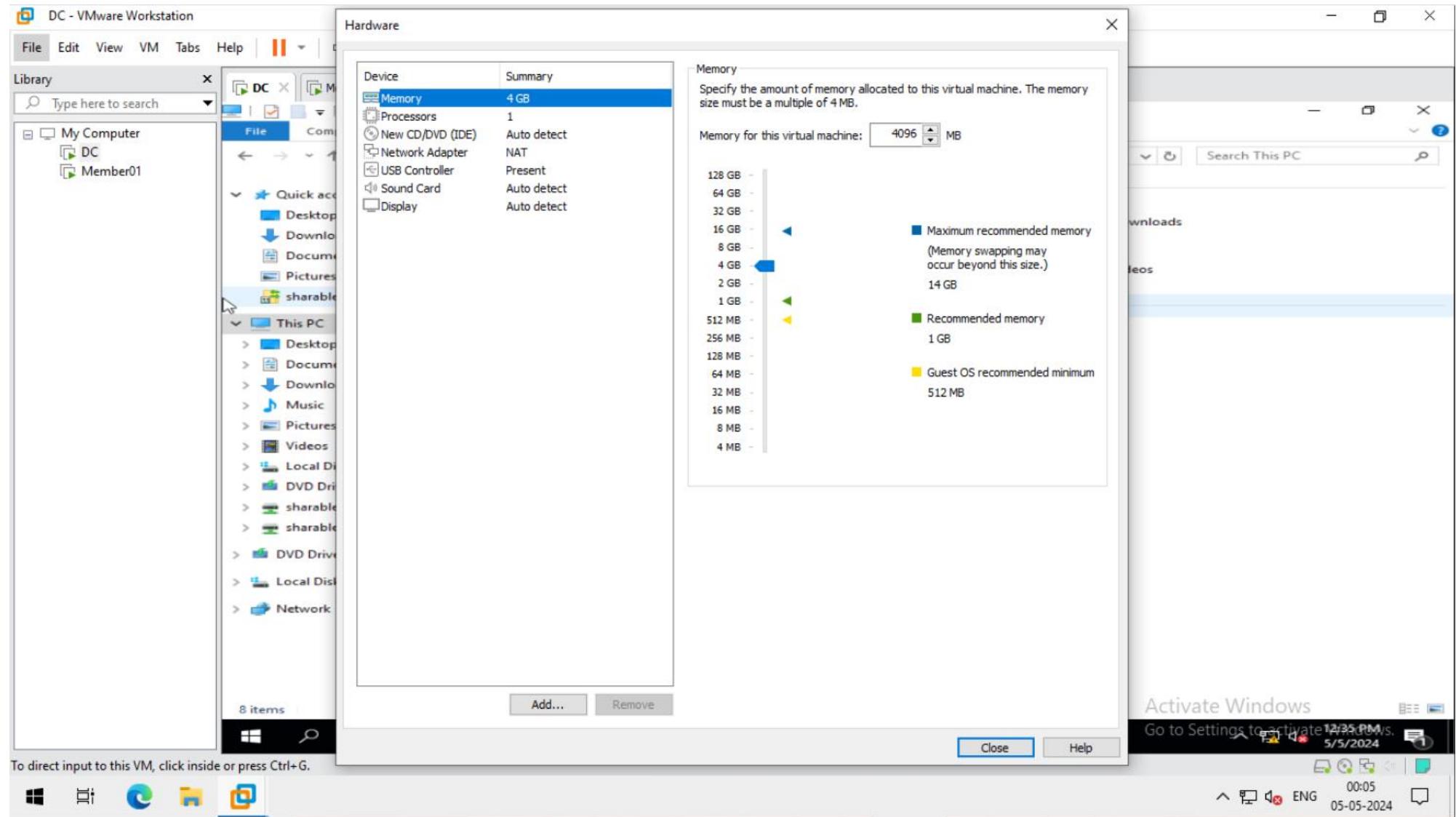


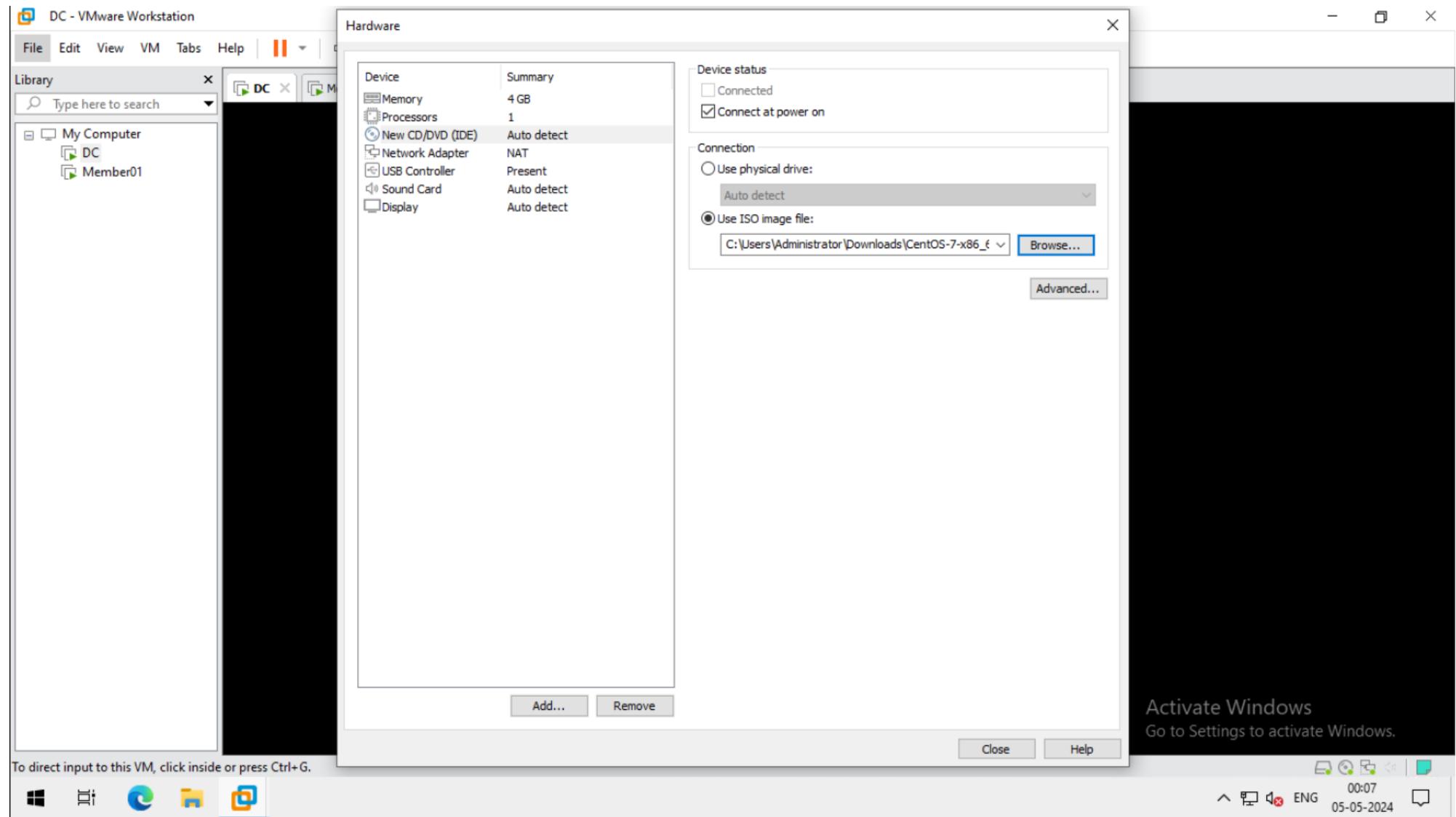












CentOS 7 64-bit

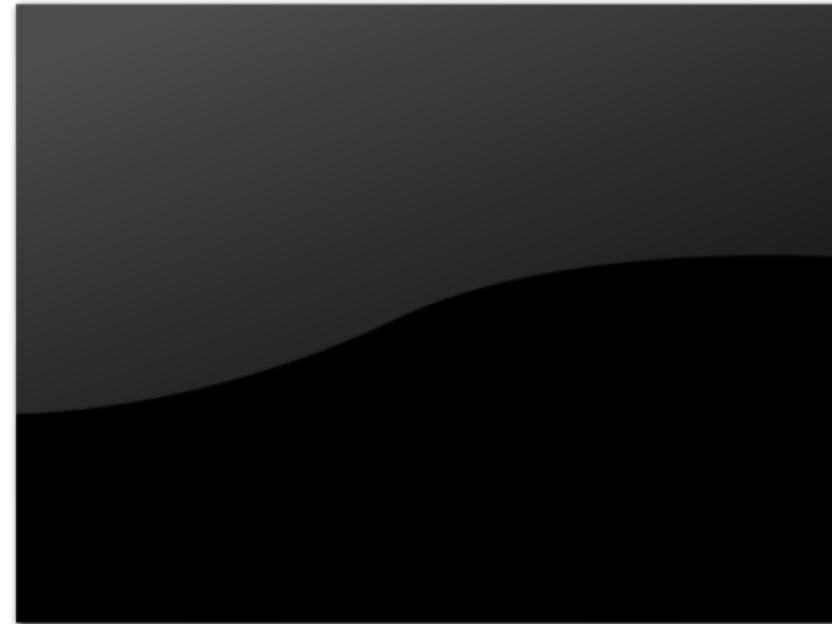
- Power on this virtual machine
- Edit virtual machine settings

Devices

	Memory	4 GB
	Processors	1
	Hard Disk (SCSI)	20 GB
	CD/DVD (IDE)	Using file C:\Use...
	Network Adapter	NAT
	USB Controller	Present
	Sound Card	Auto detect
	Display	Auto detect

Description

Type here to enter a description of this virtual machine.



Virtual Machine Details

State: Powered off

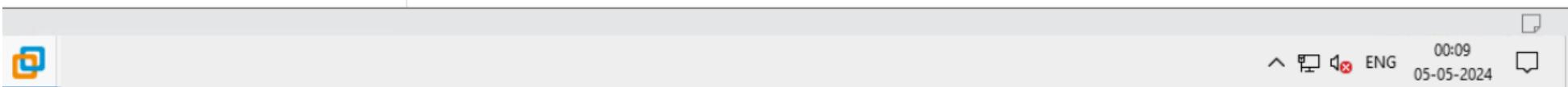
Configuration file: C:\Users\Administrator\Documents\Virtual Machines\CentOS 7 64-bit\CentOS 7 64-bit.vmx

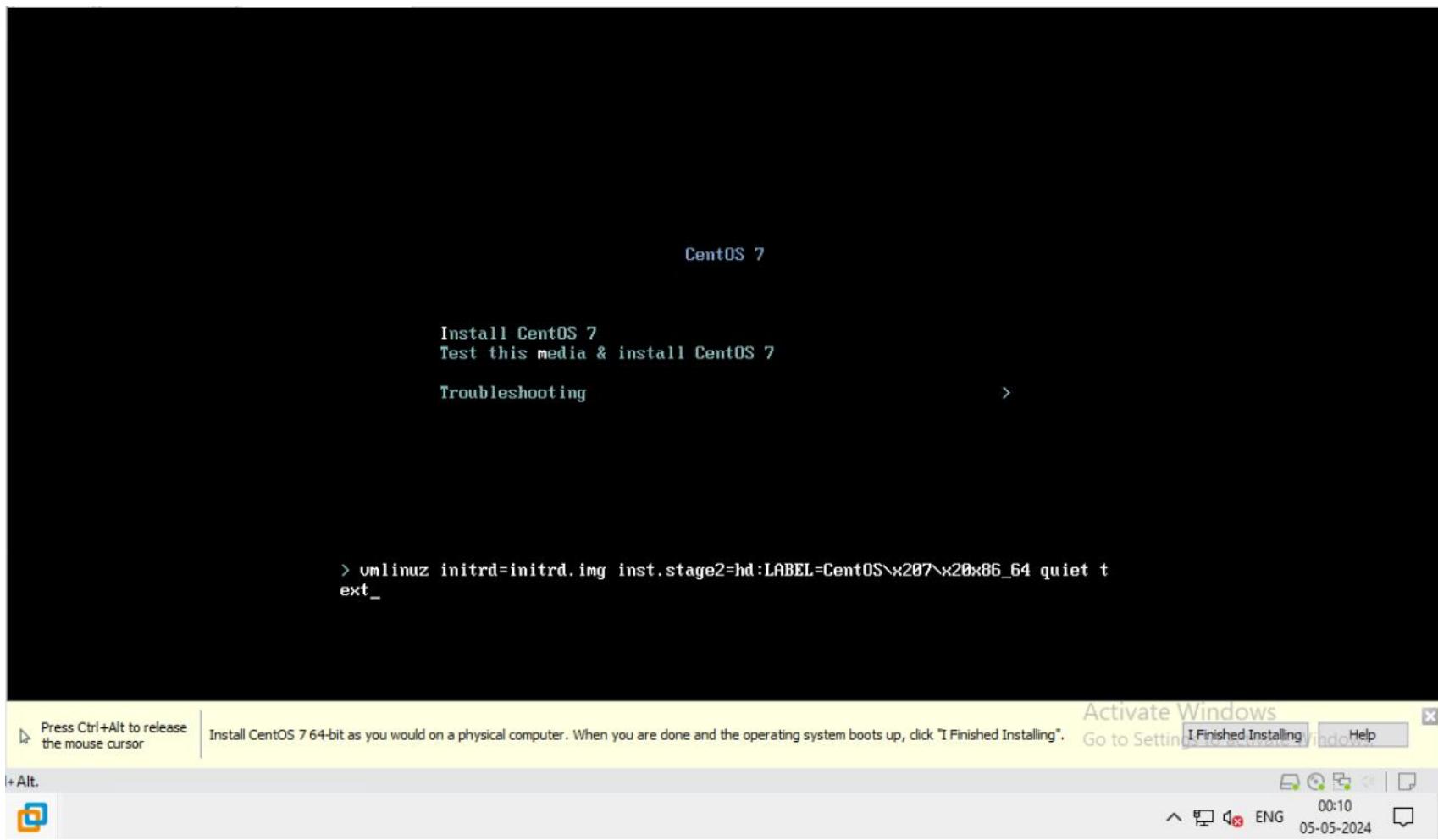
Hardware compatibility: Workstation 17.5.x virtual machine

Primary IP address: Network information is not available

Activate Windows

Go to Settings to activate Windows.





2. Change settings and start the installation

```
Installation
1) [x] Language settings
      (English (United States))
3) [x] Installation source
      (Local media)
5) [!] Installation Destination
      (No disks selected)
7) [ ] Network configuration
      (Not connected)
9) [!] User creation
      (No user will be created)
Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 8
=====
=====
Please select new root password. You will have to type it twice.

Password:
Password (confirm):
=====
=====
Installation
1) [x] Language settings
      (English (United States))
3) [x] Installation source
      (Local media)
5) [!] Installation Destination
      (No disks selected)
7) [ ] Network configuration
      (Not connected)
9) [ ] User creation
      (No user will be created)
Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]:
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log      Switch tab: Alt+Tab to help us to activate Windows.
or press Ctrl+G.

Activate Windows
00:32
05-05-2024
```

```
=====
=====
Partition Scheme Options
[ ] 1) Standard Partition
[ ] 2) Btrfs
[x] 3) LVM
[ ] 4) LVM Thin Provisioning

Select a partition scheme configuration.

Please make your choice from above ['q' to quit | 'c' to continue | 'r' to refresh]: c
Generating updated storage configuration
Checking storage configuration...

=====
=====
Installation

1) [x] Language settings
   (English (United States))
3) [x] Installation source
   (Local media)
5) [x] Installation Destination
   (Automatic partitioning selected)
7) [ ] Network configuration
   (Not connected)
9) [ ] User creation
   (No user will be created)

2) [x] Time settings
   (Asia/Kolkata timezone)
4) [x] Software selection
   (Minimal Install)
6) [x] Kdump
   (Kdump is enabled)
8) [x] Root password
   (Password is set.)

Please make your choice from above ['q' to quit | 'b' to begin installation | 'r' to refresh]:
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log      Switch tab: Alt+Tab to help; F10 to activate Windows.
or press Ctrl+G.


Activate Windows
Switch tab: Alt+Tab to help; F10 to activate Windows.
00:36
ENG
05-05-2024
```

```
=====
Password:
Password (confirm):
=====
=====
User creation

1) [x] Create user
2) Fullname
    biswajit
3) Username
    biswajit
4) [x] Use password
5) Password
    Password set.
6) [ ] Administrator
7) Groups
    Please make your choice from above ['q' to quit | 'c' to continue |
    'r' to refresh]: c
=====

=====
Installation

1) [x] Language settings
    (English (United States))
2) [x] Time settings
    (Asia/Kolkata timezone)
3) [x] Installation source
    (Local media)
4) [x] Software selection
    (Minimal Install)
5) [x] Installation Destination
    (Automatic partitioning
    selected)
6) [x] Kdump
    (Kdump is enabled)
7) [ ] Network configuration
    (Not connected)
8) [x] Root password
    (Password is set.)
9) [x] User creation
    (User biswajit will be created)
    Please make your choice from above ['q' to quit | 'b' to begin installation |
    'r' to refresh]: b
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log  Switch tab: Alt+Tab or Help to activate Windows.
Activate Windows
or press Ctrl+G.

00:39  
05-05-2024
```

=====

Base environment Software selection

Base environment

- 1) [x] Minimal Install
- 2) [] Compute Node
- 3) [] Infrastructure Server
- 4) [] File and Print Server
- 5) [] Basic Web Server
- 6) [] Virtualization Host
- 7) [] Server with GUI
- 8) [] GNOME Desktop
- 9) [] KDE Plasma Workspaces
- 10) [] Development and Creative Workstation

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: ?

[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log

Switch tab: Alt+Tab | Help: F1 Activ

Go to:

=====

Installation

- 1) [x] Language settings
(English (United States))
- 2) [x] Time settings
(Asia/Kolkata timezone)
- 3) [x] Installation source
(Local media)
- 4) [x] Software selection
(Server with GUI)
- 5) [x] Installation Destination
(Automatic partitioning selected)
- 6) [x] Kdump
(Kdump is enabled)
- 7) [x] Network configuration
- 8) [x] Root password
(Password is set.)

3. Log in into gui

```
CentOS Linux 7 (Core)
Kernel 3.10.0-1160.el7.x86_64 on an x86_64

localhost login: root
Password:
Last login: Sun May  5 13:51:50 on tty1
[root@localhost ~]# init 5
```

Sun 13:55



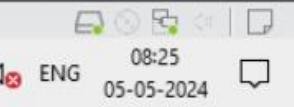
biswajit

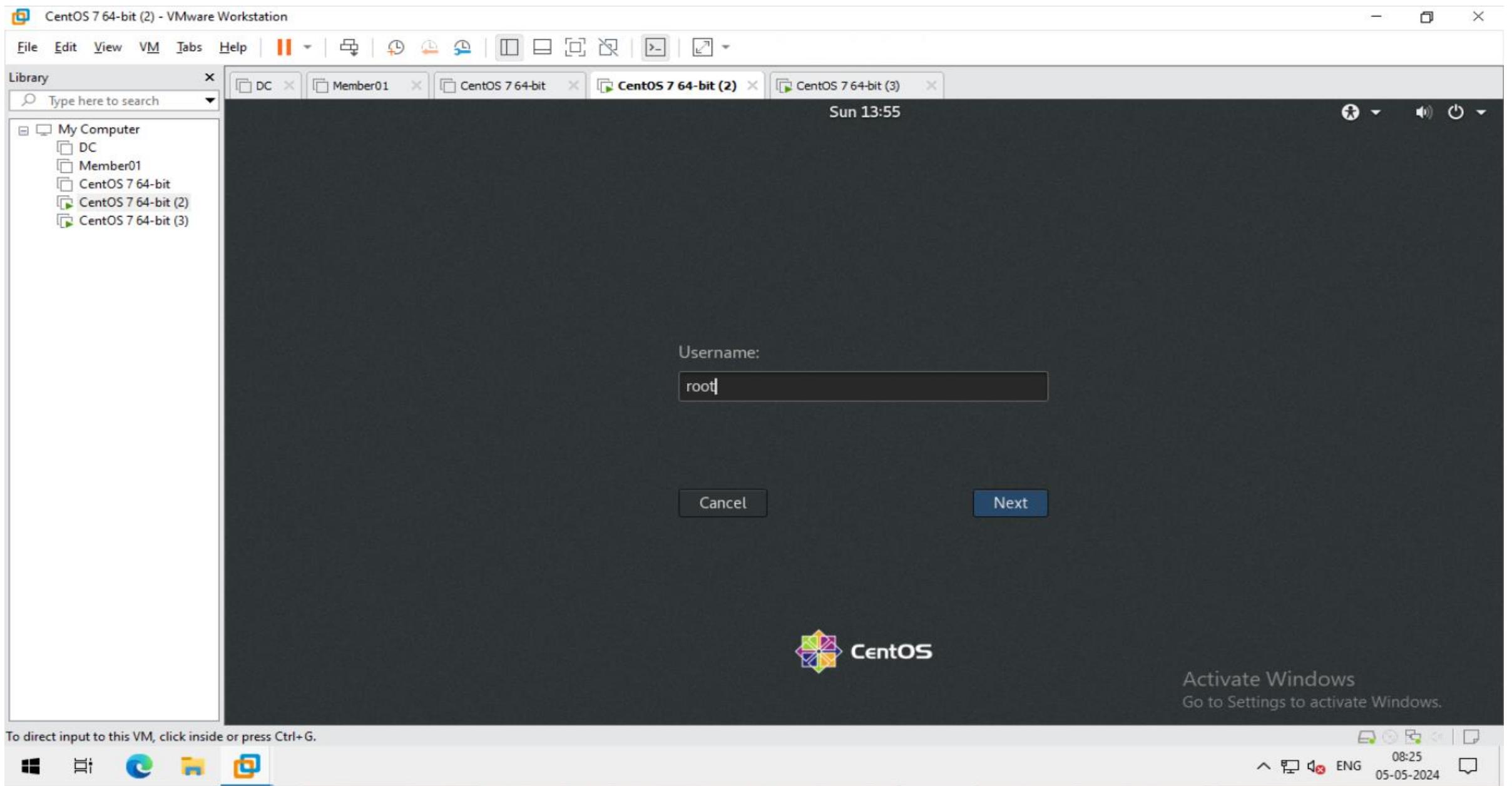
Not listed?

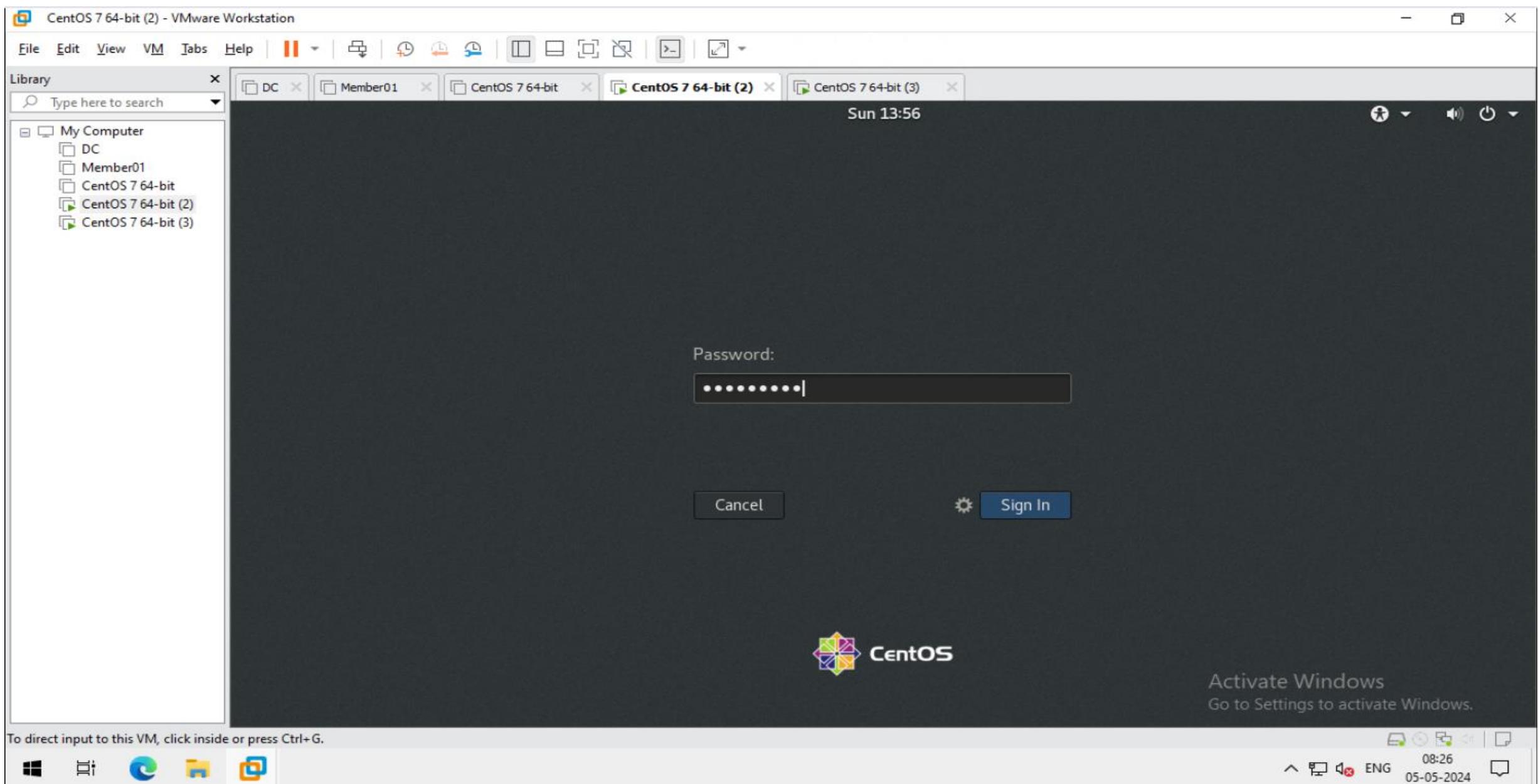


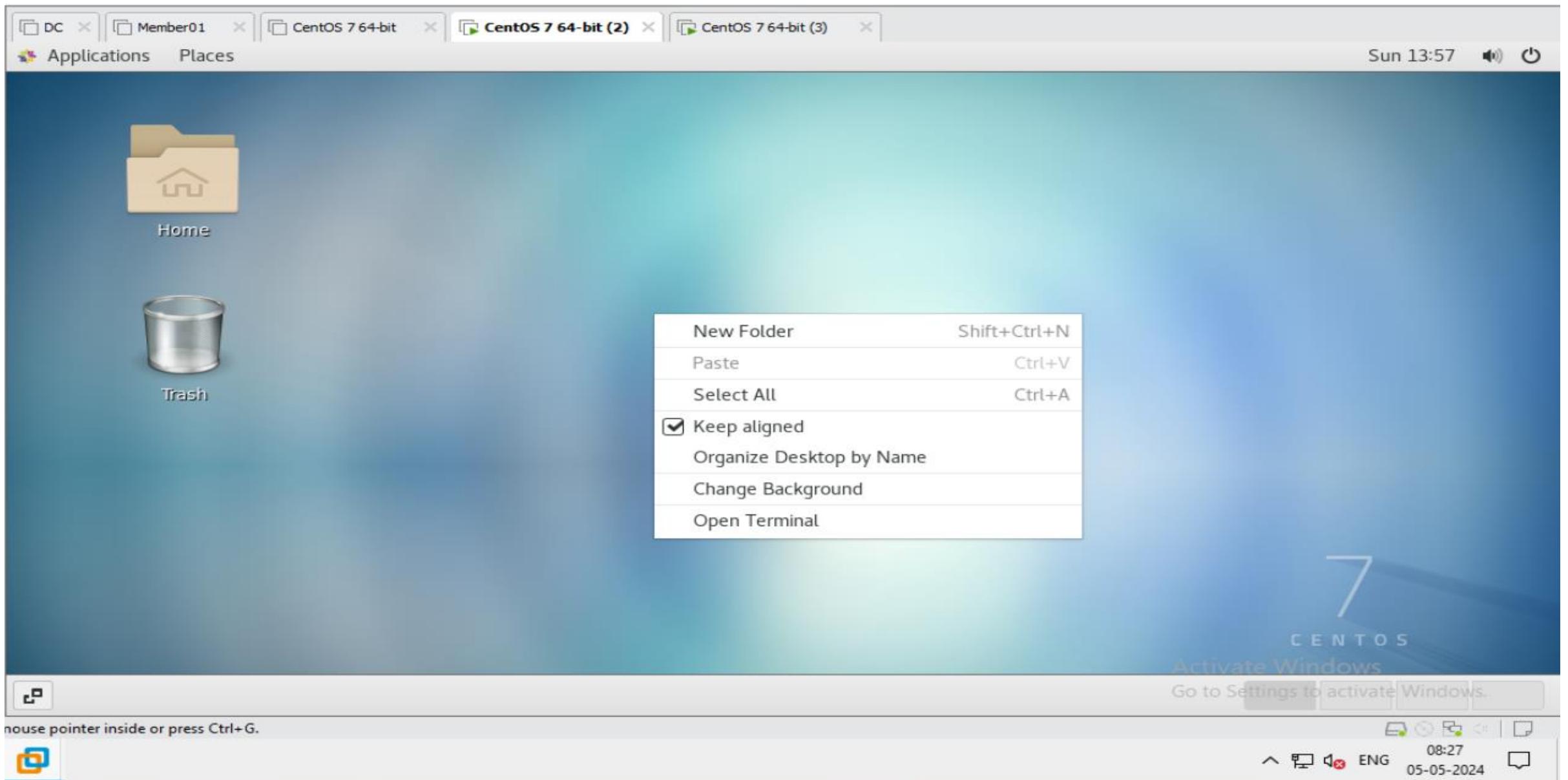
Activate Windows
Go to Settings to activate Windows.

or press Ctrl+G.

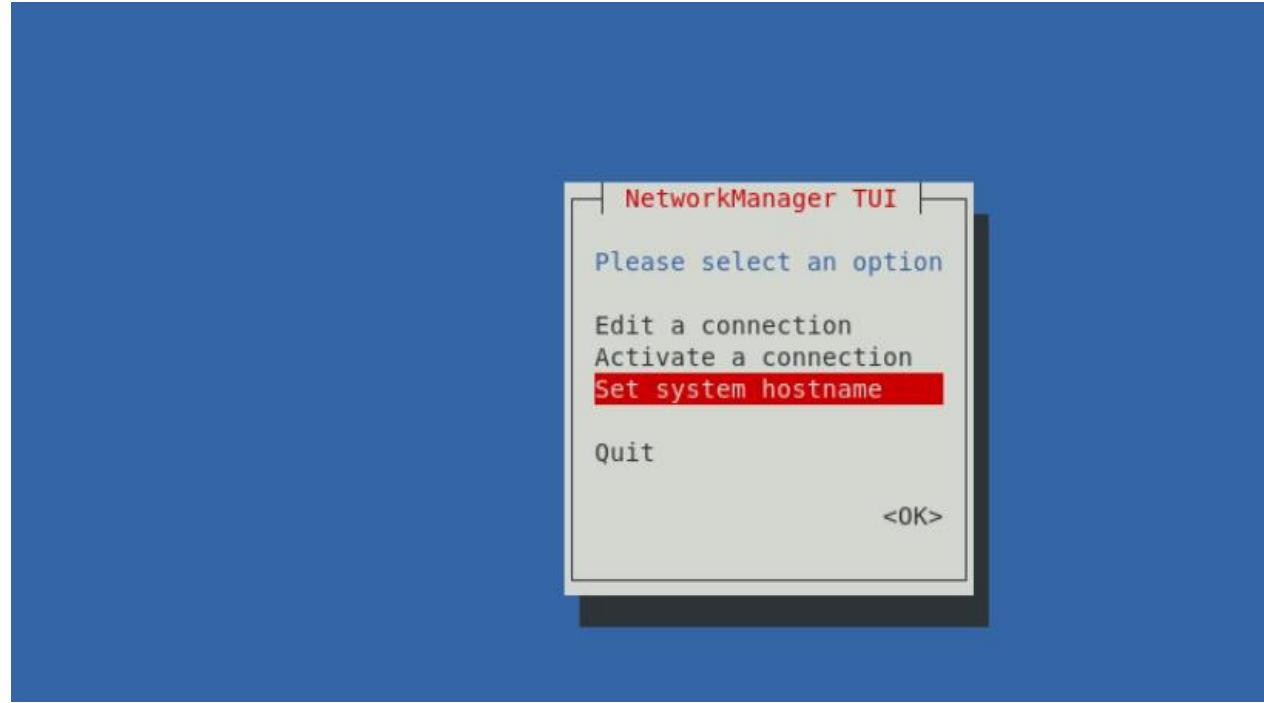
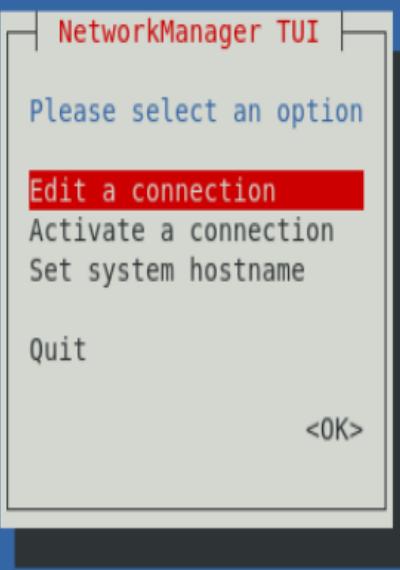


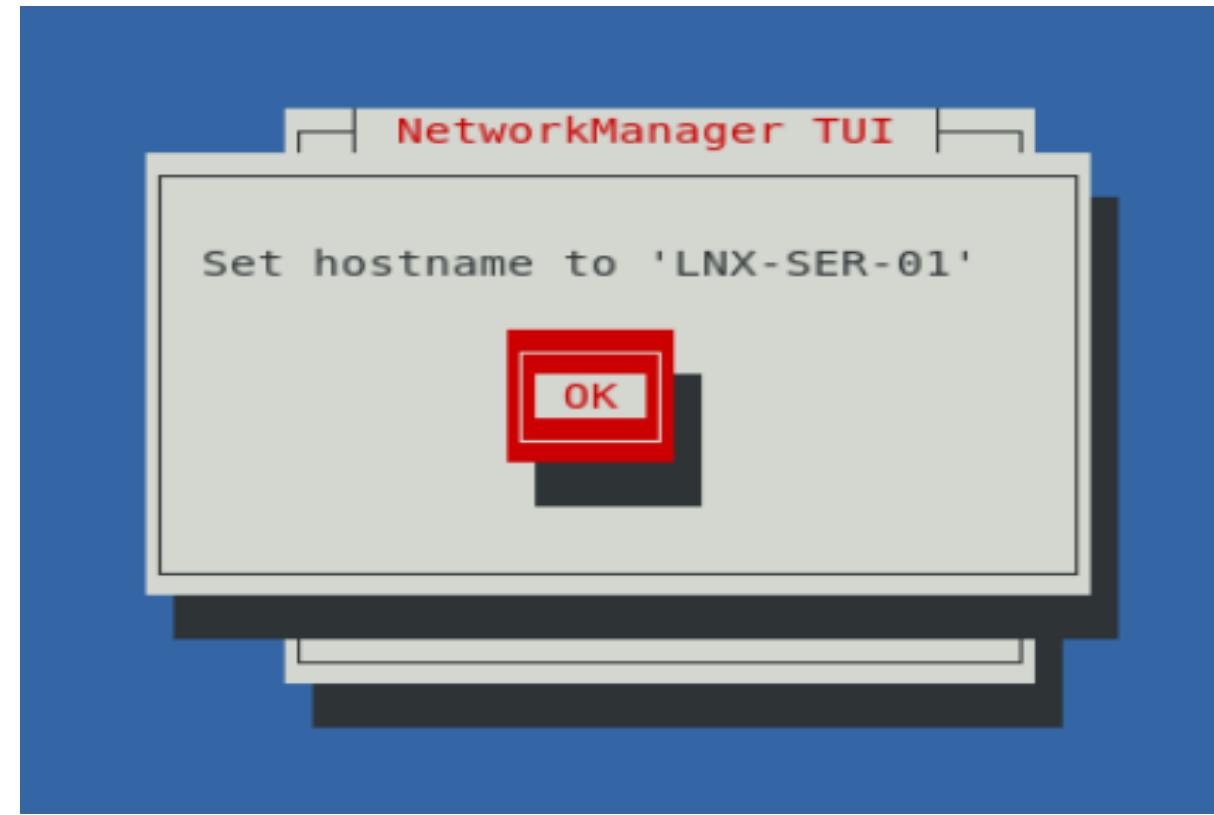






4. Change the ip and host name using nmtui command





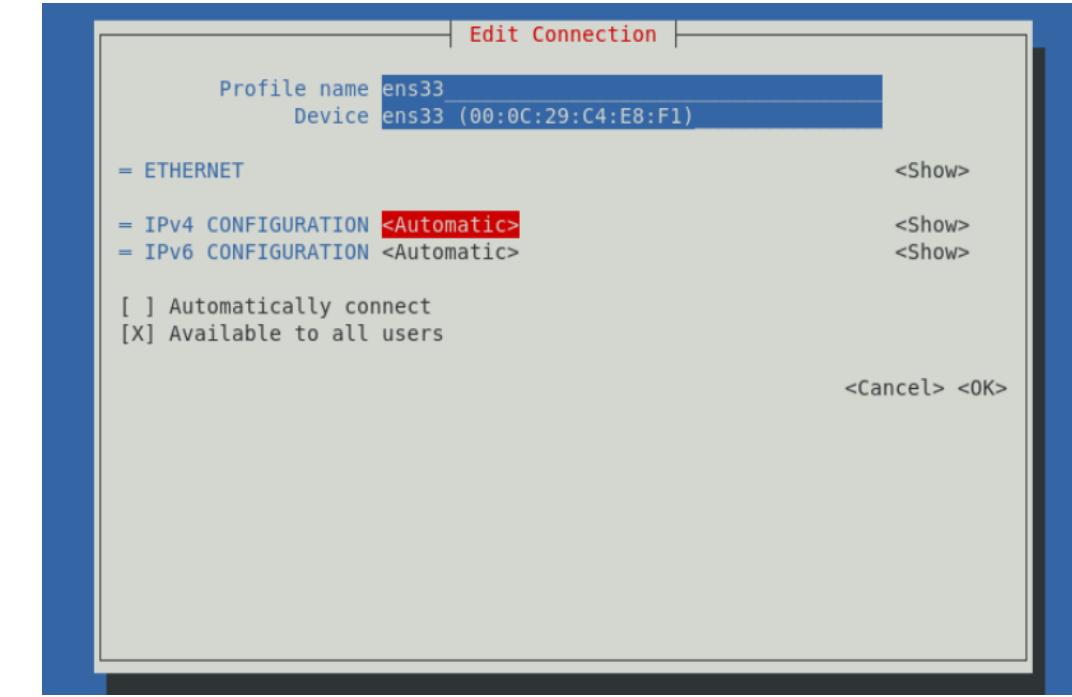
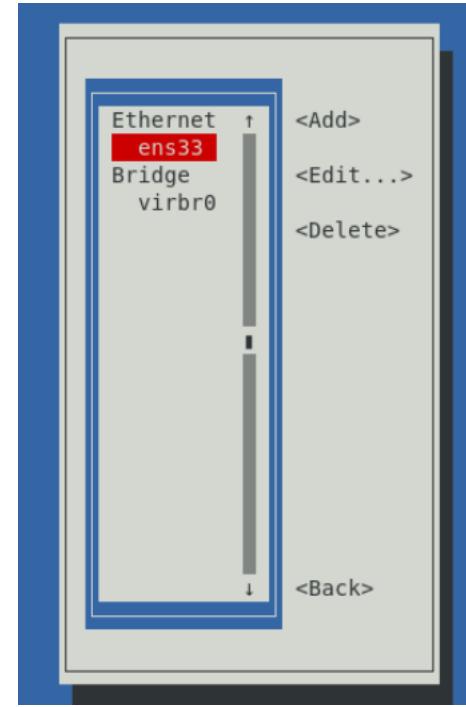
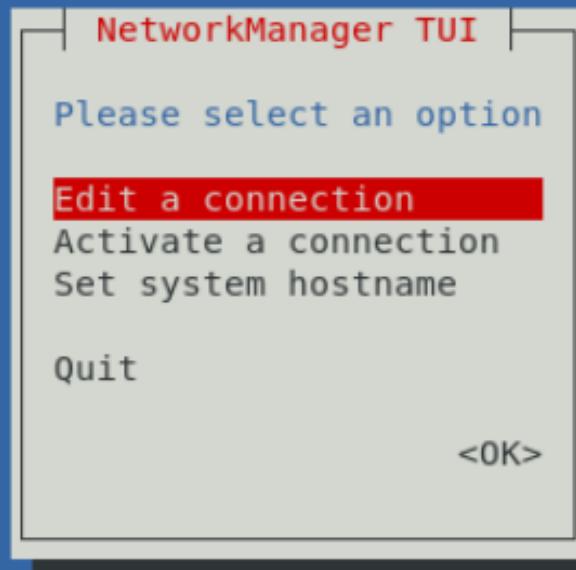
File Edit View Search Terminal Help

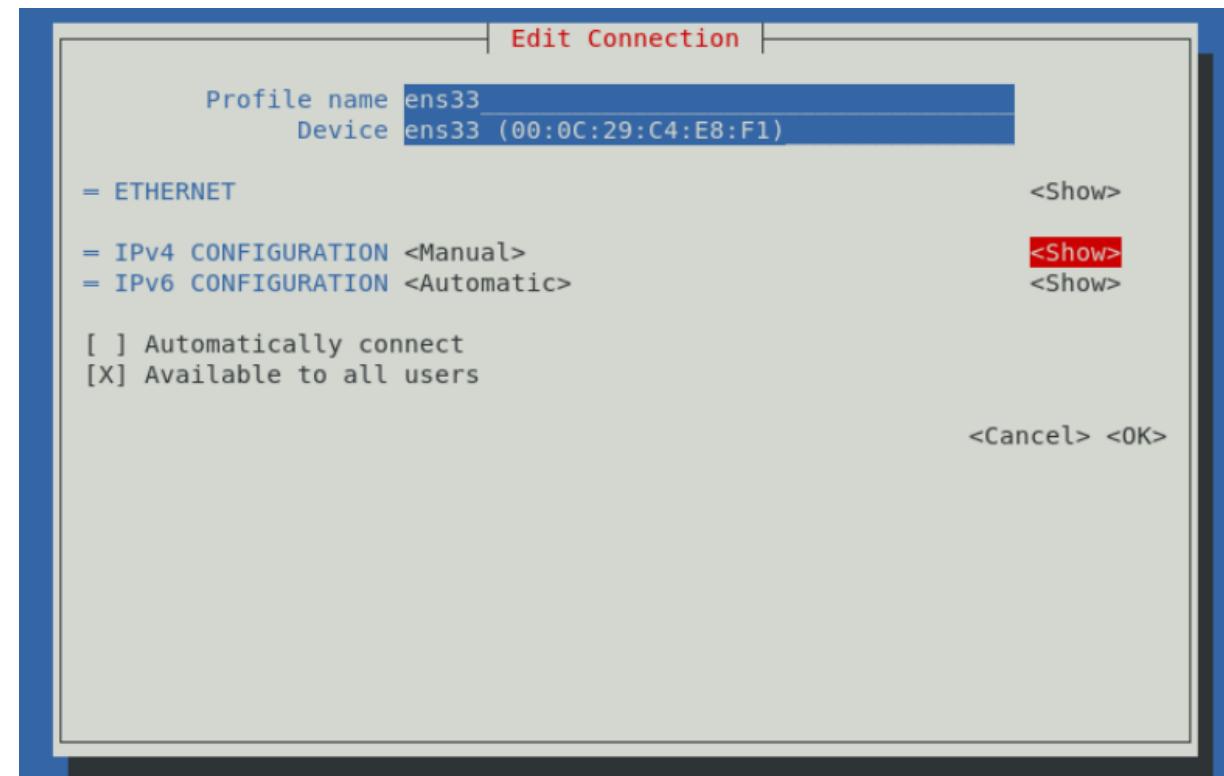
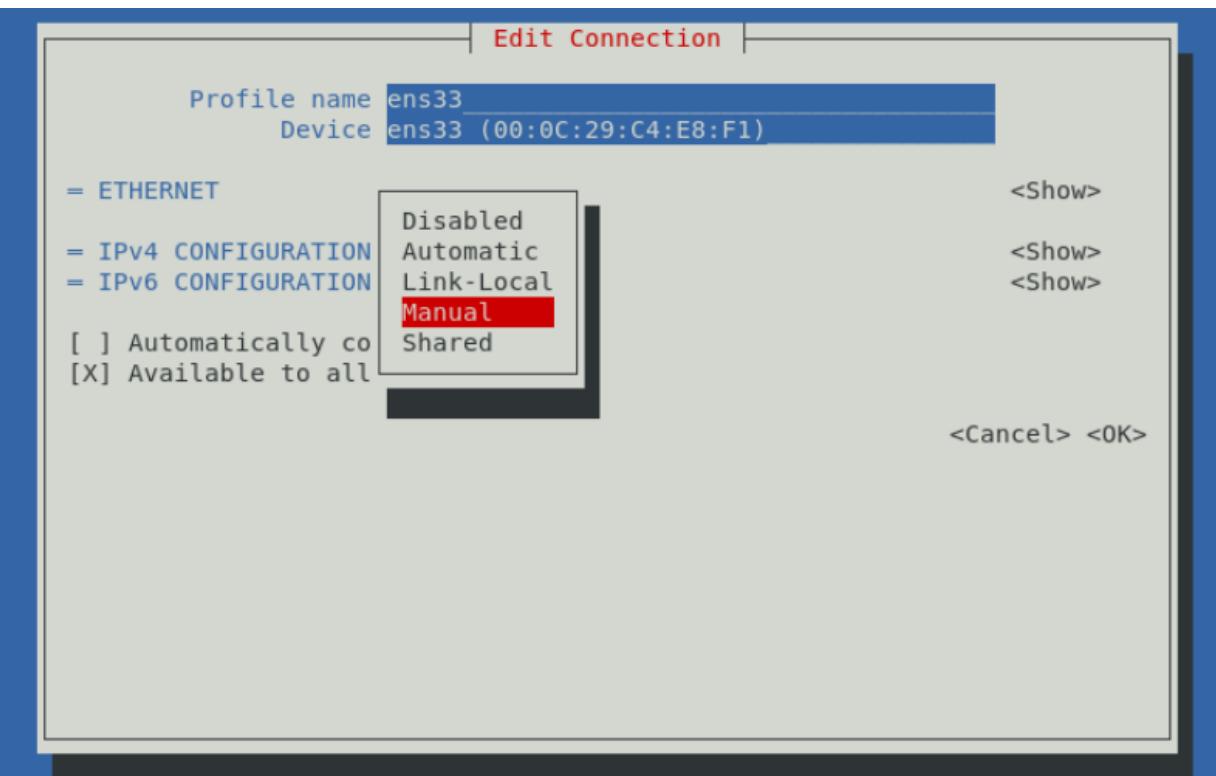
```
[root@localhost ~]# nmtui
[root@localhost ~]# hostname
LNX-SER-01
[root@localhost ~]#
```

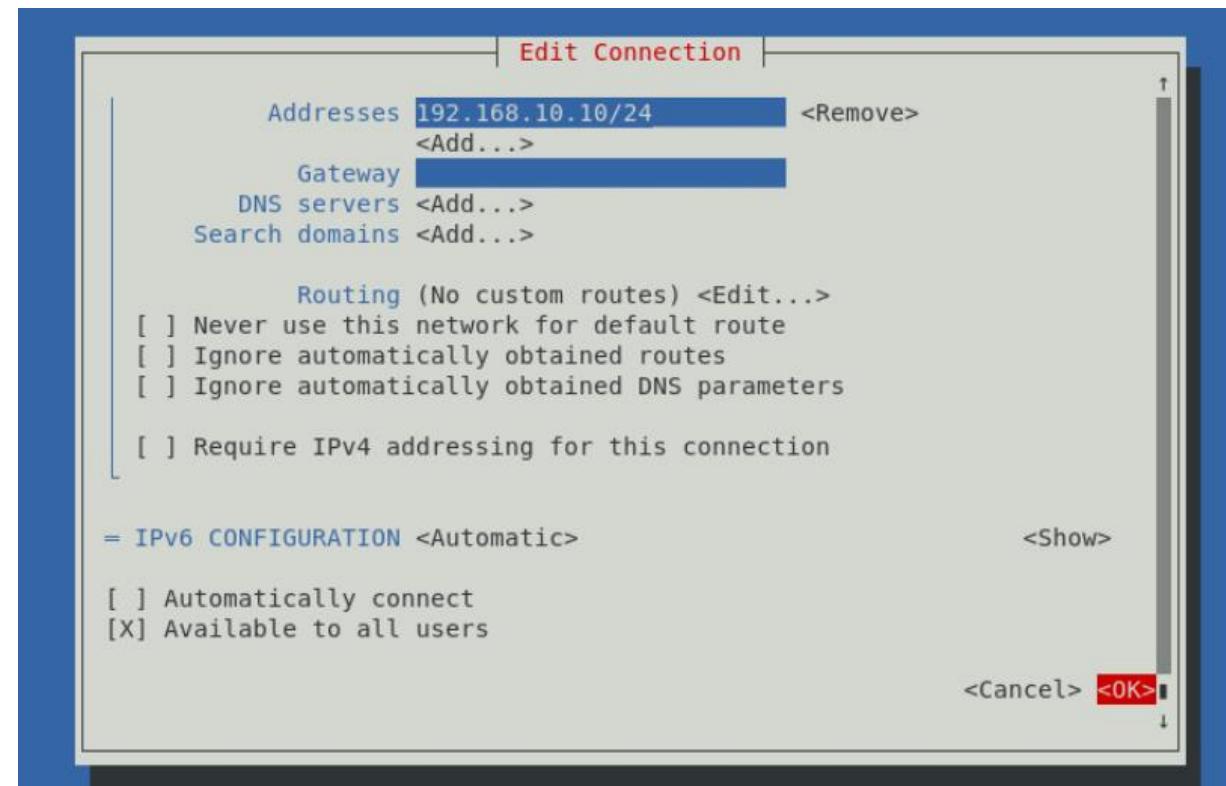
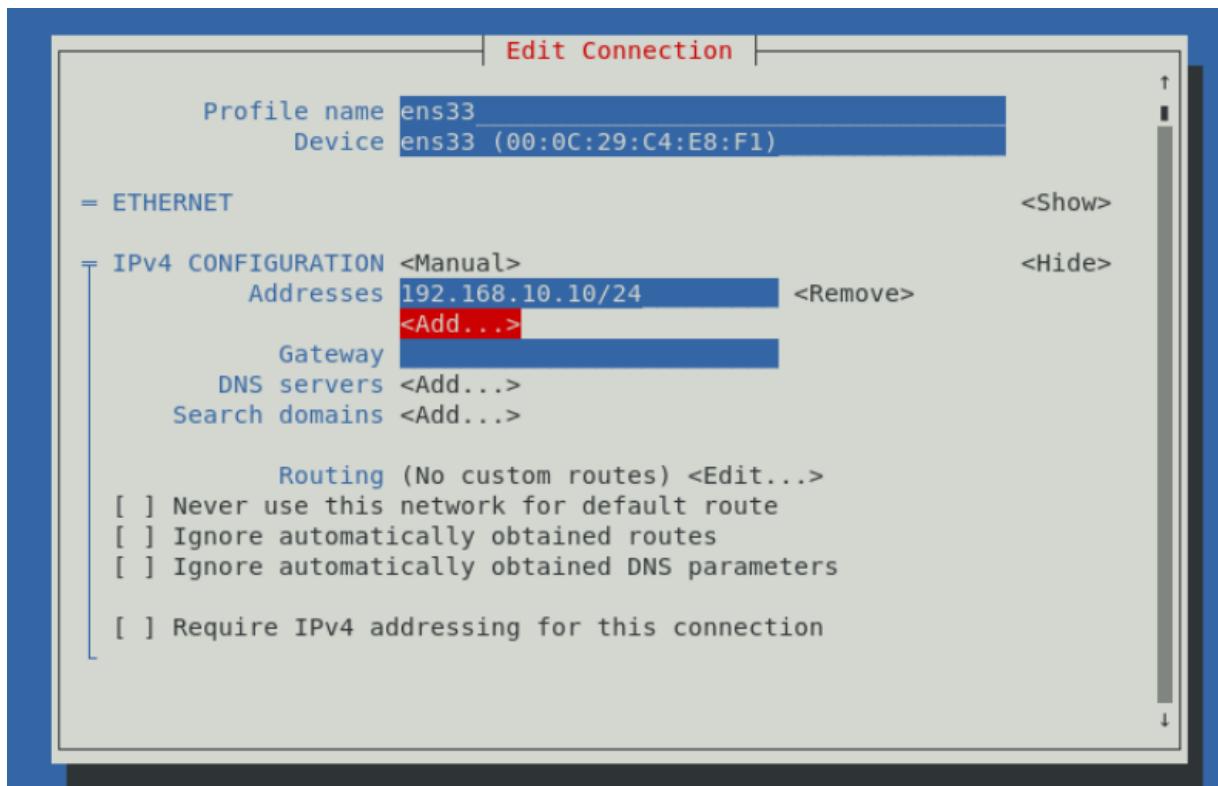
 root@localhost:~

Activate Windows

Go to Settings to activate Windows.







```
[root@localhost ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.10 netmask 255.255.255.0 broadcast 192.168.10.255
        inet6 fe80::49dd:384b:1f80:dd4c prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:c4:e8:f1 txqueuelen 1000 (Ethernet)
            RX packets 0 bytes 0 (0.0 B)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 60 bytes 8399 (8.2 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1000 (Local Loopback)
        RX packets 944 bytes 82000 (80.0 KiB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 944 bytes 82000 (80.0 KiB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

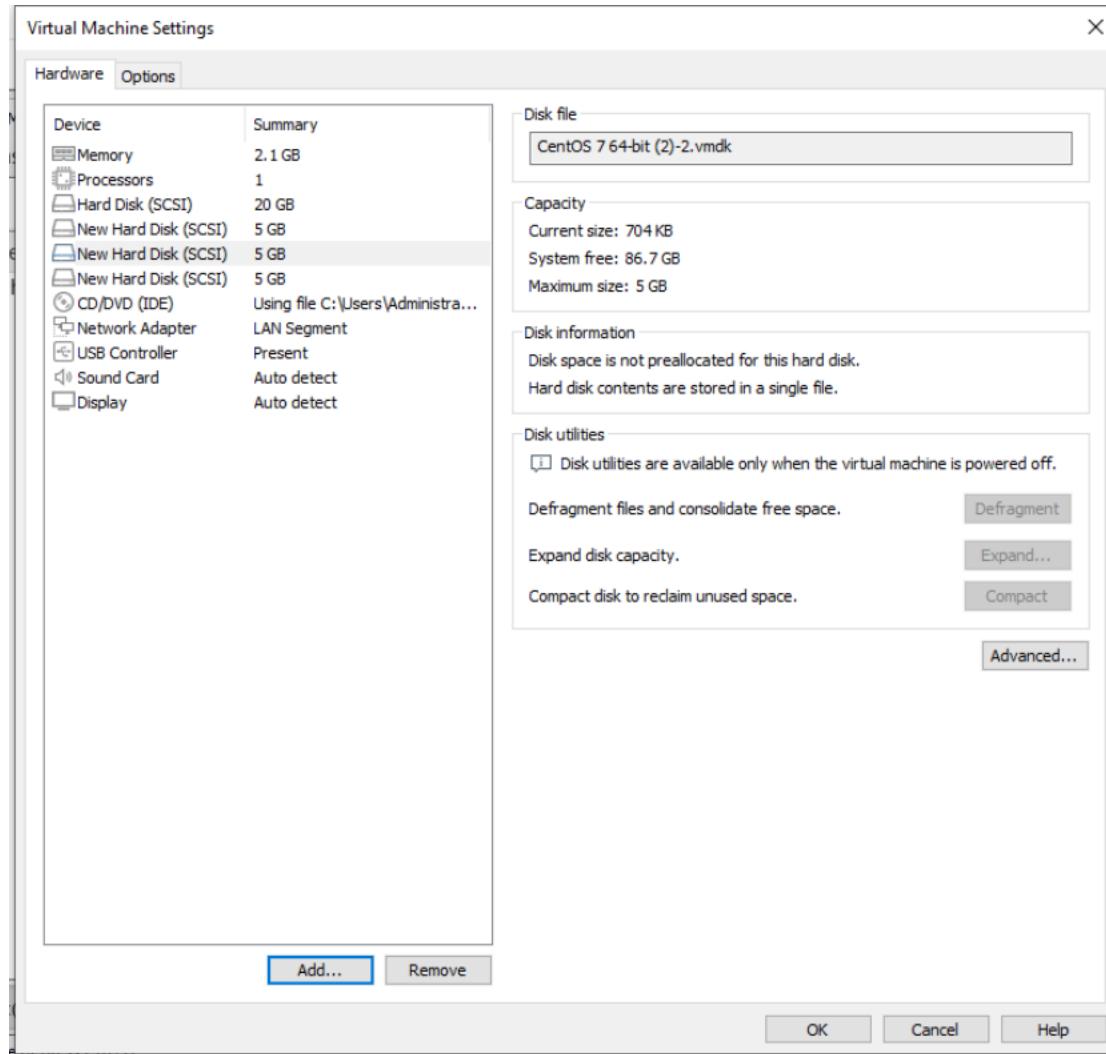
virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
        ether 52:54:00:5d:4b:70 txqueuelen 1000 (Ethernet)
        RX packets 0 bytes 0 (0.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 0 bytes 0 (0.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

  root@localhost:~

Activate Windows

Go to Settings to activate Windows.

5. Creation of LVM

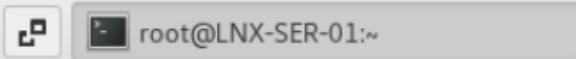


```
File Edit View Search Terminal Help
[root@LNX-SER-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   20G  0 disk
└─sda1     8:1    0   1G   0 part /boot
└─sda2     8:2    0   19G  0 part
  ├─centos-root 253:0    0   17G  0 lvm  /
  └─centos-swap 253:1    0   2G   0 lvm  [SWAP]
sdb        8:16   0   5G   0 disk
sdc        8:32   0   5G   0 disk
sdd        8:48   0   5G   0 disk
sr0       11:0    1 1024M 0 rom
[root@LNX-SER-01 ~]#

```

Activate Windows

Go to Settings to activate Windows.



File Edit View Search Terminal Help

```
sdd          8:48   0    5G  0 disk
sr0         11:0   1 1024M  0 rom
```

```
[root@LNX-SER-01 ~]# fdisk
```

Usage:

```
fdisk [options] <disk>    change partition table
fdisk [options] -l <disk>  list partition table(s)
fdisk -s <partition>      give partition size(s) in blocks
```

Options:

-b <size>	sector size (512, 1024, 2048 or 4096)
-c[=<mode>]	compatible mode: 'dos' or 'nondos' (default)
-h	print this help text
-u[=<unit>]	display units: 'cylinders' or 'sectors' (default)
-v	print program version
-C <number>	specify the number of cylinders
-H <number>	specify the number of heads
-S <number>	specify the number of sectors per track

```
[root@LNX-SER-01 ~]# n
bash: n: command not found...
```

```
[root@LNX-SER-01 ~]#
```

```
[root@LNX-SER-01 ~]# fdisk /dev/sdc
Welcome to fdisk (util-linux 2.23.2).
```

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Activate Windows

Go to Settings to activate Windows.



root@LNX-SER-01:~

```
[root@LNX-SER-01 ~]# fdisk /dev/sdc
Welcome to fdisk (util-linux 2.23.2).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0xf350161b.

Command (m for help): n
Partition type:
  p  primary (0 primary, 0 extended, 4 free)
  e  extended
Select (default p):
Using default response p
Partition number (1-4, default 1):
First sector (2048-10485759, default 2048):
Using default value 2048
Last sector, +sectors or +size{K,M,G} (2048-10485759, default 10485759):
Using default value 10485759
Partition 1 of type Linux and of size 5 GiB is set
```

```
Command (m for help): l
```

0	Empty	24	NEC DOS	81	Minix / old Lin bf	Solaris
1	FAT12	27	Hidden NTFS Win	82	Linux swap / So cl	DRDOS/sec (FAT-
2	XENIX root	39	Plan 9	83	Linux	c4 DRDOS/sec (FAT-

Activate Windows

Go to Settings to activate Windows.



root@LNX-SER-01:~

root@LNX-SER-01:~

File Edit View Search Terminal Help

```
Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'
```

```
Command (m for help): w
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
Syncing disks.
```

```
[root@LNX-SER-01 ~]# fdisk /dev/sdb
Welcome to fdisk (util-linux 2.23.2).
```

```
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.
```

```
Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0xa401573c.
```

```
Command (m for help): n
Partition type:
  p  primary (0 primary, 0 extended, 4 free)
  e  extended
Select (default p):
Using default response p
Partition number (1-4, default 1):
```

Activate Windows

Go to Settings to activate Windows.

root@LNX-SER-01:~

root@LNX-SER-01:~

File Edit View Search Terminal Help

```
Select (default p):  
Using default response p  
Partition number (1-4, default 1):  
First sector (2048-10485759, default 2048):  
Using default value 2048  
Last sector, +sectors or +size{K,M,G} (2048-10485759, default 10485759):  
Using default value 10485759  
Partition 1 of type Linux and of size 5 GiB is set
```

Command (m for help): l

0 Empty	24 NEC DOS	81 Minix / old Lin	bf Solaris
1 FAT12	27 Hidden NTFS Win	82 Linux swap / So	c1 DRDOS/sec (FAT-
2 XENIX root	39 Plan 9	83 Linux	c4 DRDOS/sec (FAT-
3 XENIX usr	3c PartitionMagic	84 OS/2 hidden C:	c6 DRDOS/sec (FAT-
4 FAT16 <32M	40 Venix 80286	85 Linux extended	c7 Syrinx
5 Extended	41 PPC PReP Boot	86 NTFS volume set	da Non-FS data
6 FAT16	42 SFS	87 NTFS volume set	db CP/M / CTOS / .
7 HPFS/NTFS/exFAT	4d QNX4.x	88 Linux plaintext	de Dell Utility
8 AIX	4e QNX4.x 2nd part	8e Linux LVM	df BootIt
9 AIX bootable	4f QNX4.x 3rd part	93 Amoeba	e1 DOS access
a OS/2 Boot Manag	50 OnTrack DM	94 Amoeba BBT	e3 DOS R/O
b W95 FAT32	51 OnTrack DM6 Aux	9f BSD/OS	e4 SpeedStor
c W95 FAT32 (LBA)	52 CP/M	a0 IBM Thinkpad hi	eb BeOS fs
e W95 FAT16 (LBA)	53 OnTrack DM6 Aux	a5 FreeBSD	ee GPT
f W95 Ext'd (LBA)	54 OnTrackDM6	a6 OpenBSD	ef EFI (FAT-12/16/
10 OPUS	55 EZ-Drive	a7 NeXTSTEP	f0 Linux/PA-RISC b

Activate Windows

Go to Settings to activate Windows.

root@LNX-SER-01:~

Move mouse pointer inside or press Ctrl+G.



08:59
05-05-2024

```
Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'
```

```
Command (m for help): w
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
```

```
Syncing disks.
```

```
[root@LNX-SER-01 ~]# fdisk /dev/sdd
Welcome to fdisk (util-linux 2.23.2).
```

```
Changes will remain in memory only, until you decide to write them.
```

```
Be careful before using the write command.
```

```
Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0x2ef342dc.
```

```
Command (m for help): n
Partition type:
 p  primary (0 primary, 0 extended, 4 free)
 e  extended
Select (default p):
Using default response p
Partition number (1-4, default 1):
```

```
root@LNX-SER-01:~
```

Activate Windows

Go to Settings to activate Windows.

root@LNX-SER-01:~

- □ ×

File Edit View Search Terminal Help

b	W95 FAT32	51	OnTrack DM6 Aux	9f	BSD/OS	e4	SpeedStor
c	W95 FAT32 (LBA)	52	CP/M	a0	IBM Thinkpad hi	eb	BeOS fs
e	W95 FAT16 (LBA)	53	OnTrack DM6 Aux	a5	FreeBSD	ee	GPT
f	W95 Ext'd (LBA)	54	OnTrackDM6	a6	OpenBSD	ef	EFI (FAT-12/16/
10	OPUS	55	EZ-Drive	a7	NeXTSTEP	f0	Linux/PA-RISC b
11	Hidden FAT12	56	Golden Bow	a8	Darwin UFS	f1	SpeedStor
12	Compaq diagnost	5c	Priam Edisk	a9	NetBSD	f4	SpeedStor
14	Hidden FAT16 <3	61	SpeedStor	ab	Darwin boot	f2	DOS secondary
16	Hidden FAT16	63	GNU HURD or Sys	af	HFS / HFS+	fb	VMware VMFS
17	Hidden HPFS/NTF	64	Novell Netware	b7	BSDI fs	fc	VMware VMKCORE
18	AST SmartSleep	65	Novell Netware	b8	BSDI swap	fd	Linux raid auto
1b	Hidden W95 FAT3	70	DiskSecure Mult	bb	Boot Wizard hid	fe	LANstep
1c	Hidden W95 FAT3	75	PC/IX	be	Solaris boot	ff	BBT
1e	Hidden W95 FAT1	80	Old Minix				

Command (m for help): t

Selected partition 1

Hex code (type L to list all codes): 8e

Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

Syncing disks.

[root@LNX-SER-01 ~]# █

Activate Windows

Go to Settings to activate Windows.

root@LNX-SER-01:~

```
Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'
```

```
Command (m for help): w
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
```

```
Syncing disks.
```

```
[root@LNX-SER-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   20G  0 disk
└─sda1     8:1    0    1G  0 part /boot
└─sda2     8:2    0   19G  0 part
  ├─centos-root 253:0    0   17G  0 lvm  /
  └─centos-swap 253:1    0    2G  0 lvm  [SWAP]
sdb        8:16   0    5G  0 disk
└─sdb1     8:17   0    5G  0 part
sdc        8:32   0    5G  0 disk
└─sdc1     8:33   0    5G  0 part
sdd        8:48   0    5G  0 disk
└─sdd1     8:49   0    5G  0 part
sr0       11:0    1 1024M 0 rom
[root@LNX-SER-01 ~]#
```

Activate Windows

Go to Settings to activate Windows.



root@LNX-SER-01:~

File Edit View Search Terminal Help

```
[root@LNX-SER-01 ~]# pvcreate /dev/sdb1 /dev/sdc1 /dev/sdd1
Physical volume "/dev/sdb1" successfully created.
Physical volume "/dev/sdc1" successfully created.
Physical volume "/dev/sdd1" successfully created.
[root@LNX-SER-01 ~]#
```

File Edit View Search Terminal Help

```
[root@LNX-SER-01 ~]# vgcreate vg1 /dev/sdb1 /dev/sdc1 /dev/sdd1
Volume group "vg1" successfully created
[root@LNX-SER-01 ~]#
```

```
[root@LNX-SER-01 ~]# lvcreate -L 7G -n lvm1 vg1
Logical volume "lvm1" created.
[root@LNX-SER-01 ~]# lvcreate -L 8G -n lvm2 vg1
Volume group "vg1" has insufficient free space (2045 extents): 2048 required.
[root@LNX-SER-01 ~]# lvcreate -L 7.9G -n lvm2 vg1
Rounding up size to full physical extent 7.90 GiB
Logical volume "lvm2" created.
[root@LNX-SER-01 ~]#
```

DC X Member01 X CentOS 7 64-bit X CentOS 7 64-bit (2) X

Sun 14:44

Applications Places Terminal

root@LNX-SER-01:~

File Edit View Search Terminal Help

```
[root@LNX-SER-01 ~]# mkfs.xfs /dev/vg1/lvm1
meta-data=/dev/vg1/lvm1      isize=512    agcount=4, agsize=458752 blks
                             =          sectsz=512  attr=2, projid32bit=1
                             =          crc=1     finobt=0, sparse=0
data             =           bsize=4096   blocks=1835008, imaxpct=25
                   =           sunit=0    swidth=0 blks
naming          =version 2   bsize=4096   ascii-ci=0 ftype=1
log             =internal log bsize=4096   blocks=2560, version=2
                   =           sectsz=512  sunit=0 blks, lazy-count=1
realtime        =none        extsz=4096   blocks=0, rtextents=0
[root@LNX-SER-01 ~]# mkfs.ext4 /dev/vg1/lvm2
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
518144 inodes, 2071552 blocks
103577 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2122317824
64 block groups
32768 blocks per group, 32768 fragments per group
8096 inodes per group
Superblock backups stored on blocks:

```

Activate Windows

Go to Settings to activate Windows.



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "CentOS 7 64-bit (2)". The window title bar also includes icons for DC, Member01, and CentOS 7 64-bit. The status bar at the bottom of the terminal window shows "root@LNX-SER-01:~". The terminal window contains the following content:

```
#  
# /etc/fstab  
# Created by anaconda on Sun May  5 08:04:17 2024  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk'  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info  
#  
/dev/mapper/centos-root / xfs defaults 0 0  
UUID=00cb0502-3127-469b-afa8-b6739aa19166 /boot xfs defaults 0 0  
/dev/mapper/centos-swap swap swap defaults 0 0  
/dev/vg1/lvm1 /lvm xfs defaults 0 0  
/dev/vg1/lvm2 /lvm ext4 defaults 0 0
```

The terminal window has a scroll bar on the right side. At the bottom of the terminal window, there is a message "-- INSERT --" and a watermark "Activate Windows" with a "Go to Settings to activate Windows." link.

```
[root@LNX-SER-01 ~]# mkdir /lvm
[root@LNX-SER-01 ~]# vim /etc/fstab
[root@LNX-SER-01 ~]# mount -a
mount: unknown filesystem type '.xfs'
mount: unknown filesystem type '.ext4'
[root@LNX-SER-01 ~]# vim /etc/fstab
[root@LNX-SER-01 ~]# mount -a
mount: special device /dev/vg1/luml does not exist
[root@LNX-SER-01 ~]# vim /etc/fstab
[root@LNX-SER-01 ~]# mount -a

[root@LNX-SER-01 ~]#
[root@LNX-SER-01 ~]#
```

Activate Windows

Go to Settings to activate Windows.

root@LNX-SER-01:~

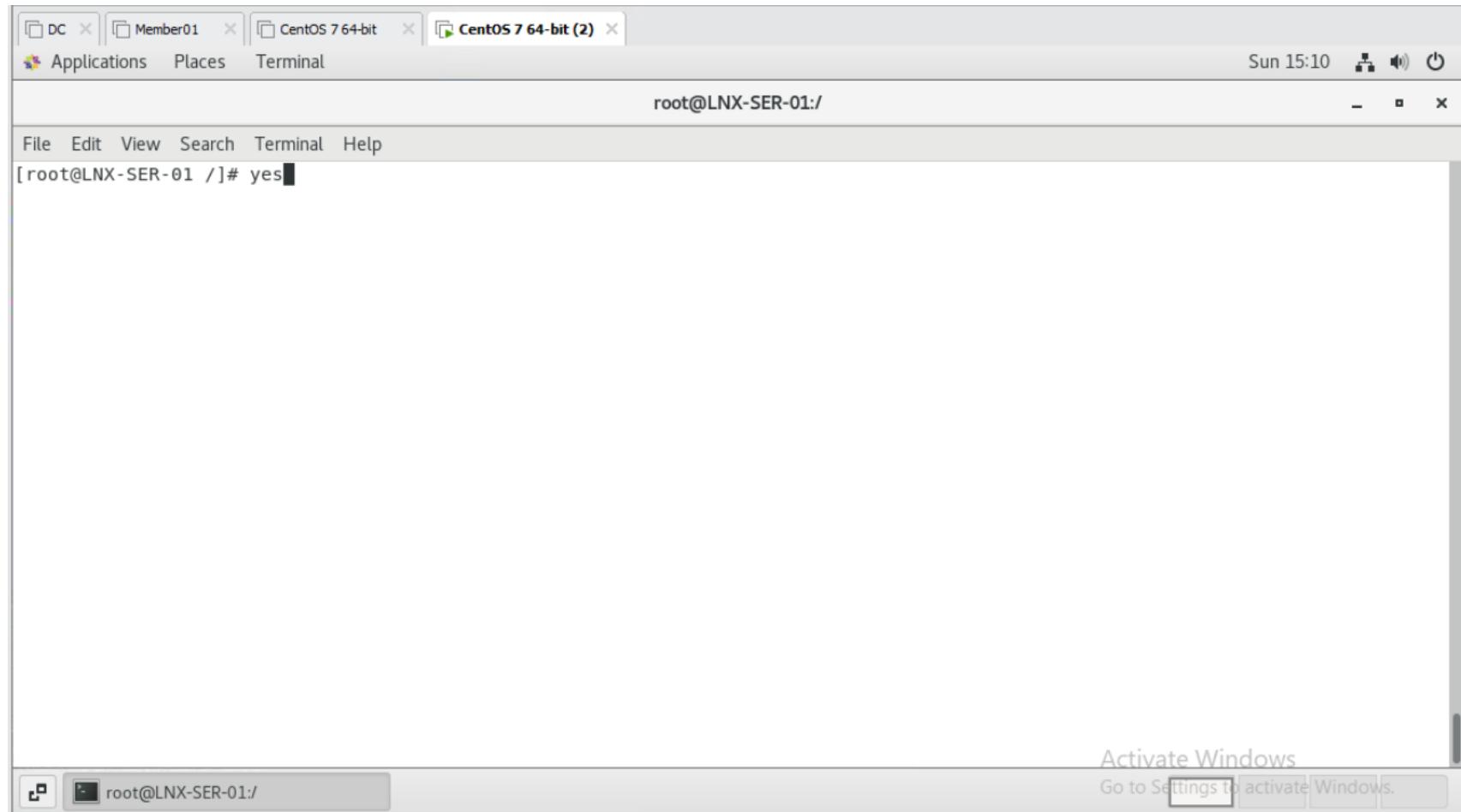
mouse pointer inside or press Ctrl+G.



```
[root@LNX-SER-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   20G  0 disk 
└─sda1     8:1    0    1G  0 part /boot
└─sda2     8:2    0   19G  0 part 
  ├─centos-root 253:0    0   17G  0 lvm  /
  └─centos-swap 253:1    0    2G  0 lvm  [SWAP]
sdb        8:16   0   5G  0 disk 
└─sdb1     8:17   0   5G  0 part 
  └─vg1-lvm1  253:2    0    7G  0 lvm  /lvm
sdc        8:32   0   5G  0 disk 
└─sdc1     8:33   0   5G  0 part 
  ├─vg1-lvm1  253:2    0    7G  0 lvm  /lvm
  └─vg1-lvm2  253:3    0   7.9G 0 lvm  /lvm
sdd        8:48   0   5G  0 disk 
└─sdd1     8:49   0   5G  0 part 
  └─vg1-lvm2  253:3    0   7.9G 0 lvm  /lvm
sr0       11:0   1 1024M 0 rom 

[root@LNX-SER-01 ~]# █
```

6. Start yes process and kill it using top command



DC Member01 CentOS 7 64-bit CentOS 7 64-bit (2)

Sun 14:02

root@LNX-SER-01:~

File Edit View Search Terminal Tabs Help

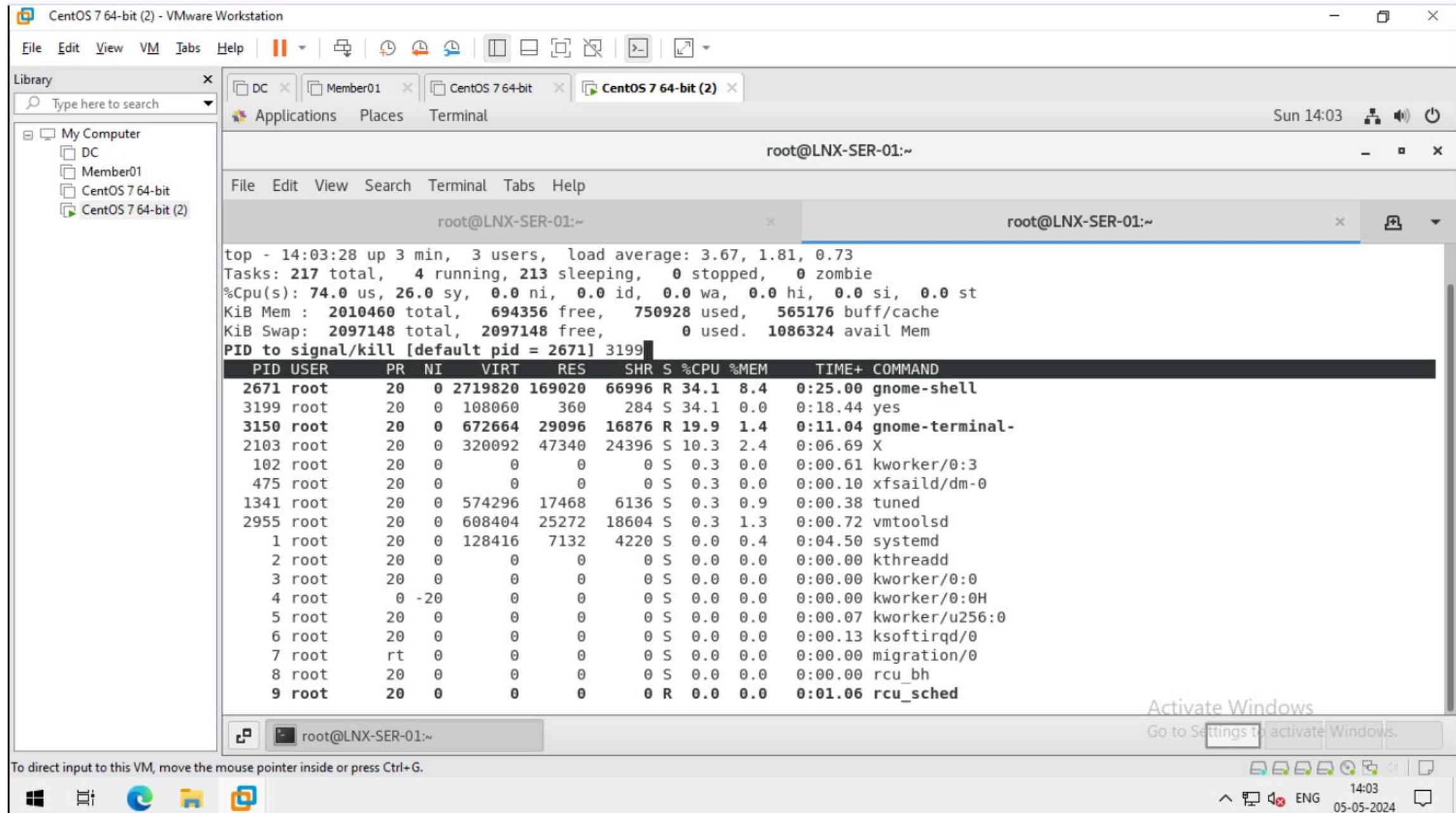
root@LNX-SER-01:~

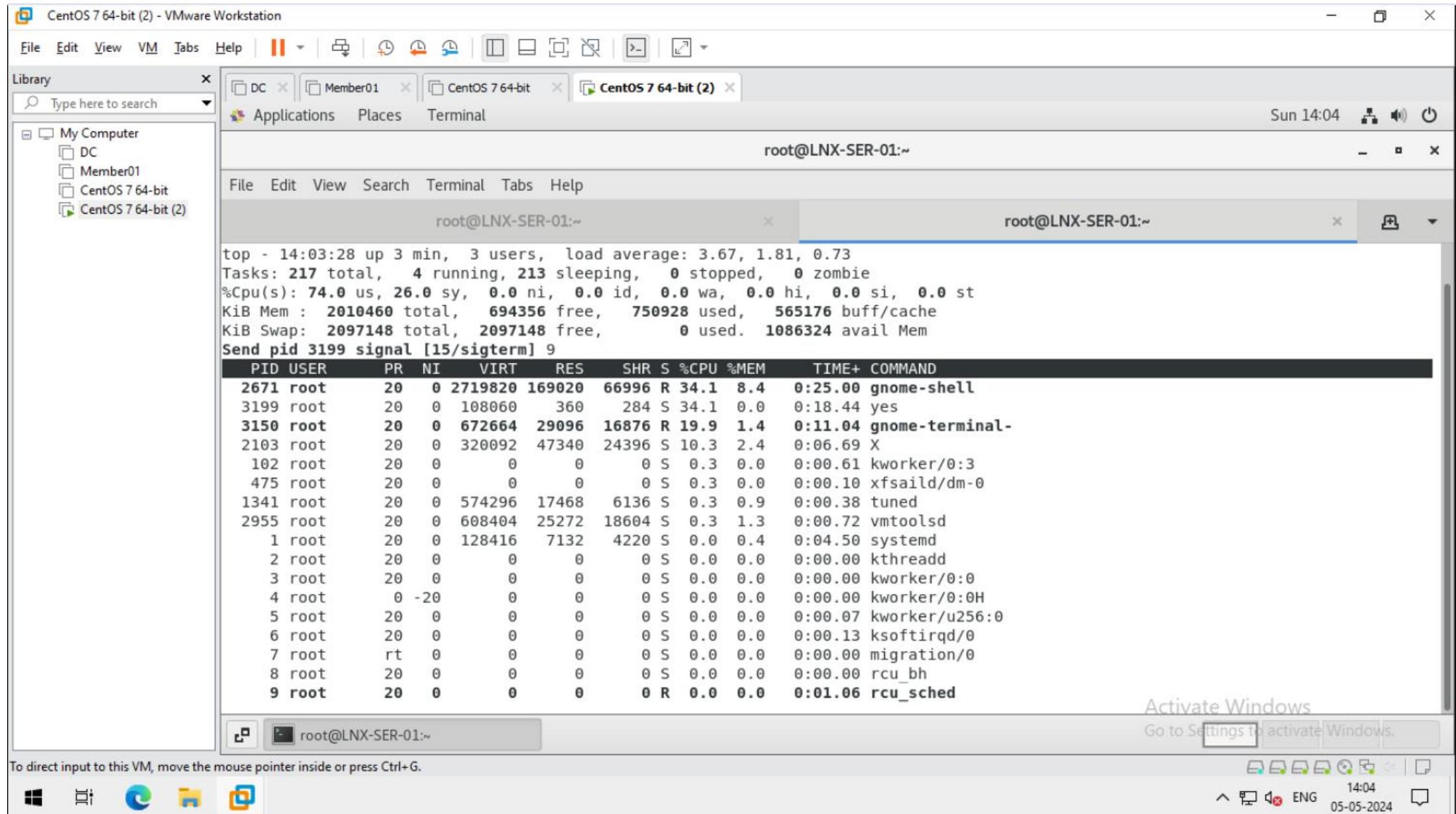
root@LNX-SER-01:~

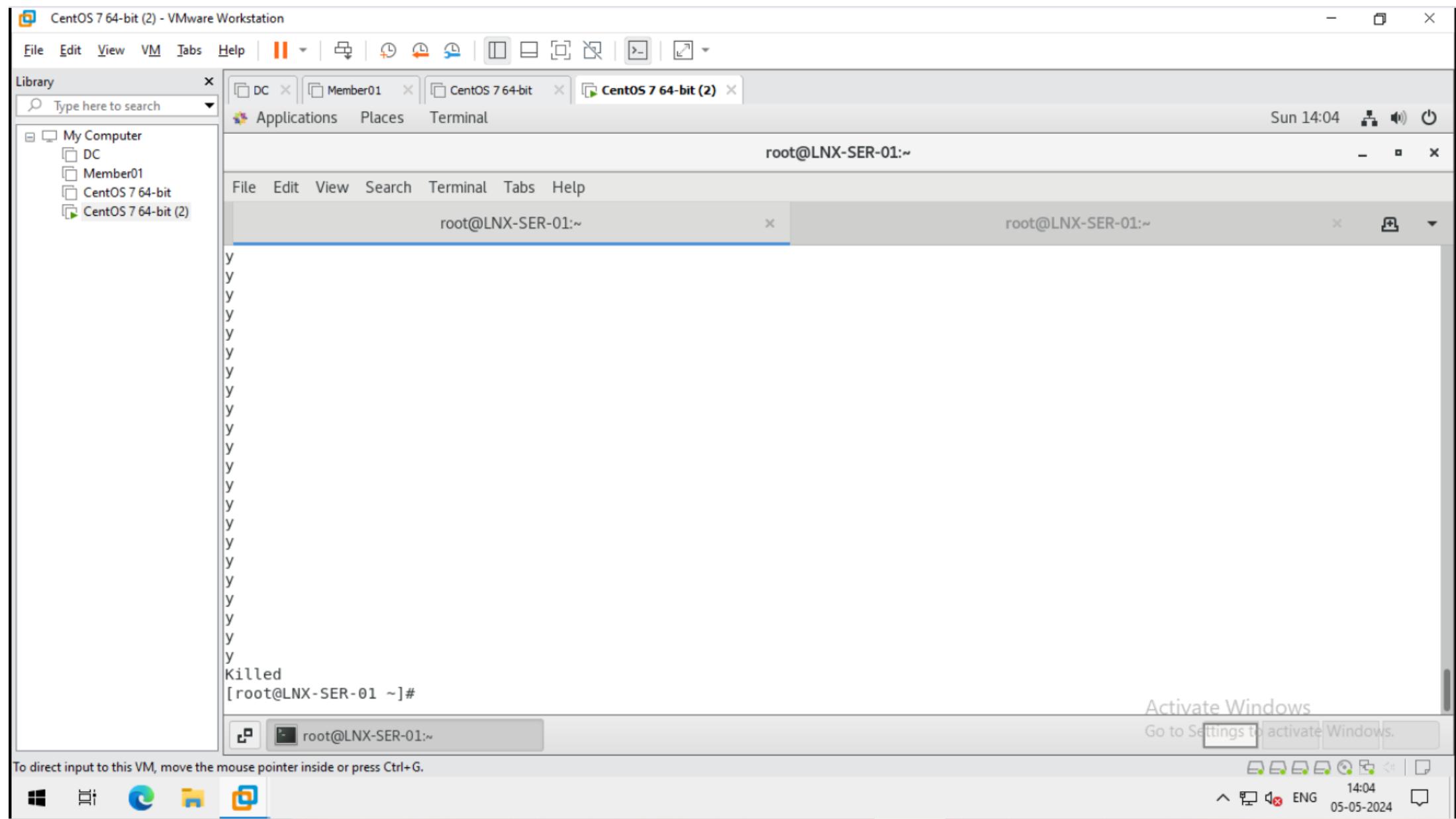
```
top - 14:02:49 up 2 min, 3 users, load average: 3.06, 1.46, 0.57
Tasks: 218 total, 3 running, 215 sleeping, 0 stopped, 0 zombie
%Cpu(s): 74.2 us, 25.8 sy, 0.0 ni, 0.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 2010460 total, 693088 free, 751876 used, 565496 buff/cache
KiB Swap: 2097148 total, 2097148 free, 0 used. 1085212 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2671 root 20 0 2720844 169104 66984 R 34.2 8.4 0:11.49 gnome-shell
3199 root 20 0 108060 360 284 S 33.6 0.0 0:05.10 yes
3150 root 20 0 672664 28884 16868 R 20.6 1.4 0:03.28 gnome-terminal-
2103 root 20 0 320092 47340 24396 S 10.0 2.4 0:02.68 X
102 root 20 0 0 0 0 S 0.3 0.0 0:00.52 kworker/0:3
1 root 20 0 128416 7132 4220 S 0.0 0.4 0:04.49 systemd
2 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kworker/0:0
4 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 kworker/0:0H
5 root 20 0 0 0 0 S 0.0 0.0 0:00.06 kworker/u256:0
6 root 20 0 0 0 0 S 0.0 0.0 0:00.13 ksoftirqd/0
7 root rt 0 0 0 0 S 0.0 0.0 0:00.00 migration/0
8 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_bh
9 root 20 0 0 0 0 S 0.0 0.0 0:01.04 rcu_sched
10 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 lru-add-drain
11 root rt 0 0 0 0 S 0.0 0.0 0:00.00 watchdog/0
13 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kdevtmpfs
```

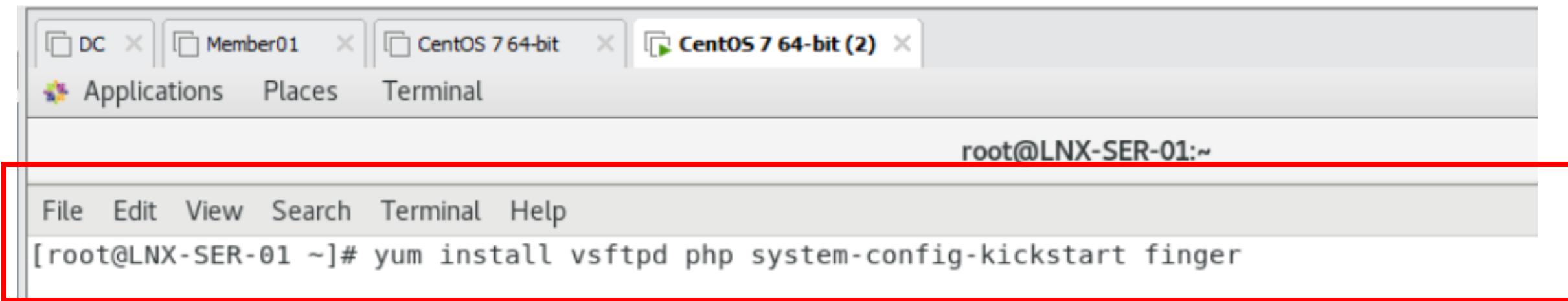
Activate Windows
Go to Settings to activate Windows.







7. Installing the packets using yum in single command



```
[root@LNX-SER-01 ~]# yum install vsftpd php system-config-kickstart finger
```

```
ackages by hand (maybe package-cleanup can help).
--> Running transaction check
---> Package finger.x86_64 0:0.17-52.el7 will be installed
---> Package php.x86_64 0:5.4.16-48.el7 will be installed
---> Package system-config-kickstart.noarch 0:2.9.7-1.el7 will be installed
---> Package vsftpd.x86_64 0:3.0.2-29.el7_9 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package           Arch      Version       Repository   Size
=====
Installing:
finger           x86_64    0.17-52.el7   base        25 k
php              x86_64    5.4.16-48.el7  base        1.4 M
system-config-kickstart noarch   2.9.7-1.el7   base        348 k
vsftpd          x86_64    3.0.2-29.el7_9 updates   173 k

Transaction Summary
=====
Install 4 Packages

Total download size: 1.9 M
Installed size: 6.7 M
Is this ok [y/d/N]: y
```

Activate Windows

File Edit View Search Terminal Help

Downloading packages:

(1/4): finger-0.17-52.el7.x86_64.rpm	25 kB 00:00:00
(2/4): vsftpd-3.0.2-29.el7_9.x86_64.rpm	173 kB 00:00:00
(3/4): system-config-kickstart-2.9.7-1.el7.noarch.rpm	348 kB 00:00:00
(4/4): php-5.4.16-48.el7.x86_64.rpm	1.4 MB 00:00:00

Total

1.9 MB/s | 1.9 MB 00:00:00

Running transaction check

Running transaction test

Transaction test succeeded

Running transaction

Installing : finger-0.17-52.el7.x86_64	1/4
Installing : vsftpd-3.0.2-29.el7_9.x86_64	2/4
Installing : system-config-kickstart-2.9.7-1.el7.noarch	3/4
Installing : php-5.4.16-48.el7.x86_64	4/4
Verifying : php-5.4.16-48.el7.x86_64	1/4
Verifying : system-config-kickstart-2.9.7-1.el7.noarch	2/4
Verifying : vsftpd-3.0.2-29.el7_9.x86_64	3/4
Verifying : finger-0.17-52.el7.x86_64	4/4

Installed:

finger.x86_64 0:0.17-52.el7	php.x86_64 0:5.4.16-48.el7	system-config-kickstart.noarch 0:2.9.7-1.el7
vsftpd.x86_64 0:3.0.2-29.el7_9		

Complete!

[root@LNX-SER-01 ~]#

Activate Windows

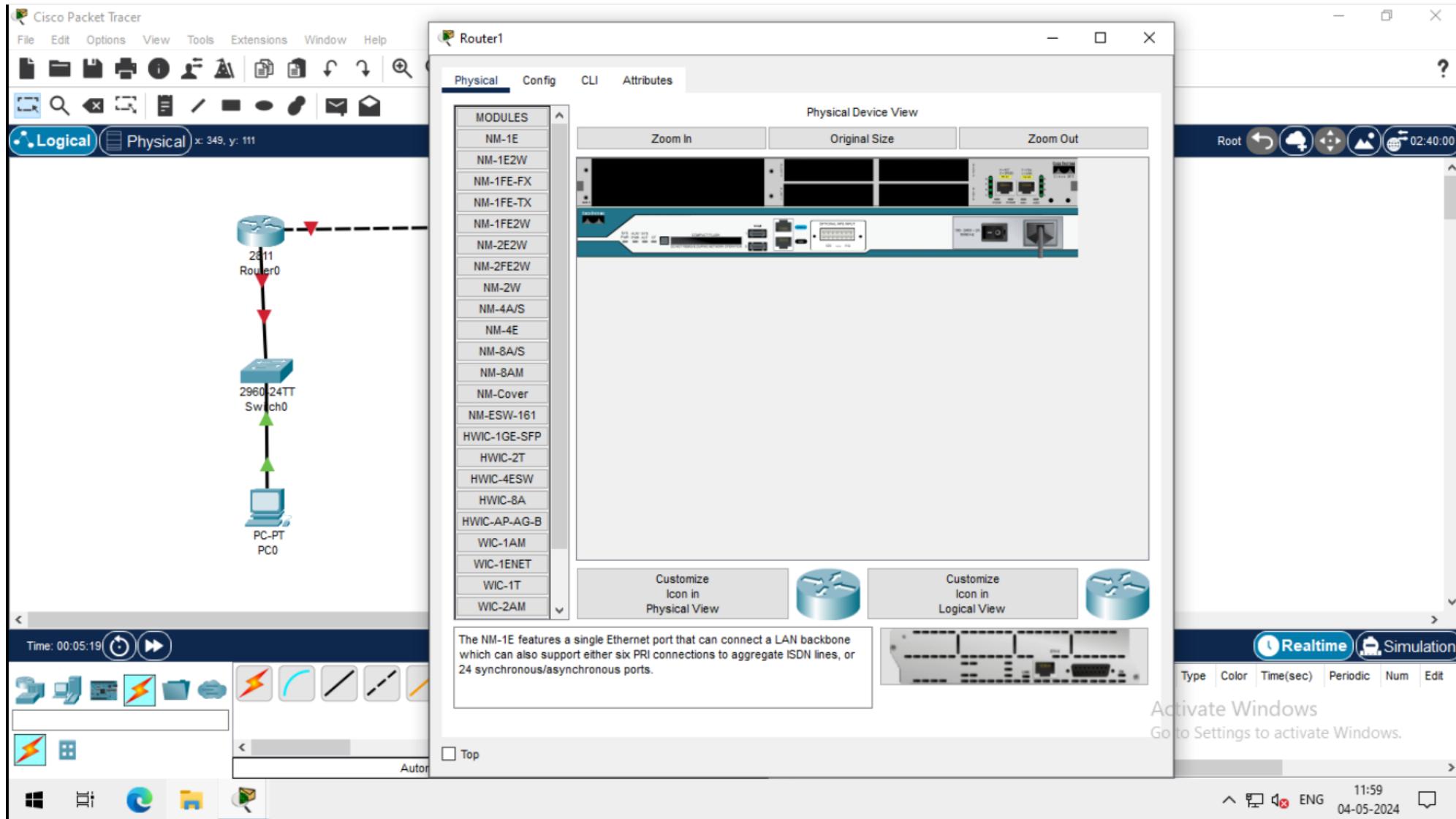
PROJECT – 4

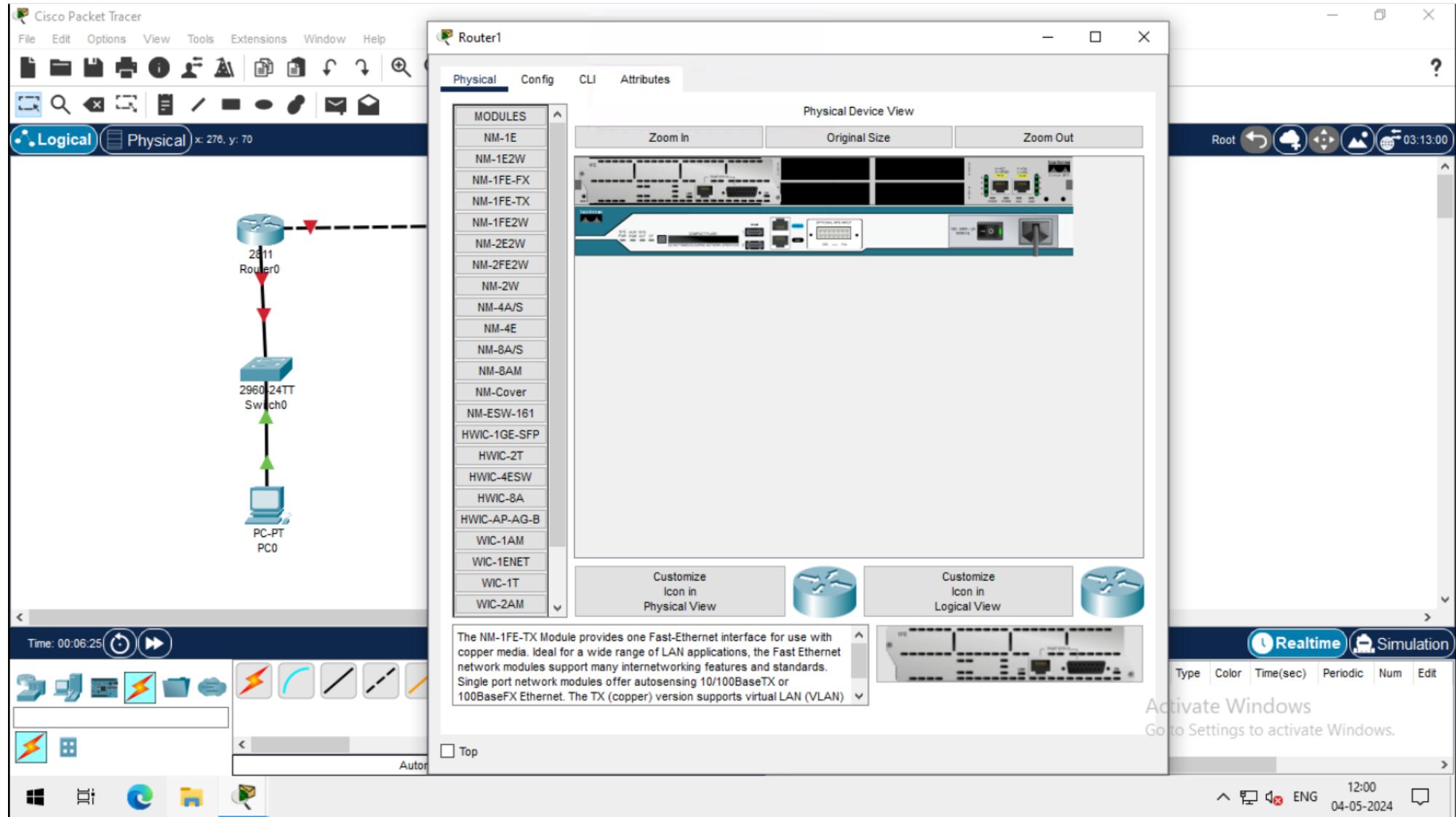
Use Cisco packet tracer and implement static routing and OSPF routing using 3 routers.

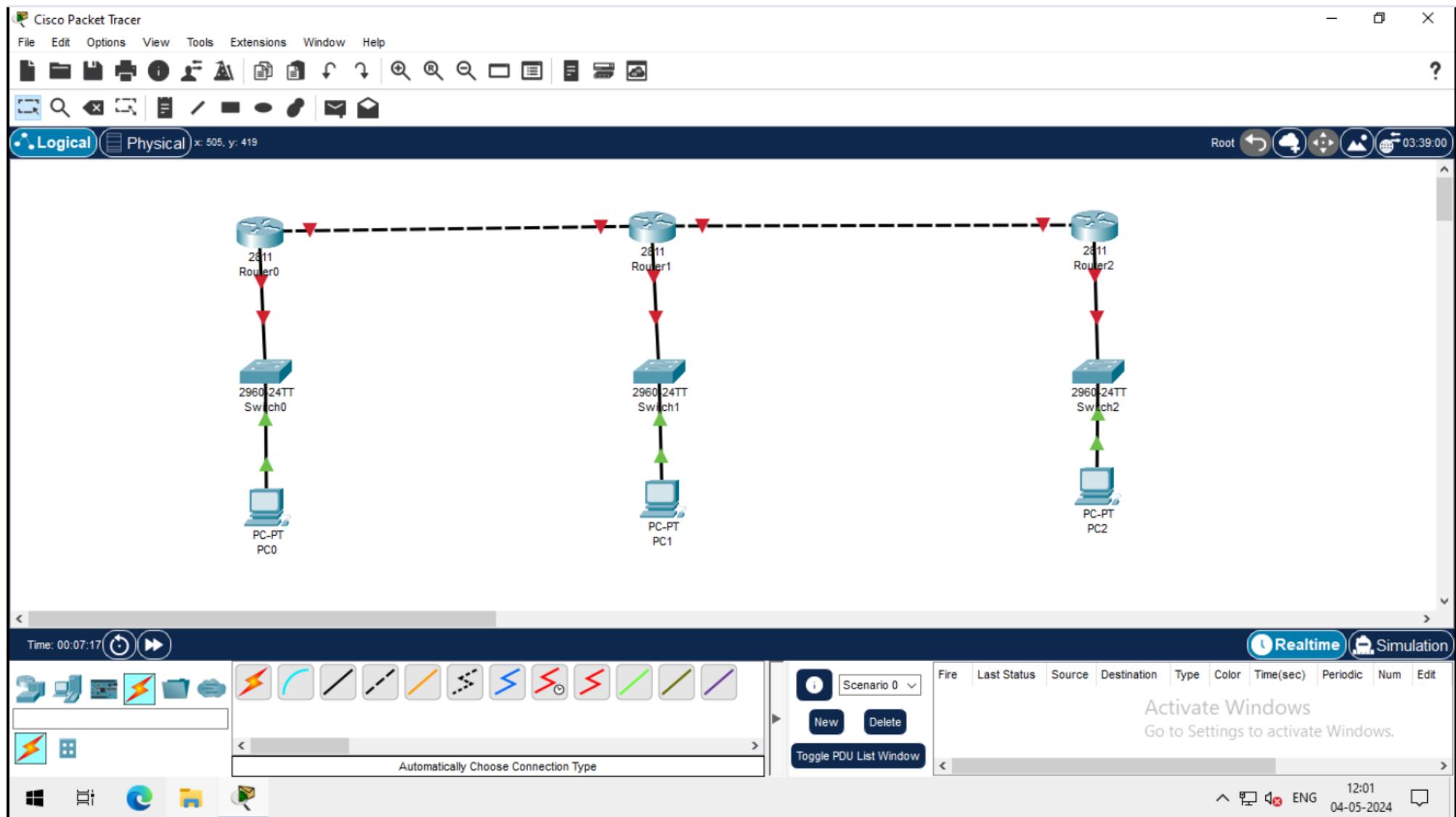
content

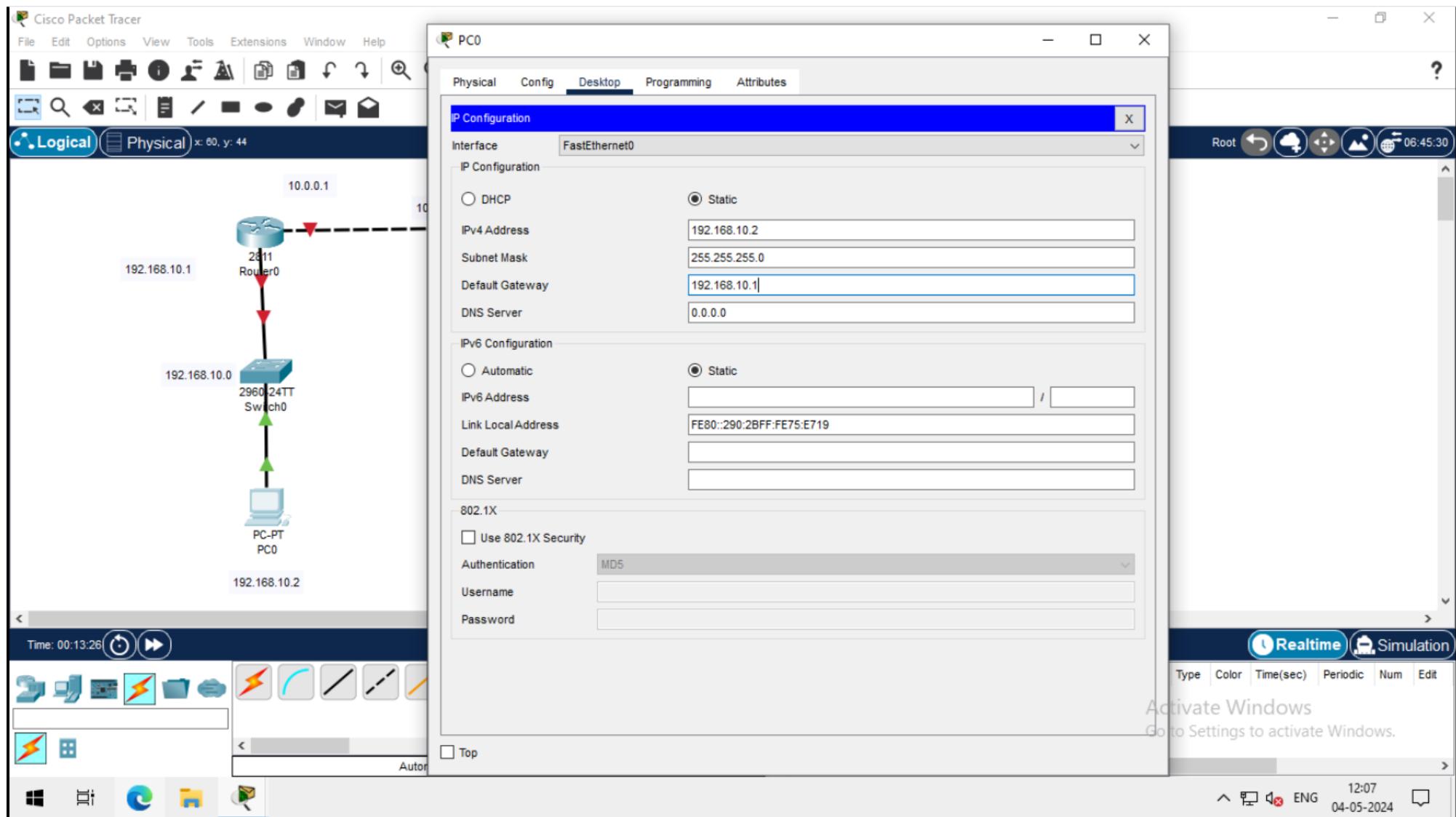
<u>Sl no.</u>	<u>Function</u>
1. Static routing using 3 routers	<ul style="list-style-type: none">- Add 3 pcs, 3 routers, 3 switches- Assign IP to all pc- Configure all 3 routers and assign IP to all ports- Make Indirect connections between routers- Ping one pc with another for test
2. OSPF using 3 routers	<ul style="list-style-type: none">- Add 2 pc, 3 router, 2 switches- Assign IP to all pc- Configure all 3 routers and assign IP to all ports- make OSPF Configuration.- Ping one pc with another for test

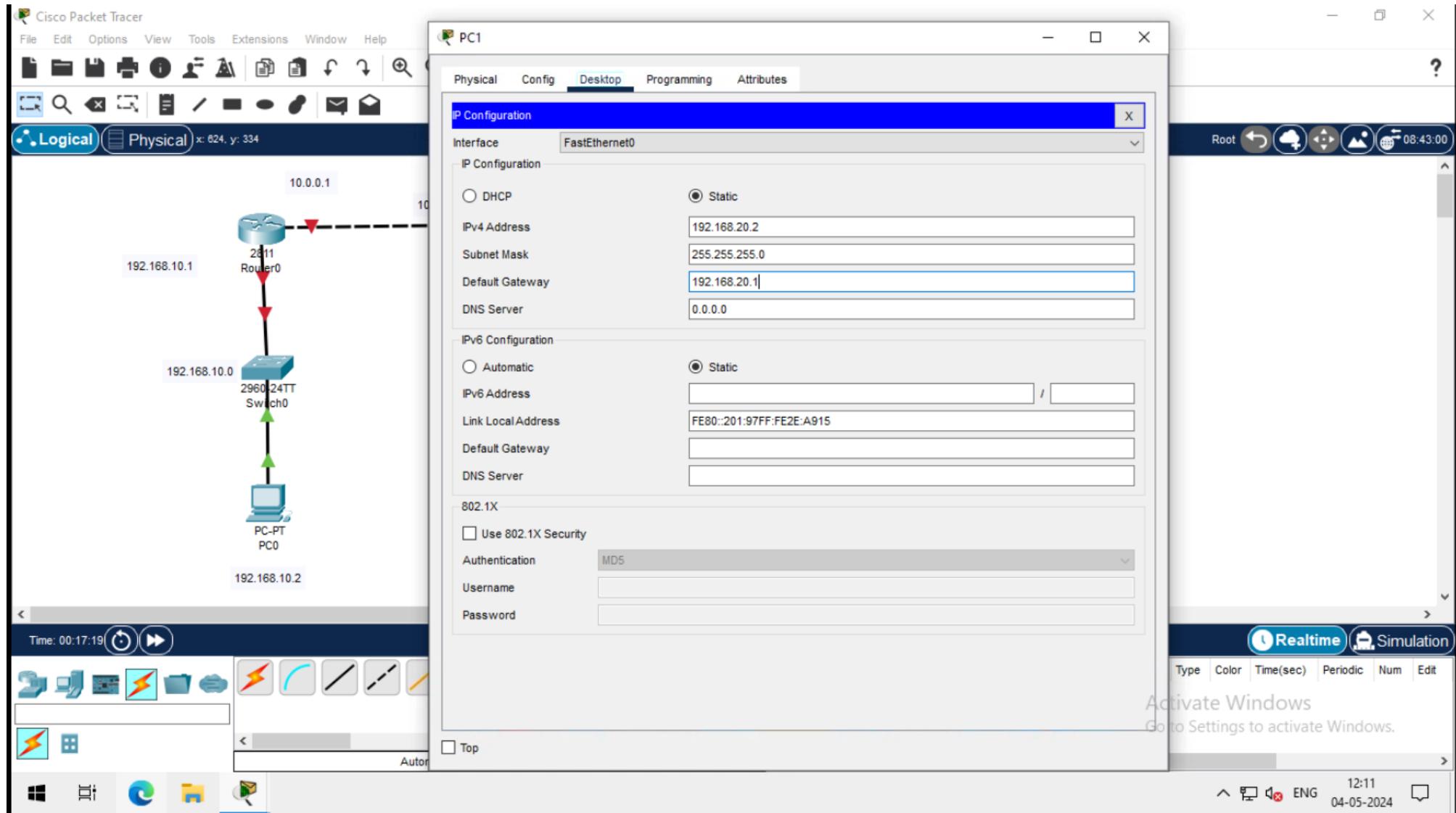
1. Static routing using 3 routers

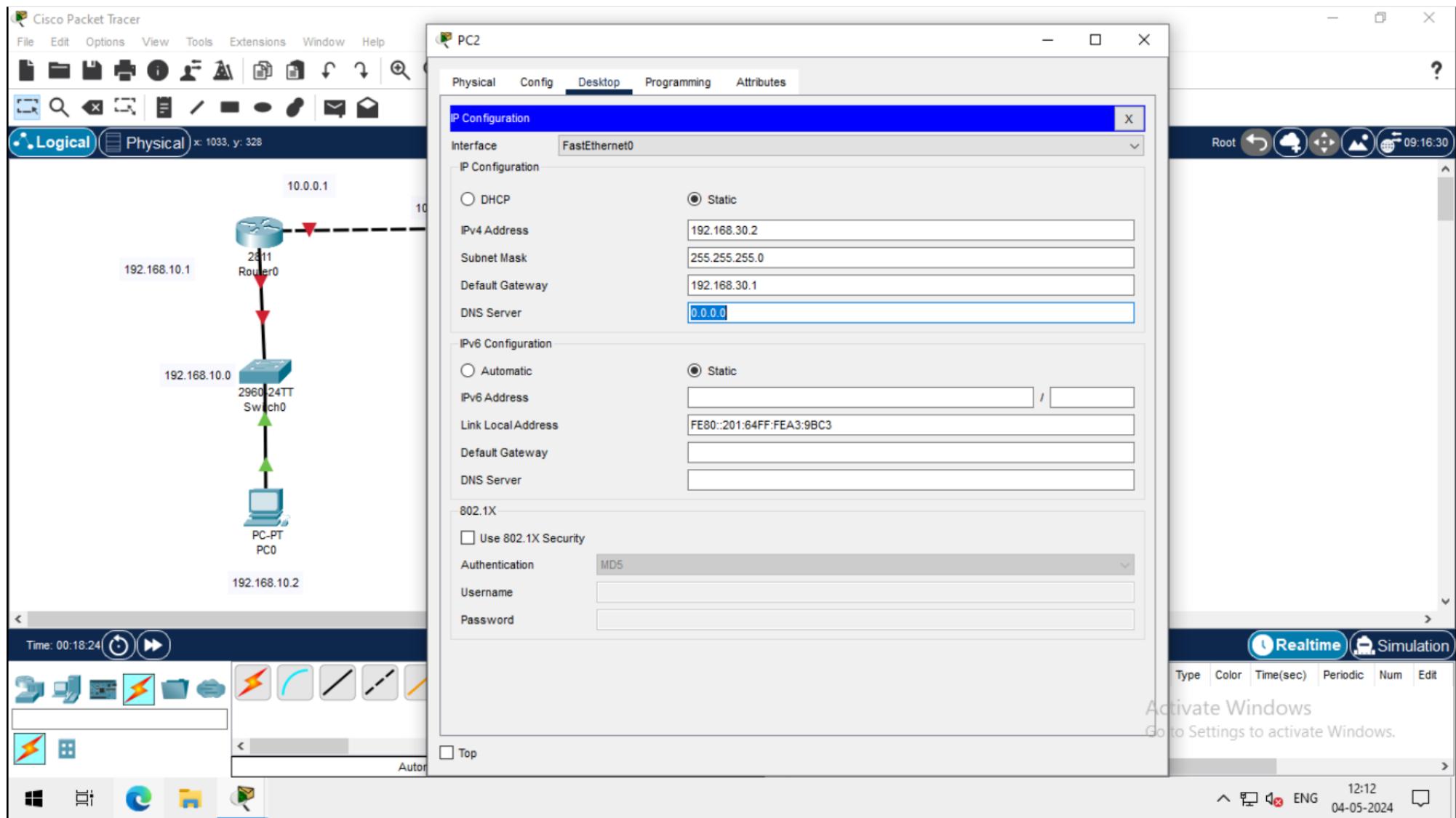


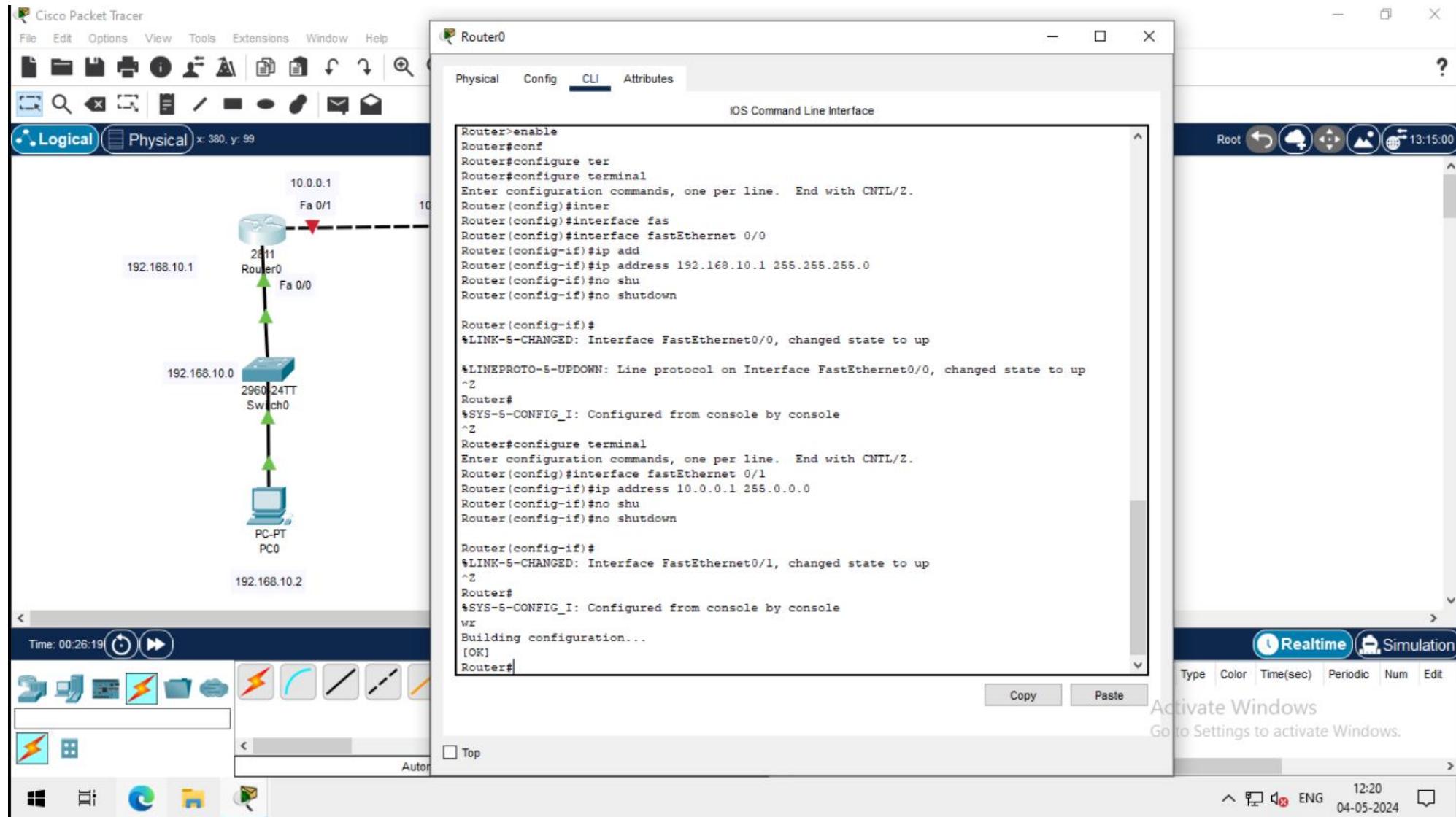












Router1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#no shutdown

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
wr
^
* Invalid input detected at '^' marker.

Router(config-if)#interface fastEthernet 0/1
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
*LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
^Z
Router#
*SYS-5-CONFIG_I: Configured from console by console
wr
Building configuration...
[OK]
Router#en
Router#enable
Router#conf
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 1/0
Router(config-if)#ip address 11.0.0.1 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#

```

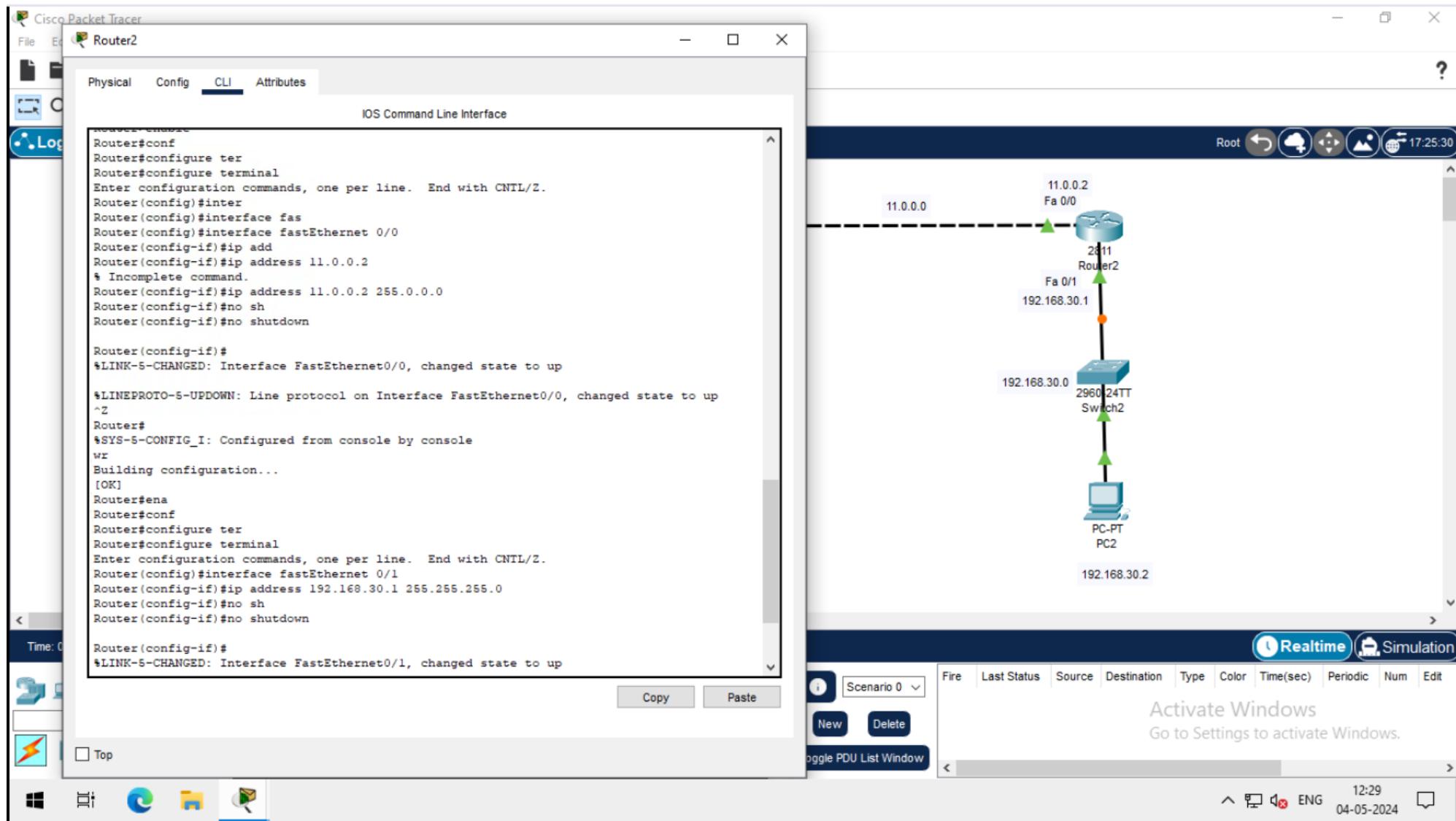
Activate Windows
Go to Settings to activate Windows.

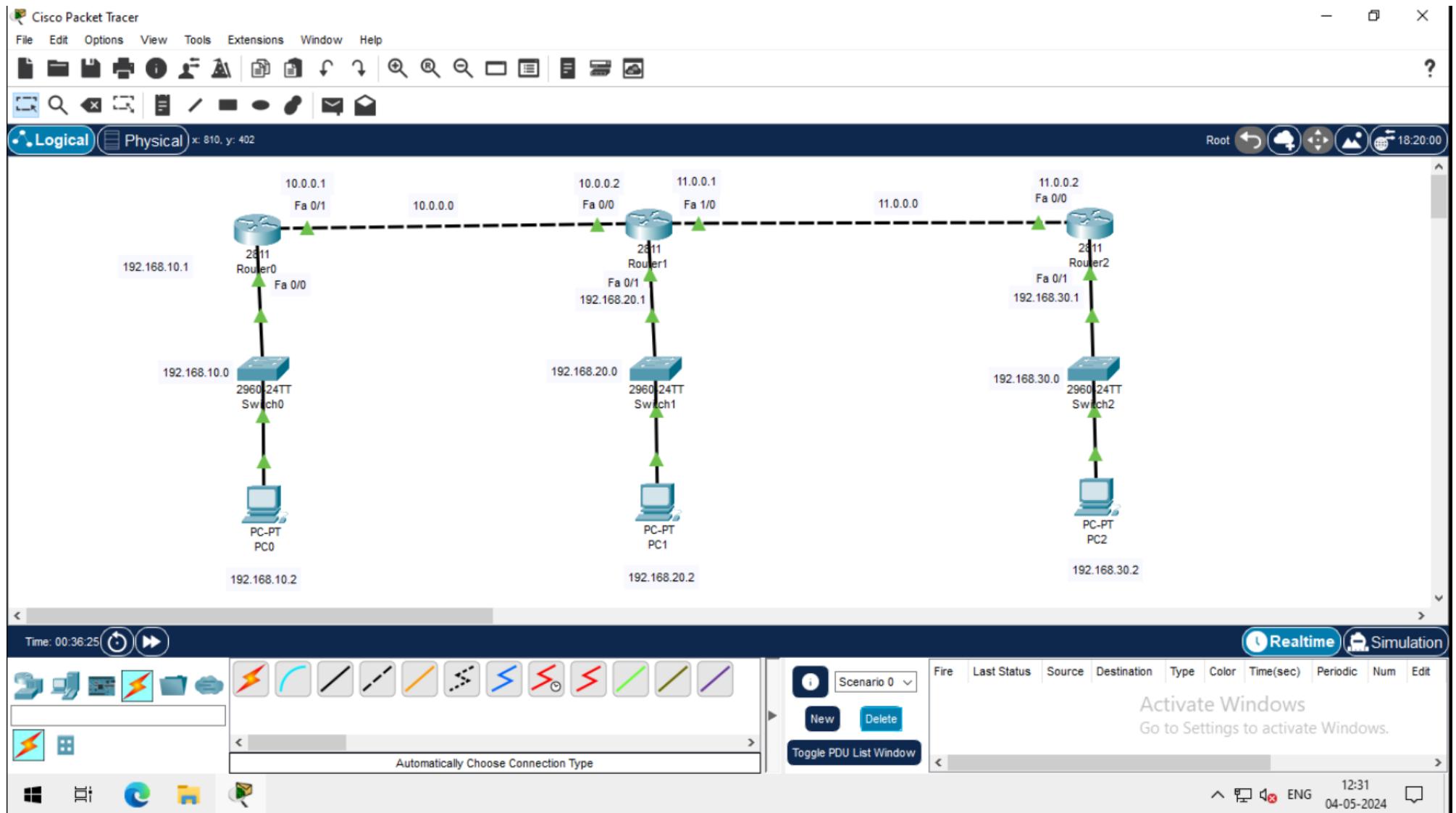
Top

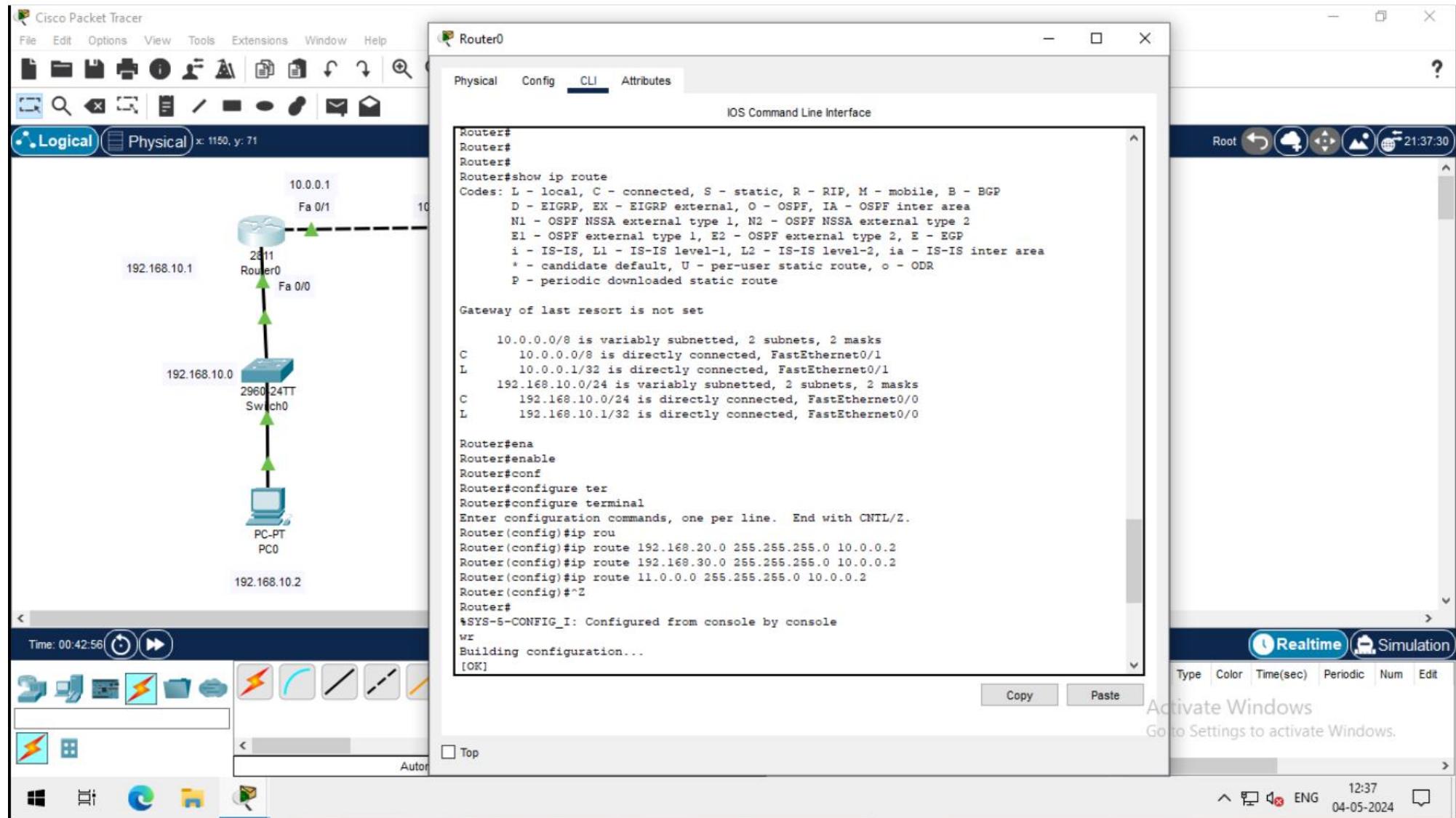
Copy Paste

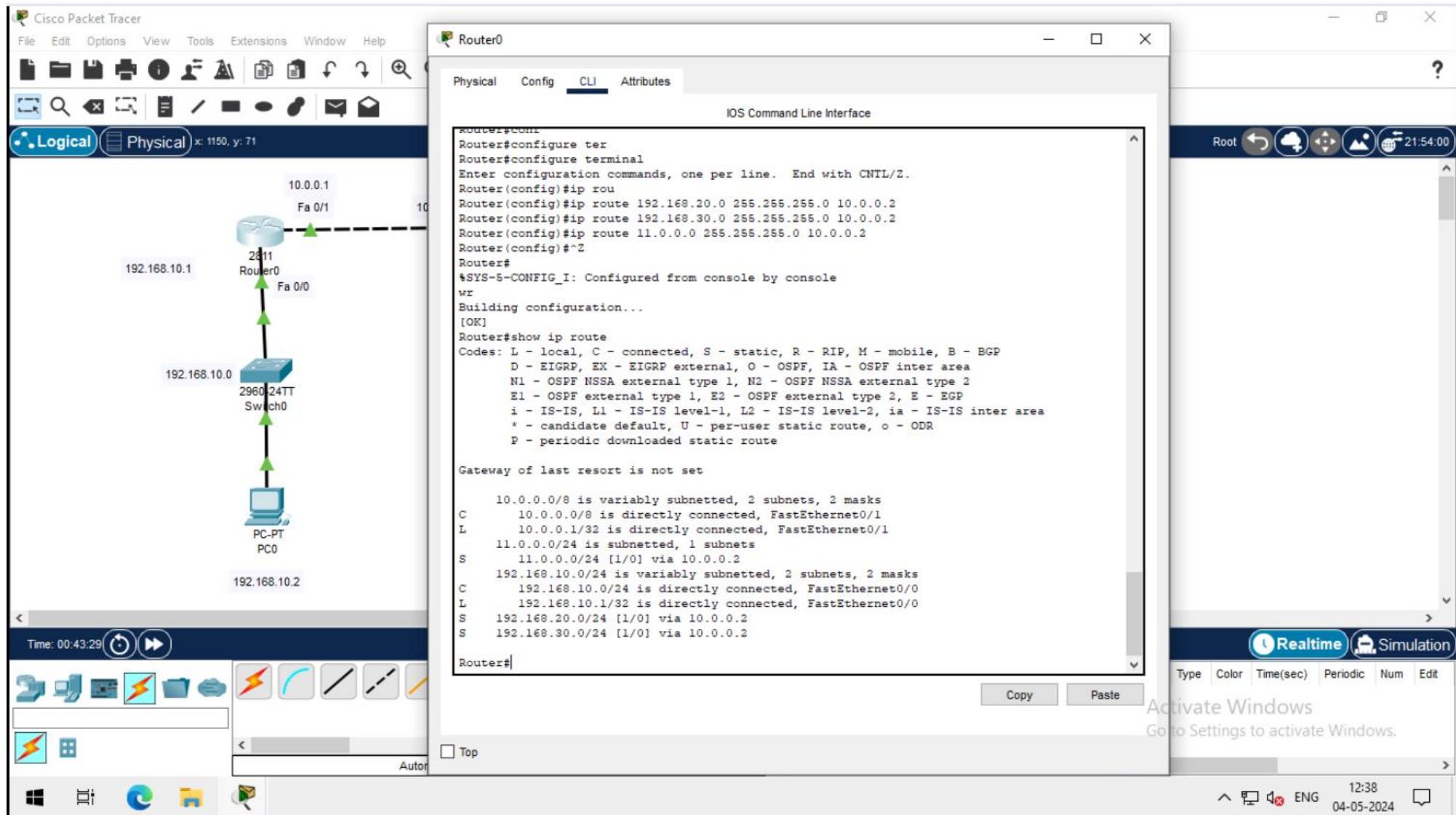
12:26 04-05-2024

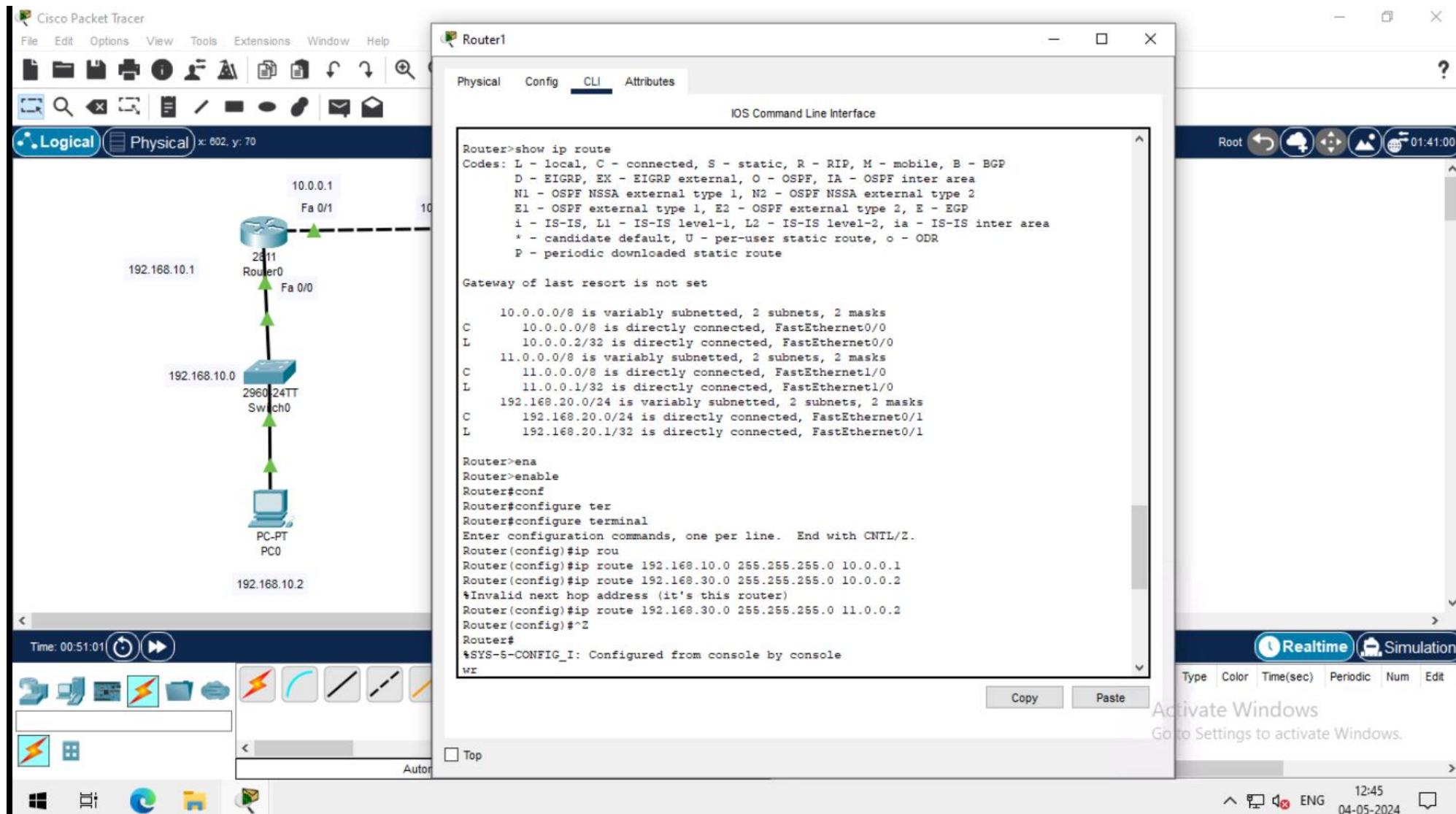


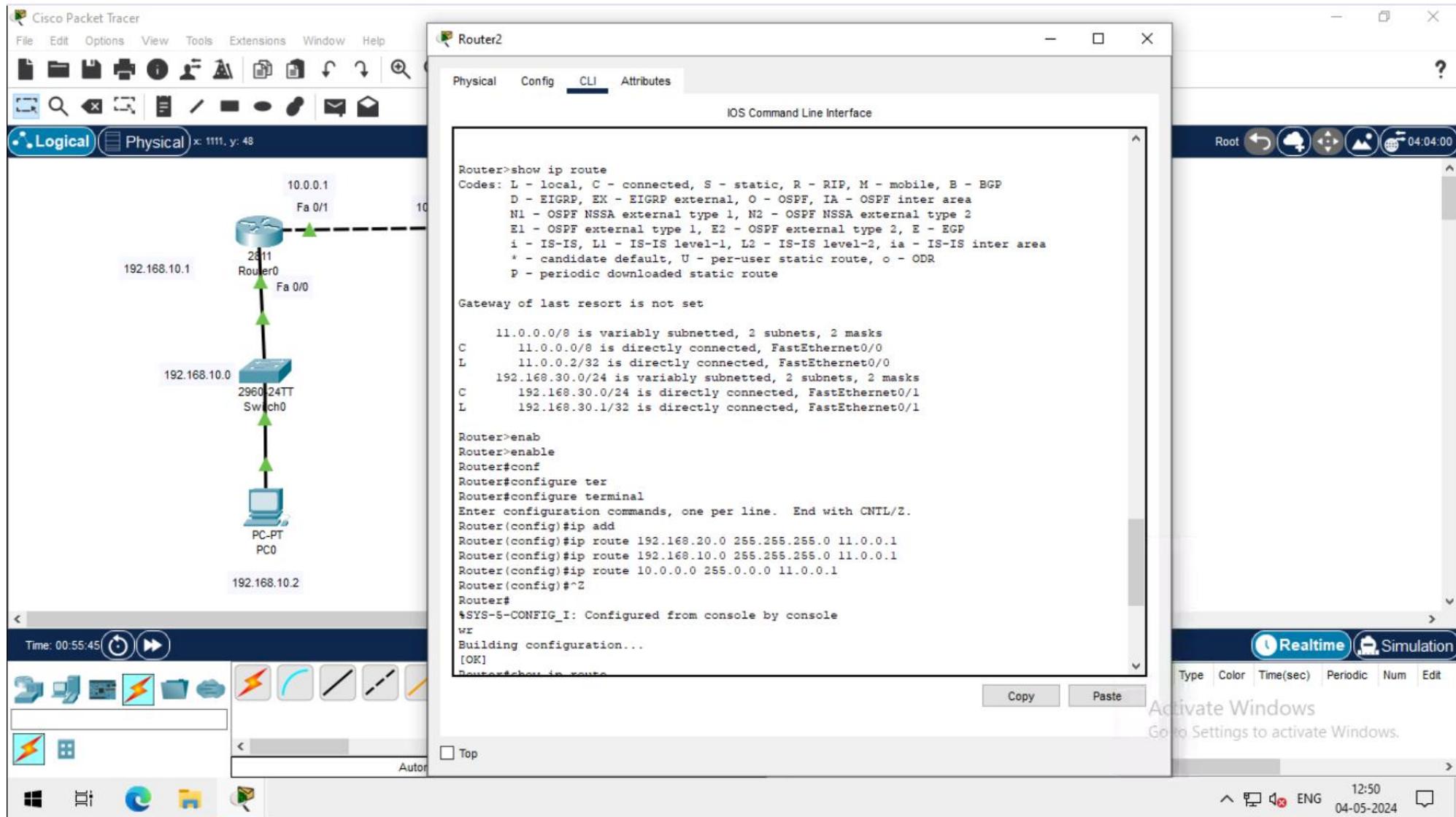


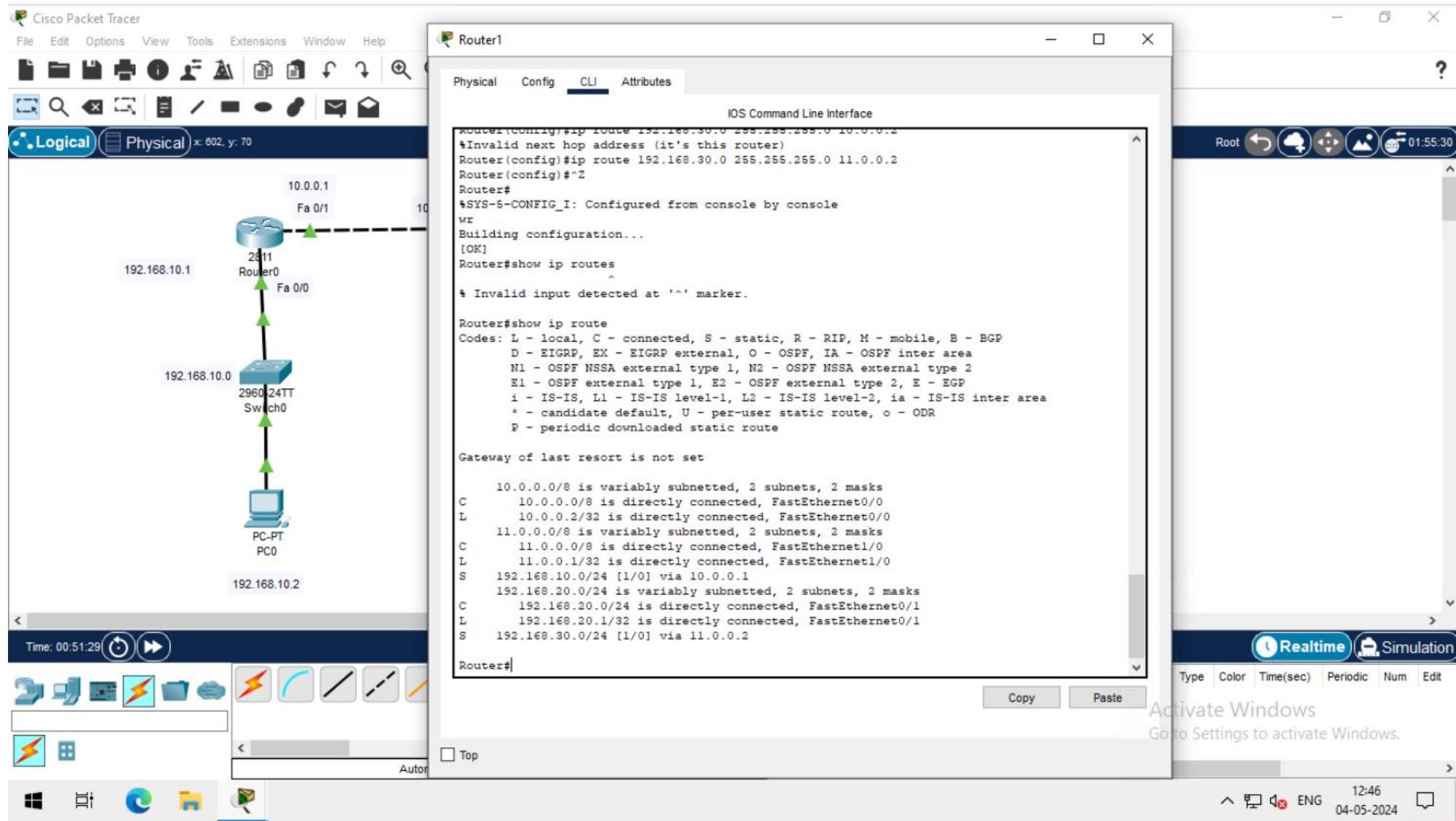


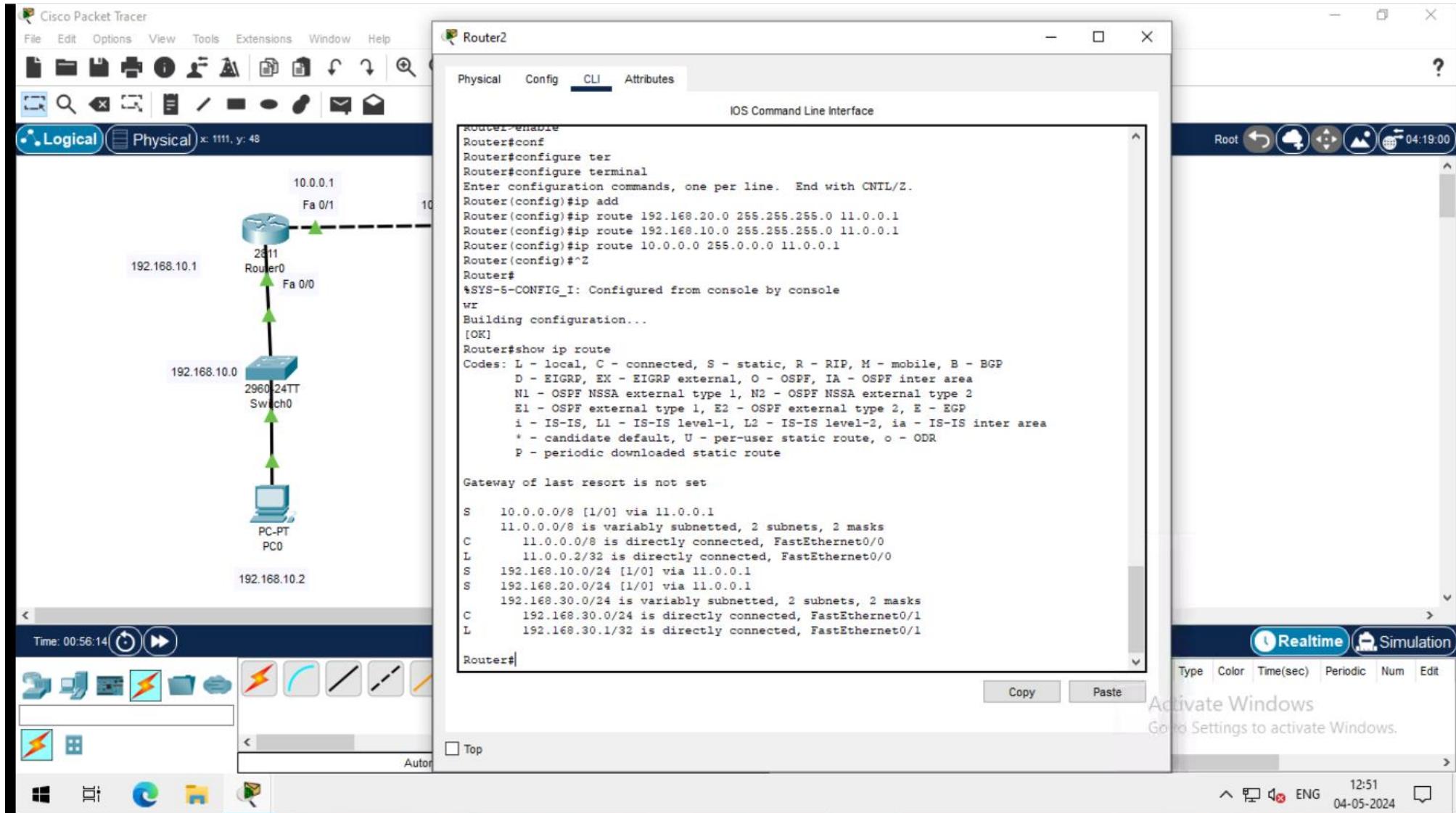


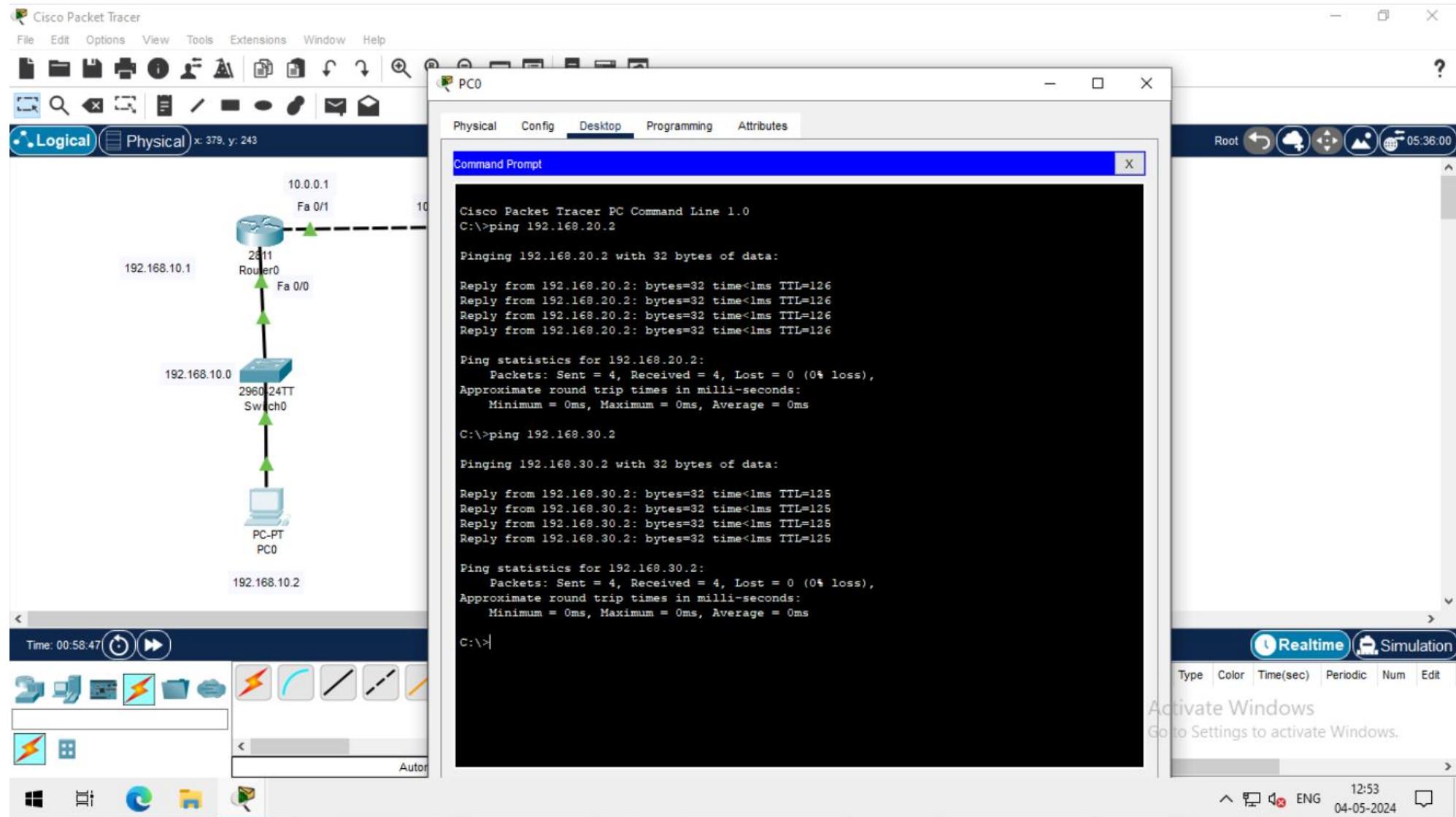


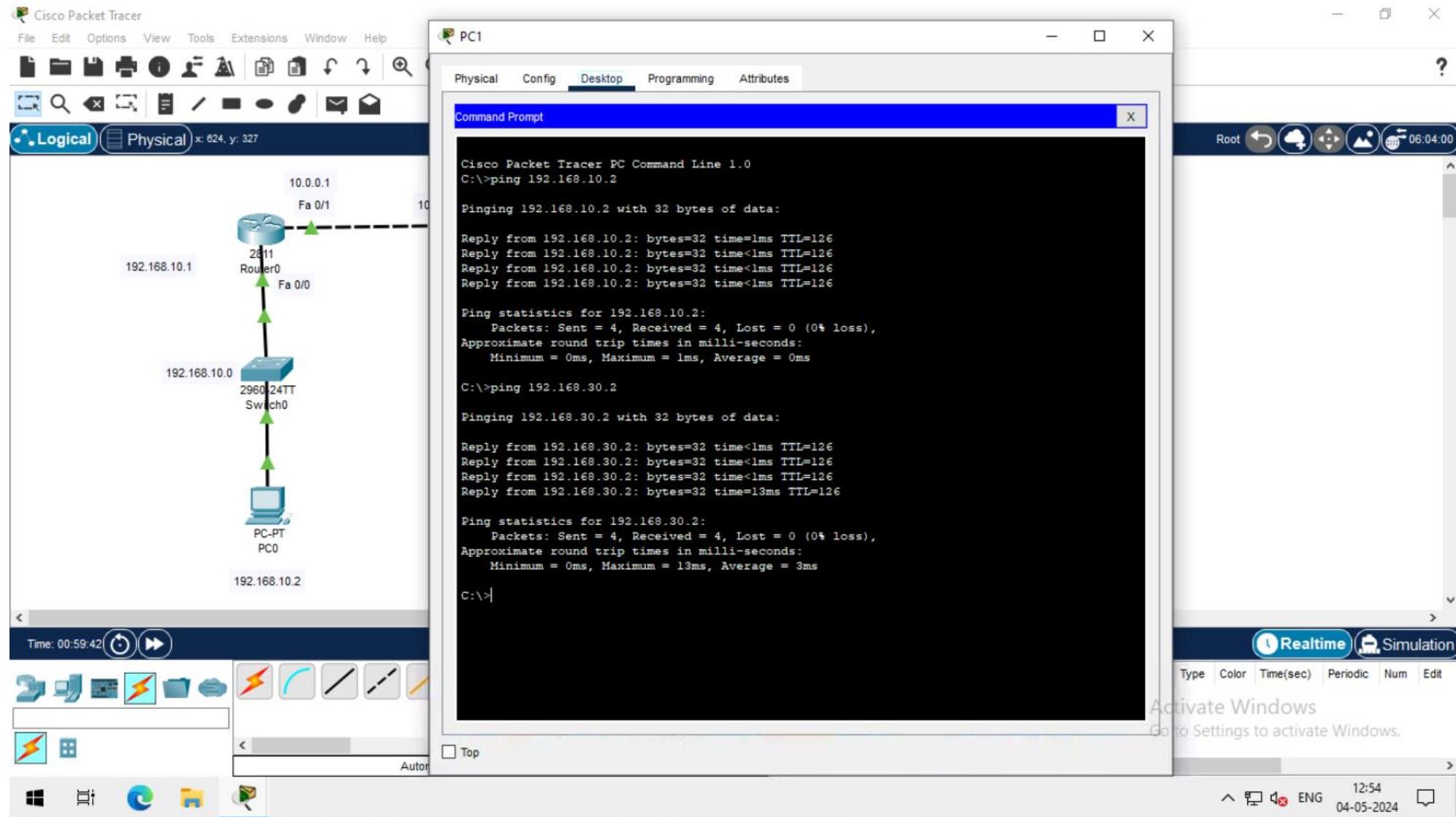


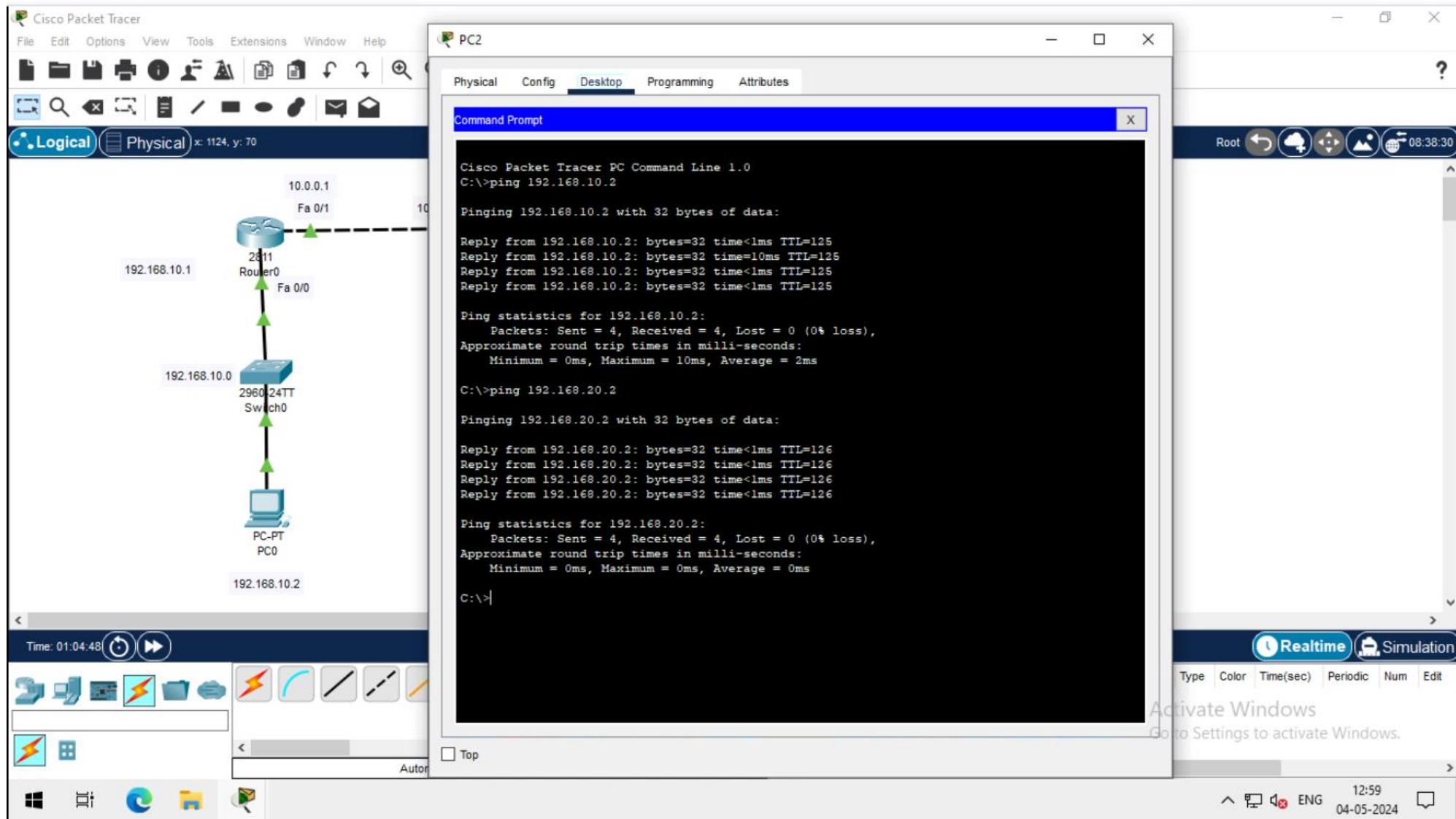




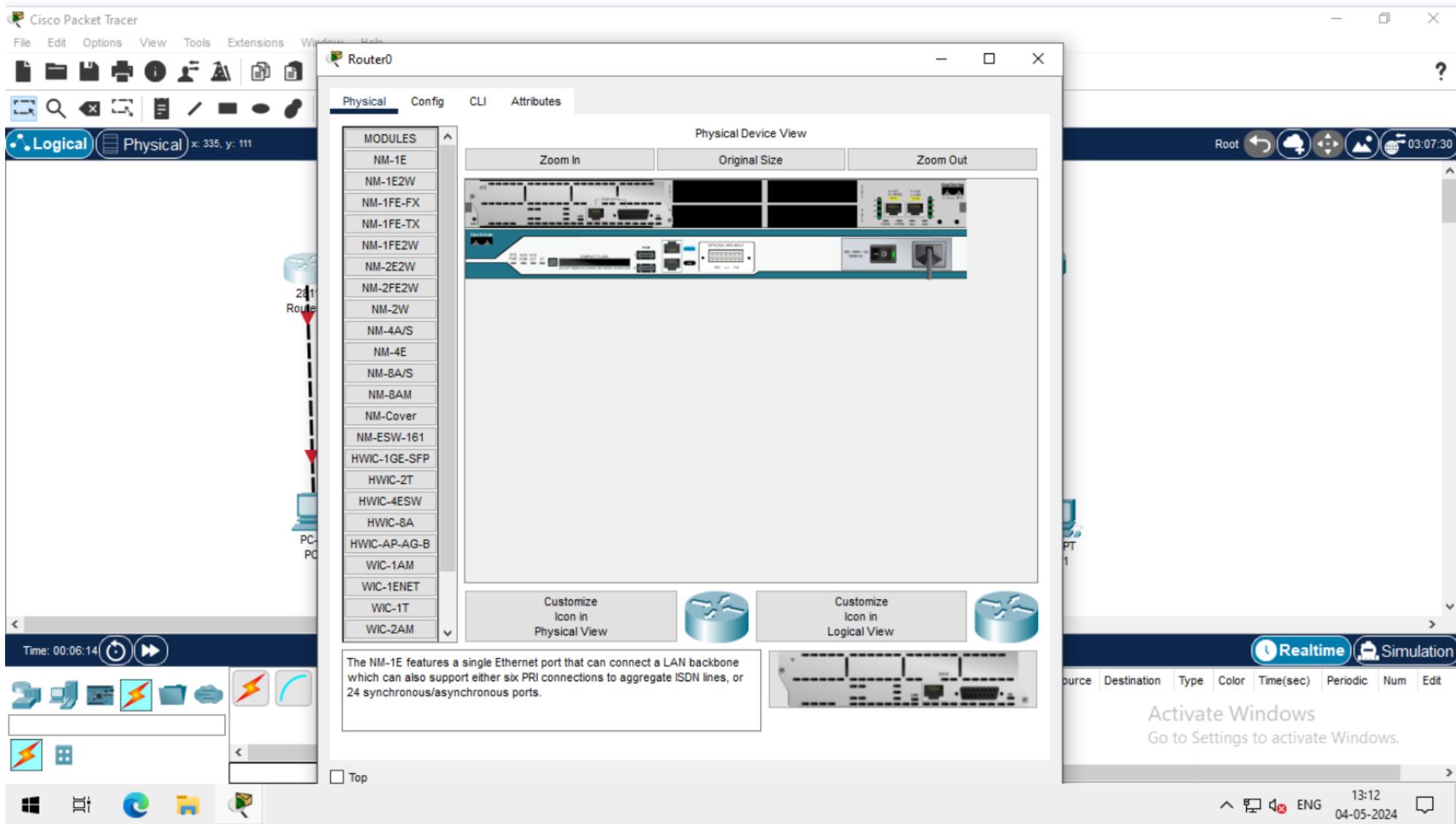


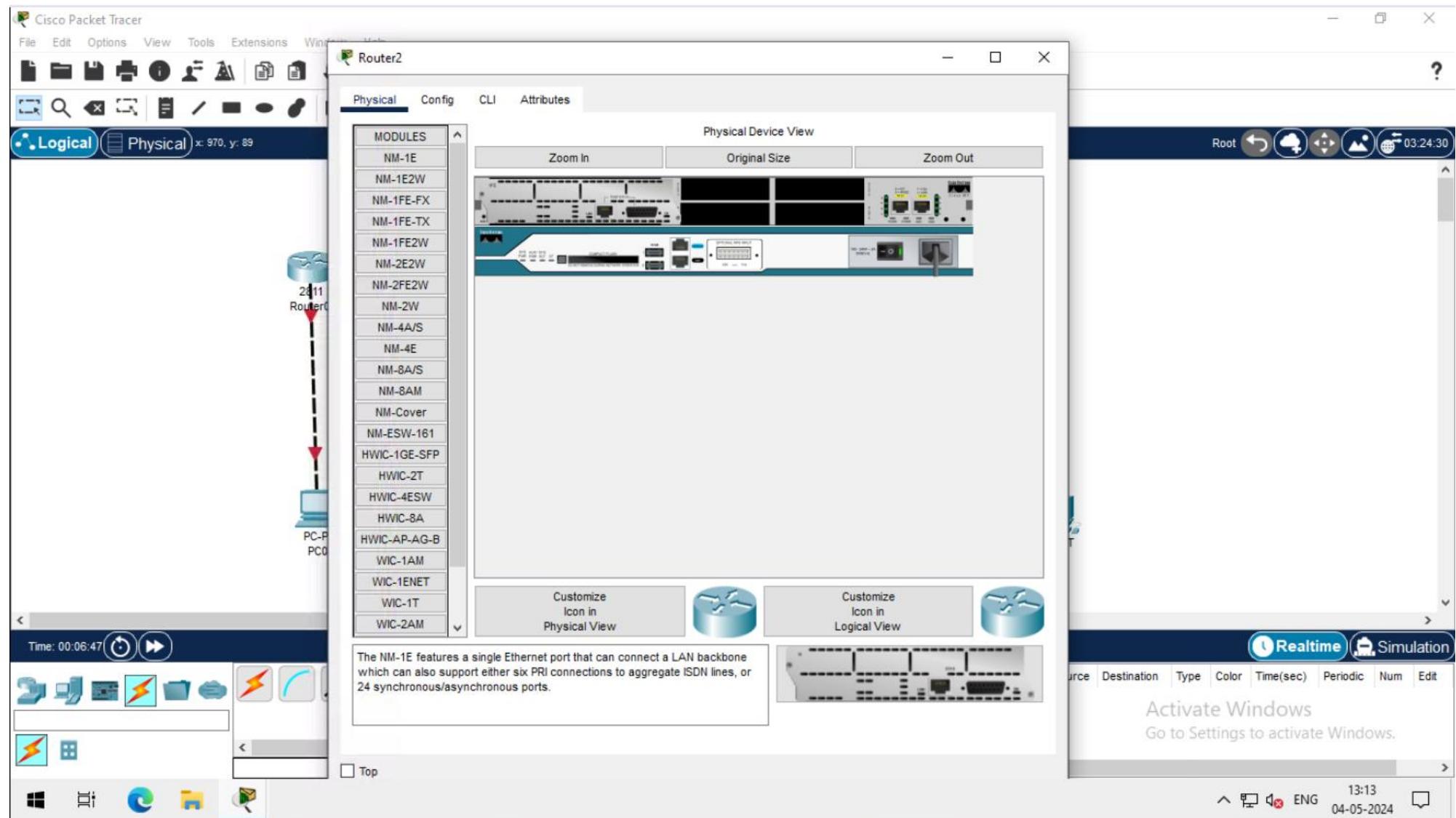


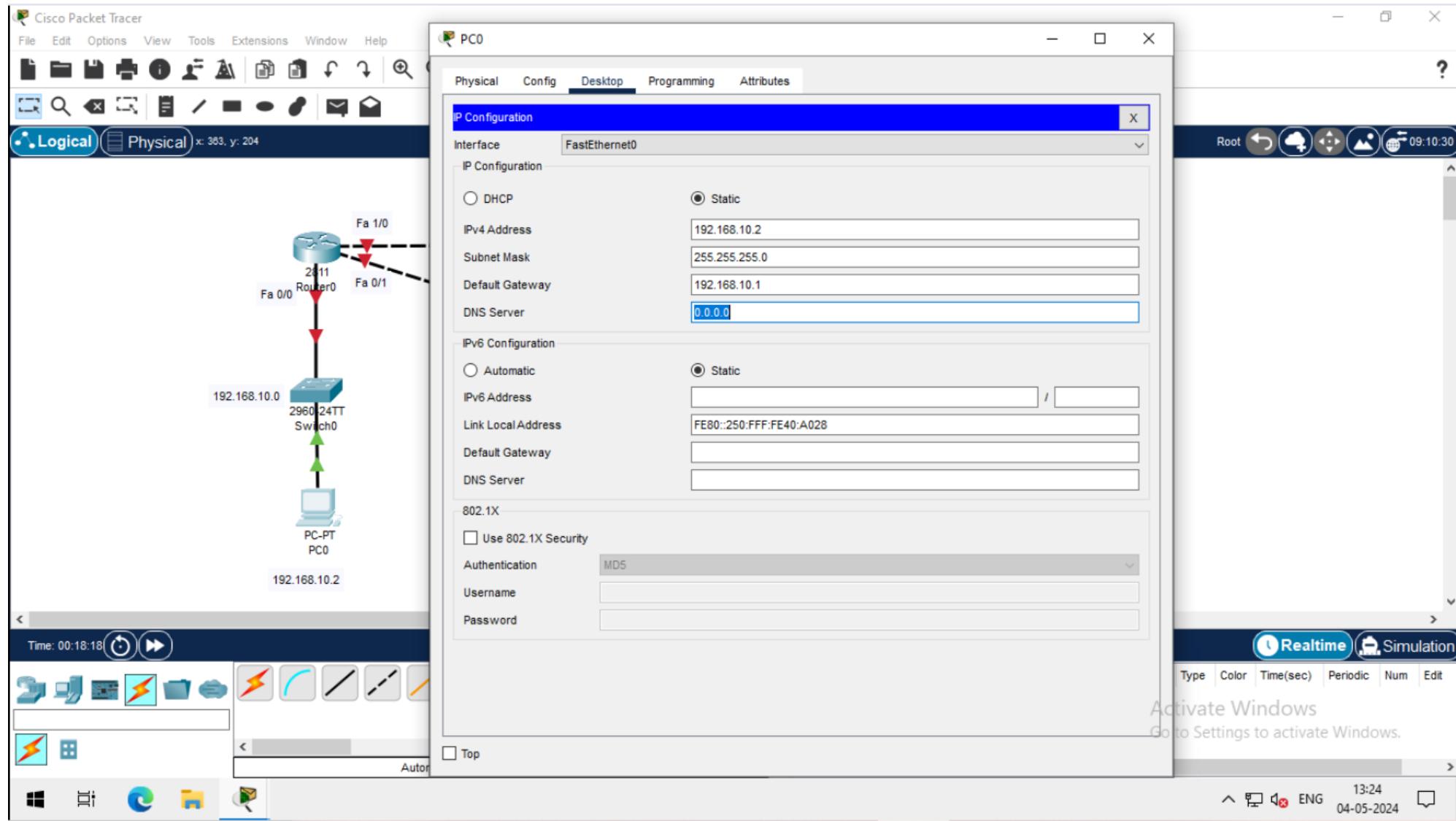


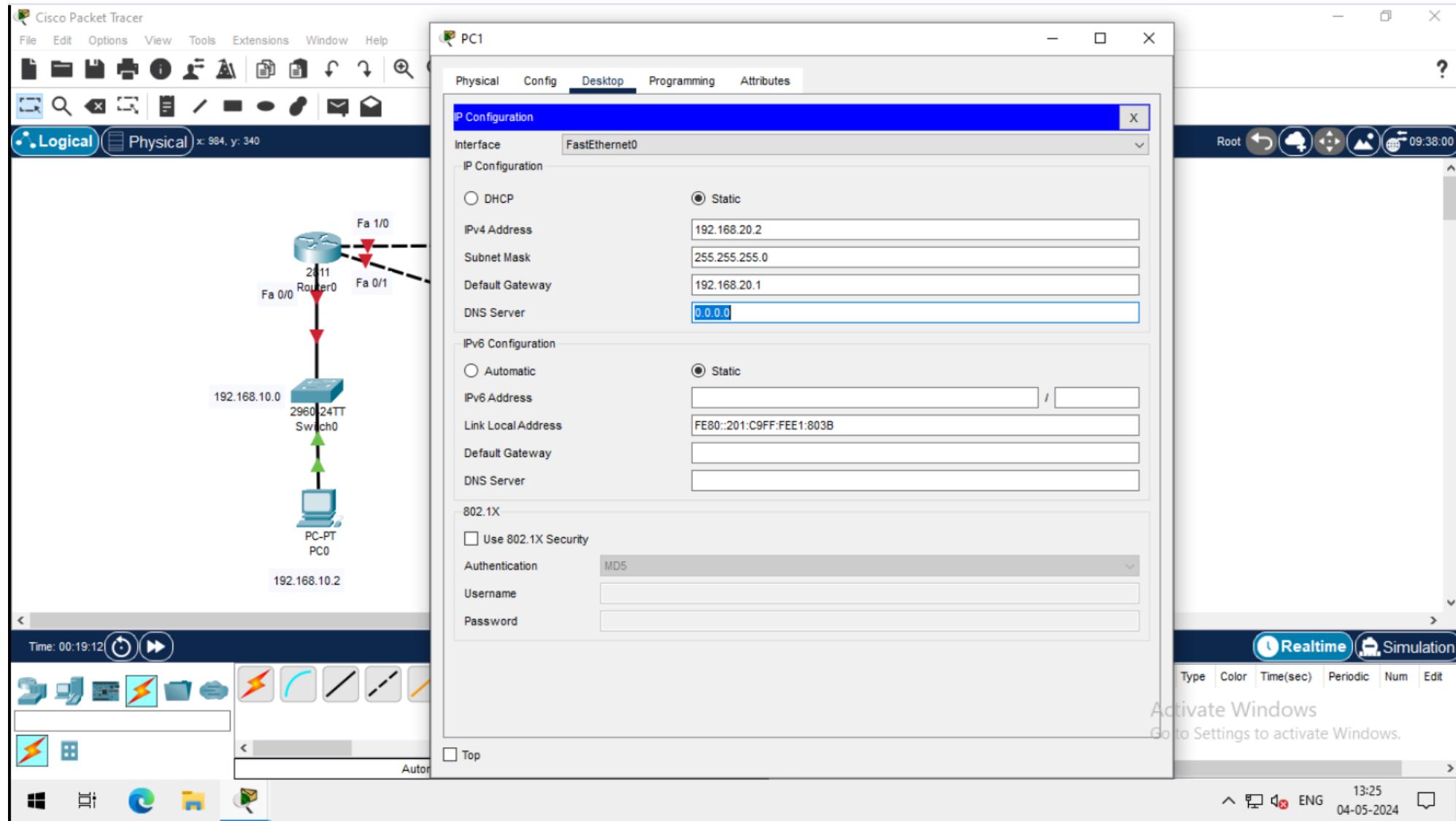


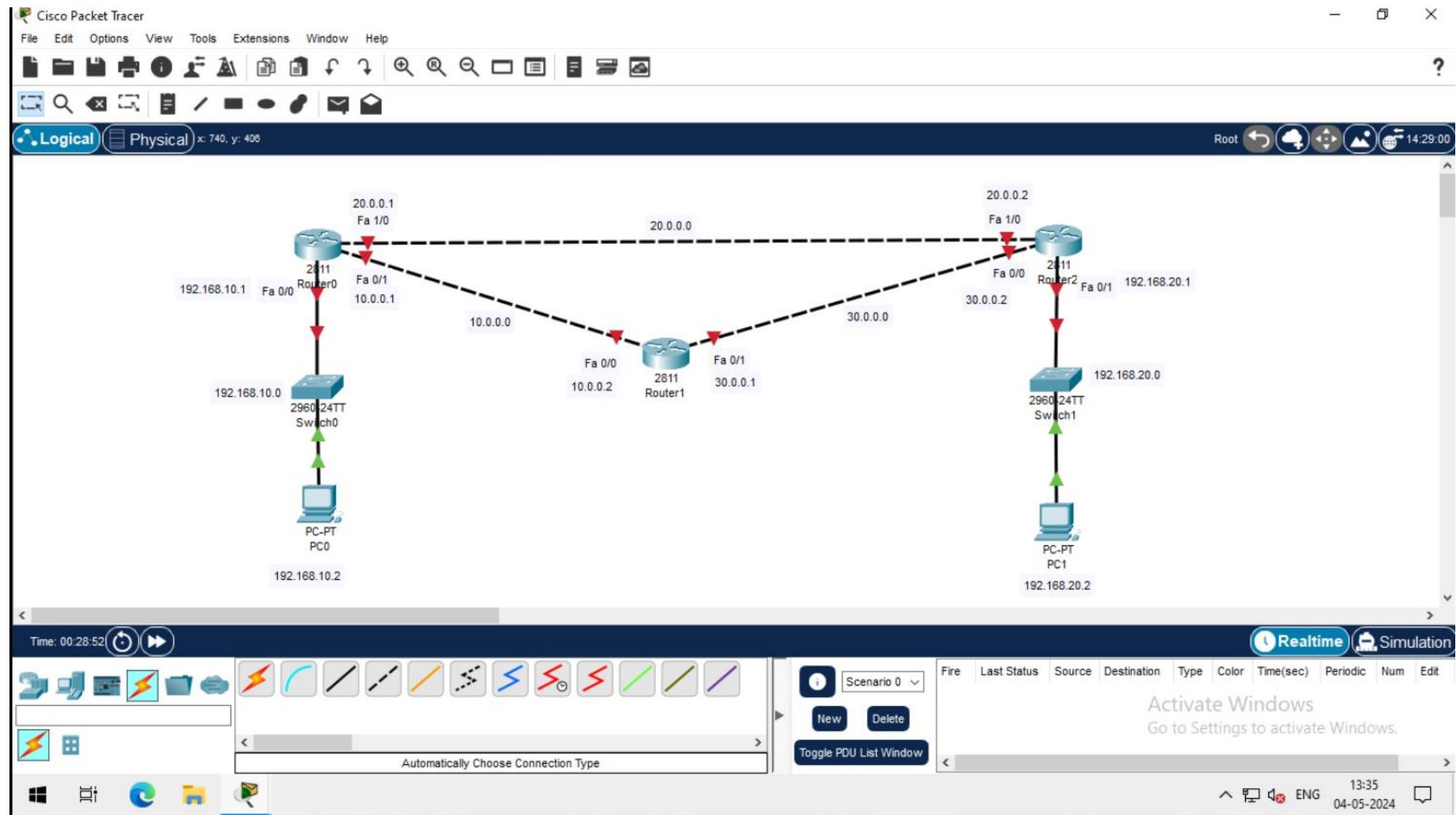
2. OSPF using 3 routers

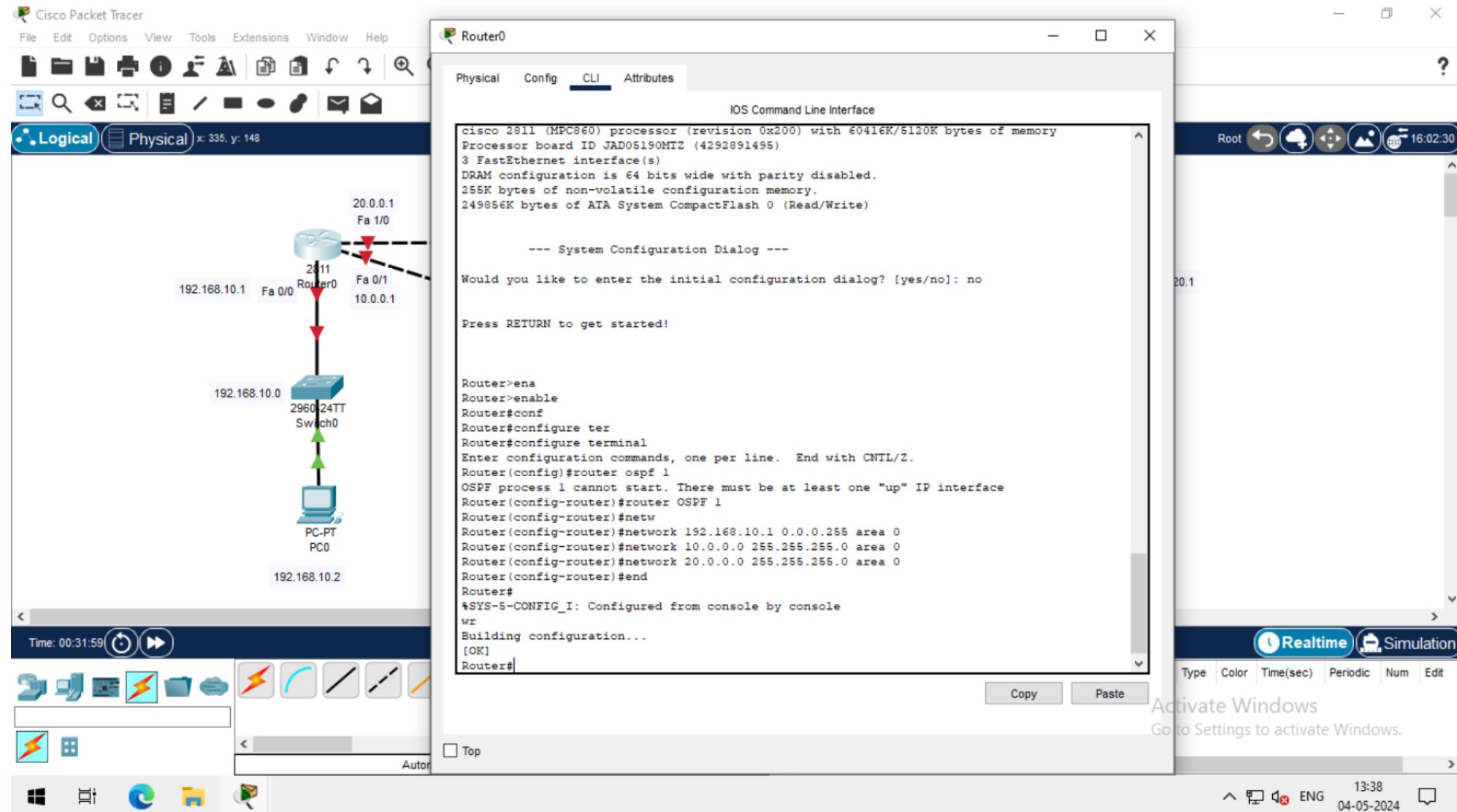


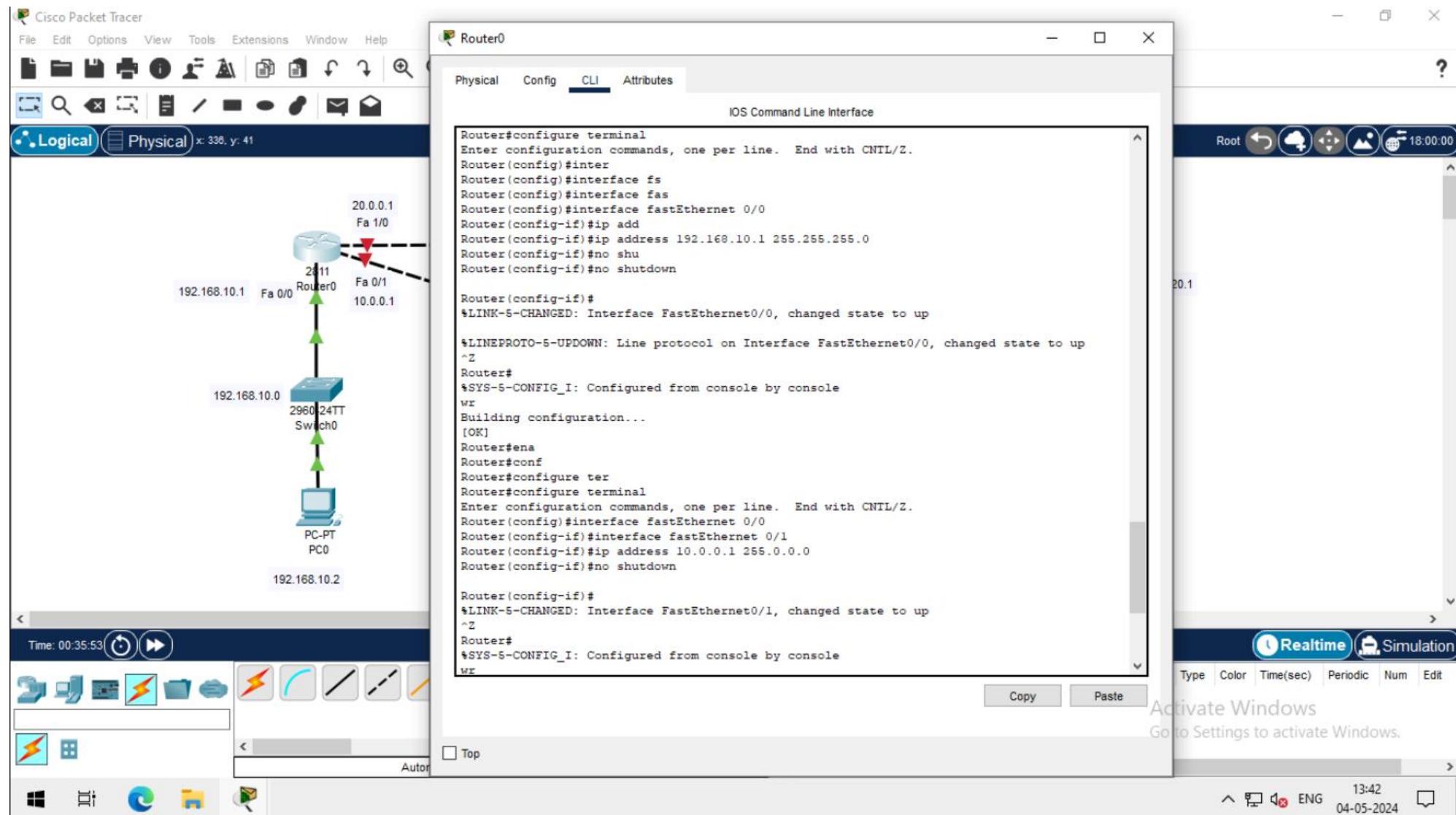


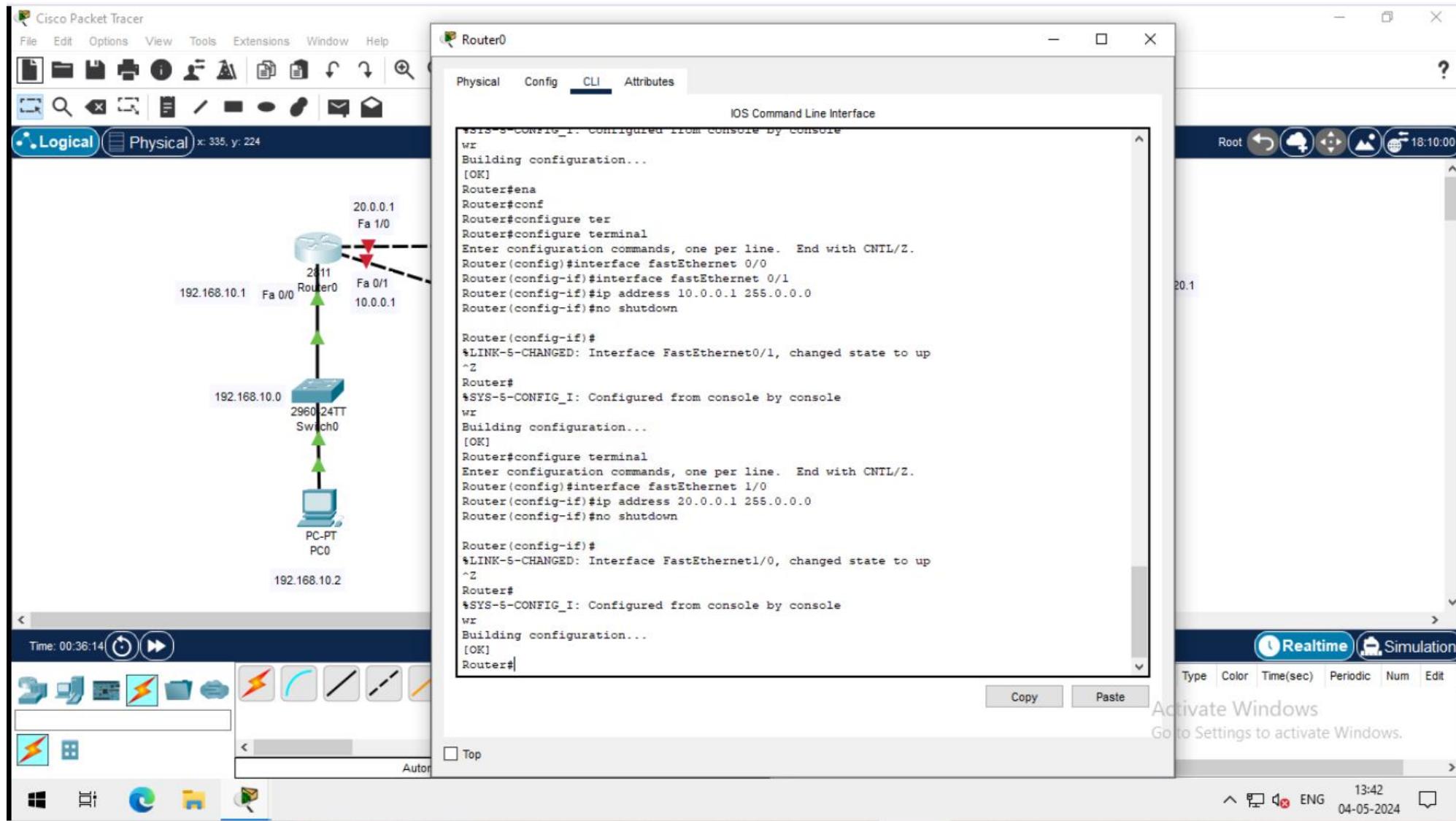


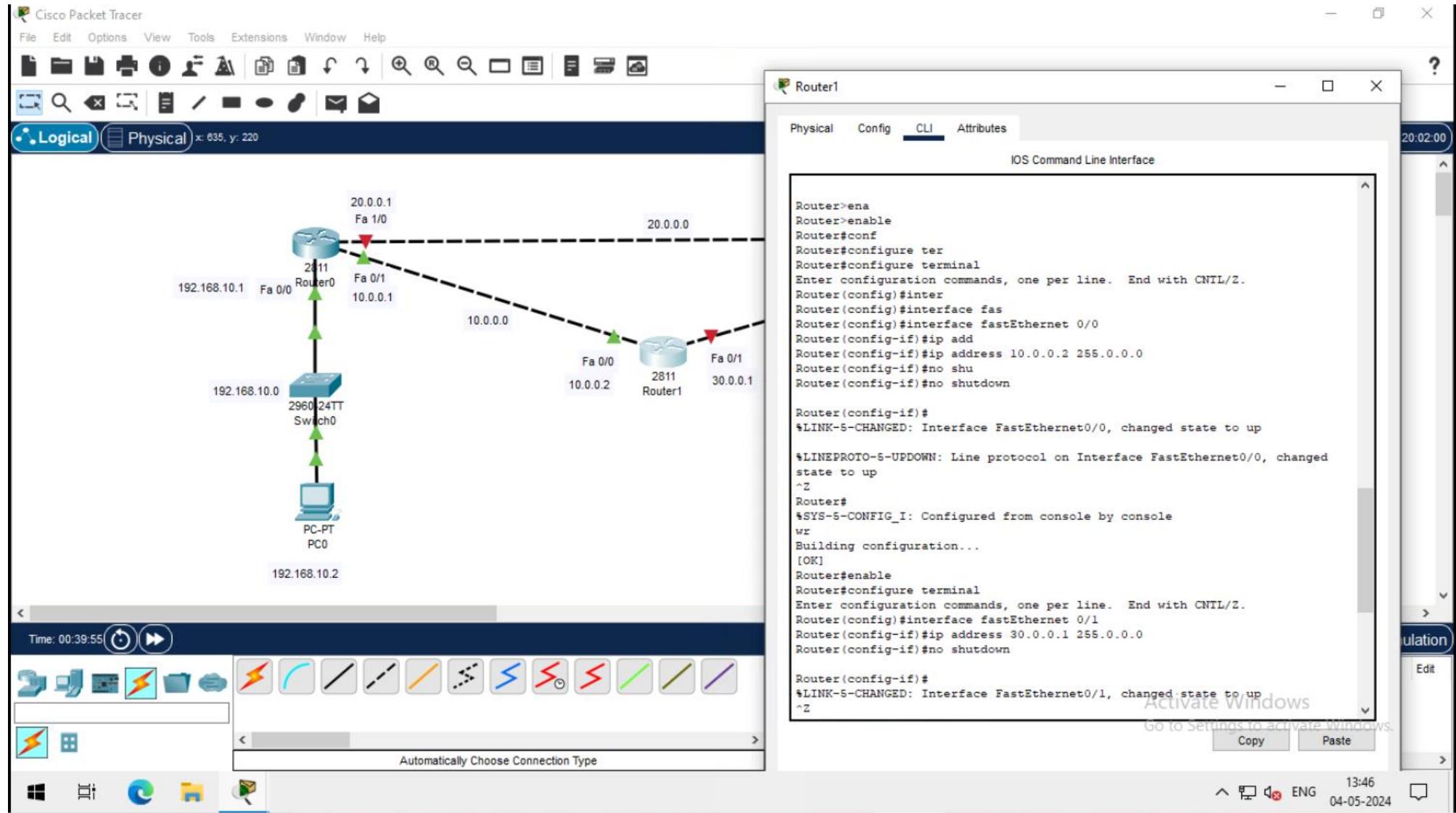


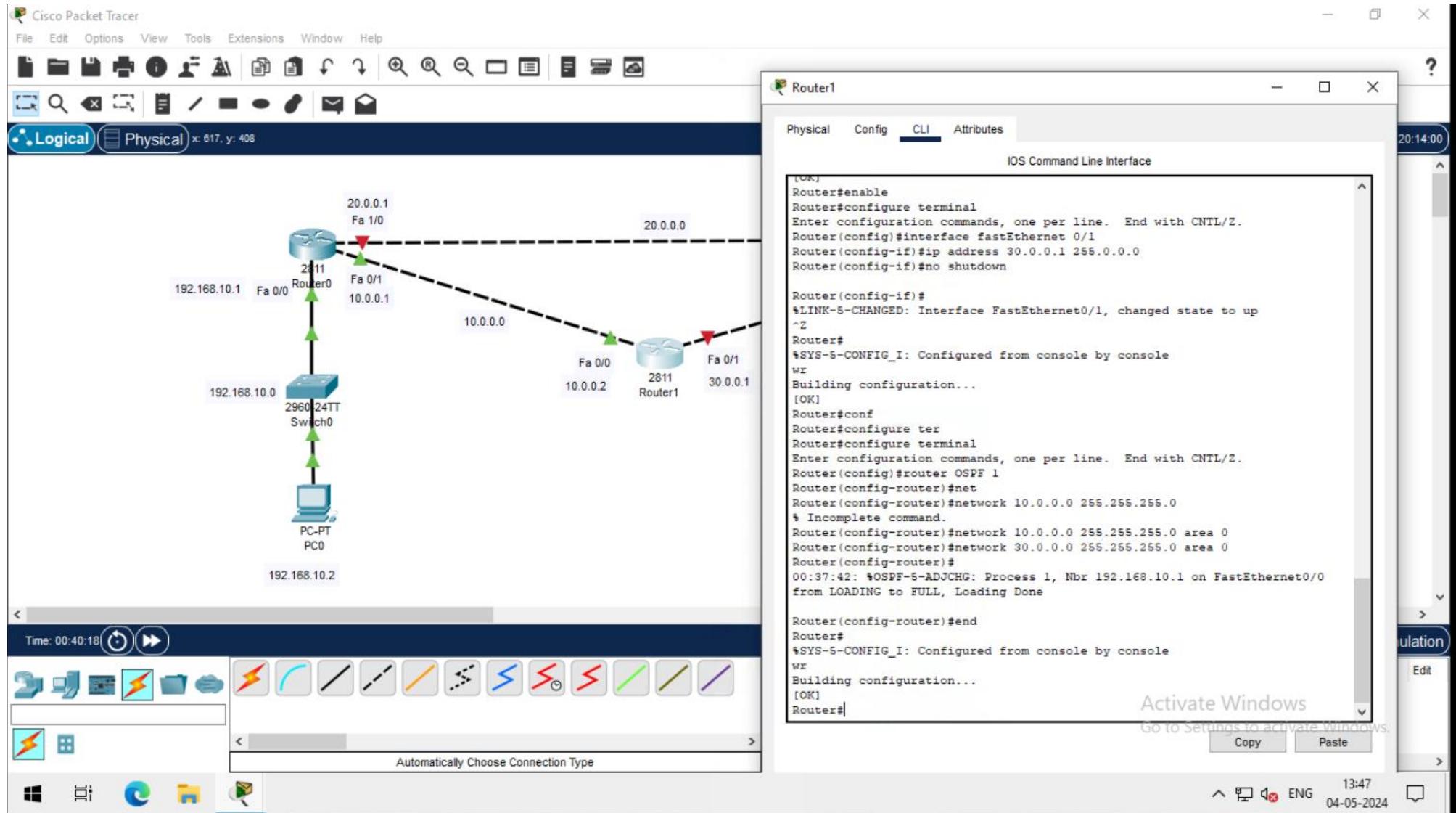


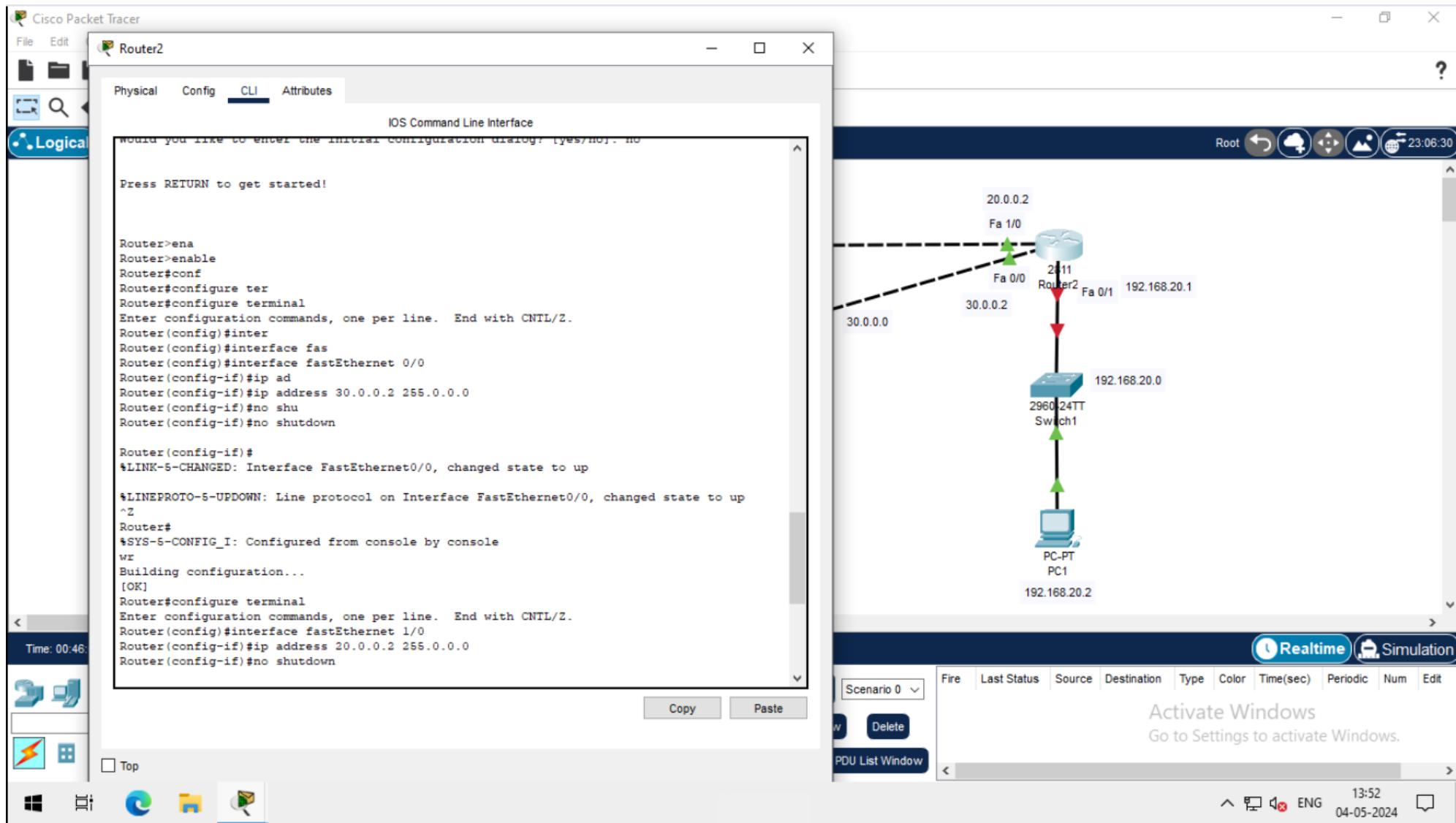


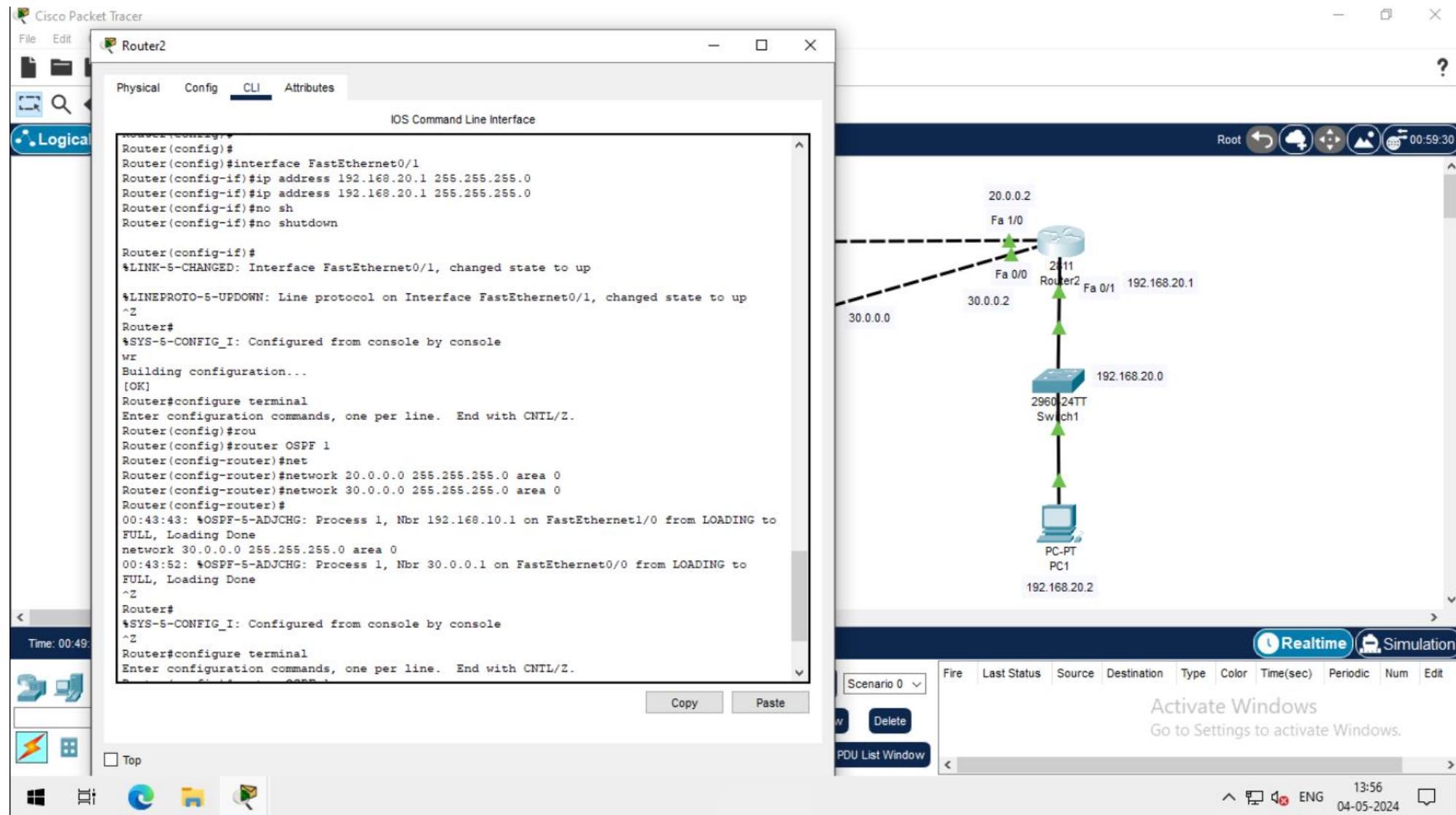


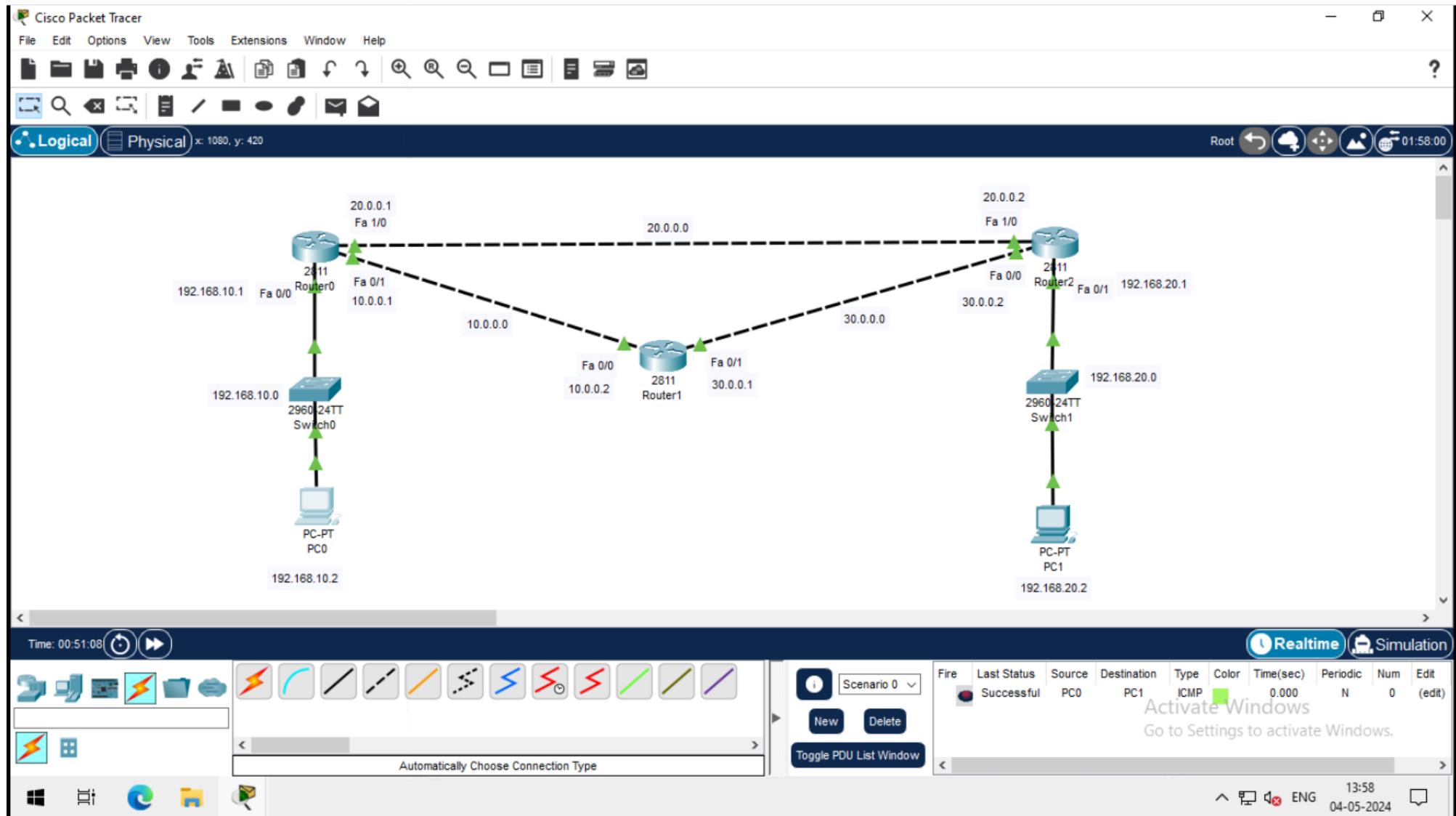


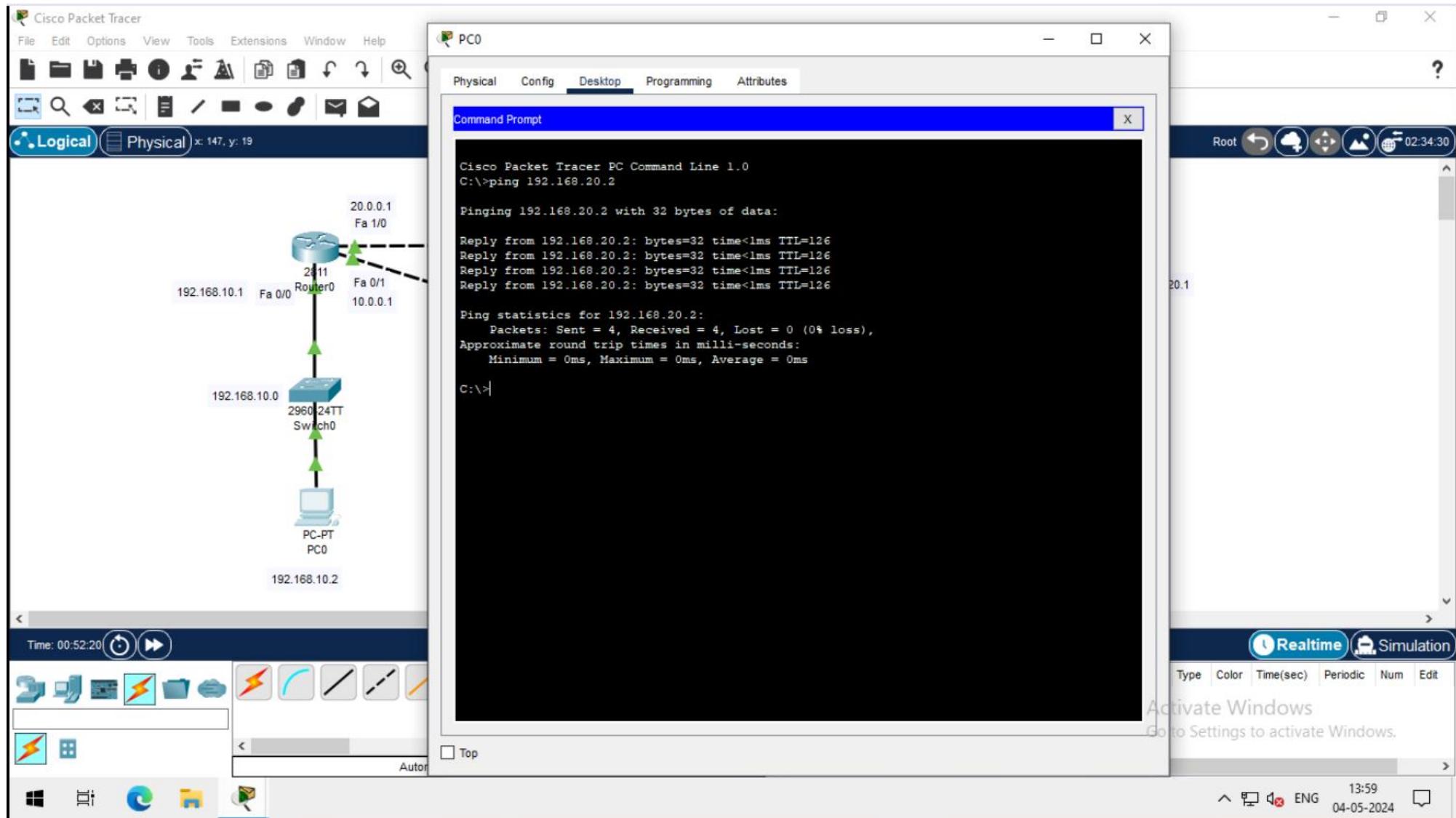


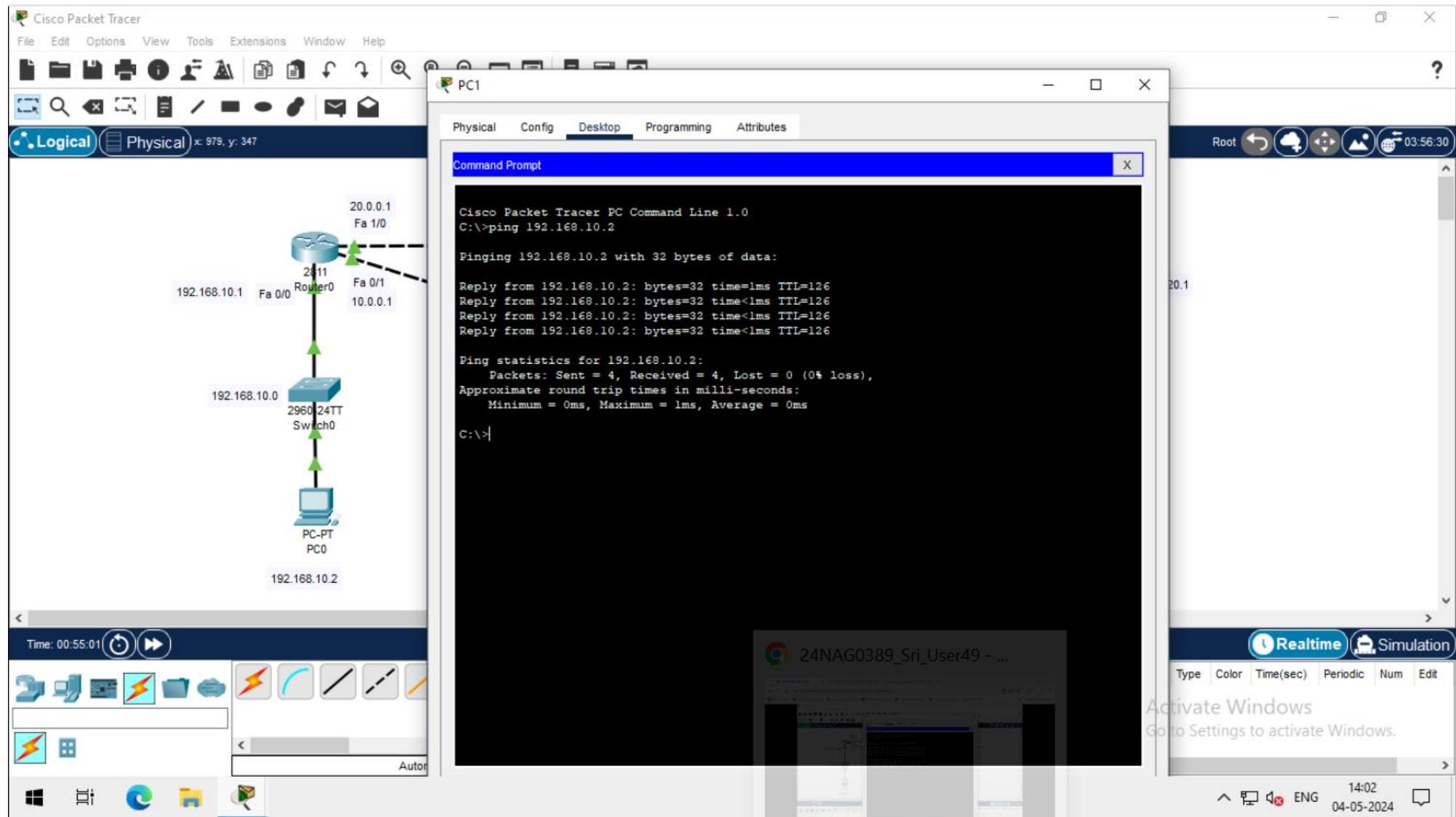


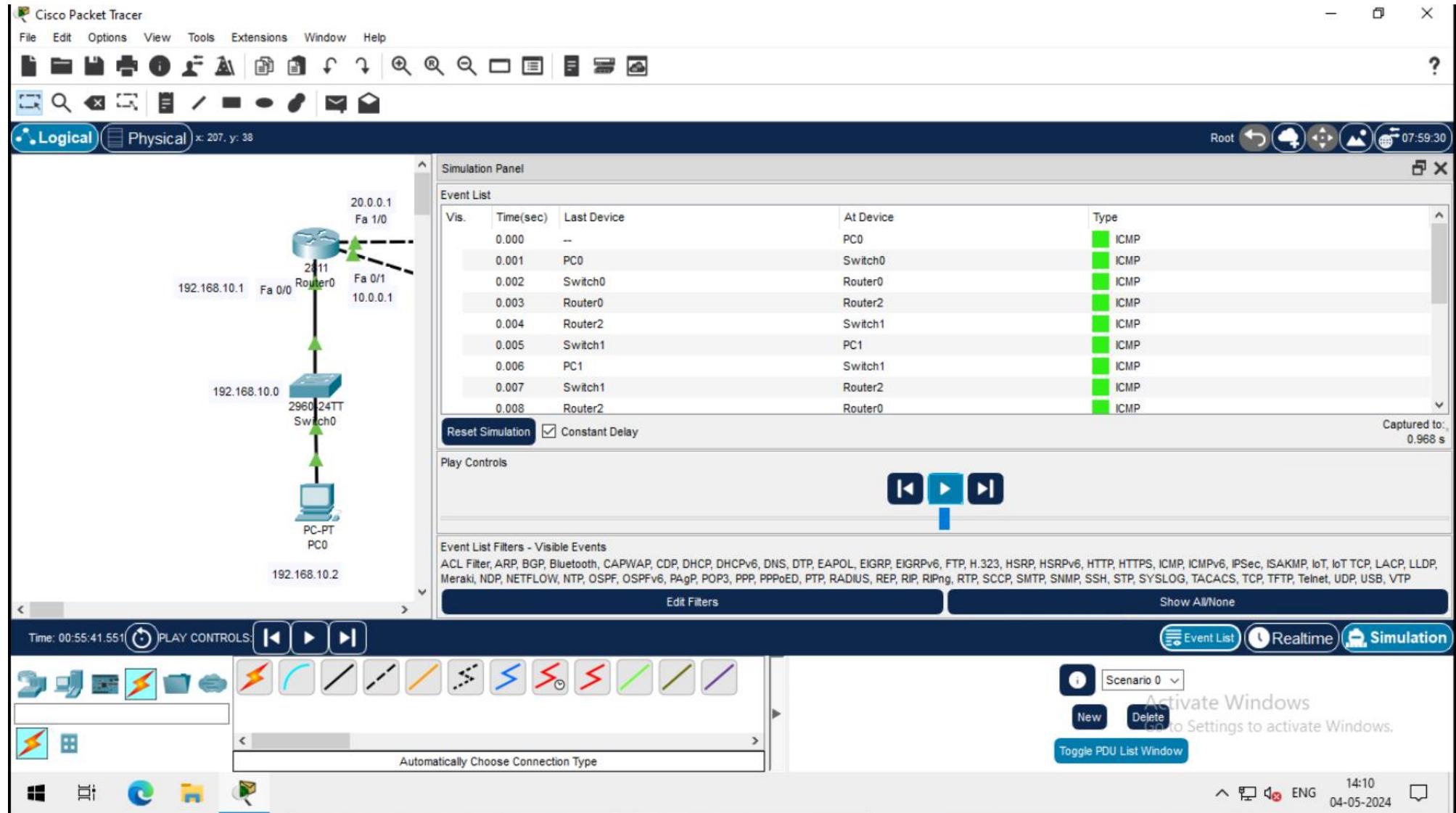












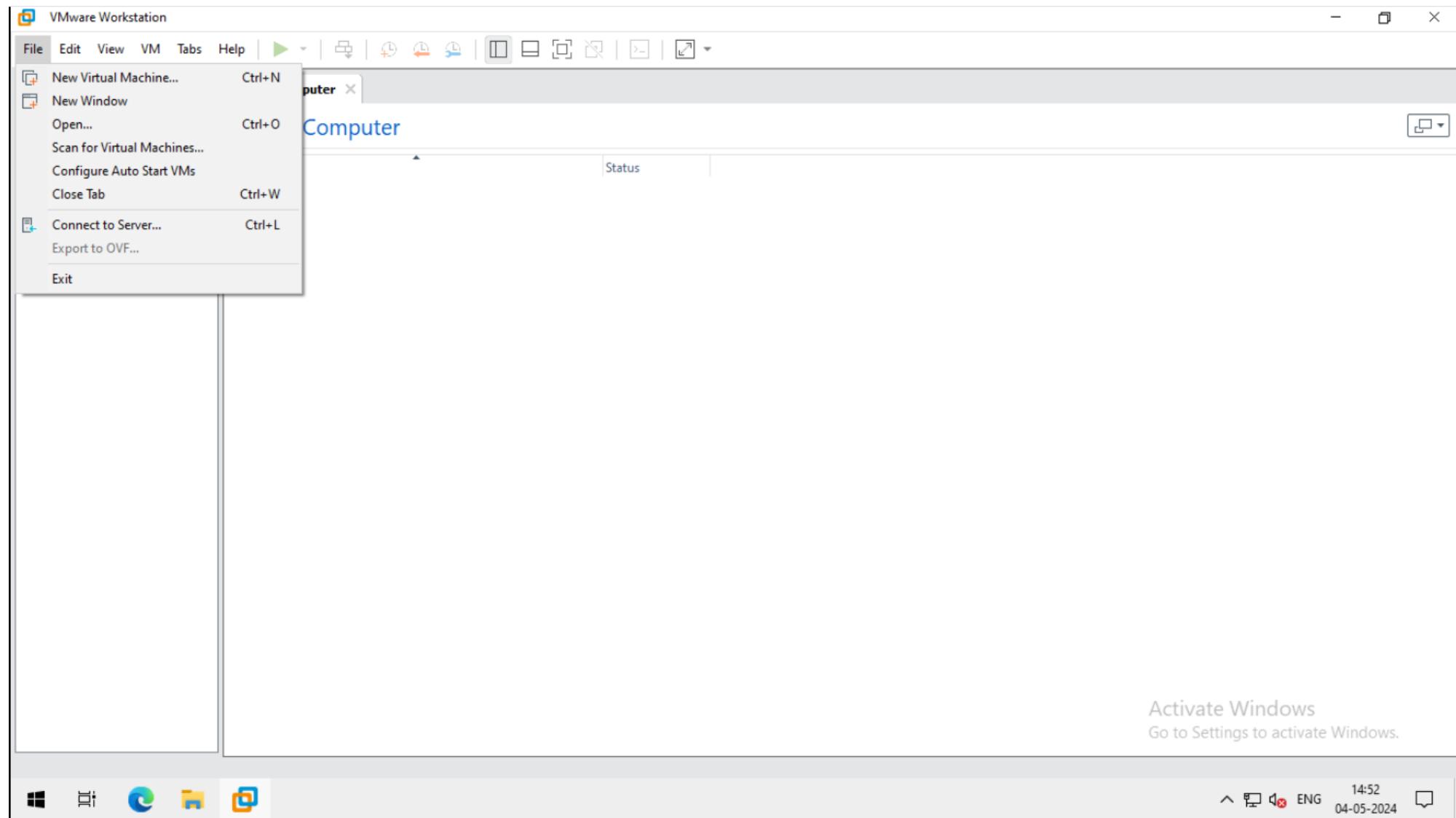
Project-1

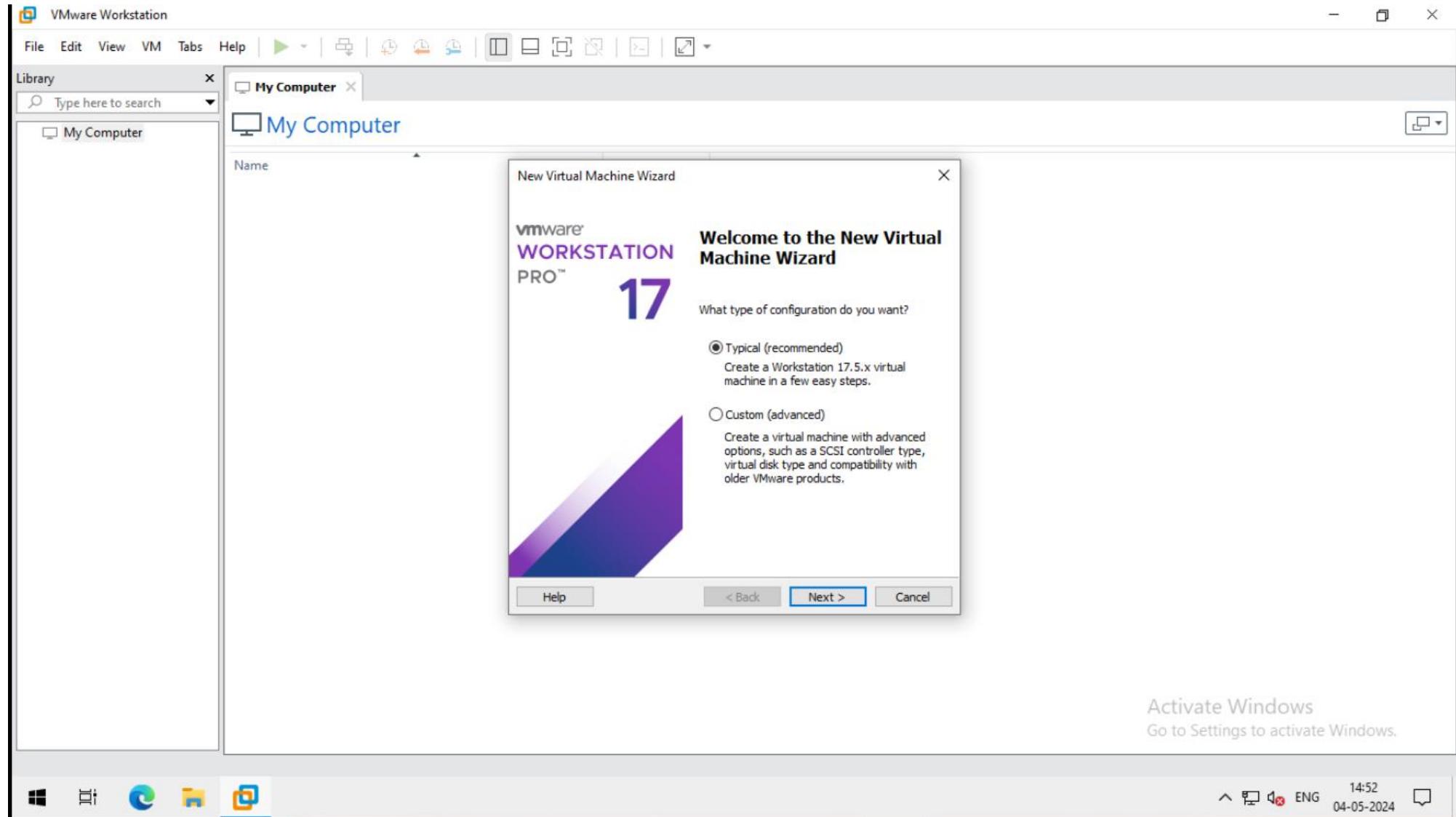
Create a domain controller using domain name as <your-name>.training and create a shared NFS folder (c:\sharables) on domain controller machine with read-only permissions and access this folder on the member machine.

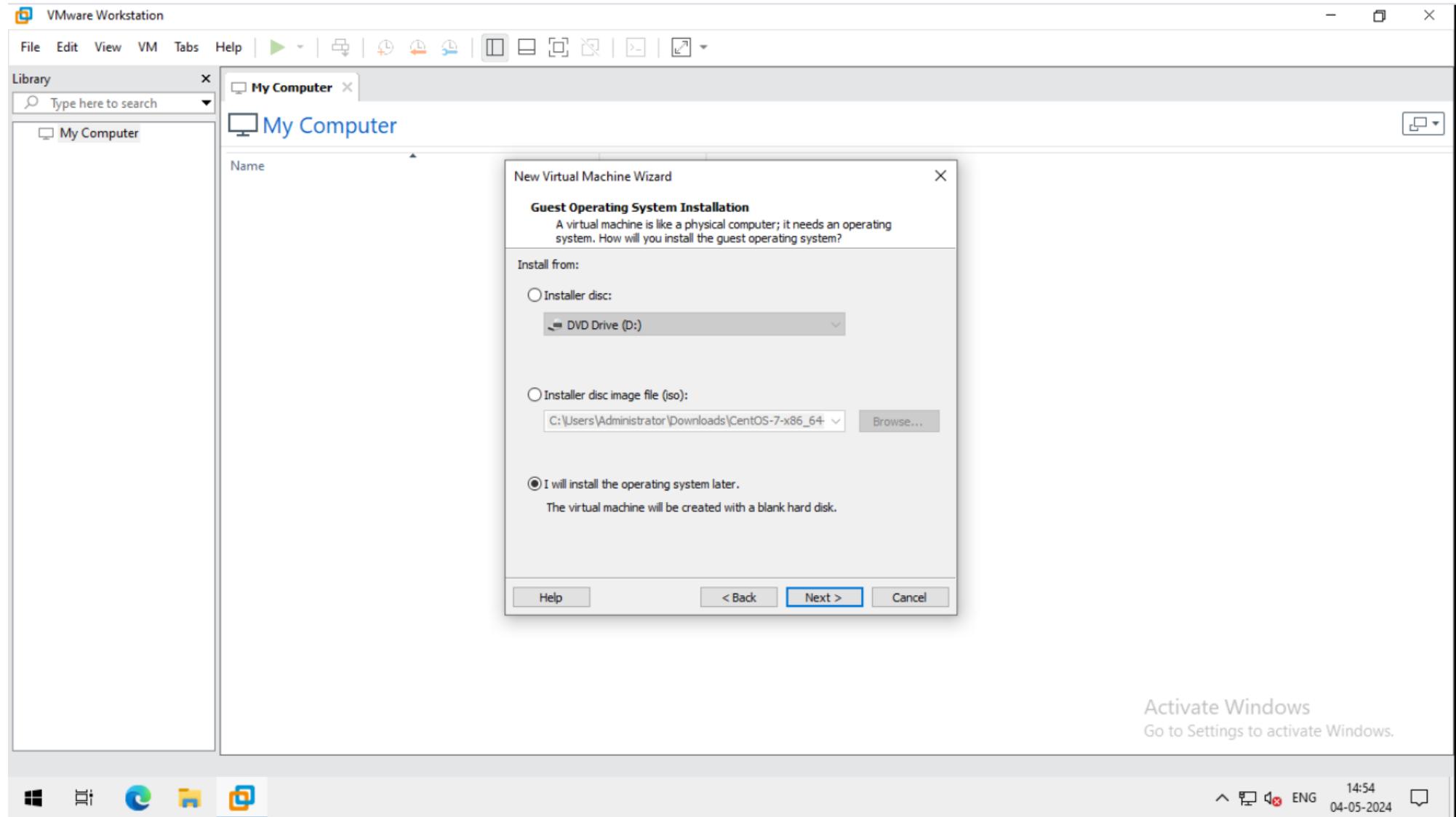
CONTENT

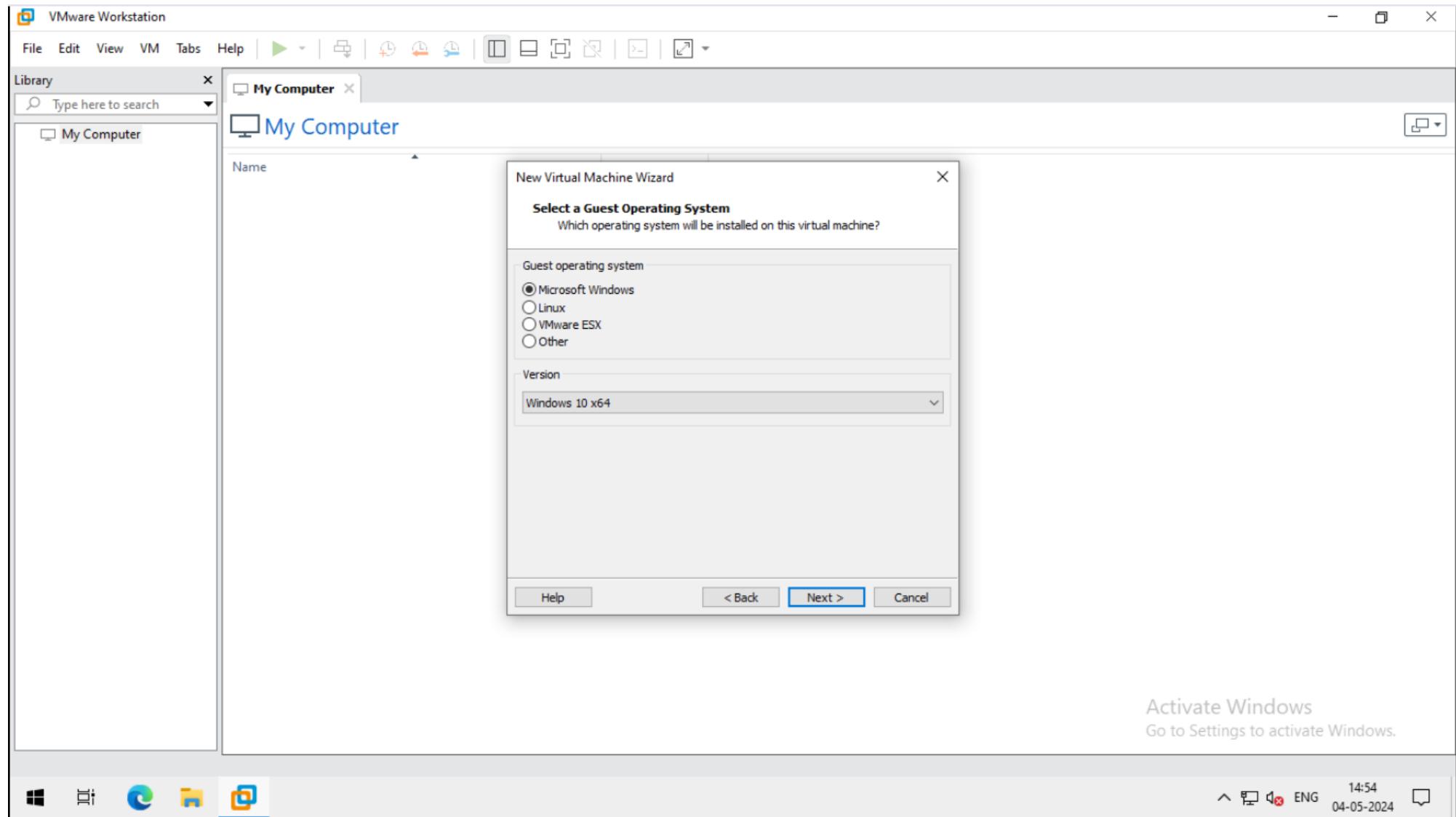
Sl no.	Function
1. windows server 2016 as domain controller	<ul style="list-style-type: none">- Install windows server 2016 with a custom LAN Segment names as “Wipro-network”- Post-installation configuration- Install the required role and promote the server to domain controller (ADDS, Server NFS and client for NFS)- create a group using name “dcadmins”- add 2 users in it with the ‘domain admins’ permissions
2. Install another windows server 2016 (as GUI) with the name “Member01”	<ul style="list-style-type: none">- Install another windows server 2016 (as GUI) with the name “Member01”- Post-installation configuration- Domain join- Login with “dcadmins” members
3. NFS sharing	<ul style="list-style-type: none">- Create a new directory as “c:\sharable” on domain controller- give read-only permission- share it through map network device using \\IP\folder or domain name:\folder- now try to access in member machine

1. Install Windows Server 2016 with a custom LAN Segment names as “Wipro-network”



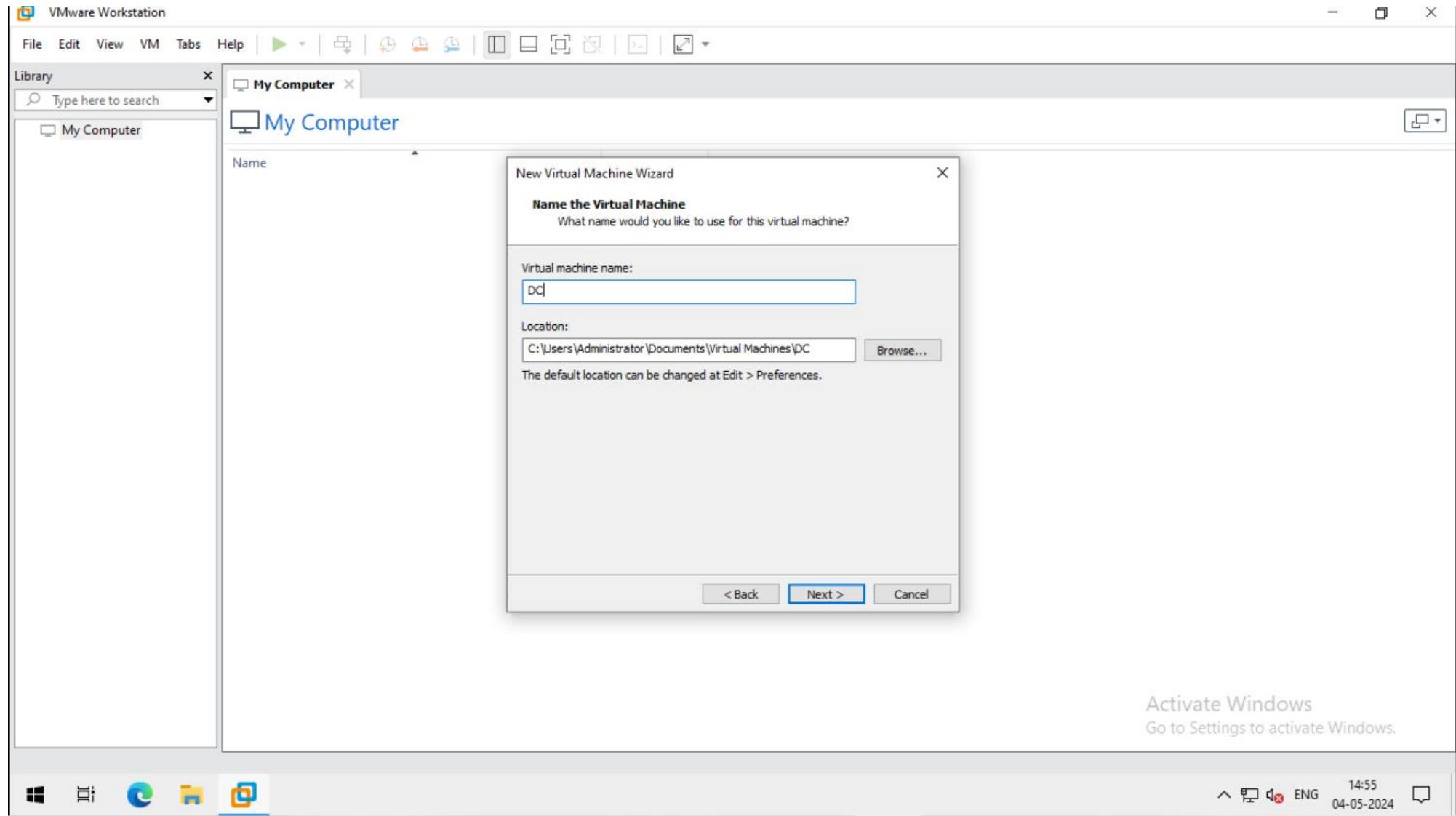






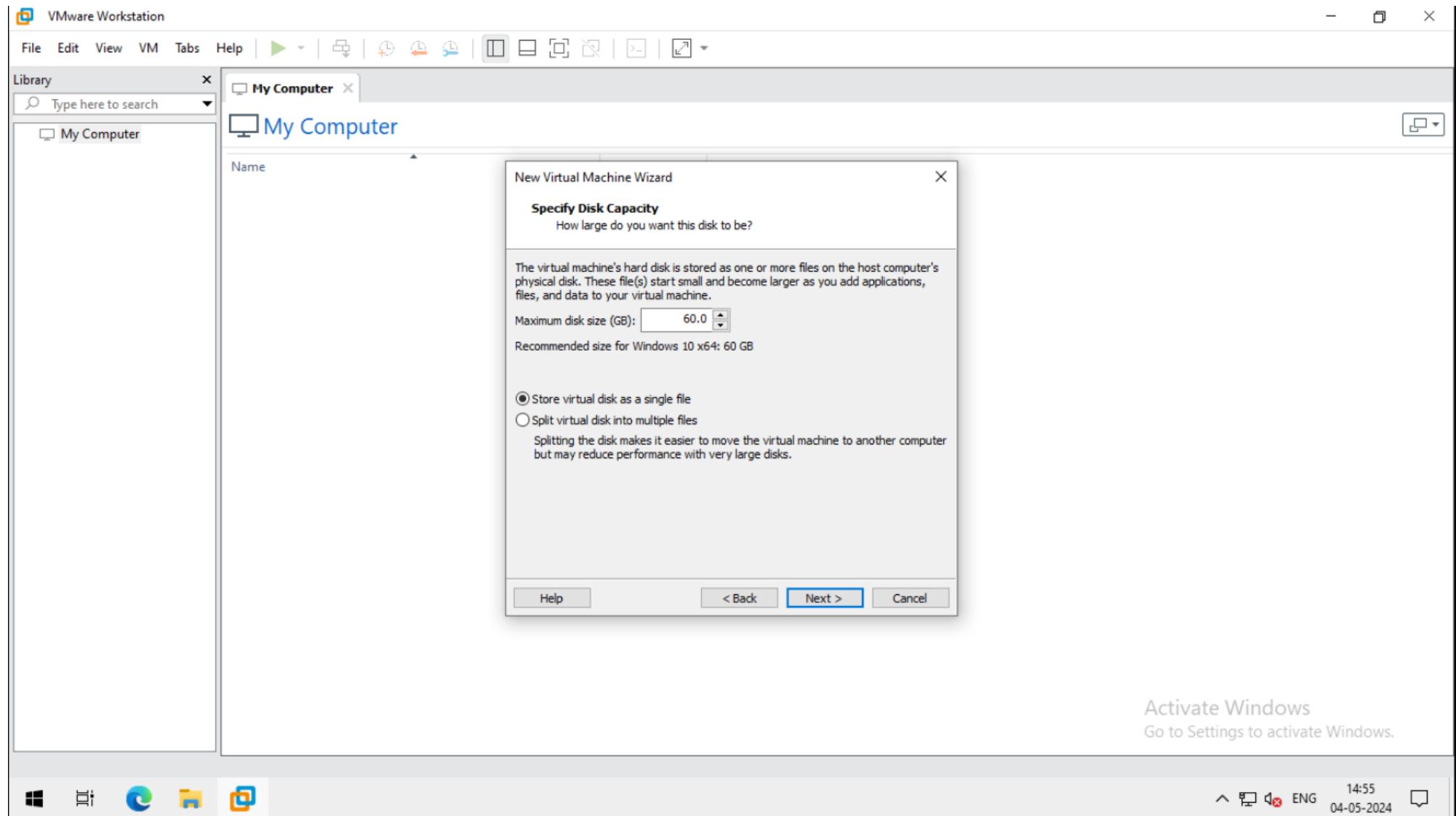
Activate Windows
Go to Settings to activate Windows.

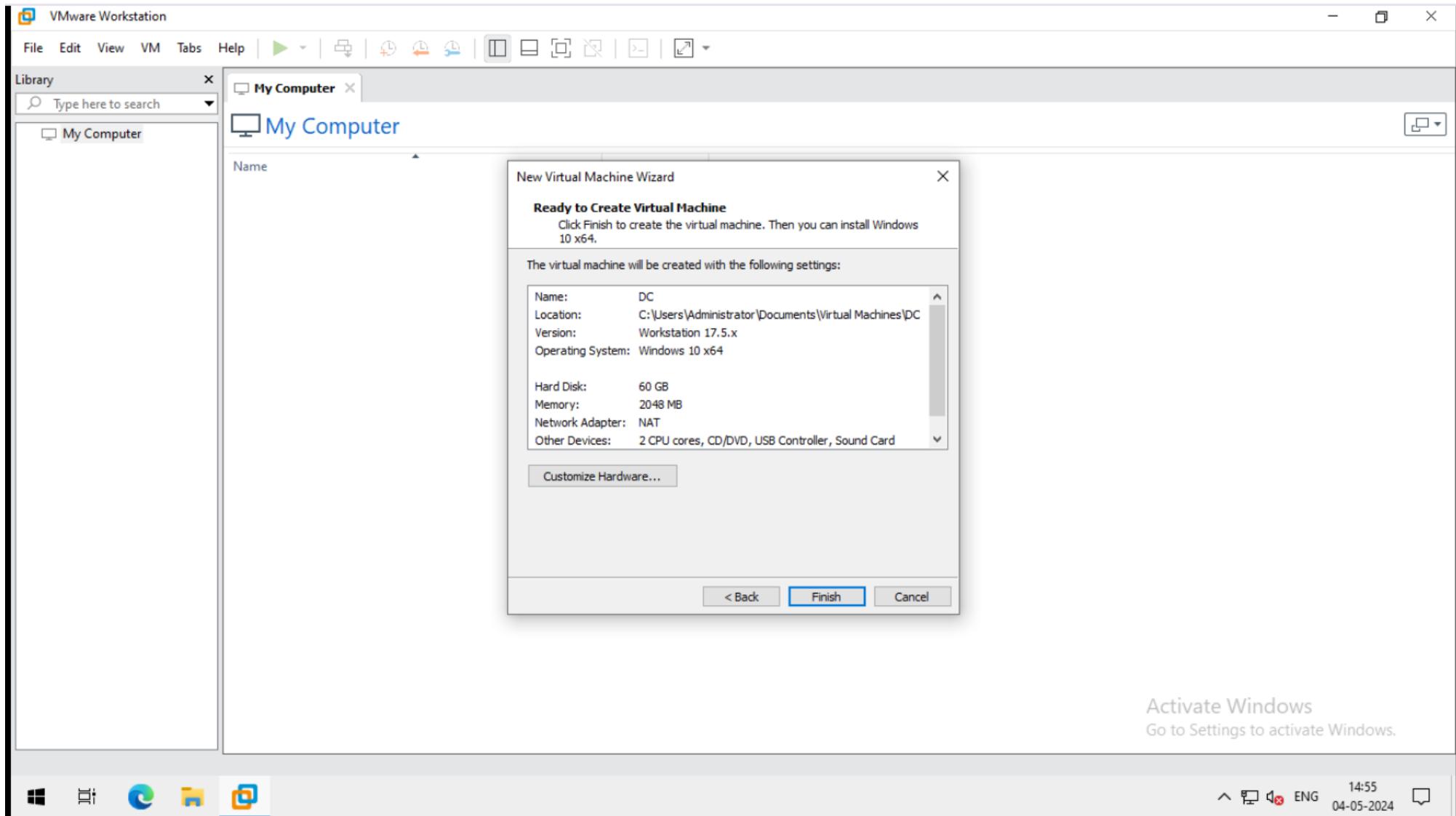
14:54
04-05-2024

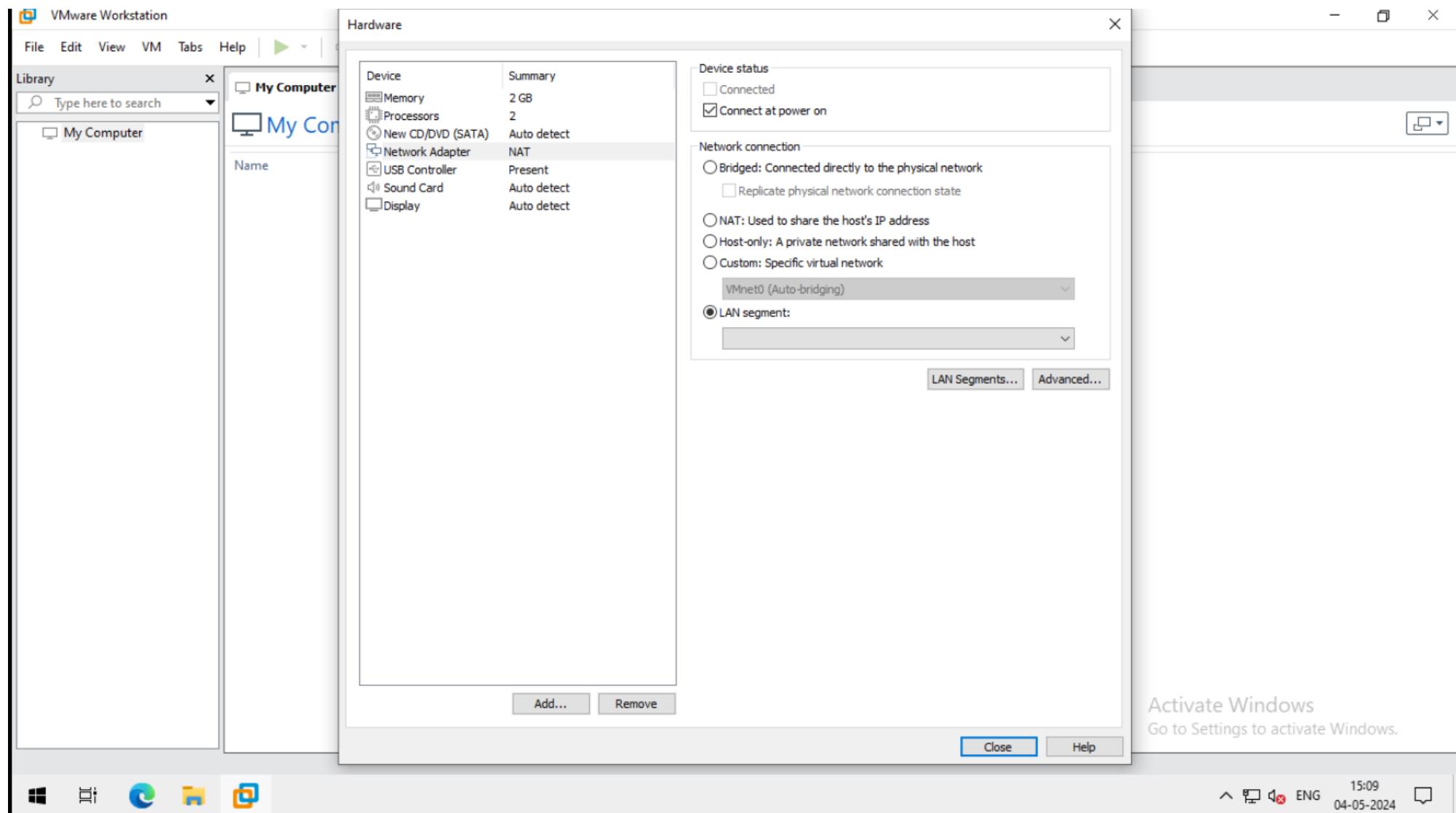


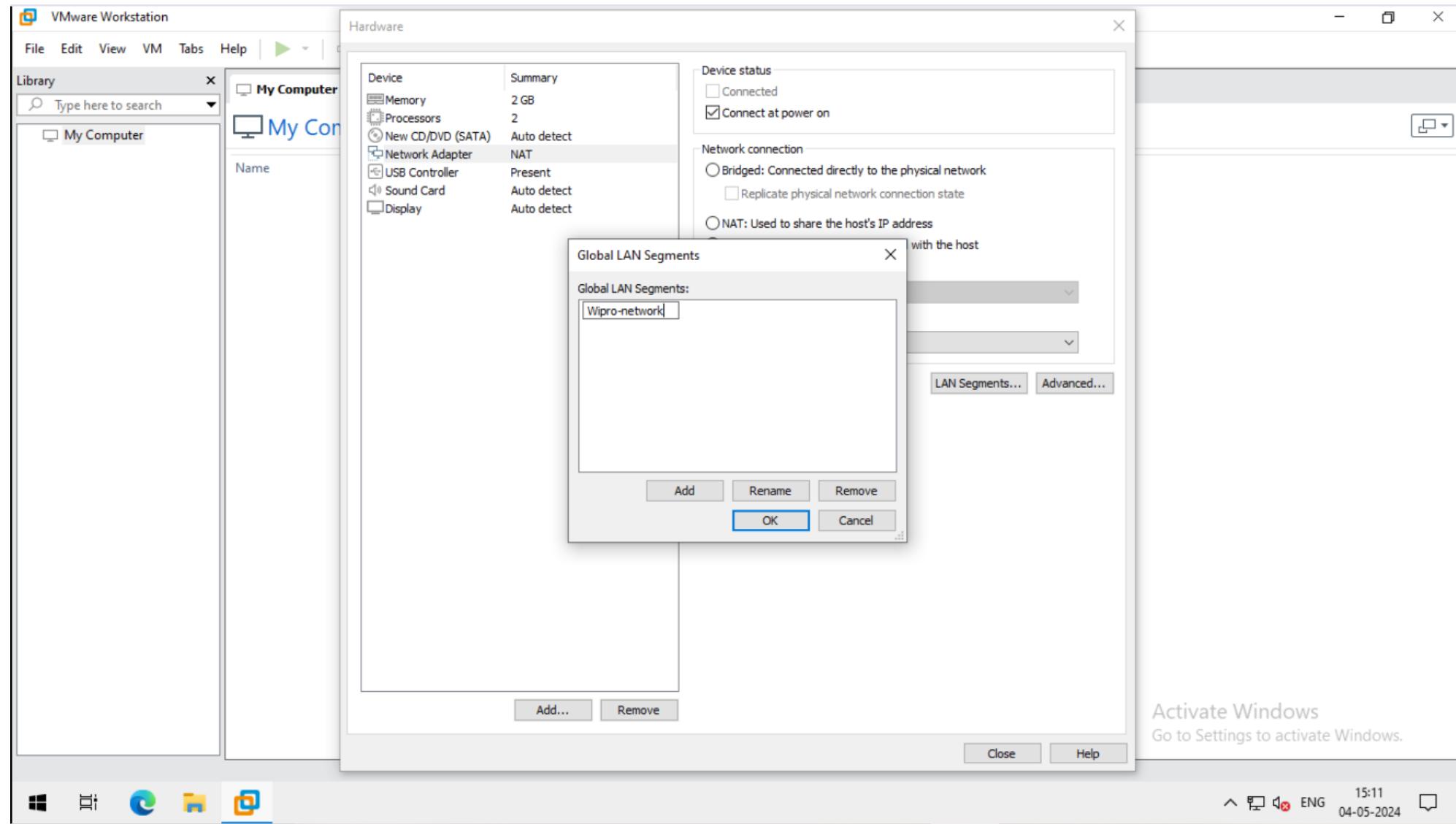
Activate Windows
Go to Settings to activate Windows.

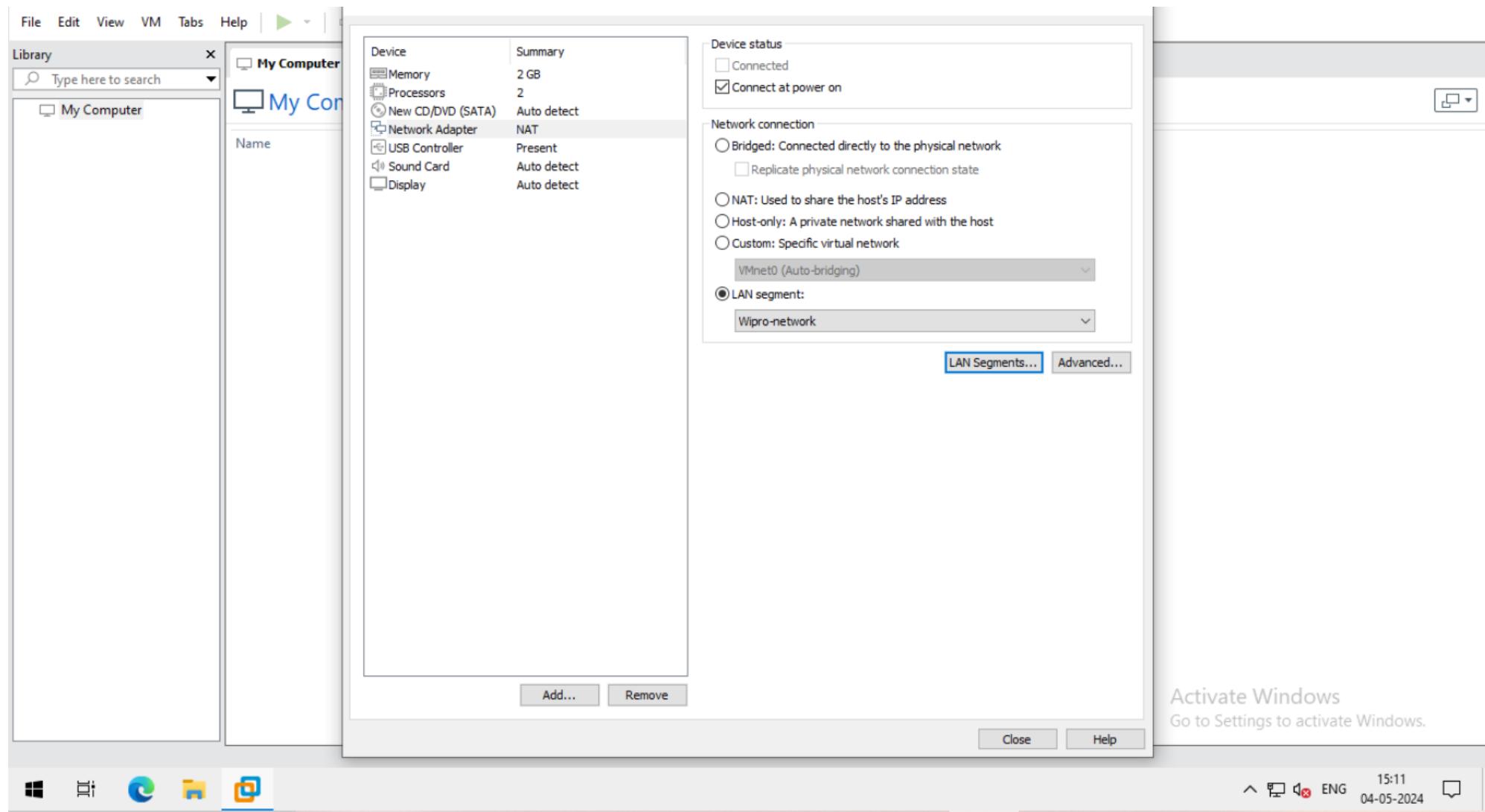
14:55
04-05-2024

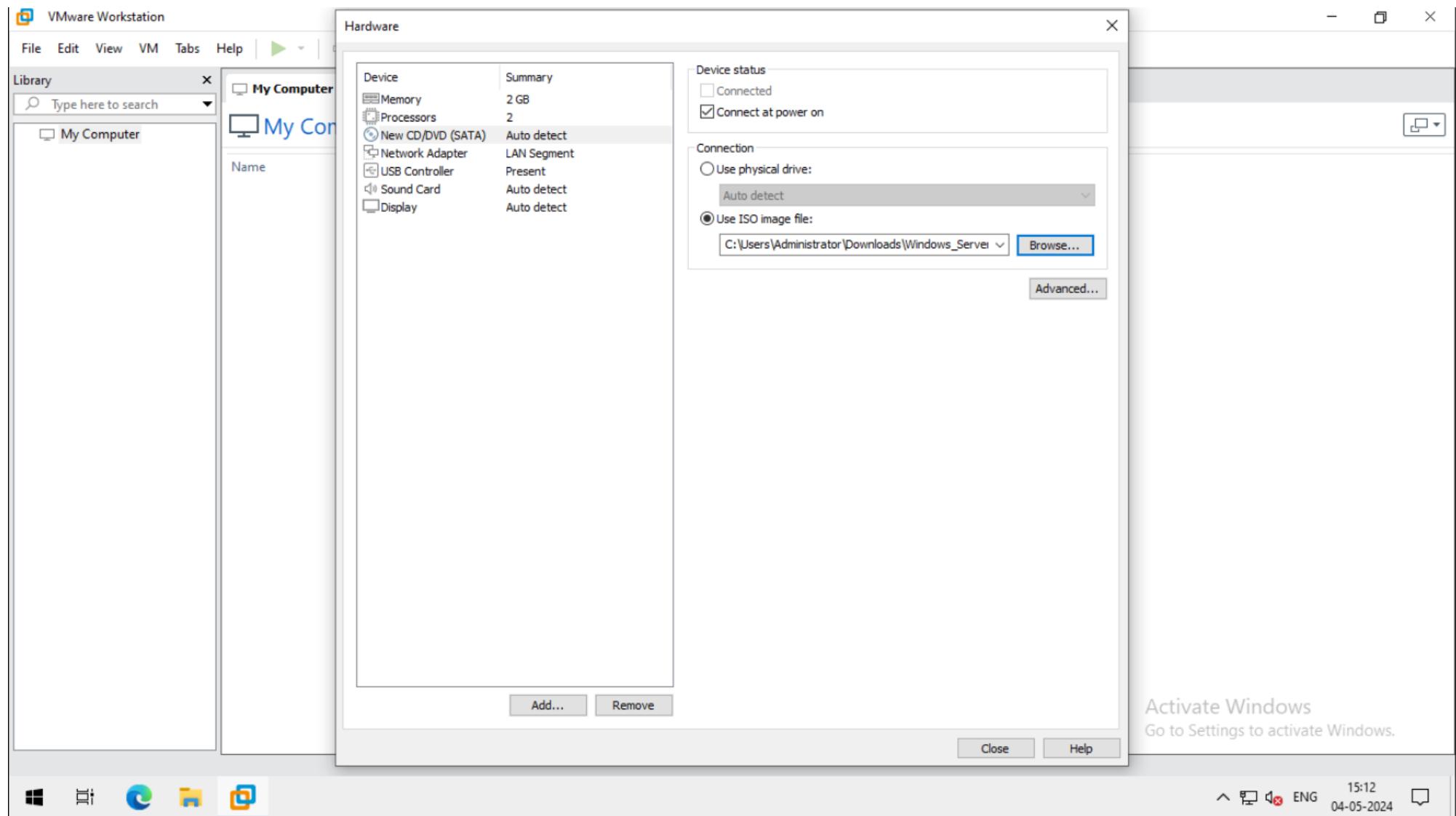


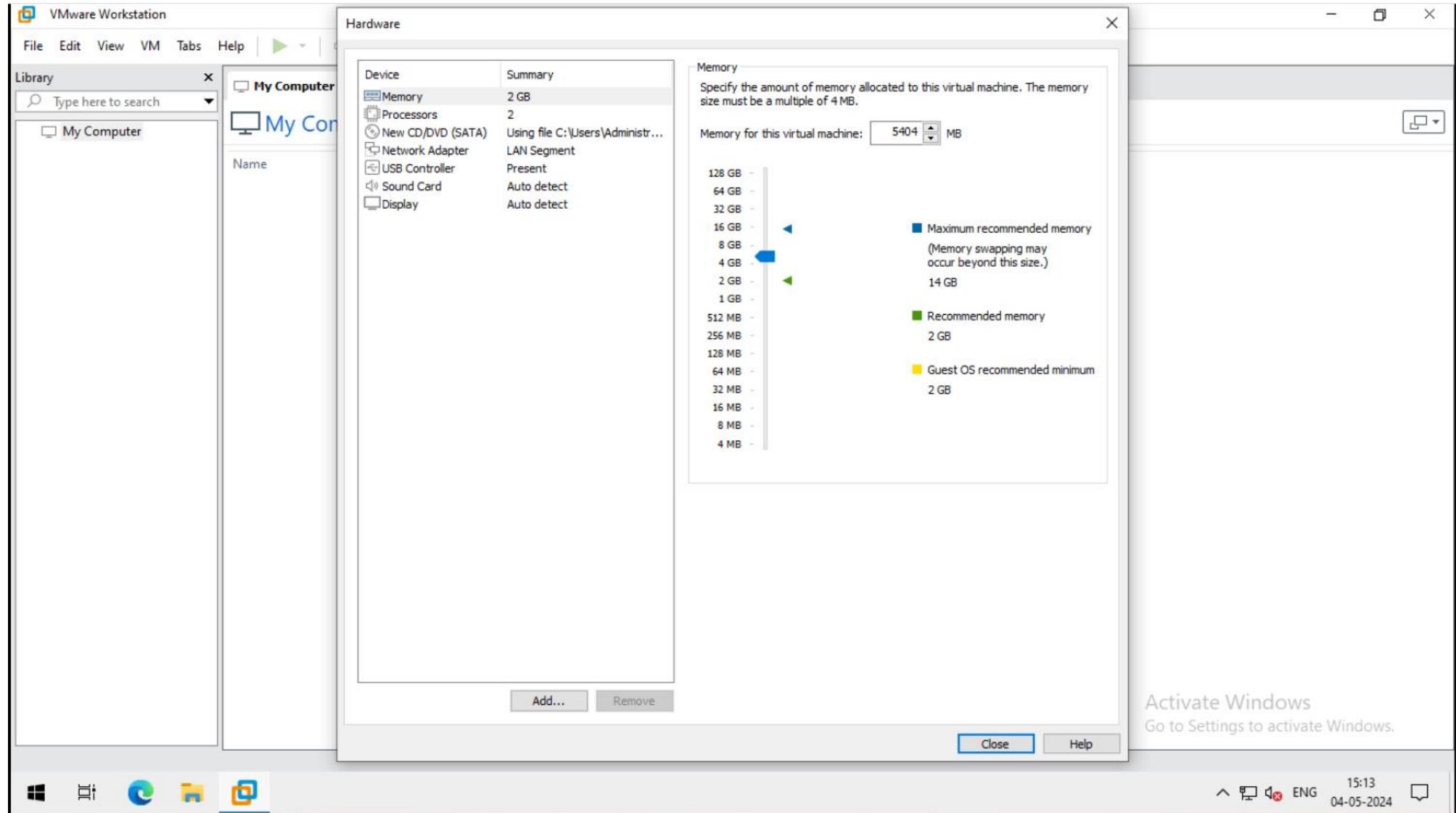


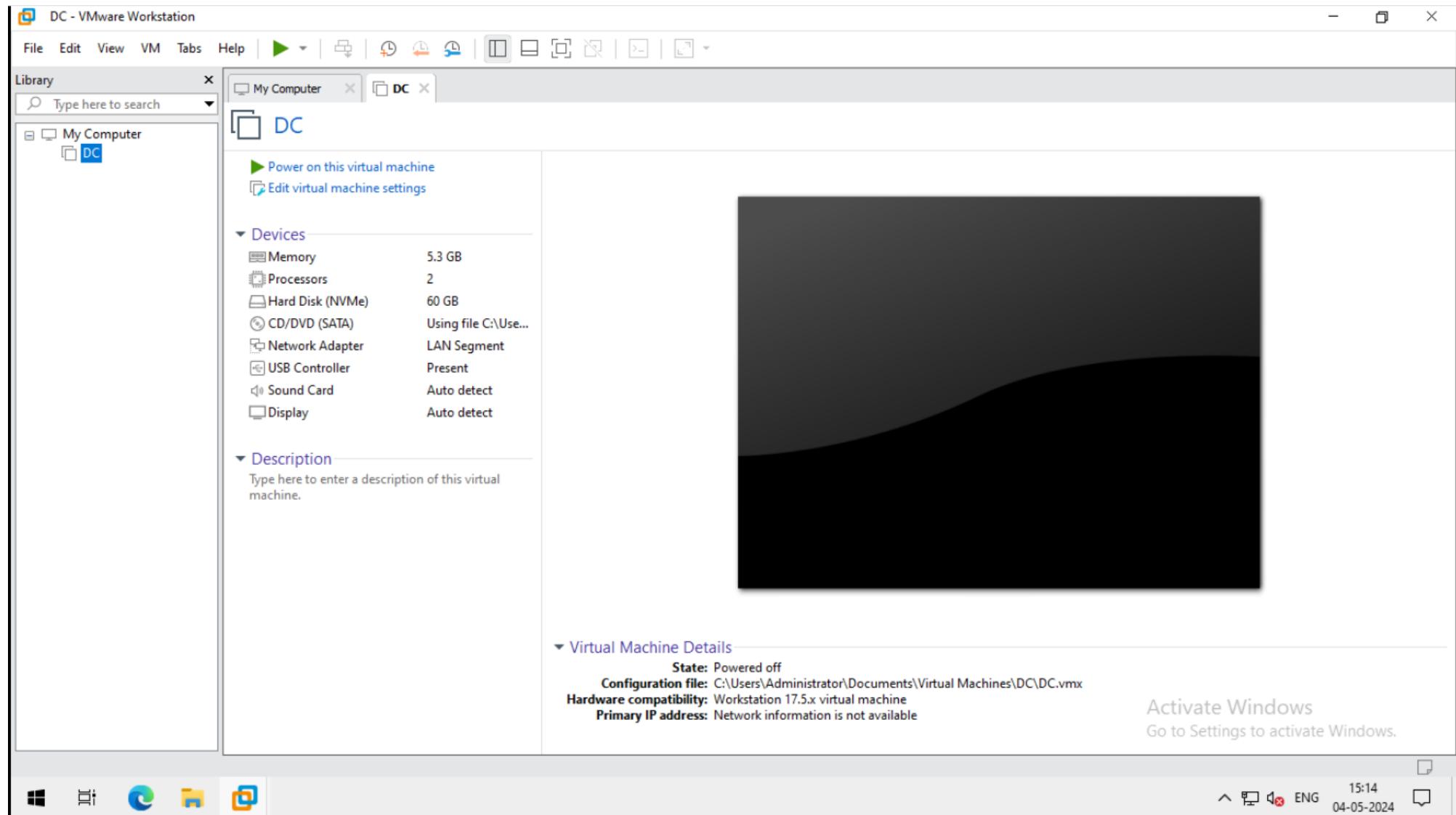


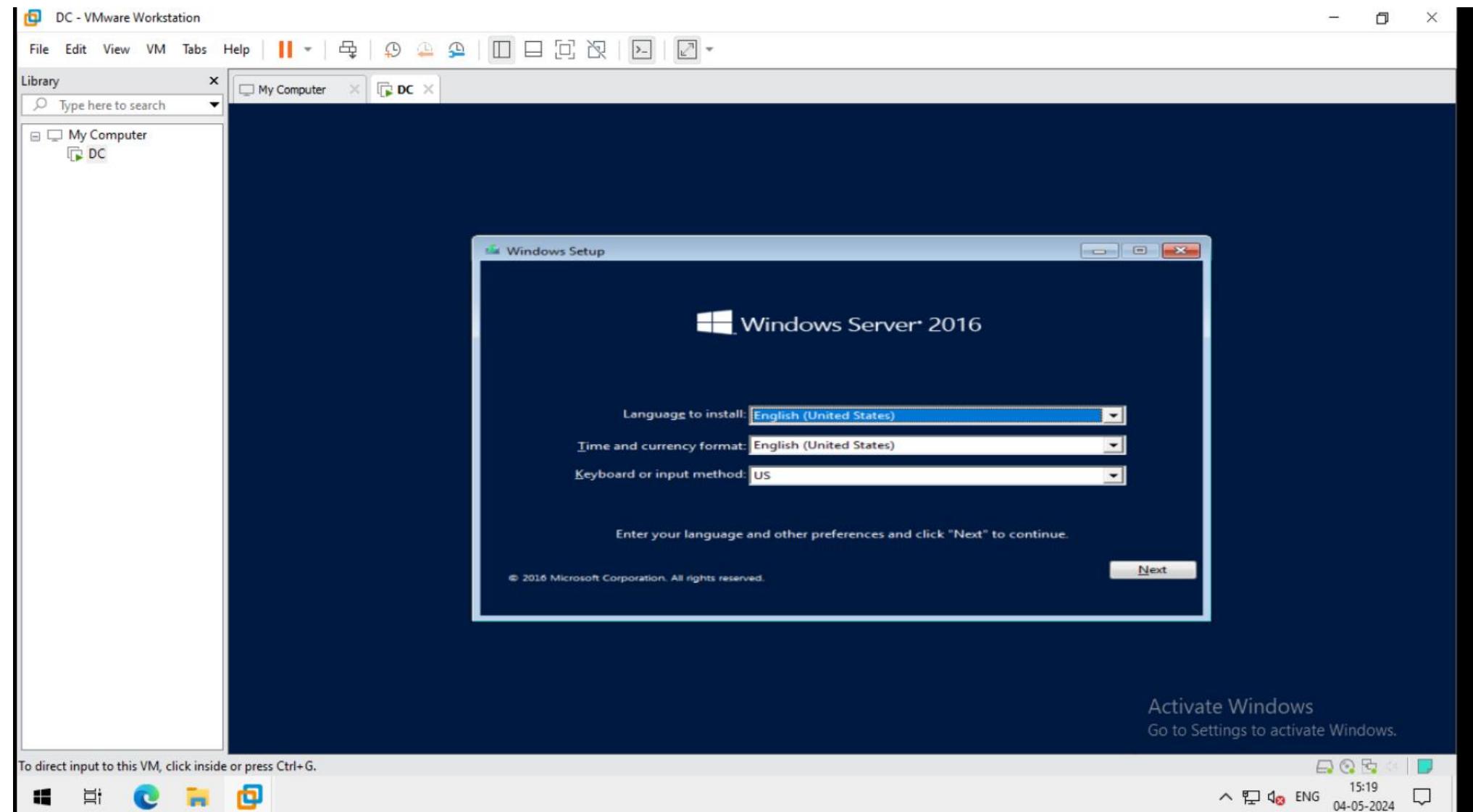


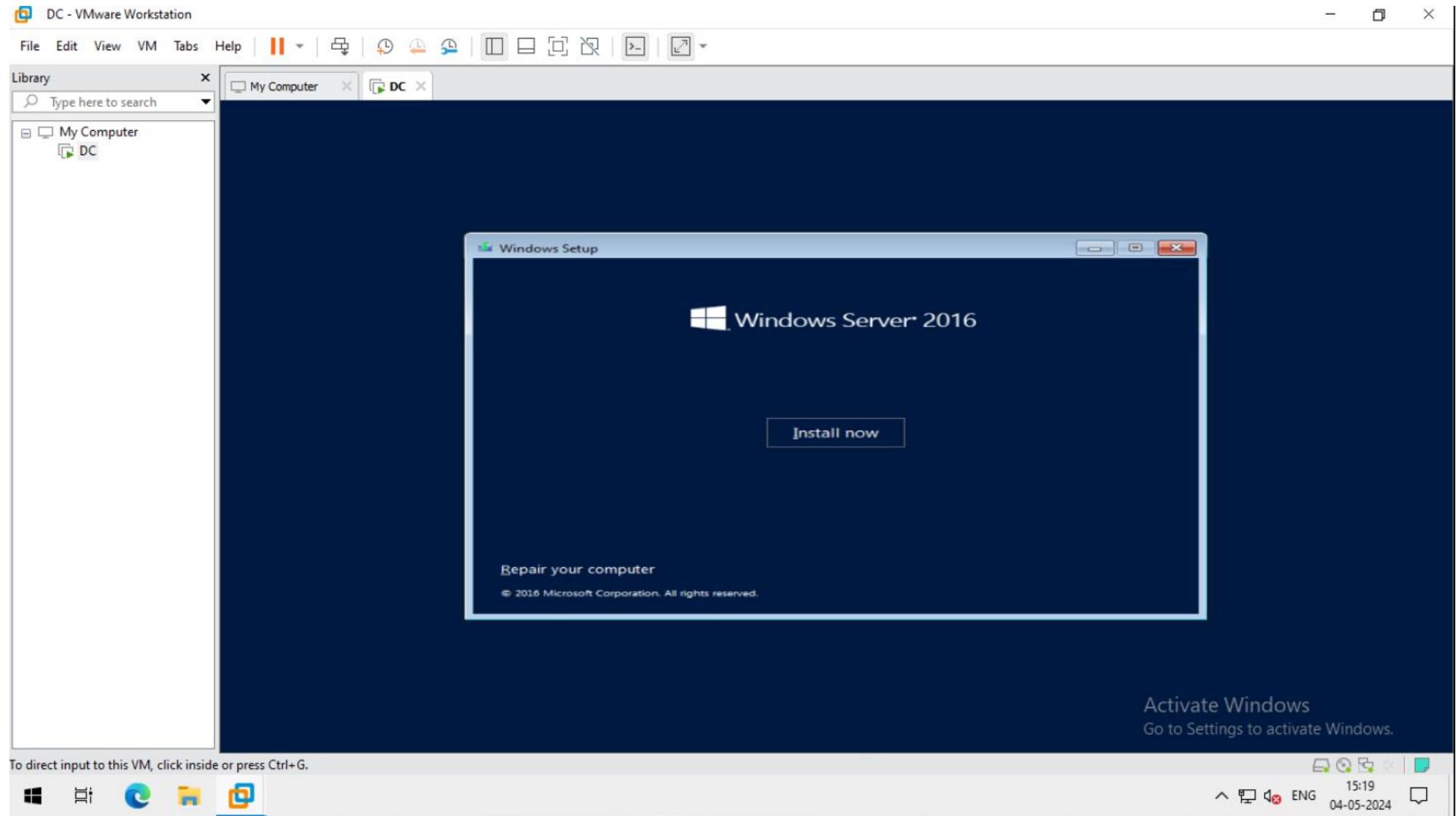


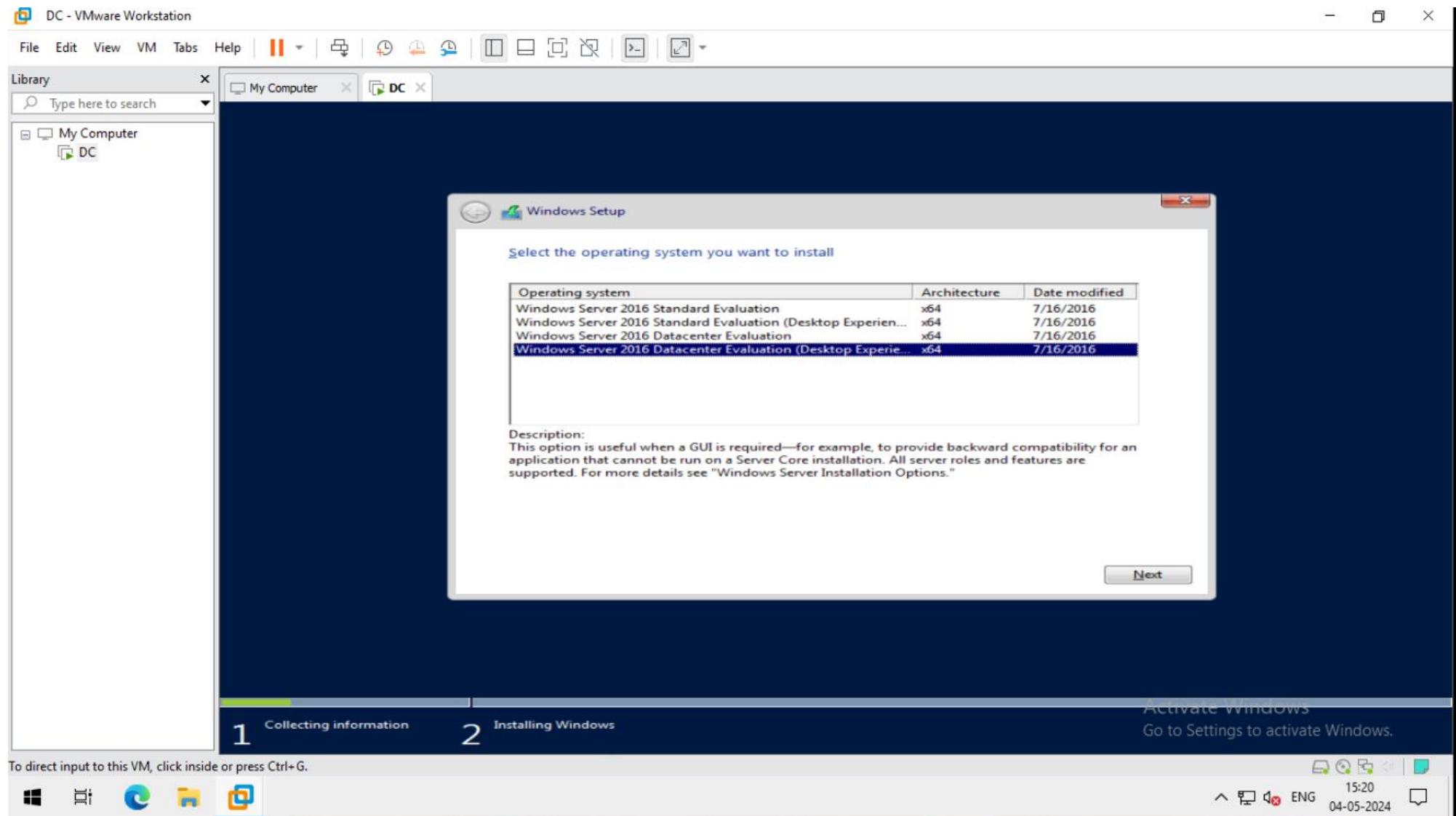


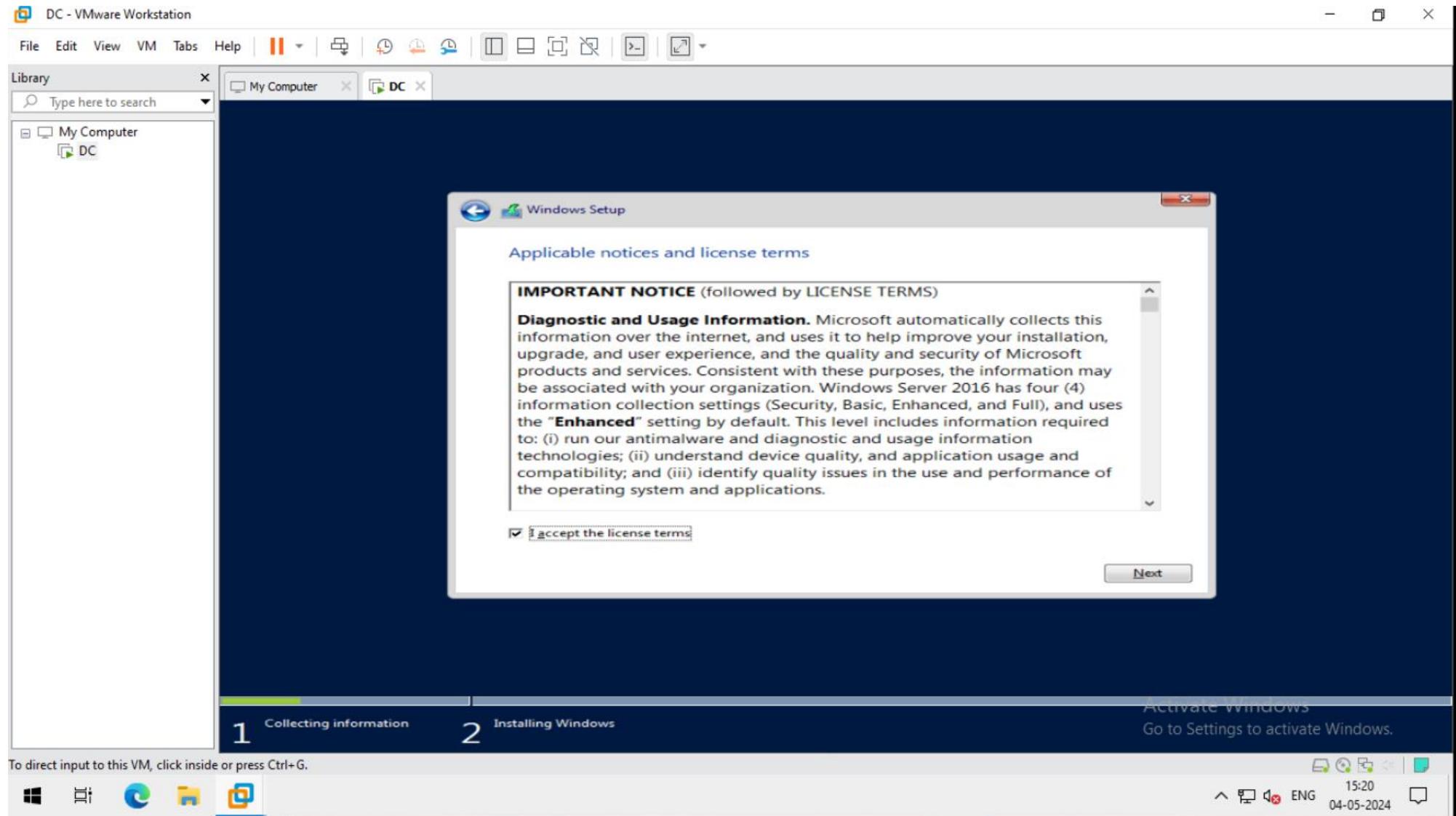


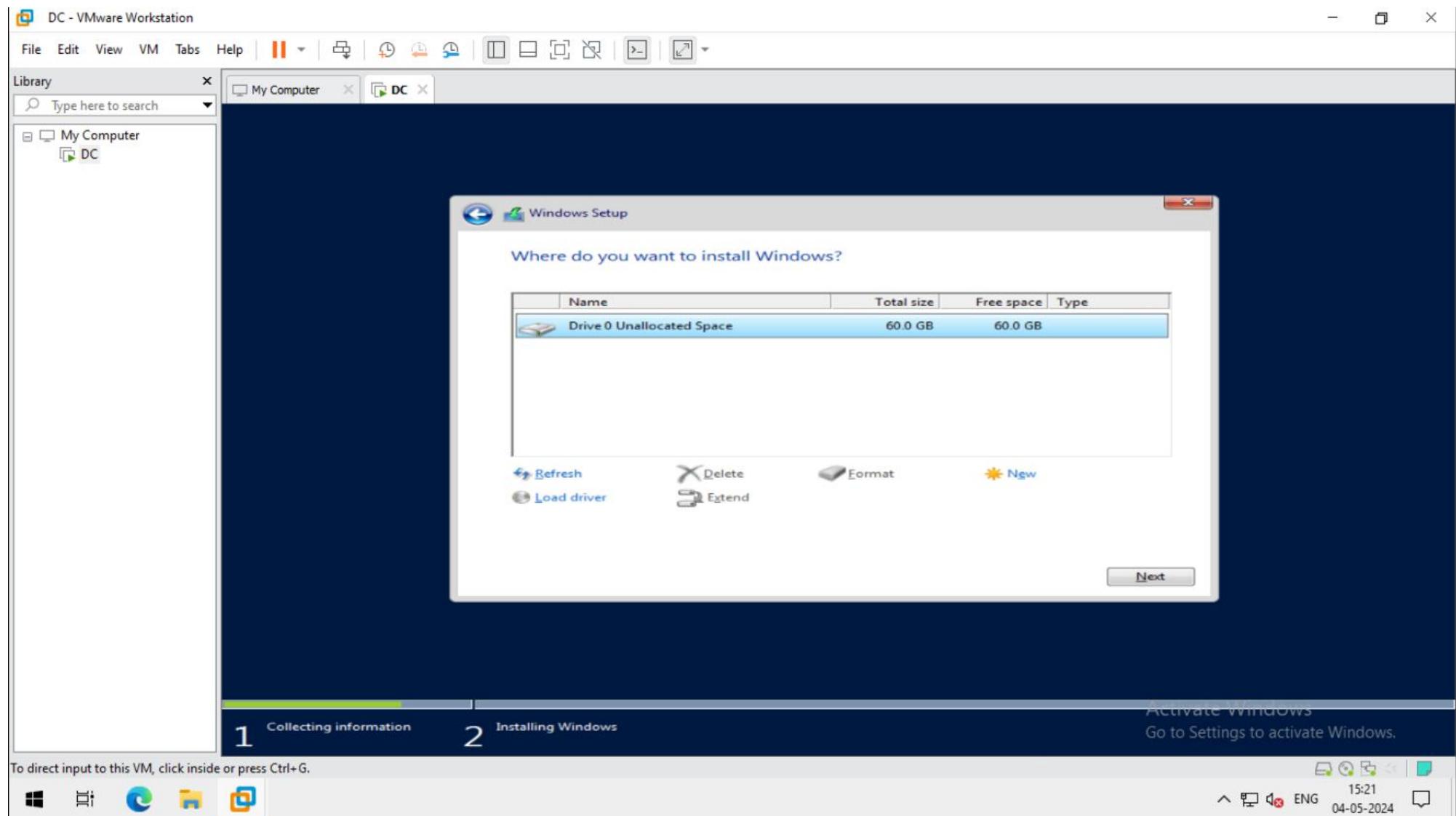


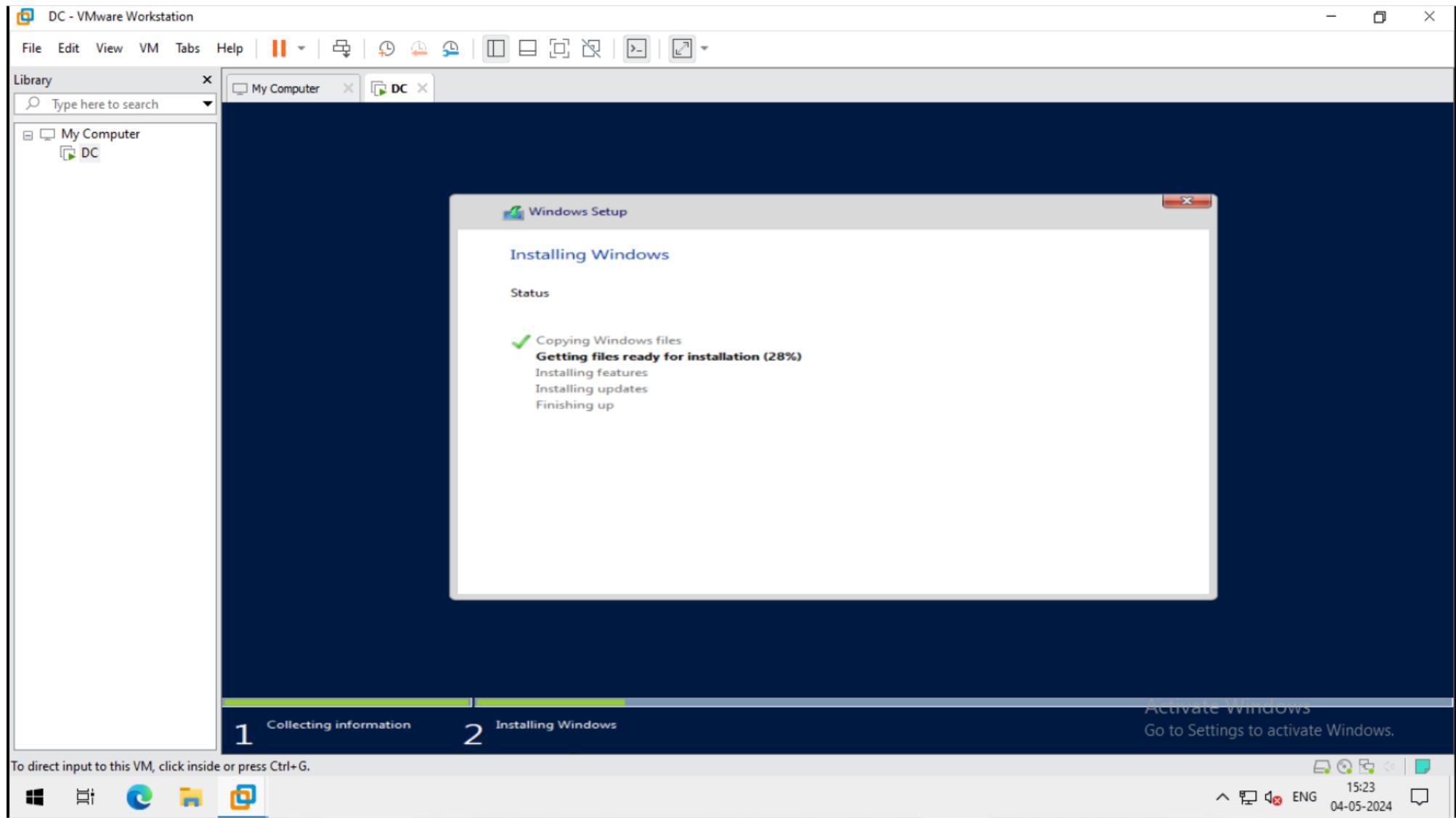


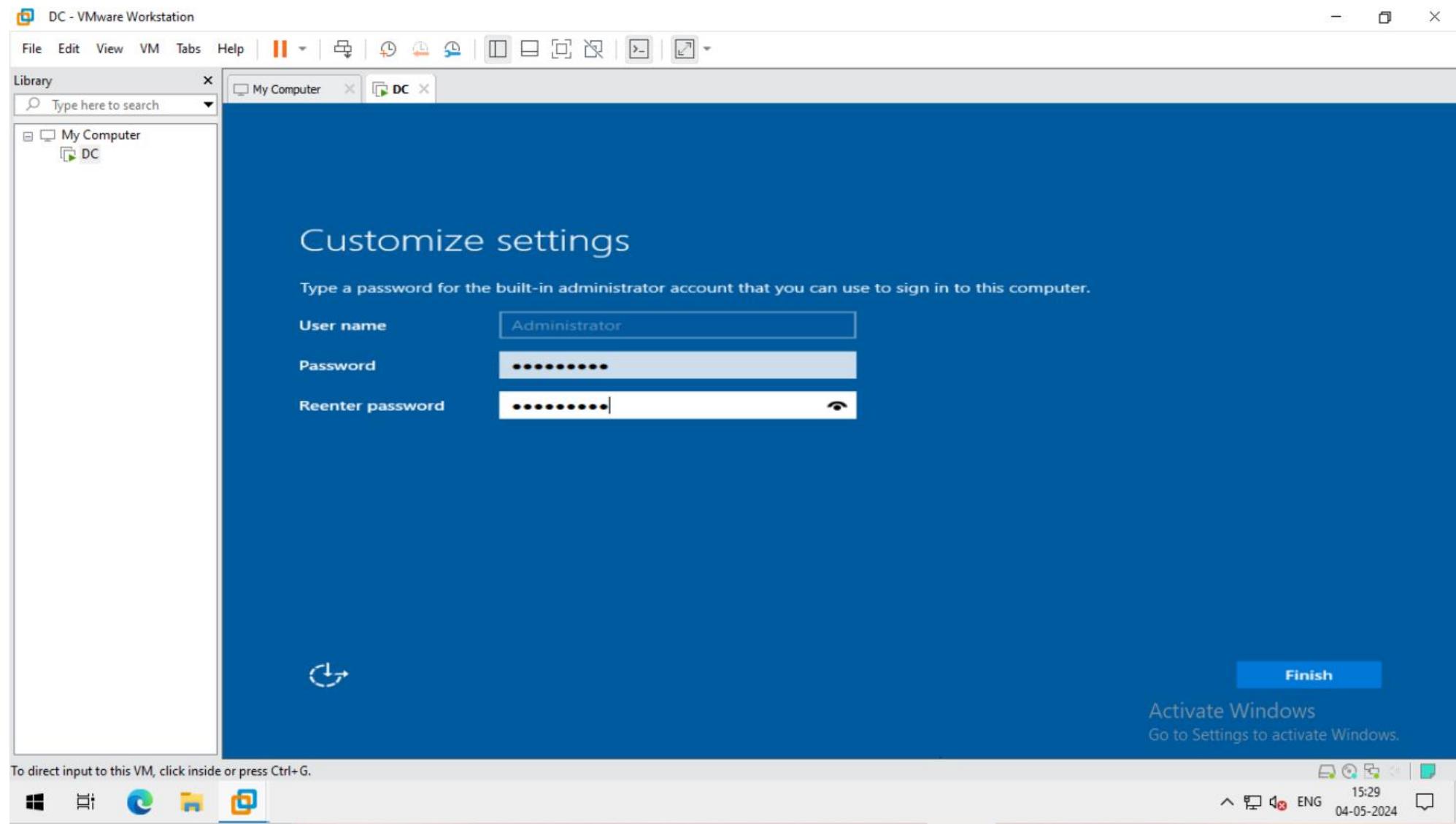


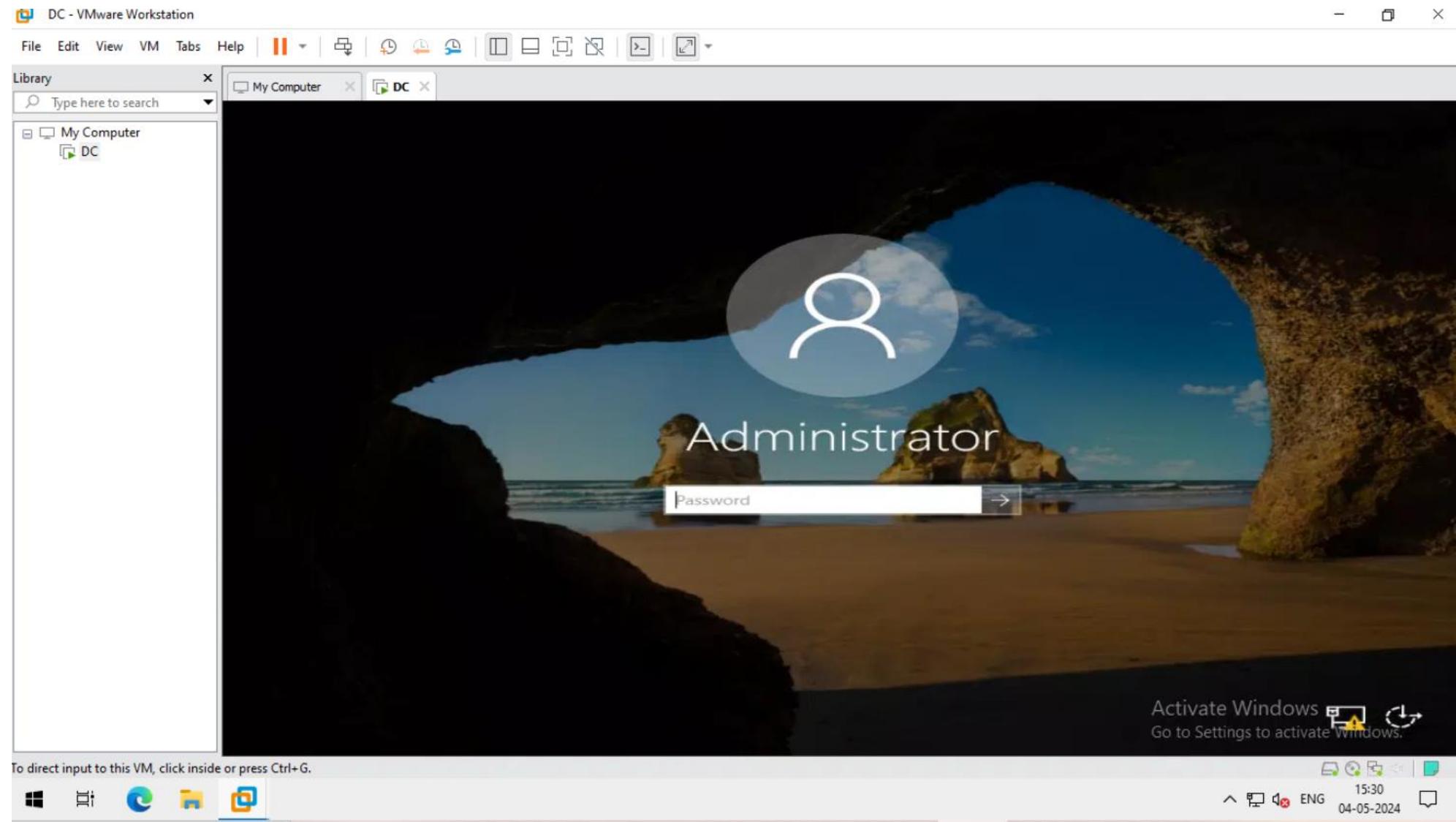


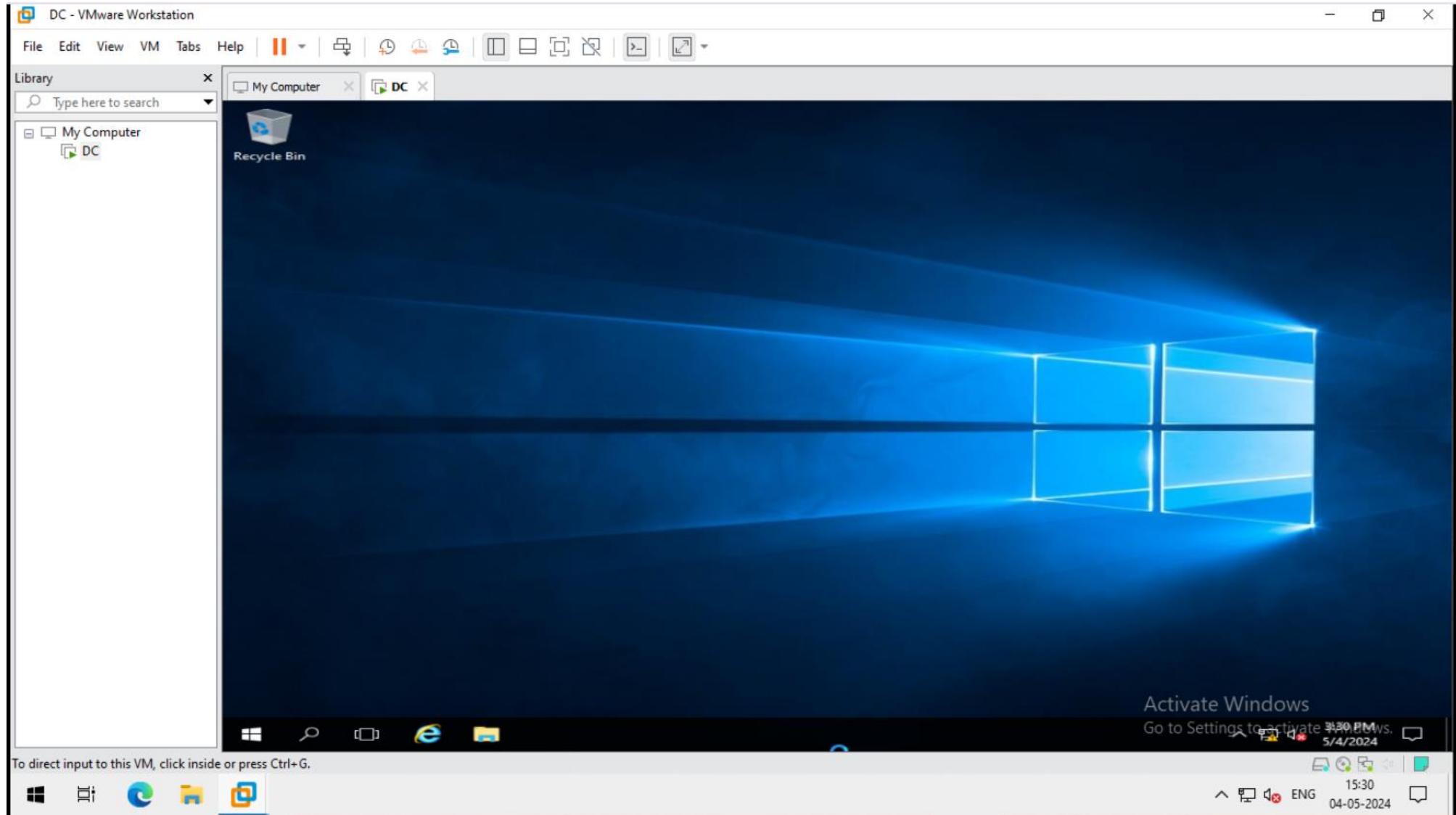




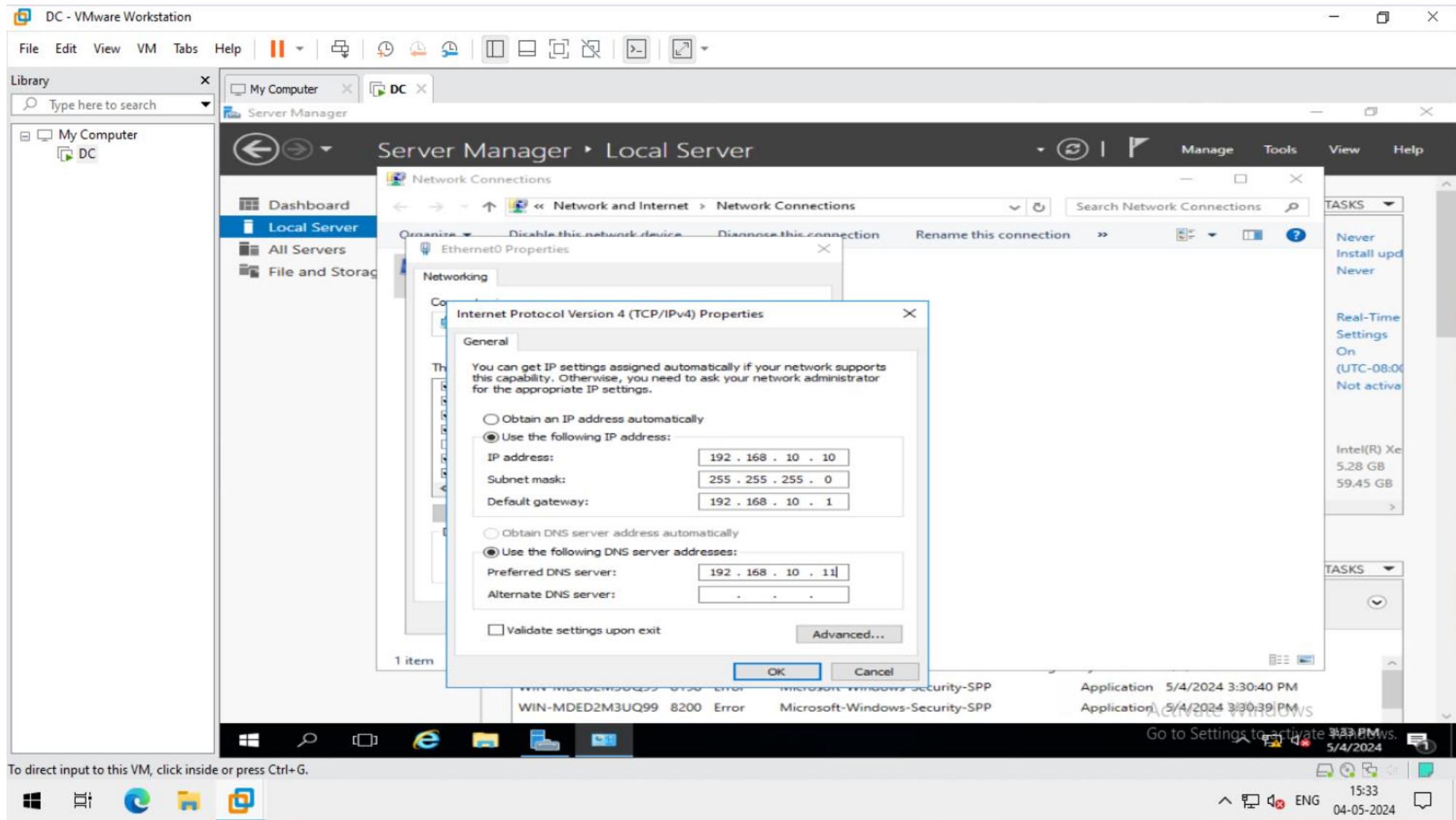


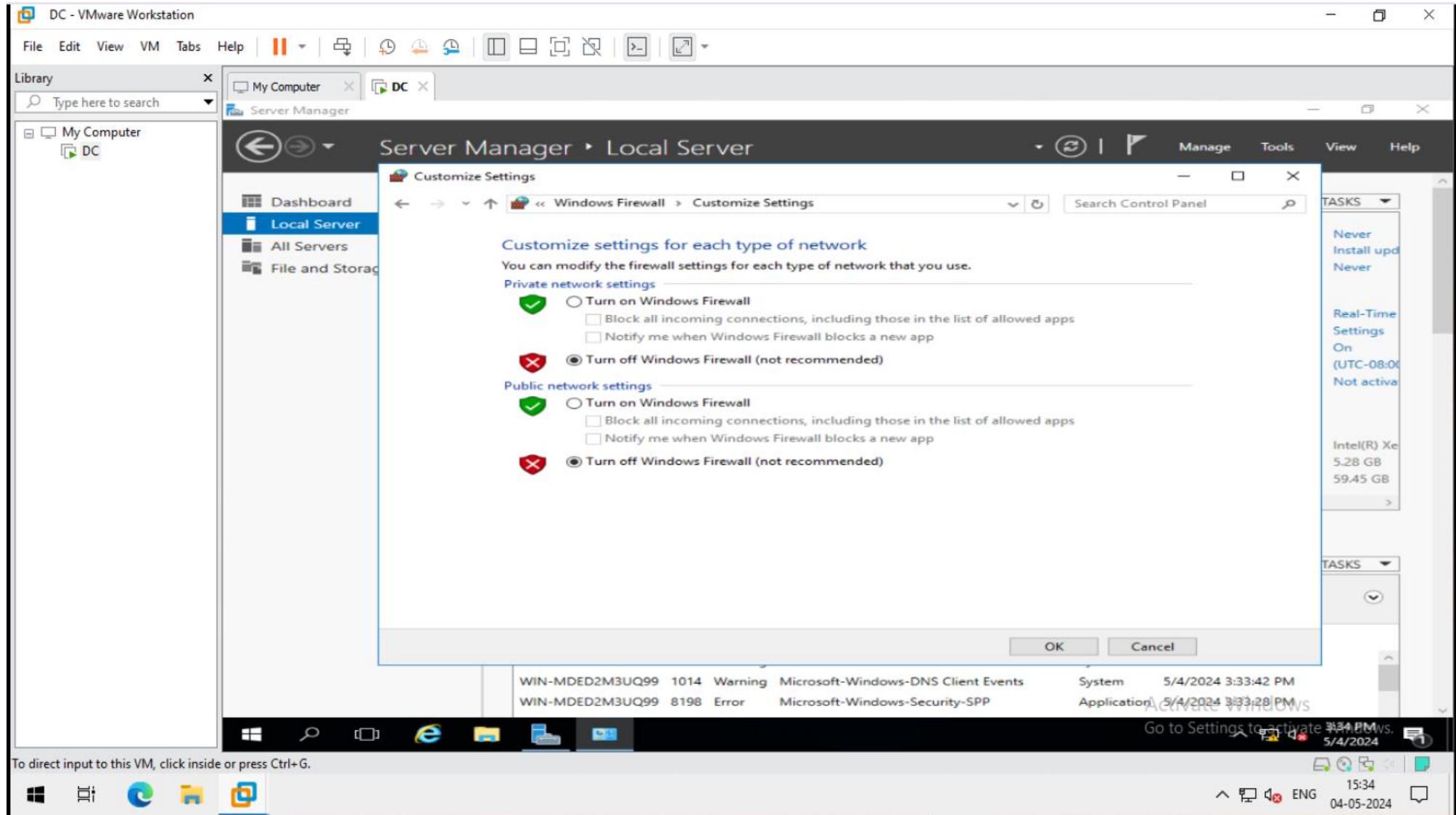


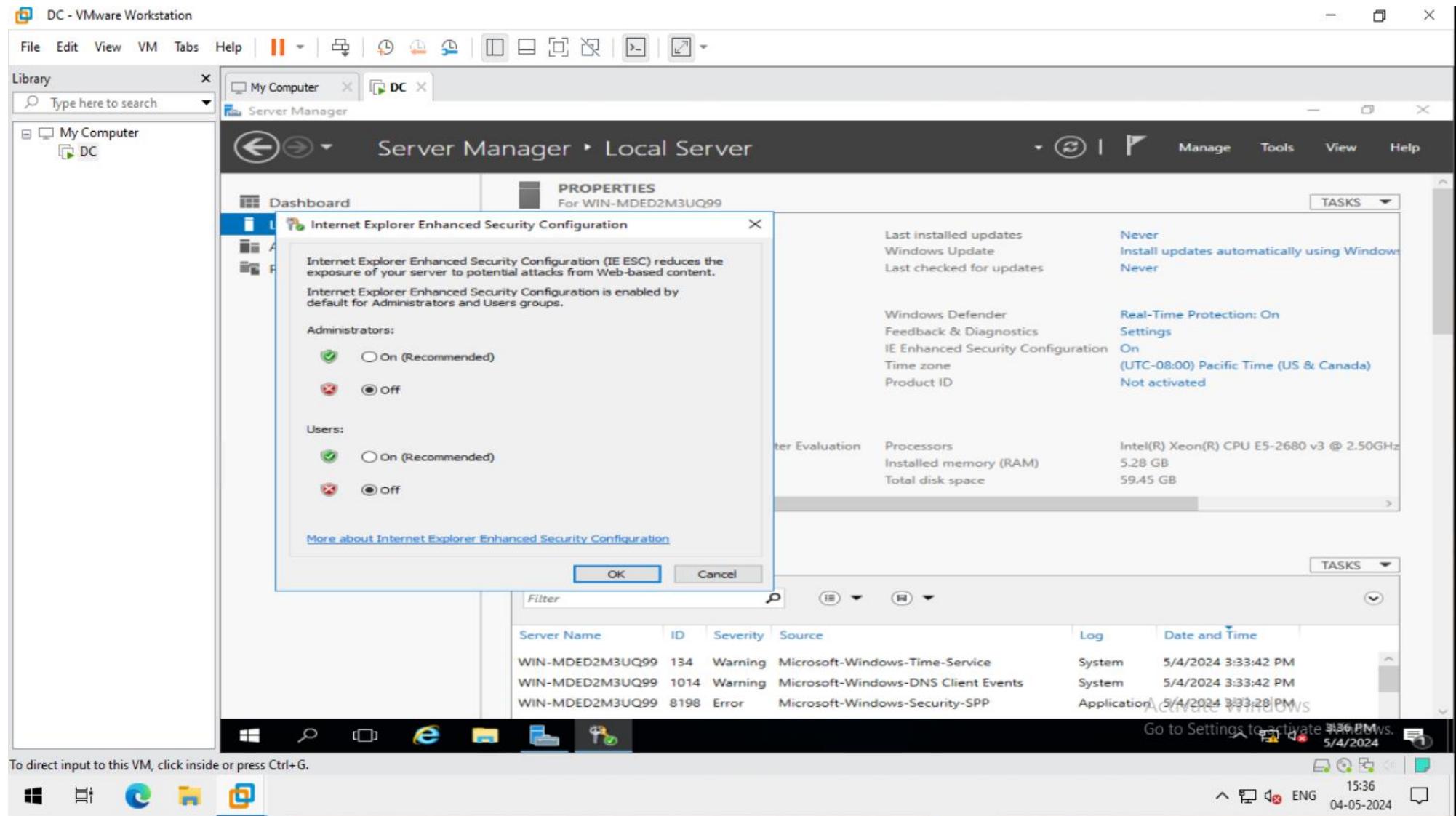


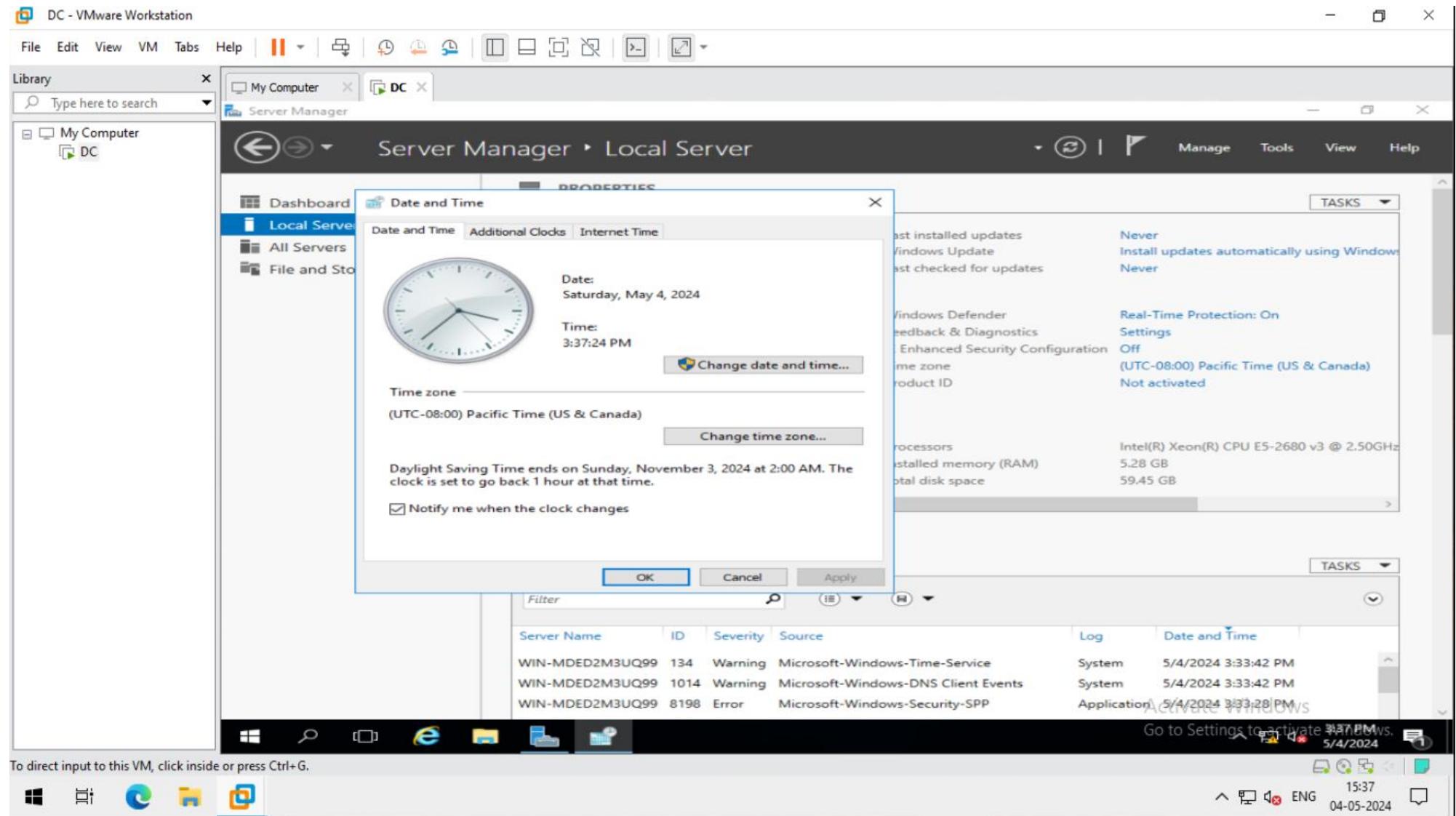


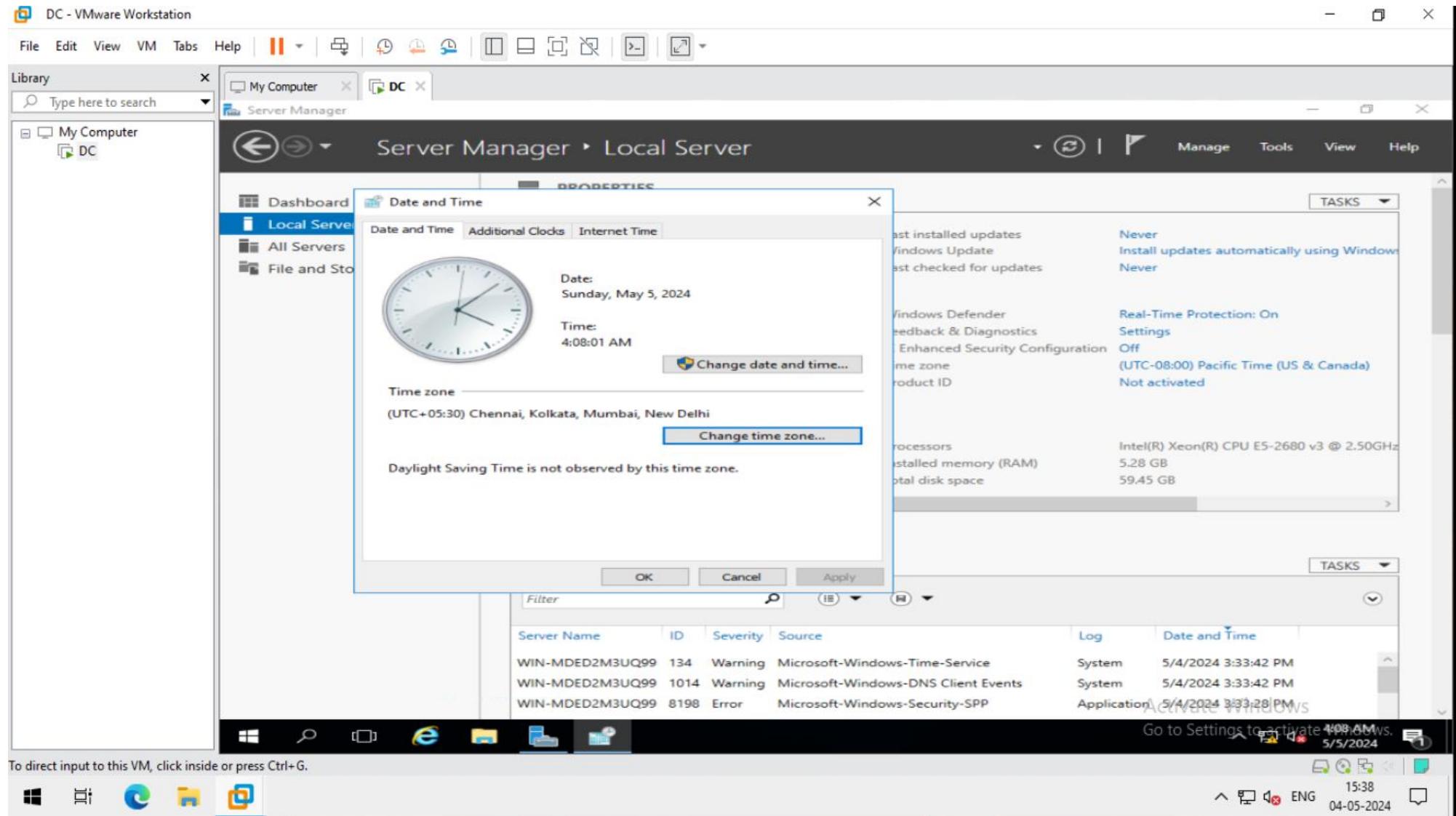
2. Post-installation configuration

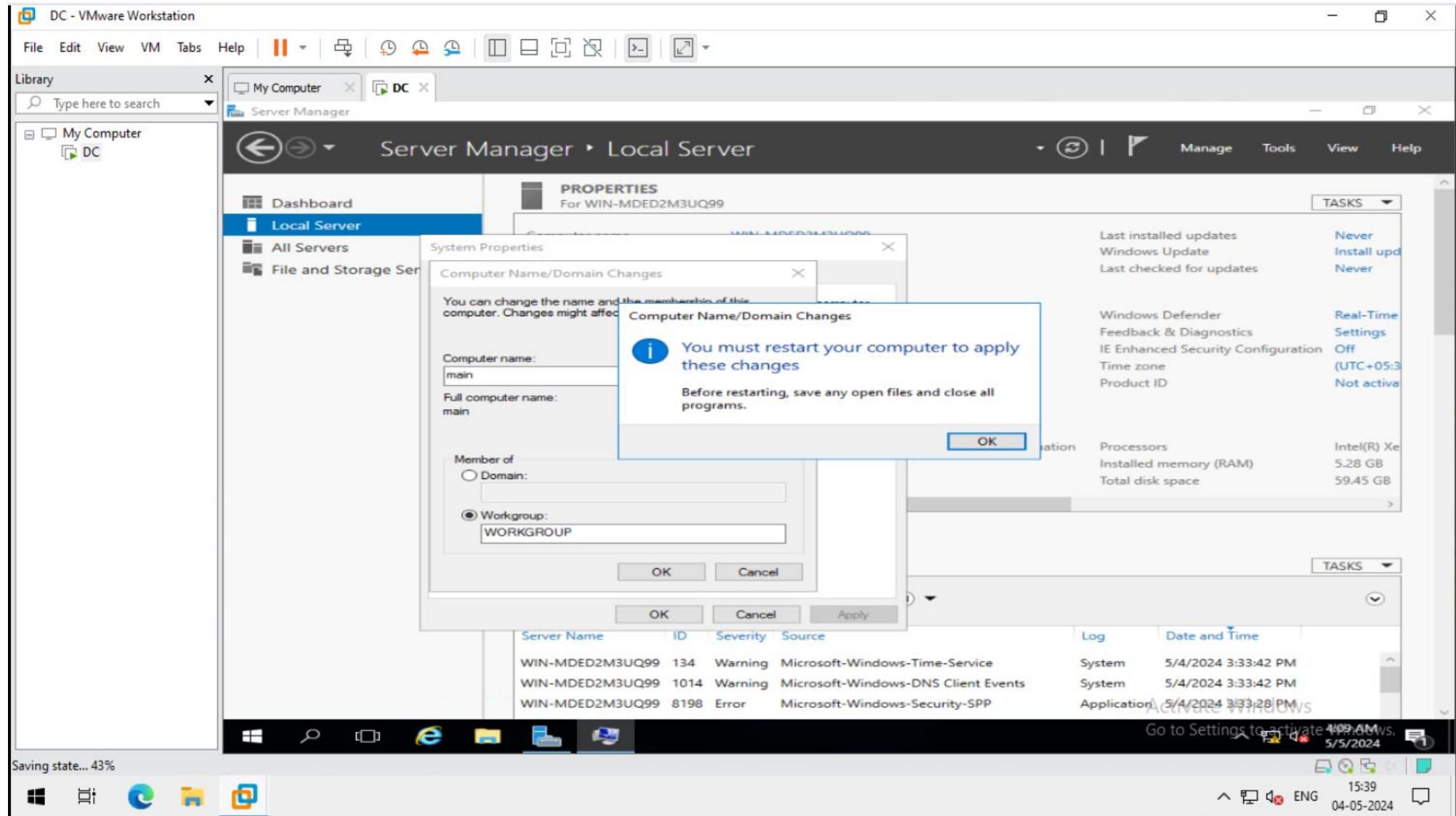




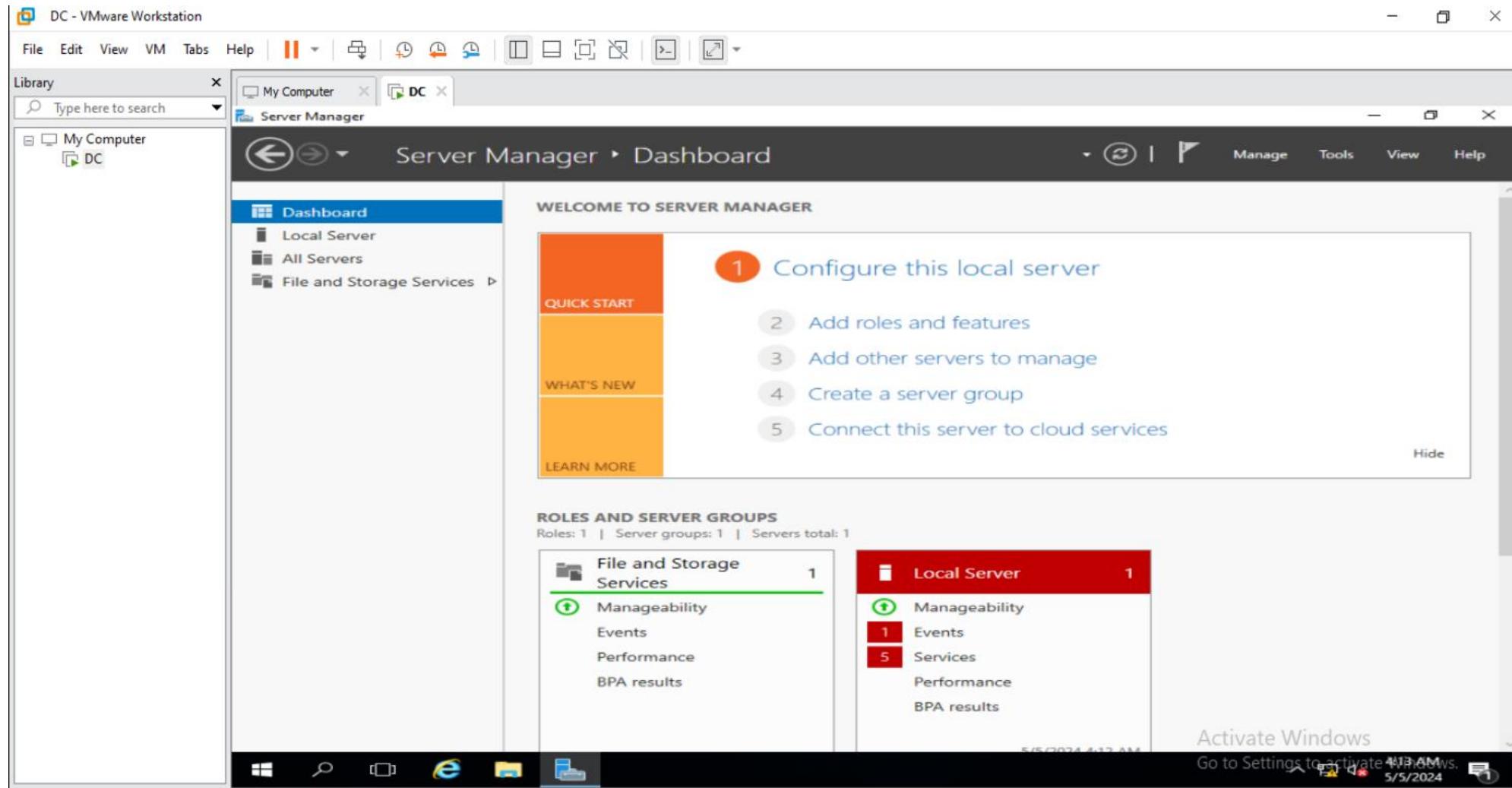


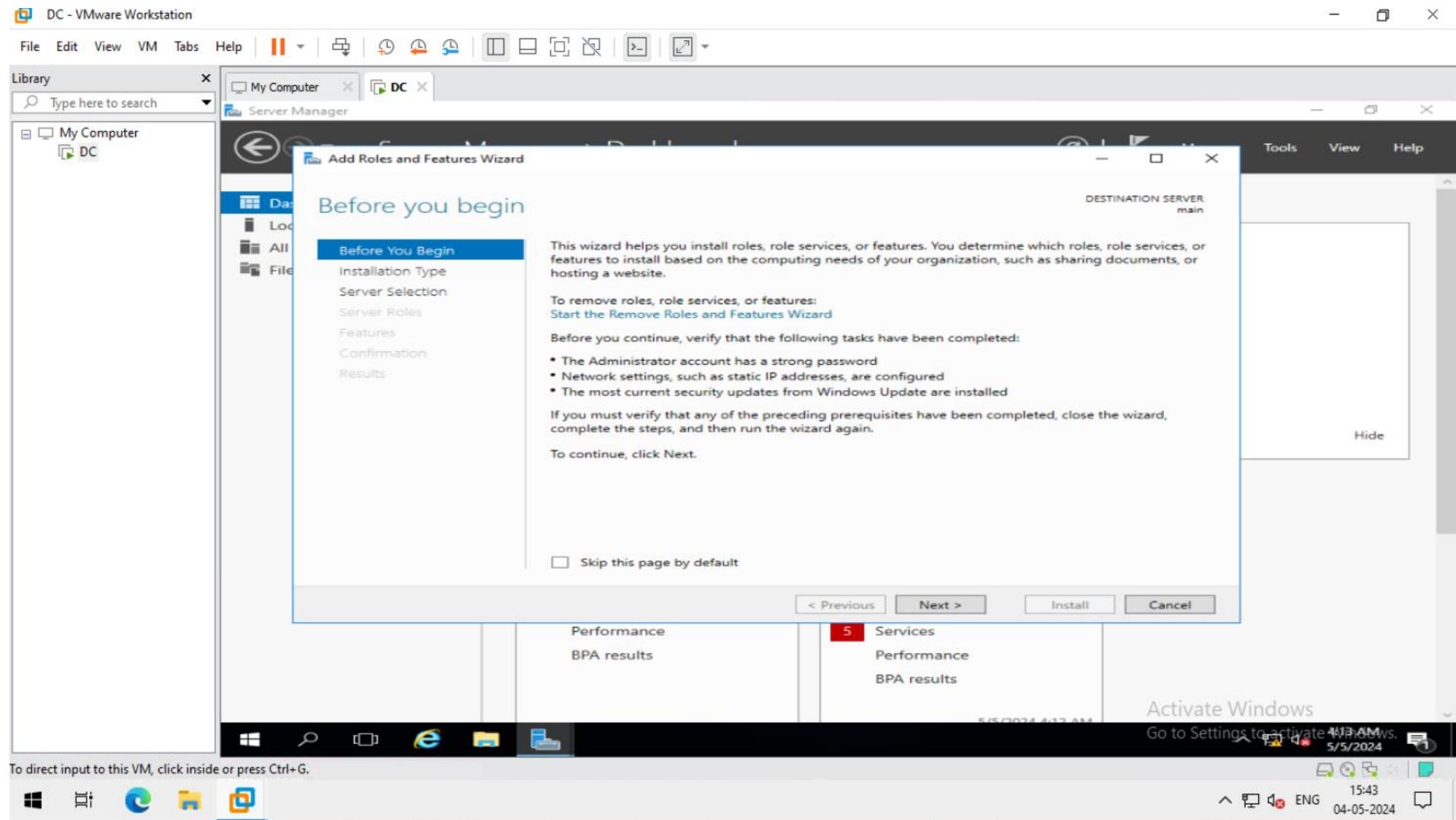


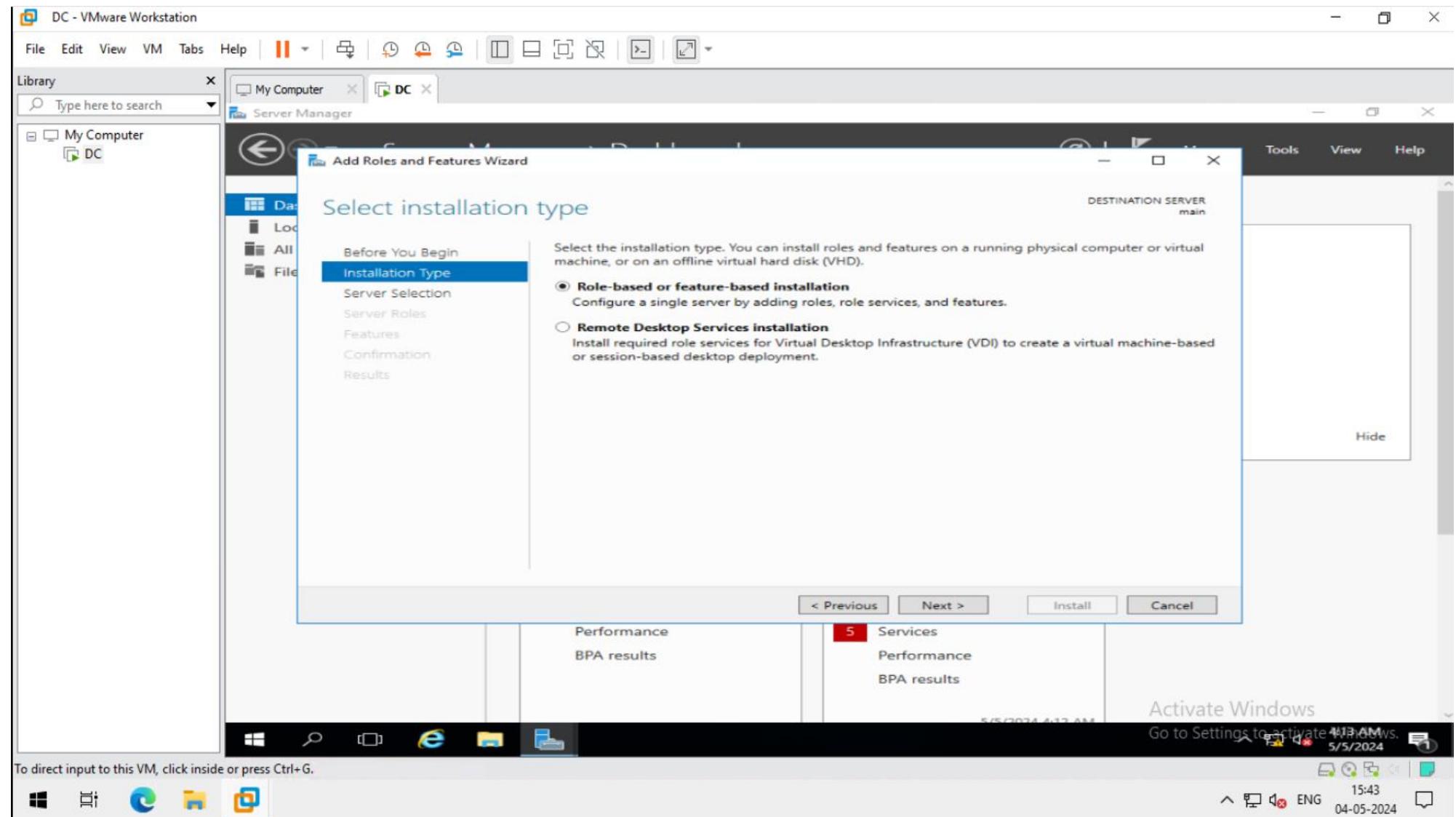


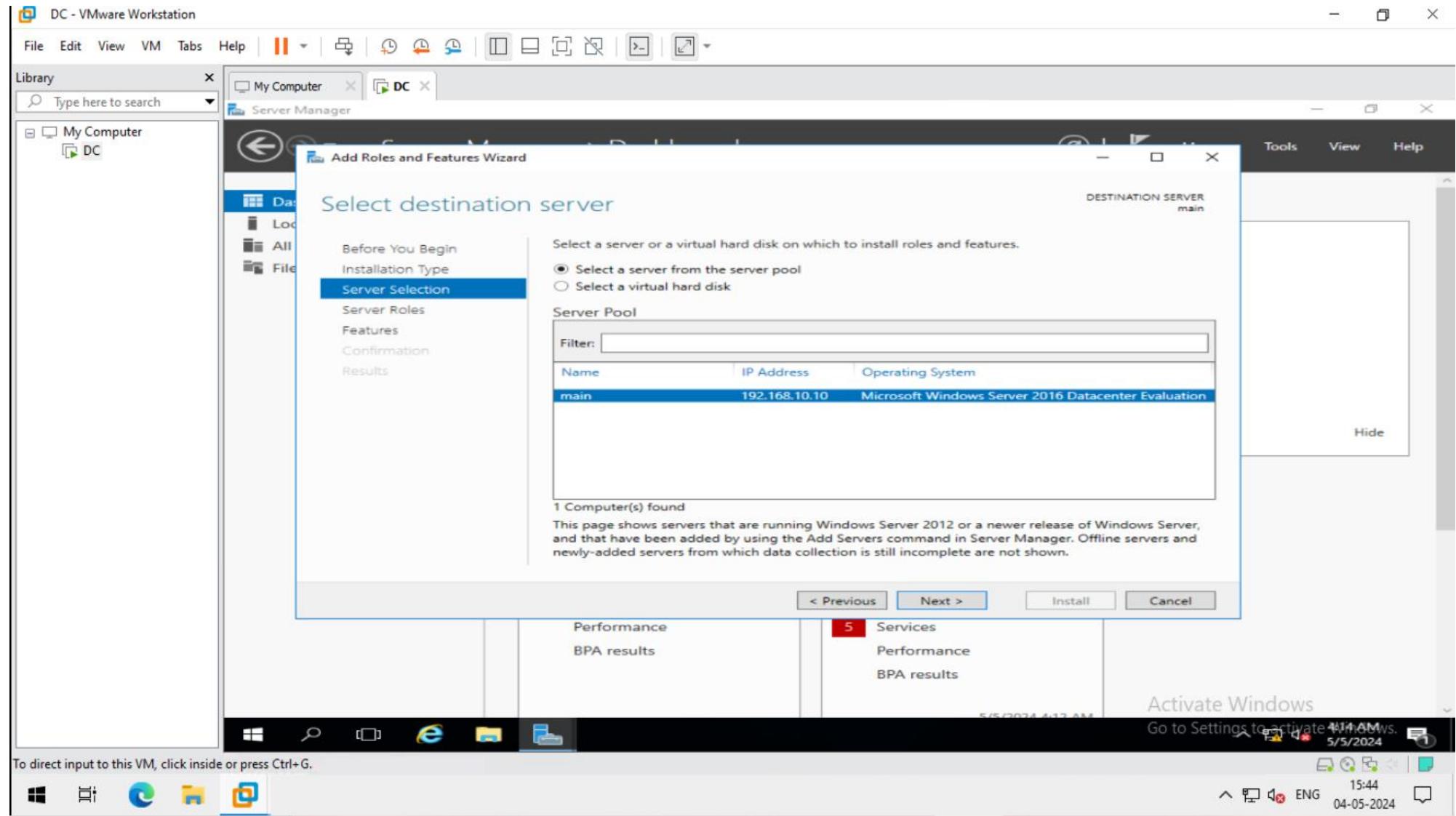


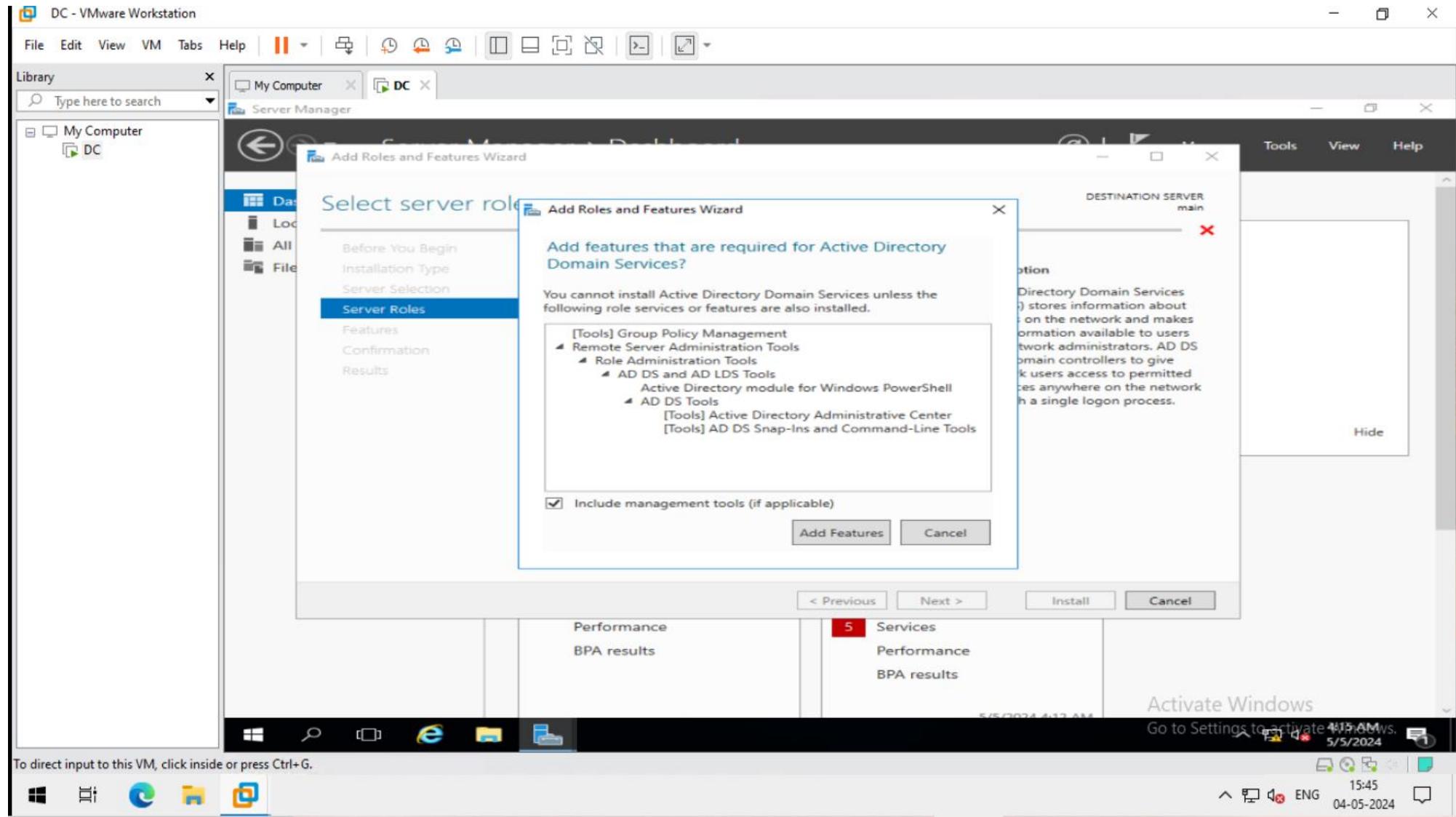
3- Install the required role

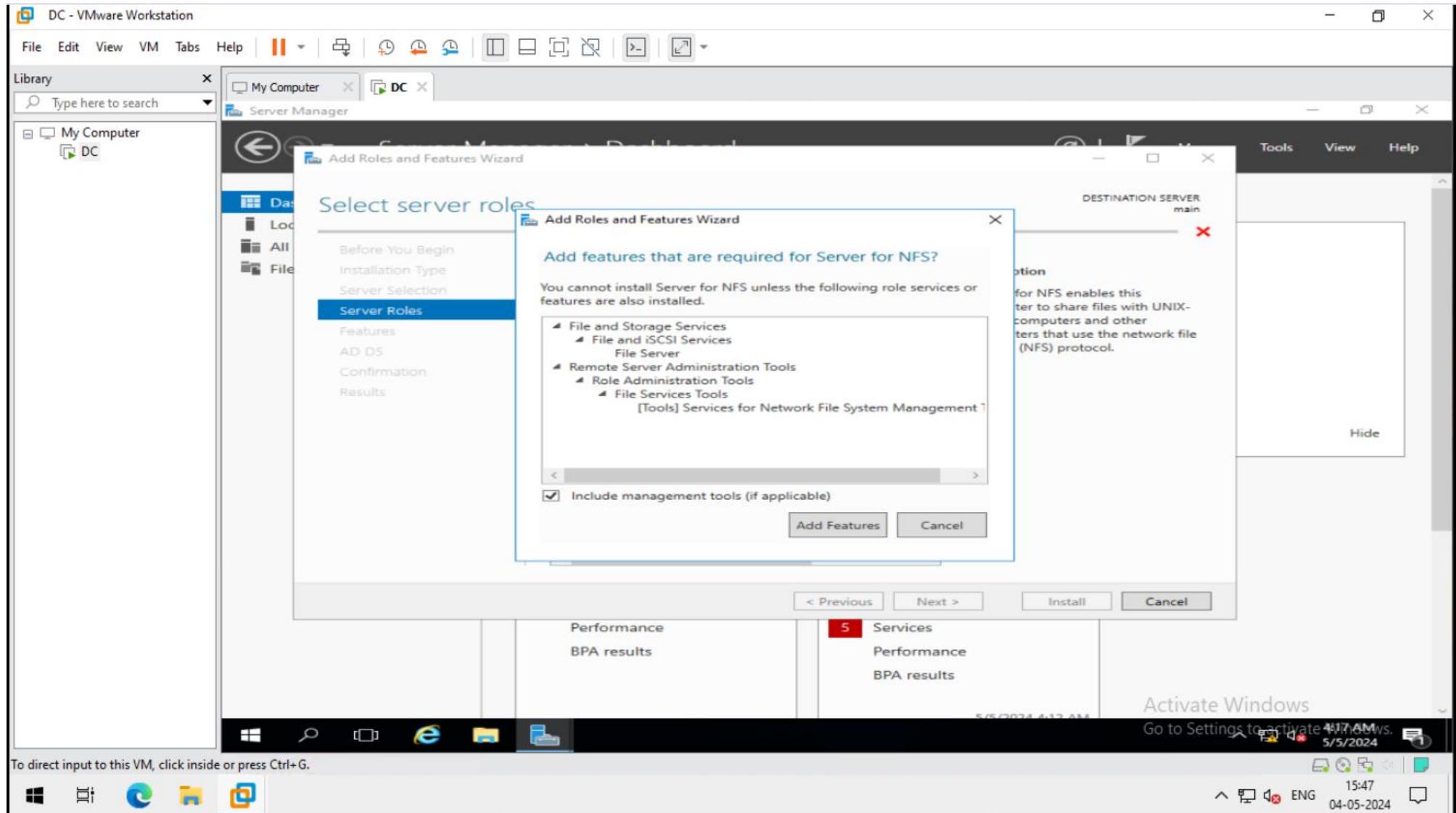


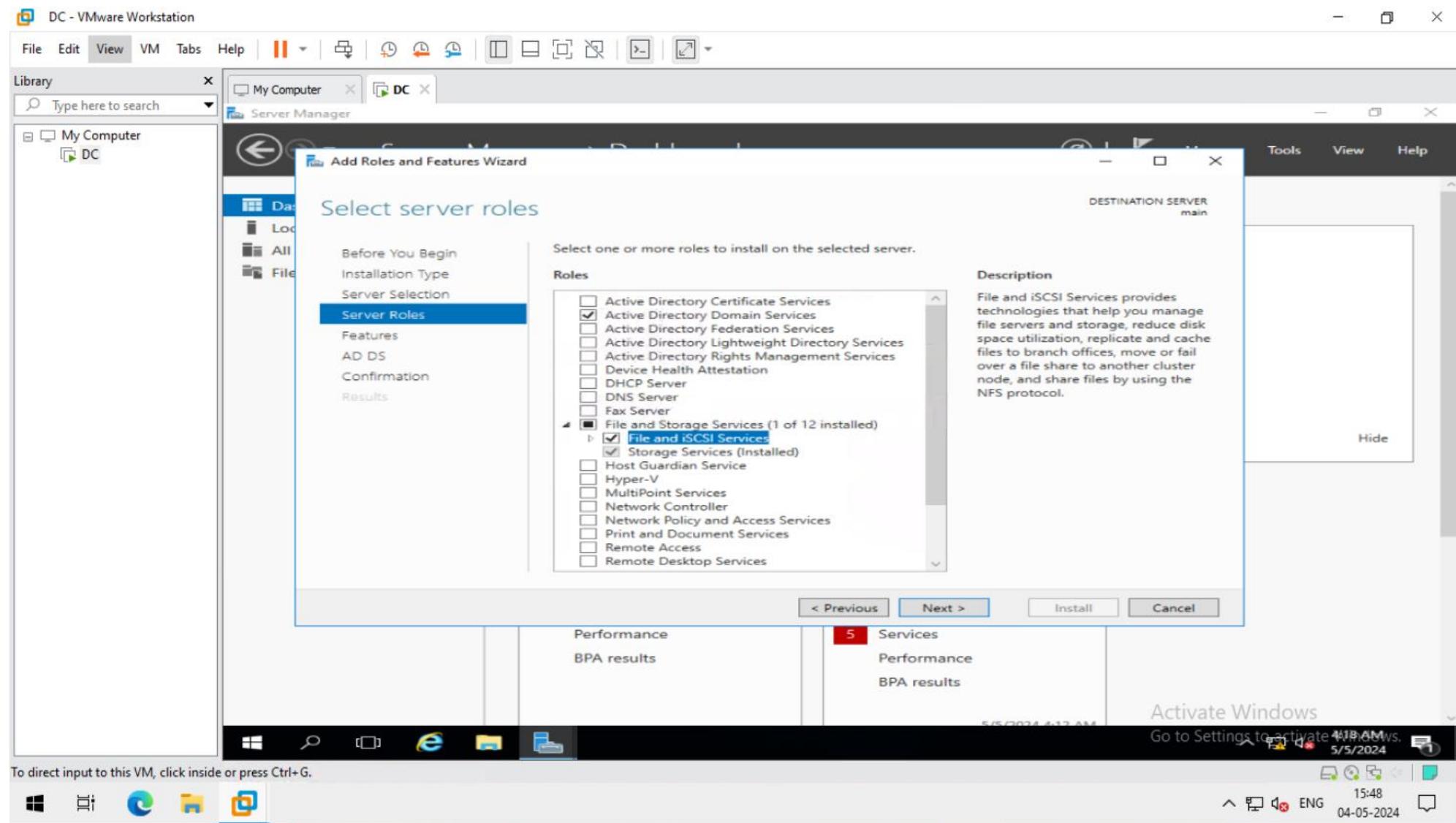


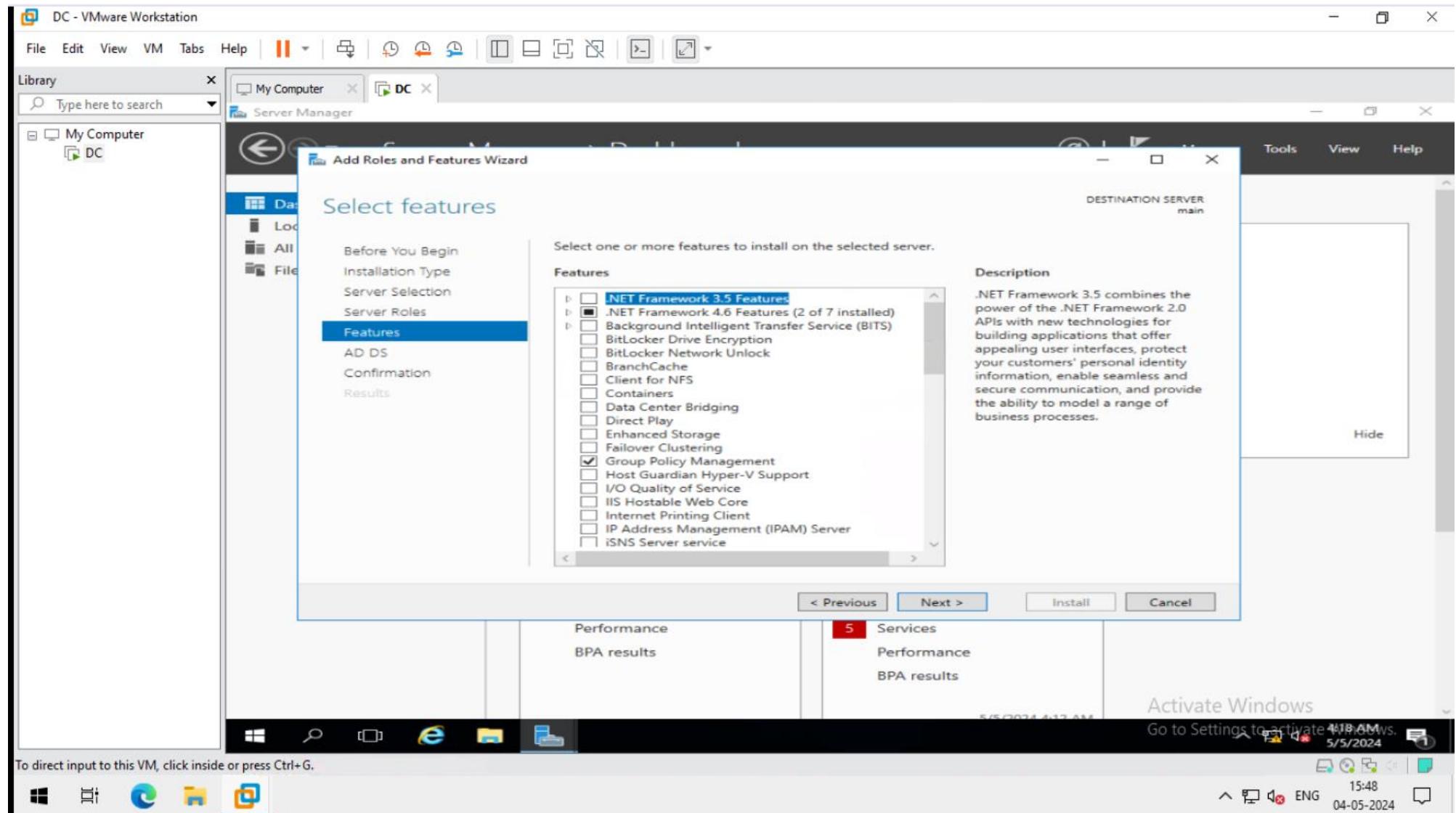


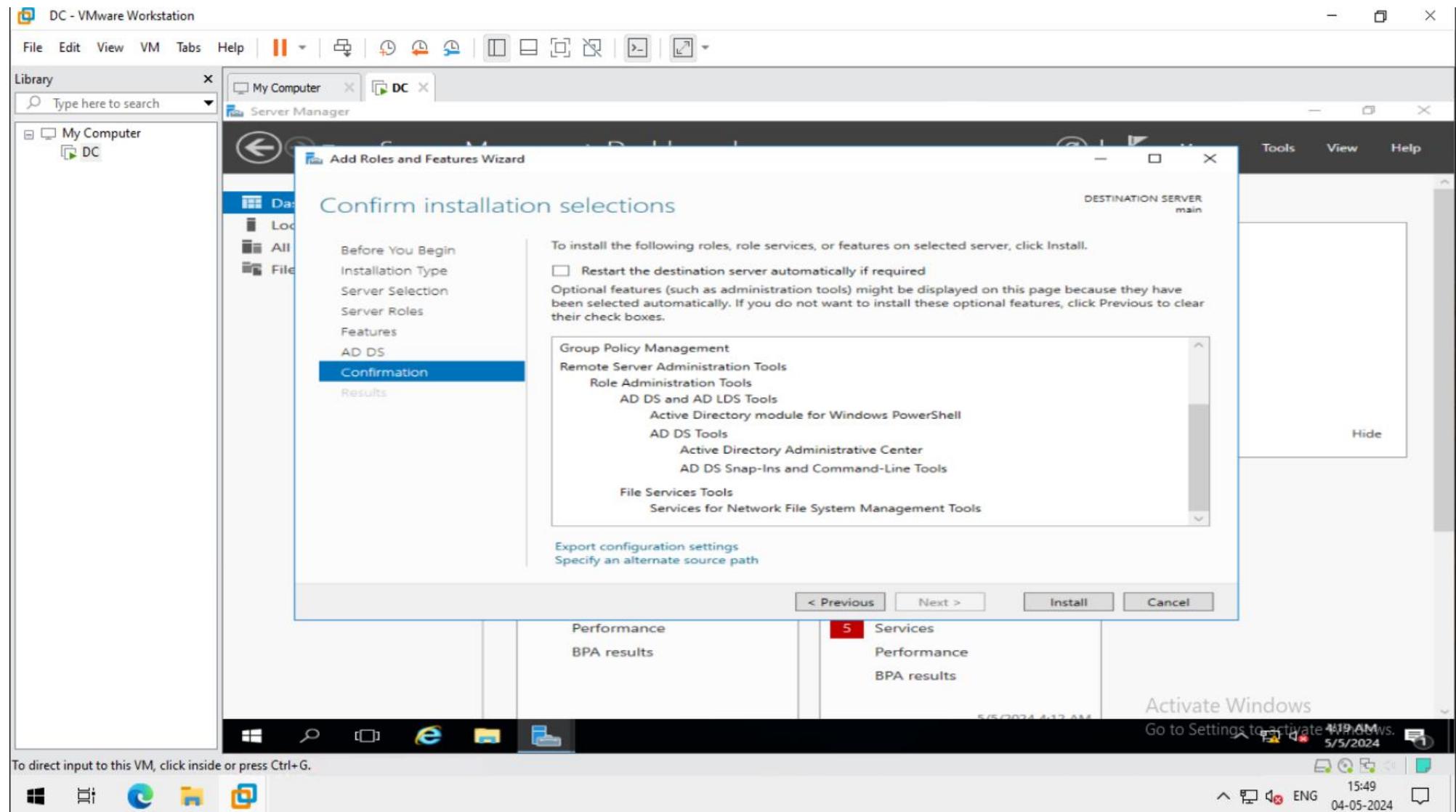


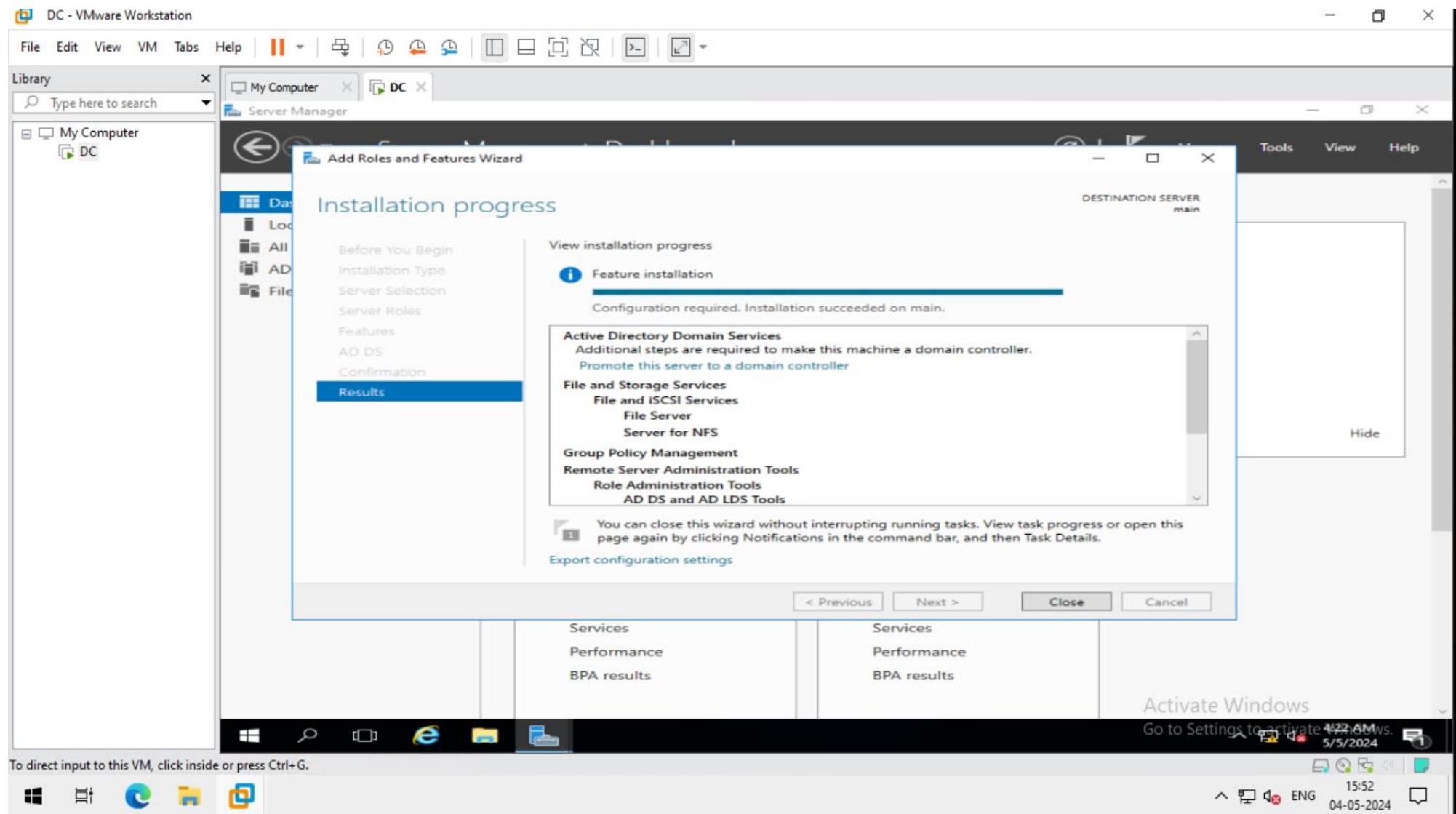


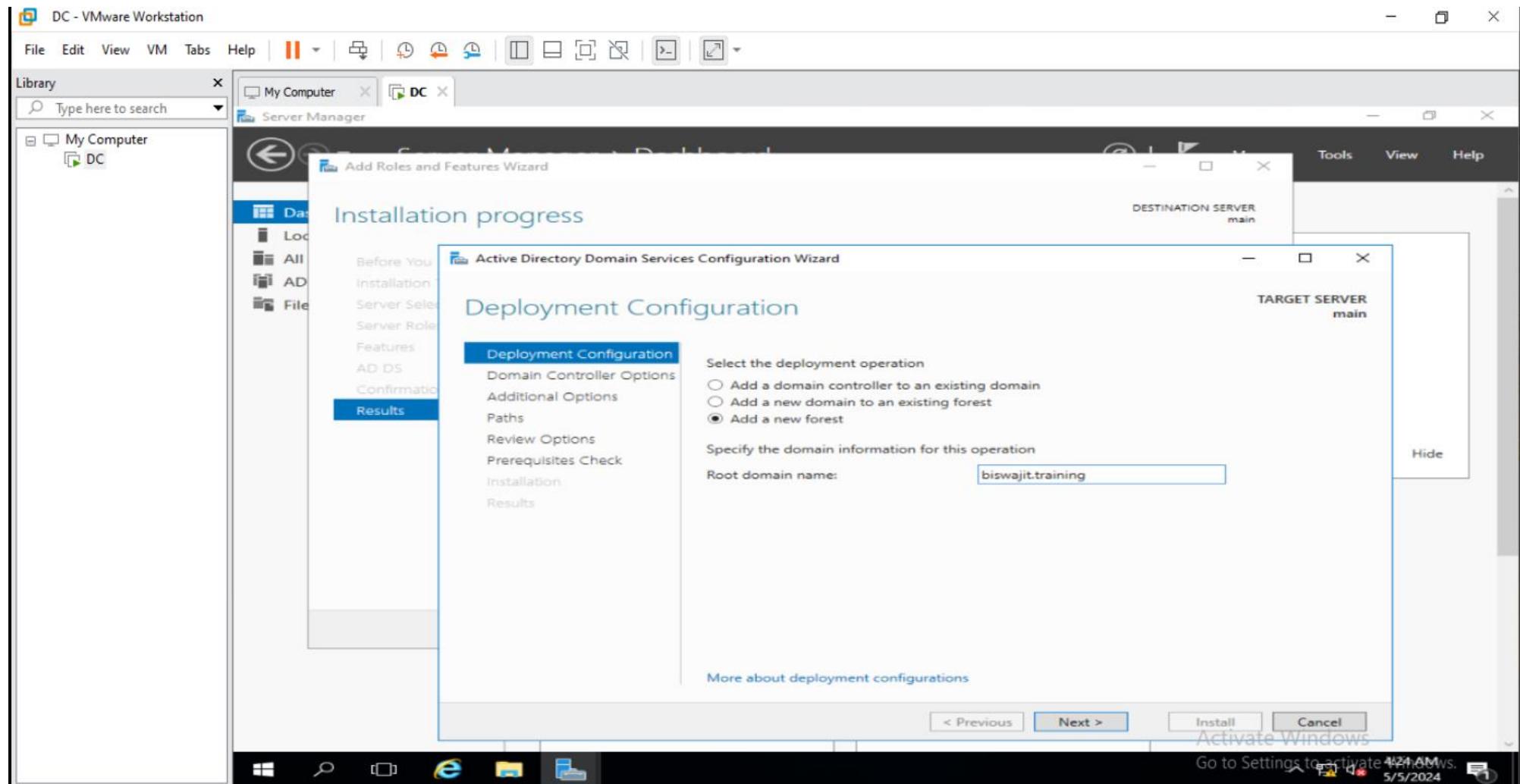


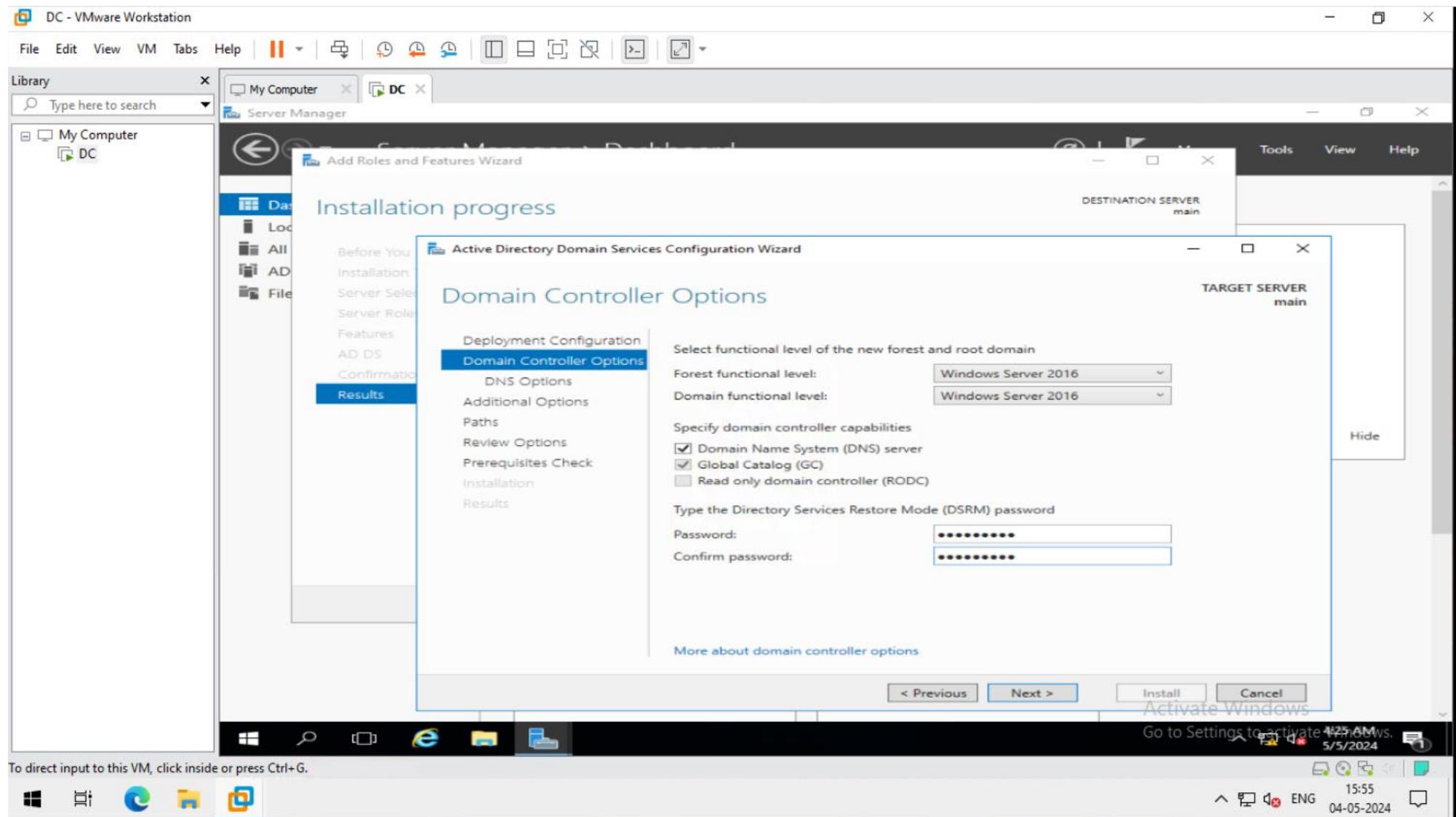


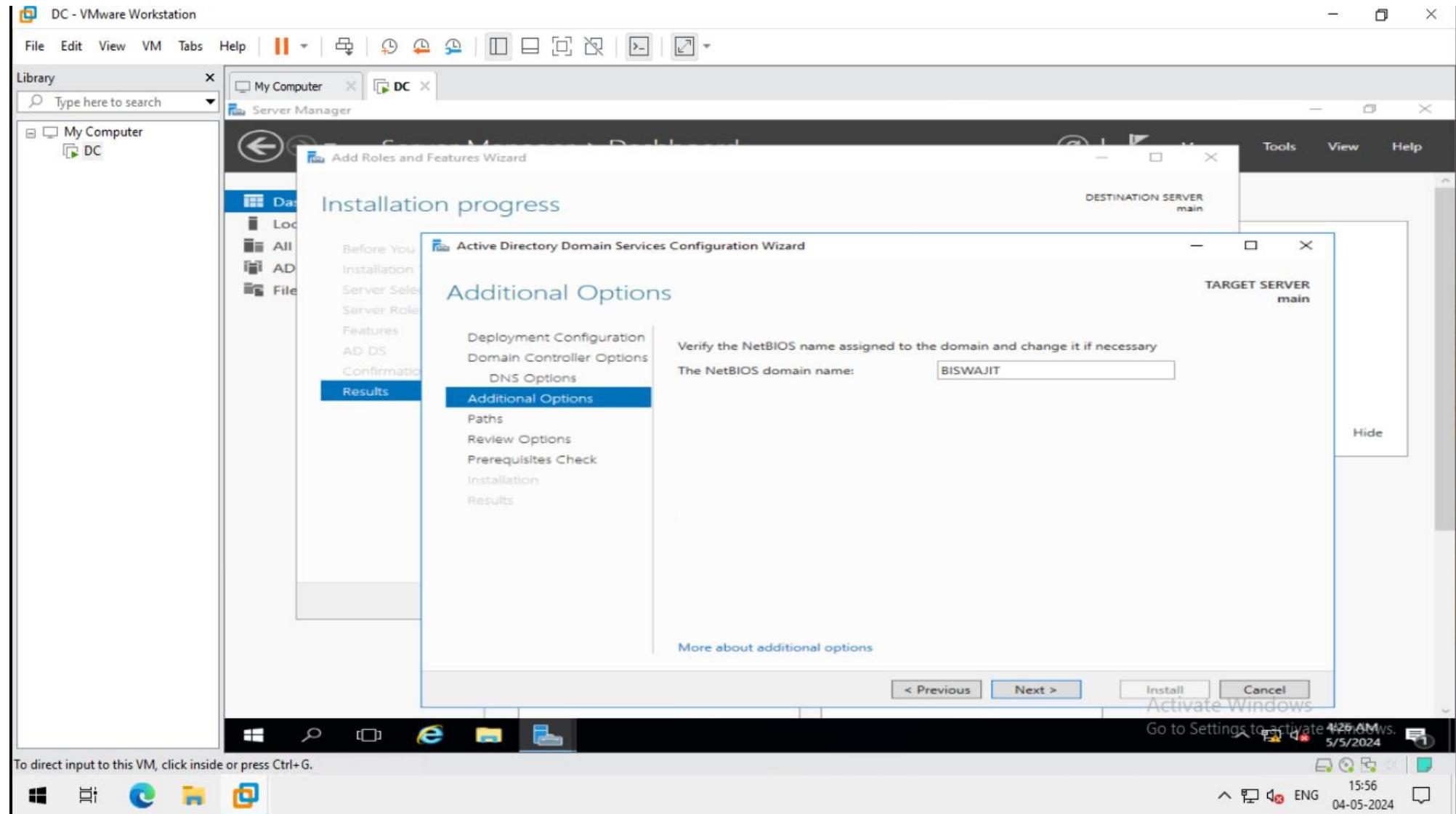


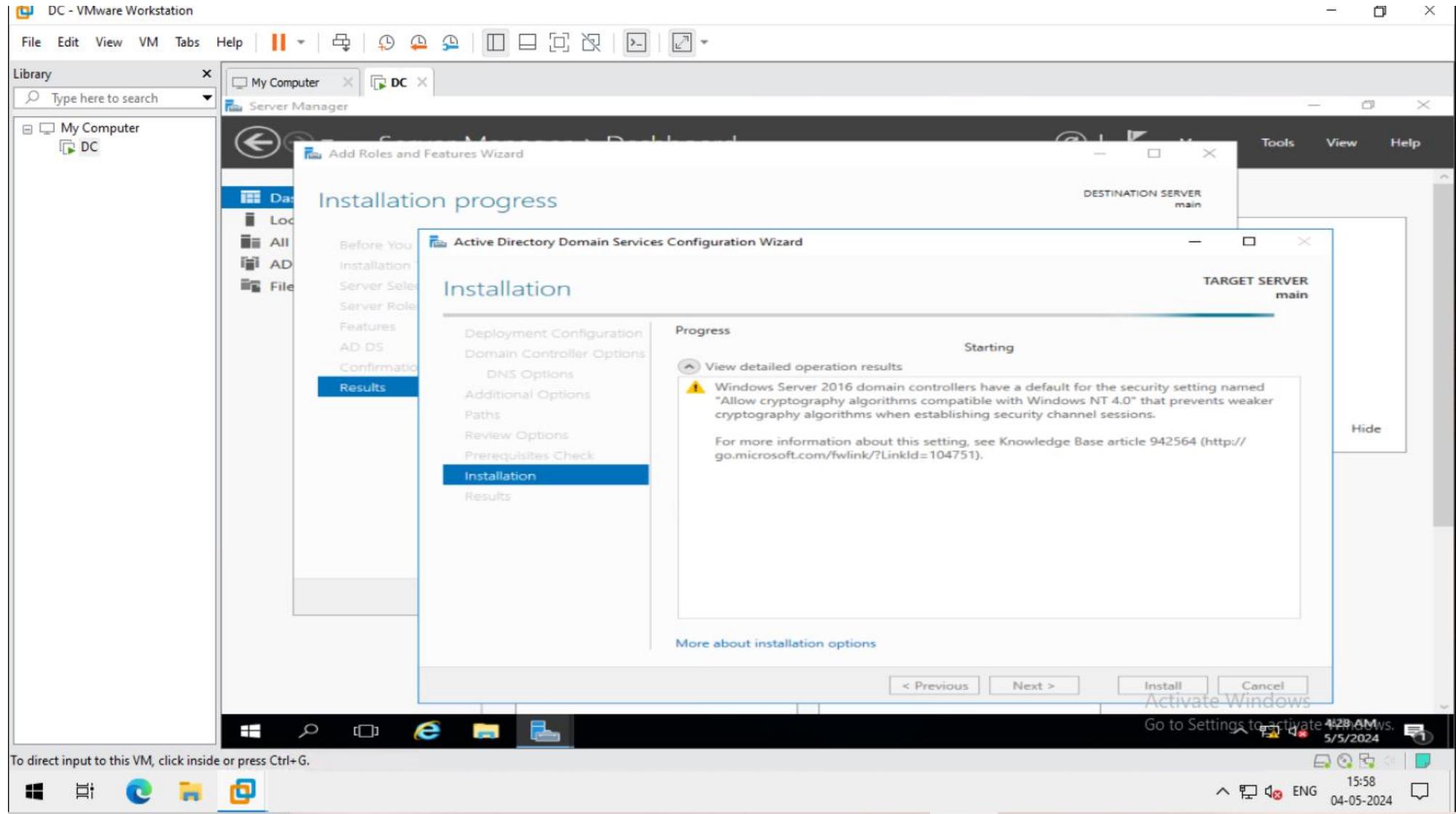


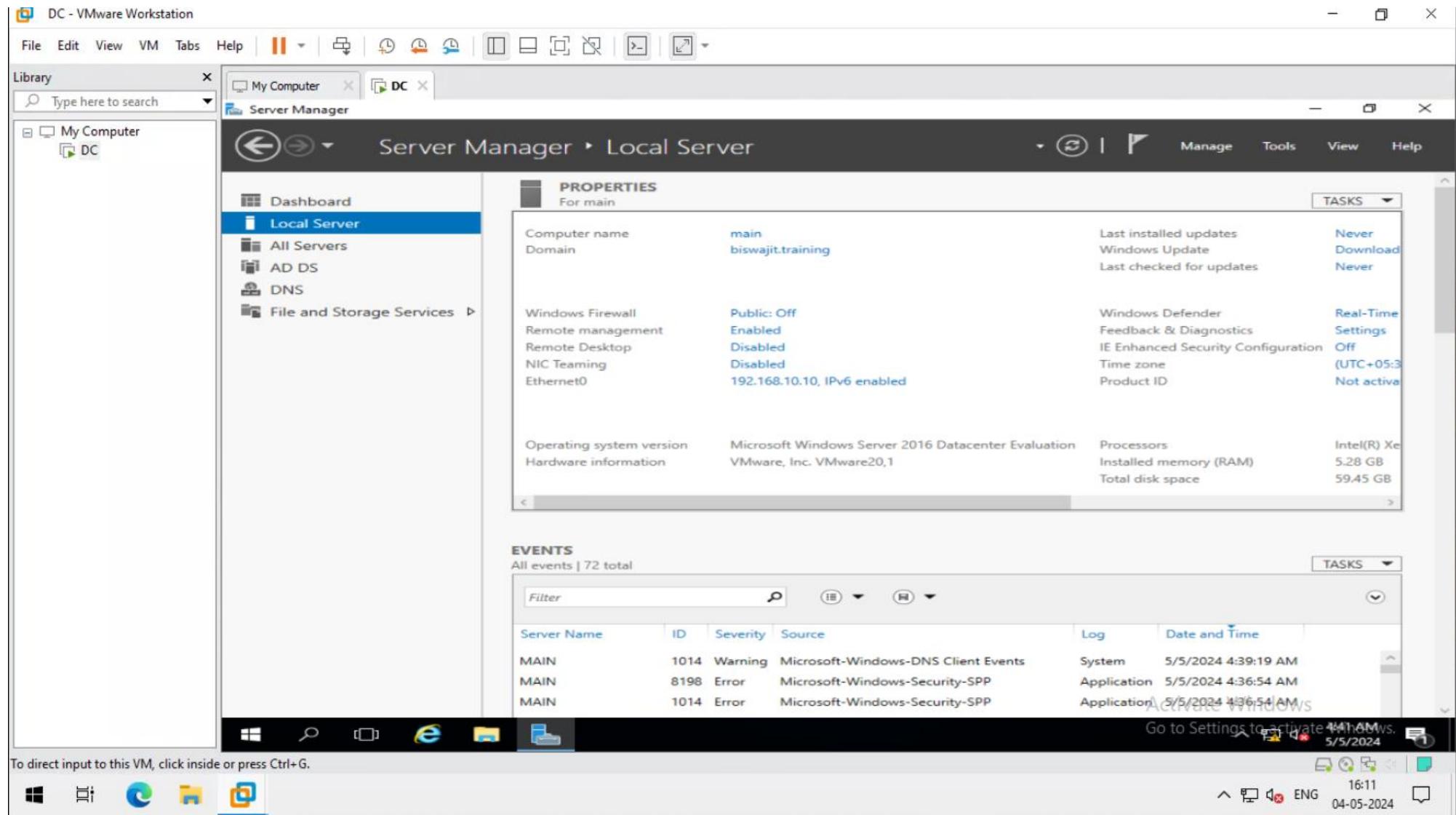




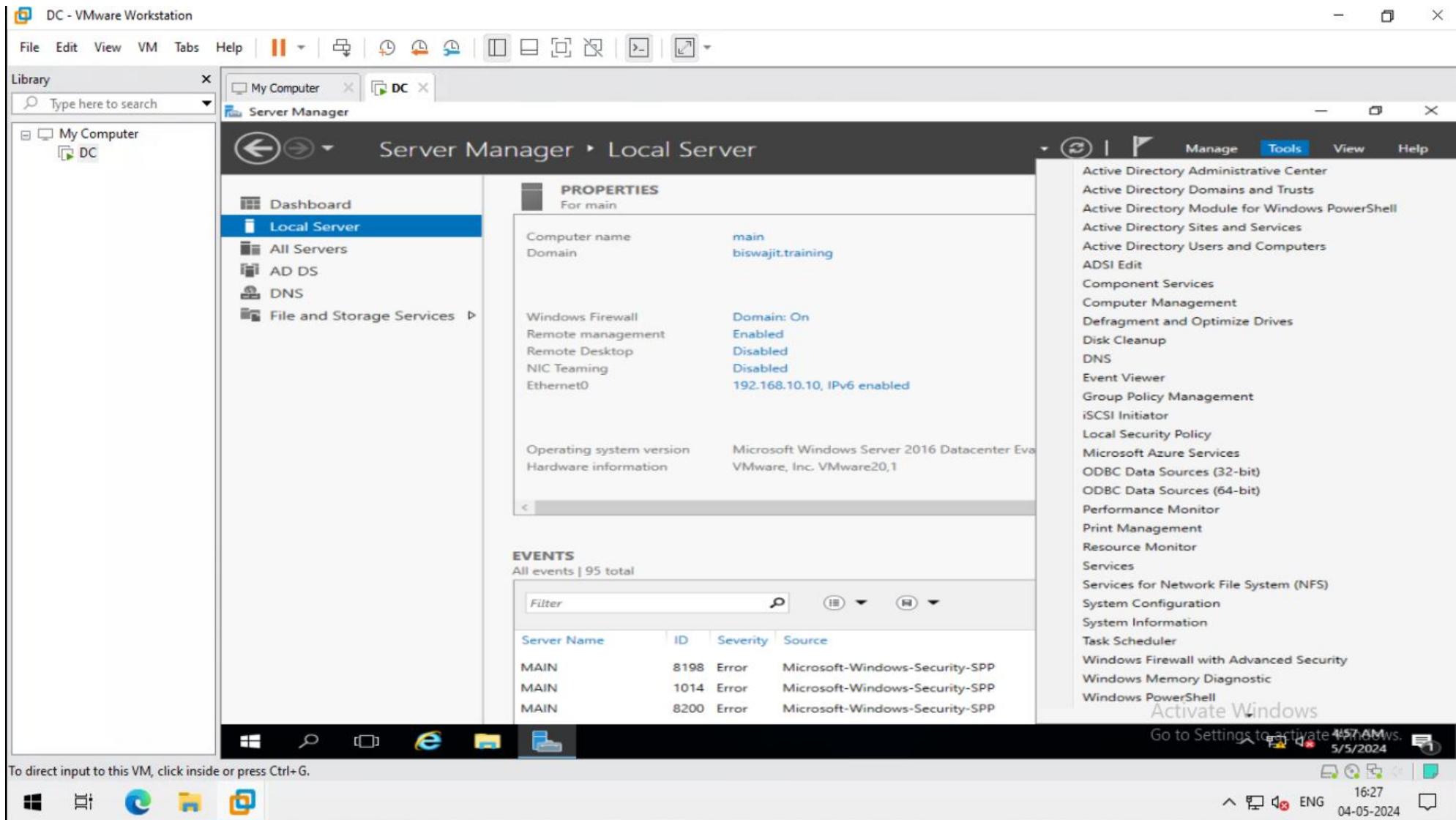








4- create a group and add user with permission



DC - VMware Workstation

File Edit View VM Tabs Help

Library My Computer DC

Type here to search

Active Directory Users and Computers

File Action View Help

Active Directory Users and Computers

Name	Type	Description
Administrator	User	Built-in account for ad...
biswa	Delegate Control...	Security Group...
	Find...	Security Group...
	Change Domain...	Security Group...
	Change Domain Controller...	Security Group...
	Raise domain functional level...	Security Group...
	Operations Masters...	Security Group...
New	>	Security Group...
All Tasks	>	Security Group...
Refresh		Security Group...
Properties		Security Group...
Help		Security Group...
Enterprise K...	Security Group...	Members of this group ...
Group Polic...	Security Group...	Members in this group c...
Guest	User	Built-in account for gue...
Key Admins	Security Group...	Members of this group ...
Protected Us...	Security Group...	Members of this group ...
RAS and IAS ...	Security Group...	Servers in this group can...
Read-only D...	Security Group...	Members of this group ...
Schema Ad...	Security Group...	Designated administrato...

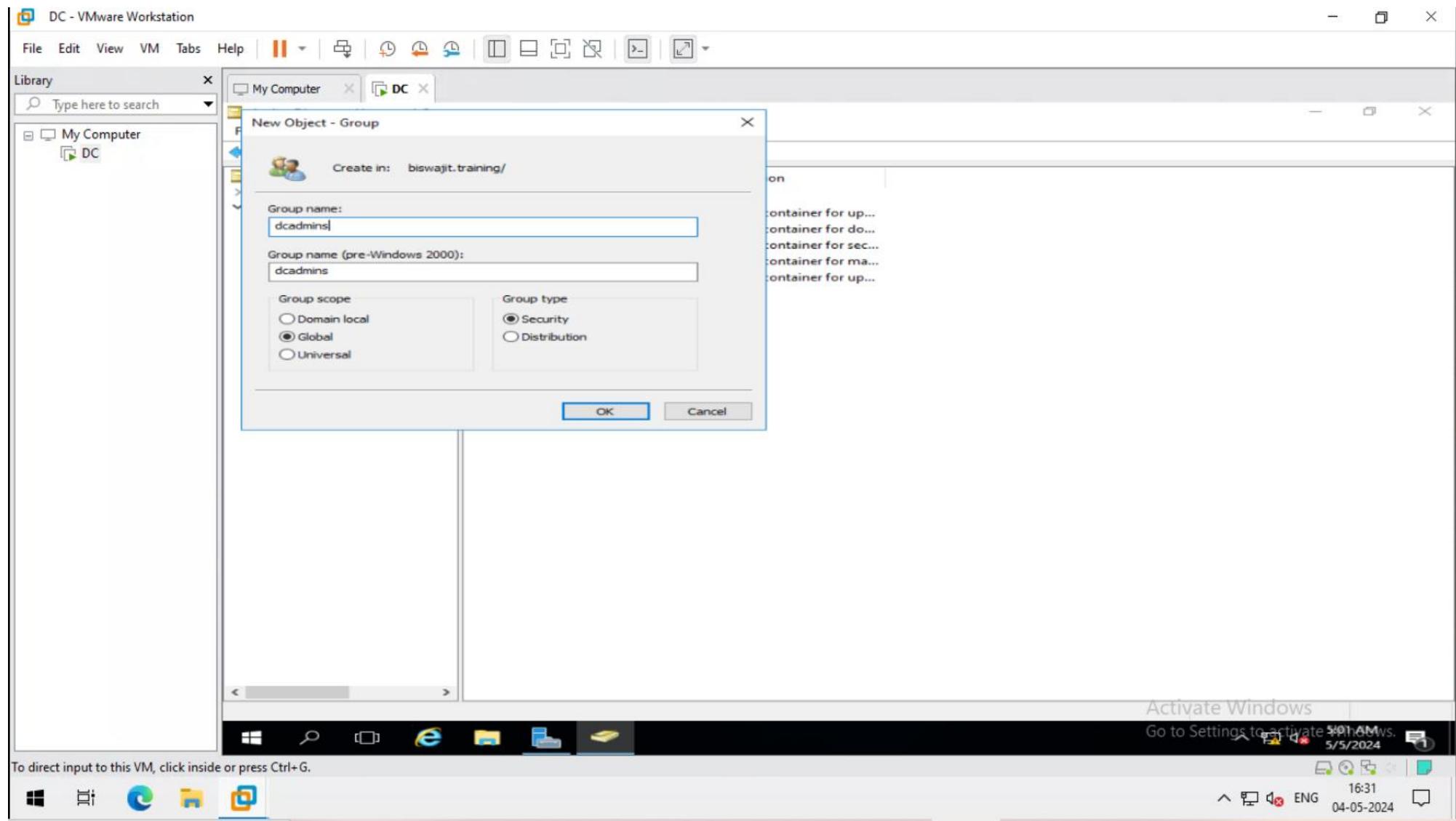
Displays Help for the current selection.

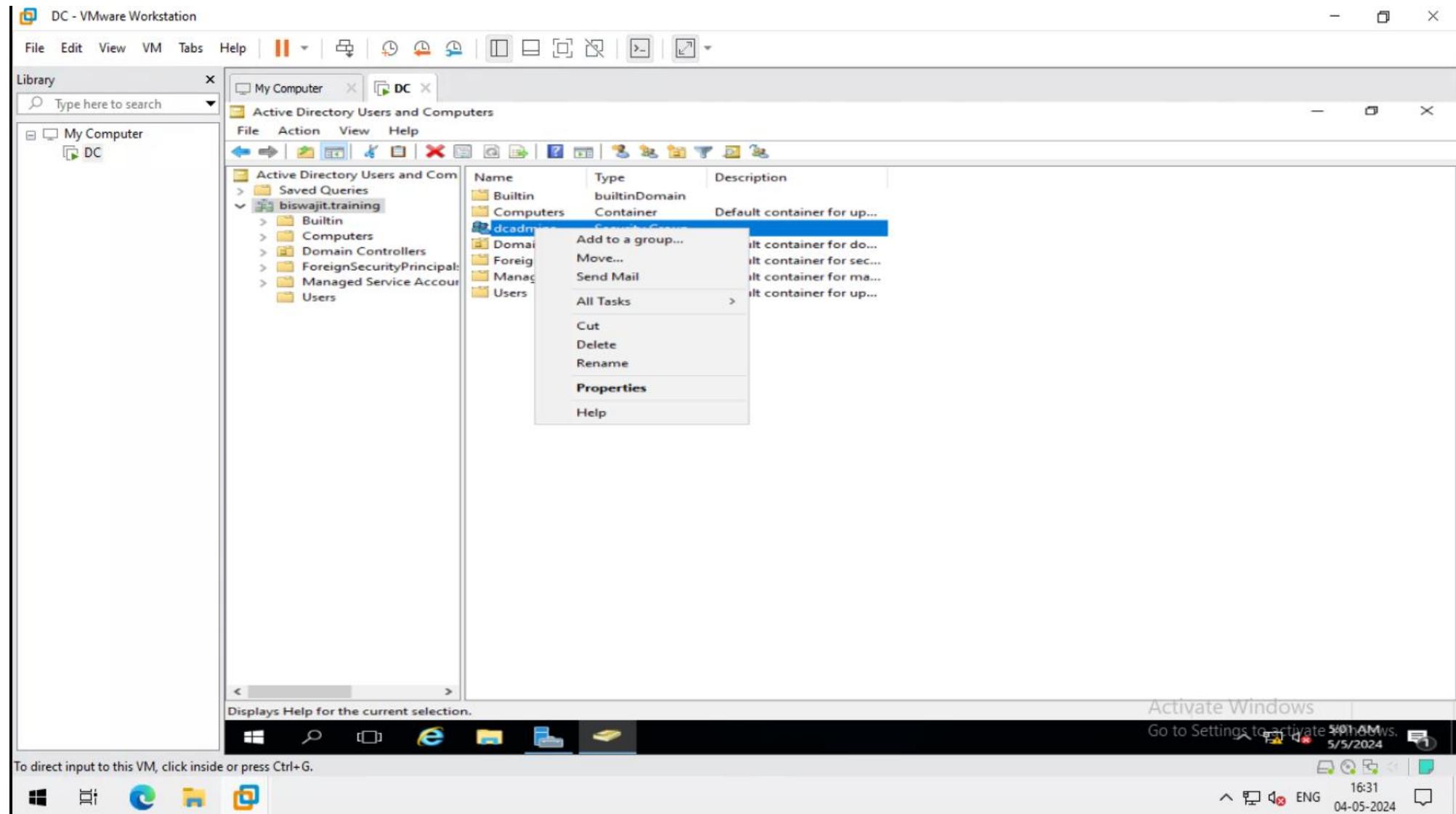
To direct input to this VM, click inside or press Ctrl+G.

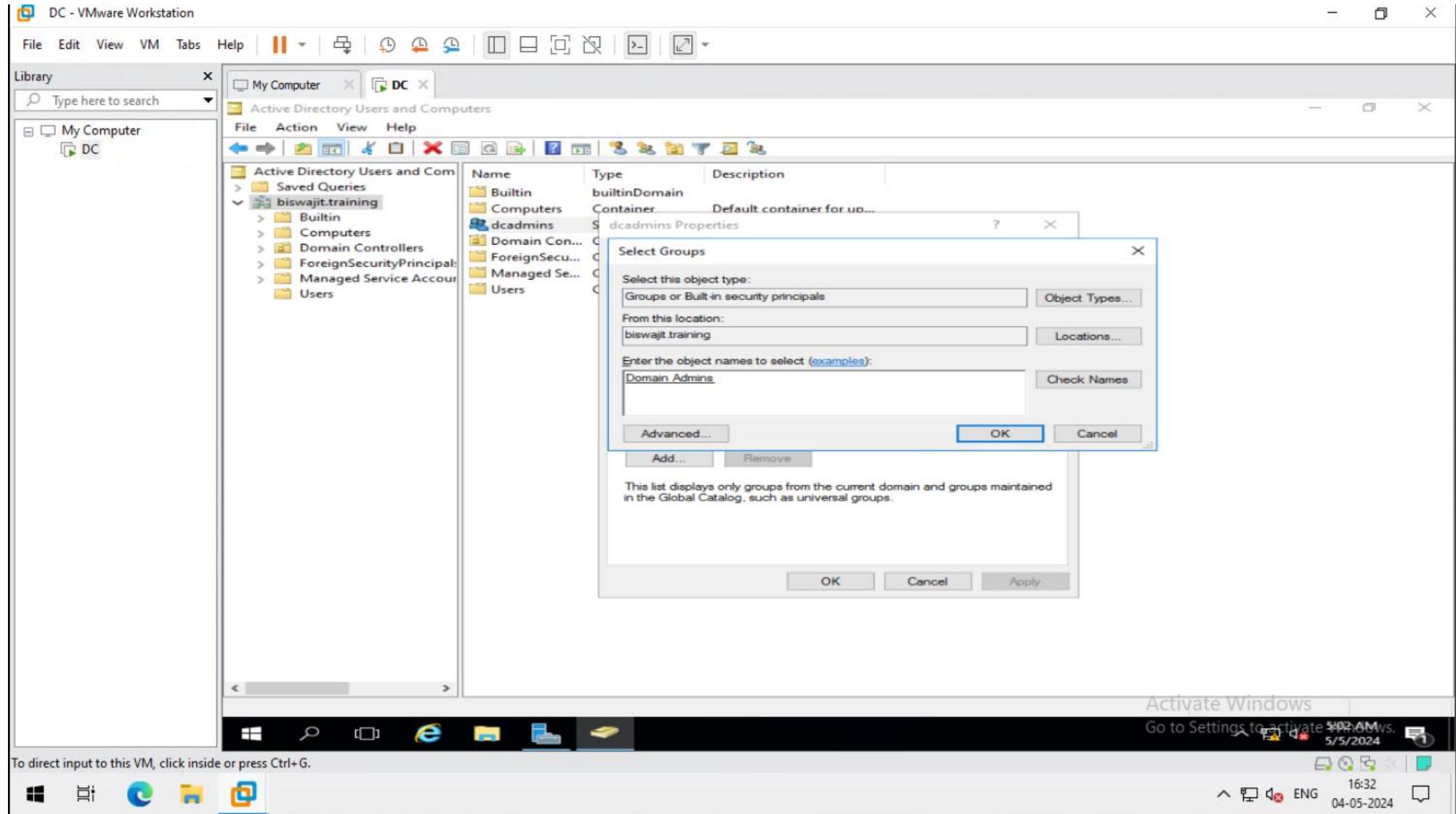
Activate Windows Go to Settings to activate 4:59 AMws. 5/5/2024

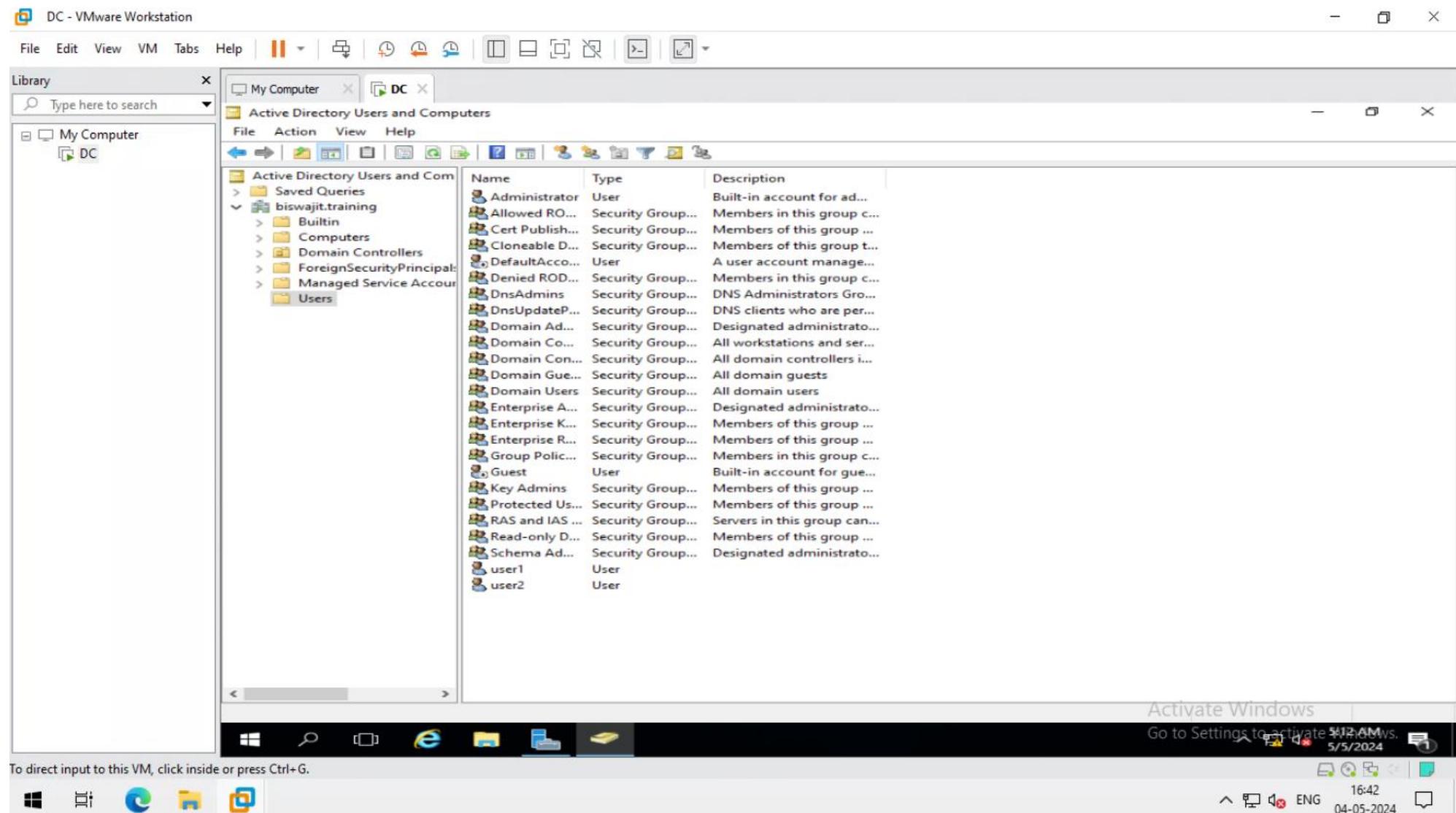
16:29 04-05-2024 ENG

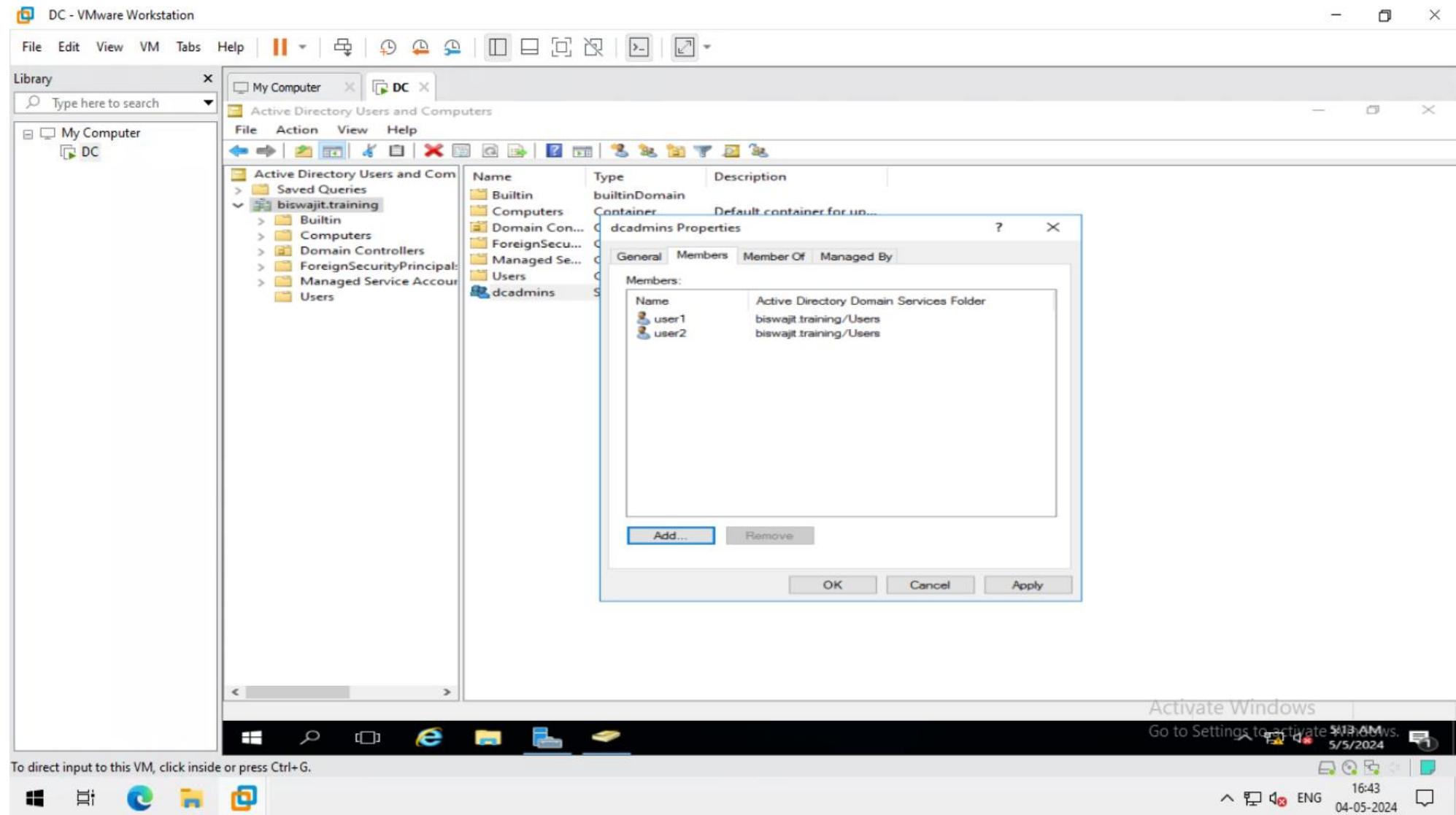
The screenshot shows the Active Directory Users and Computers (ADUC) application running in a VMware Workstation window. The main pane displays a list of users and security groups under the 'Administrator' account. The 'Administrator' user is highlighted. The interface includes a ribbon bar with tabs for File, Edit, View, VM, Tabs, and Help. Below the ribbon is a library pane showing 'My Computer' and 'DC'. The status bar at the bottom provides system information such as the date (04-05-2024), time (16:29), and language (ENG). A watermark for 'RPS learn..evolve' is visible in the bottom left corner.



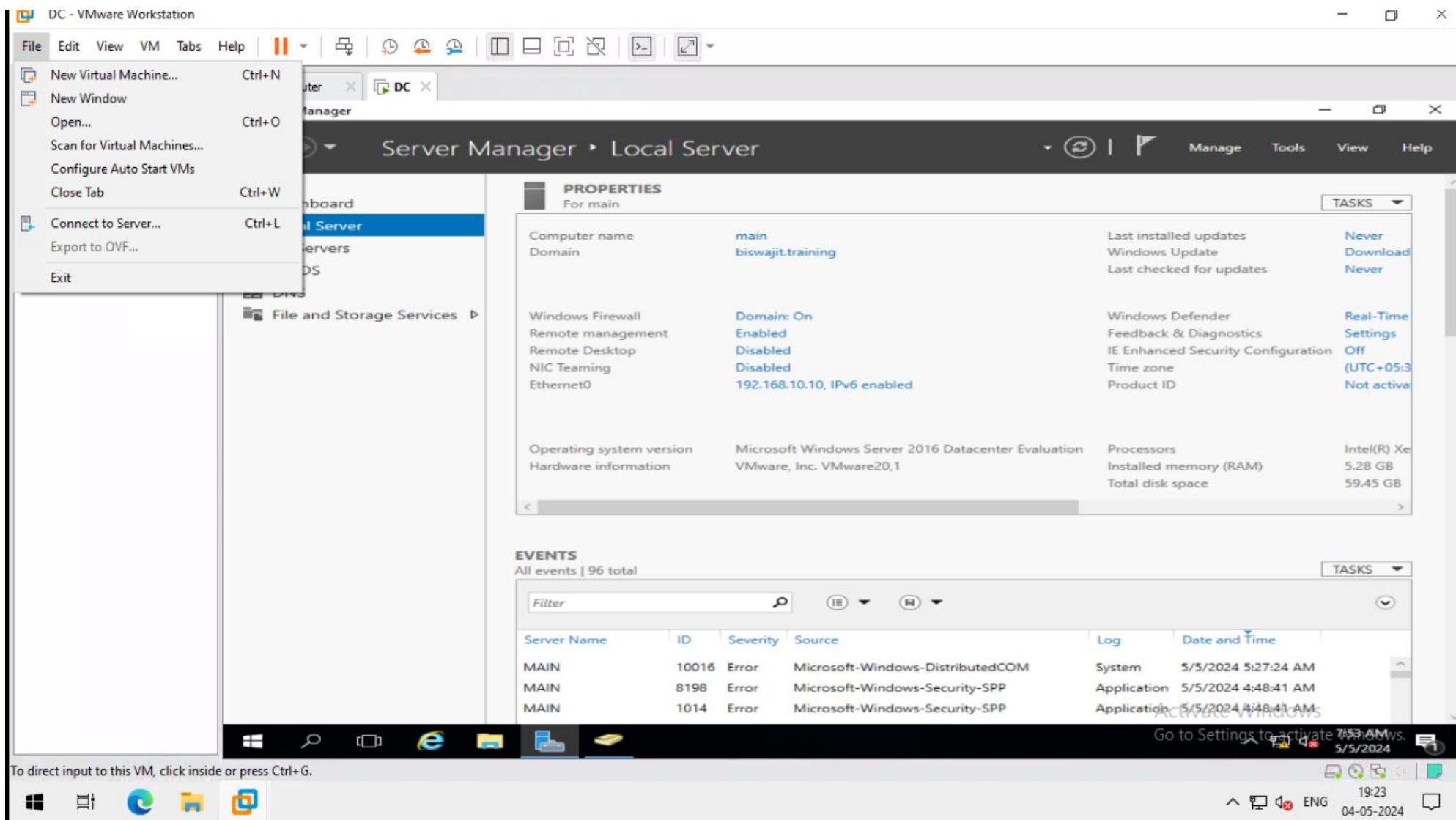


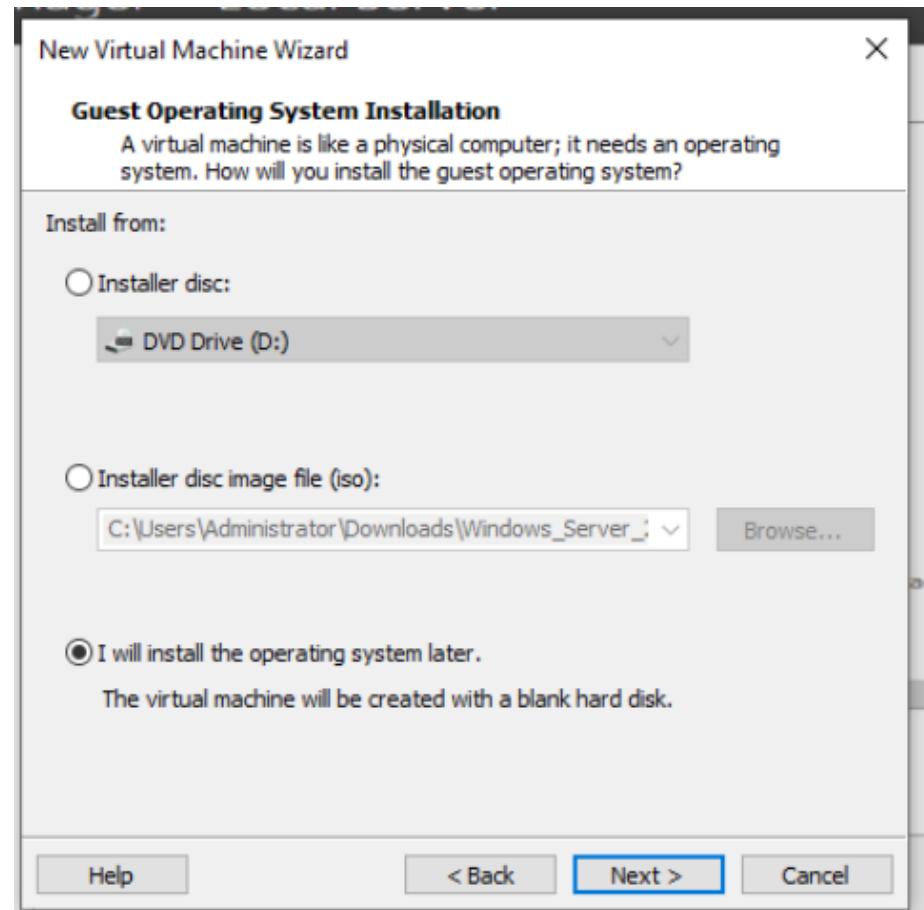


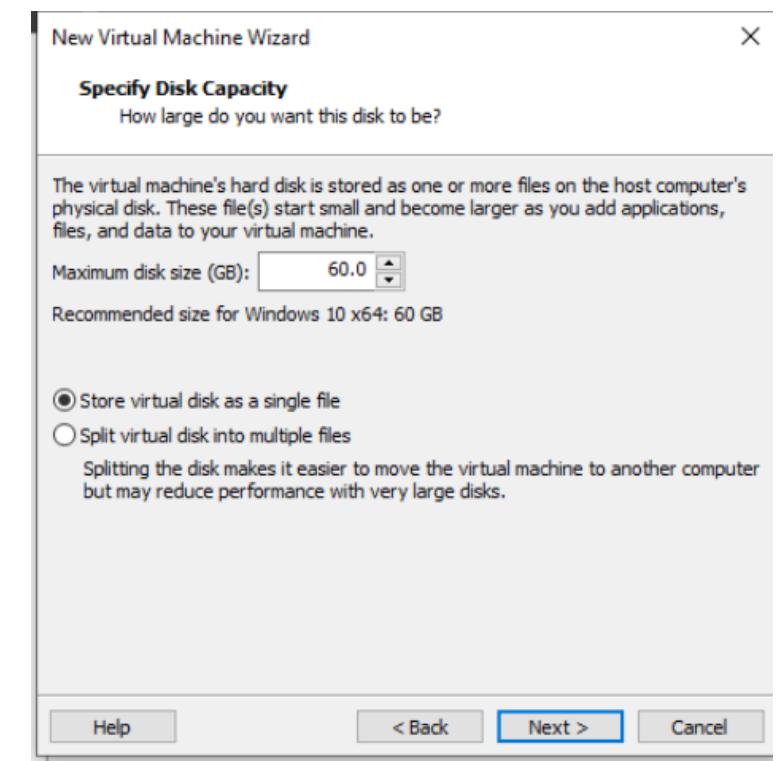
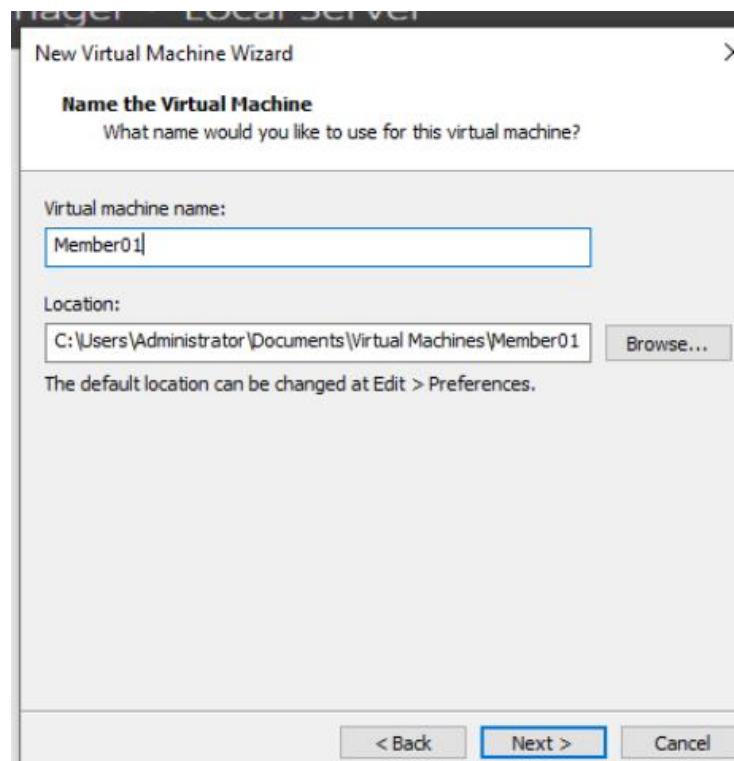
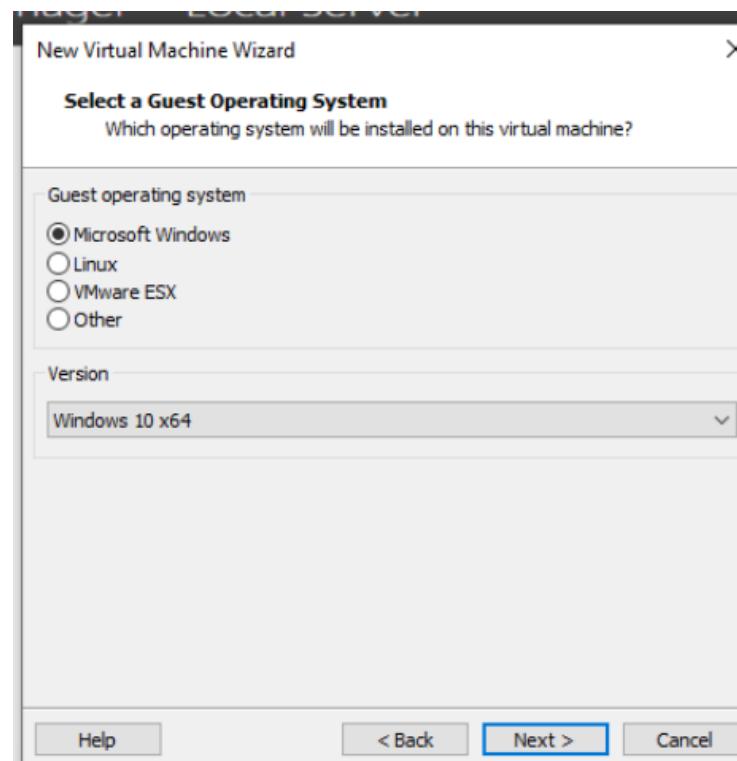


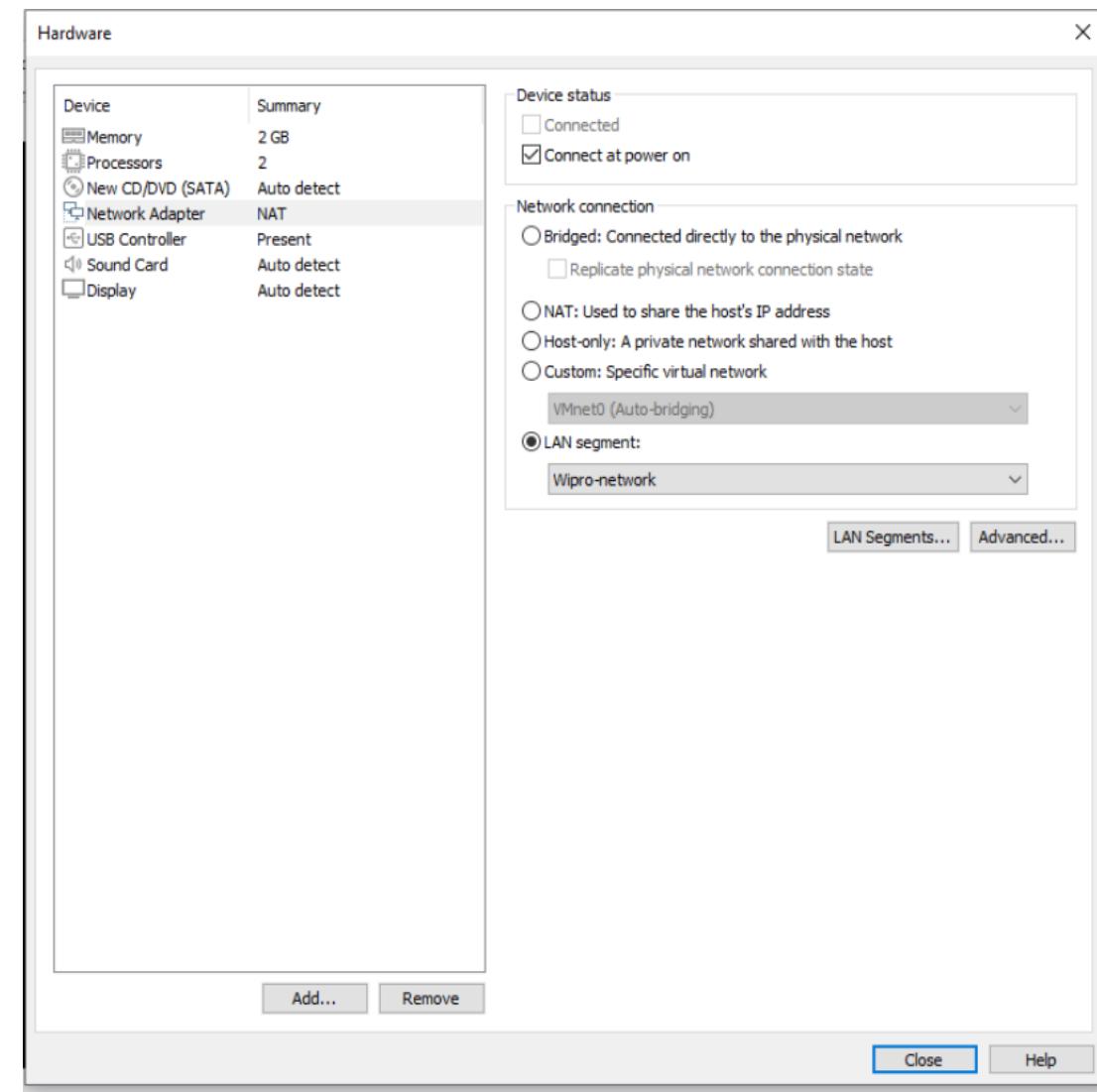
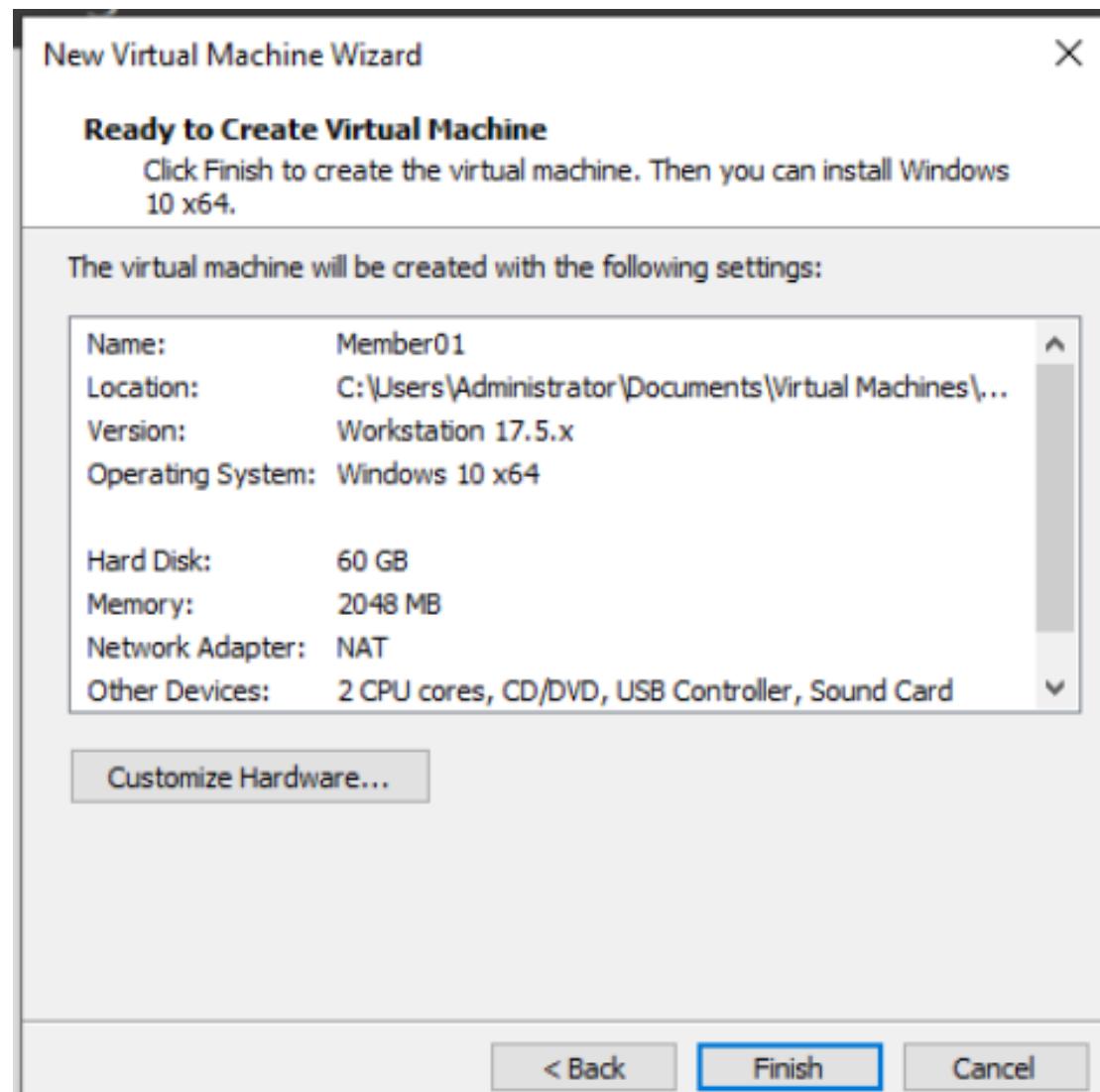


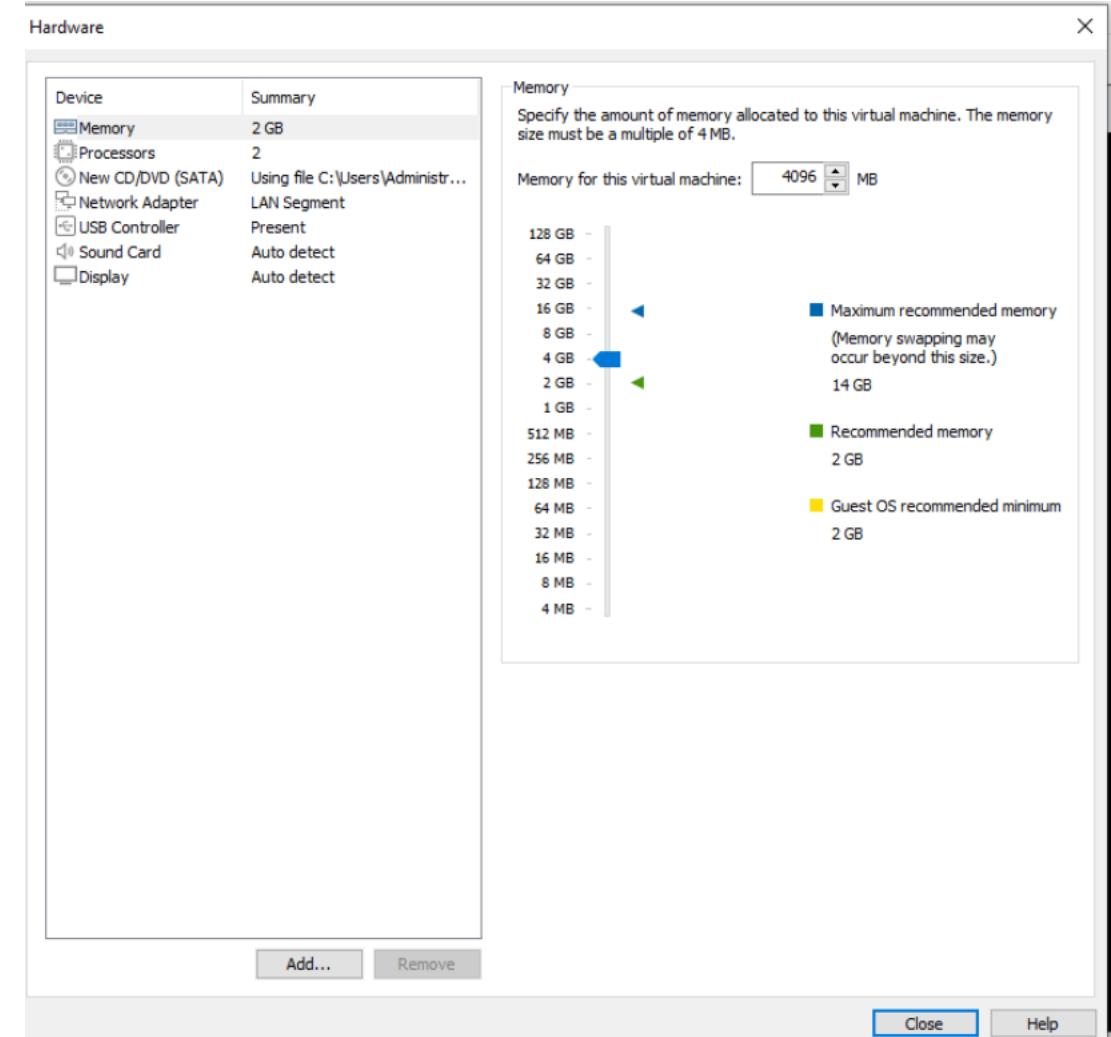
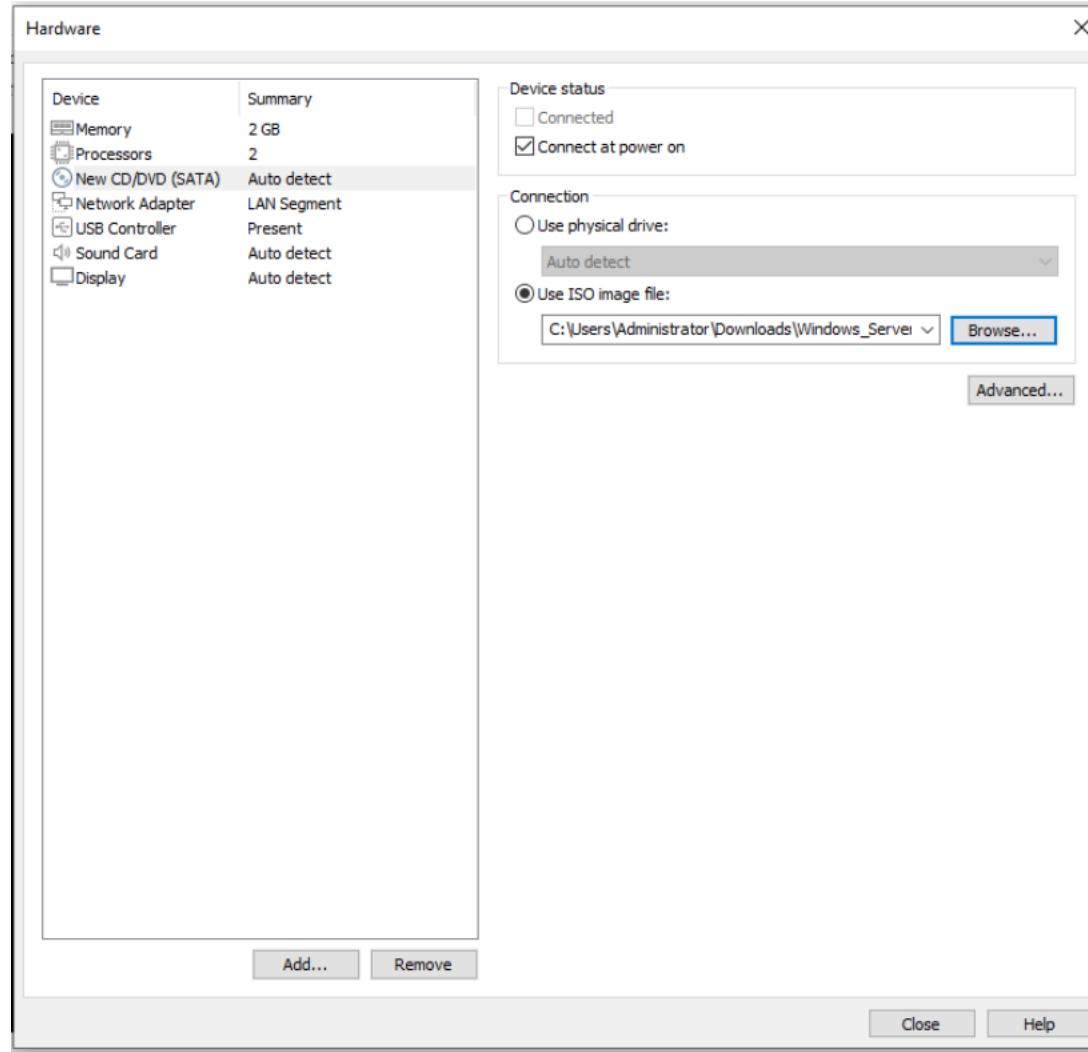
5. Install another Windows server 2016 (as GUI) with the name “Member01”

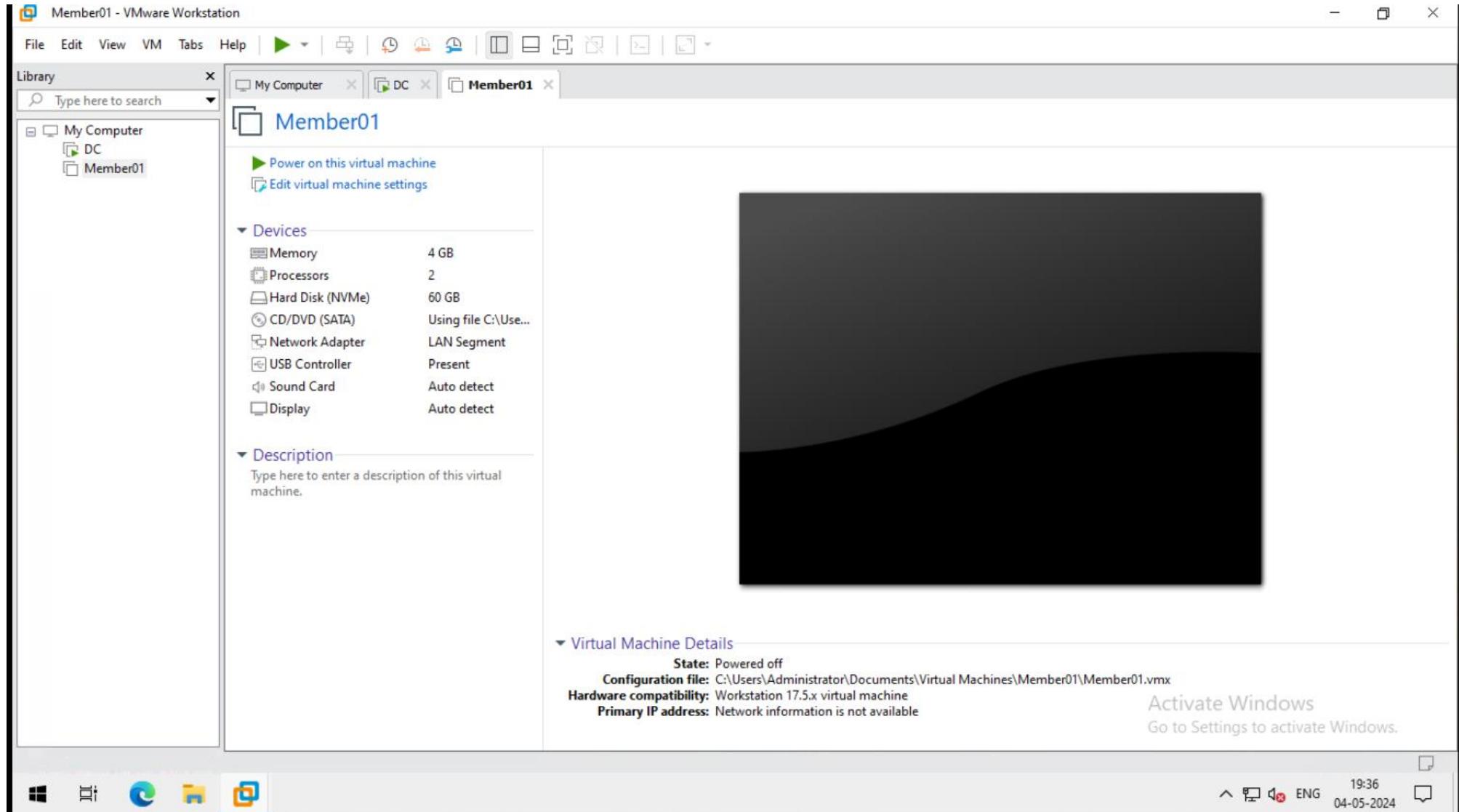


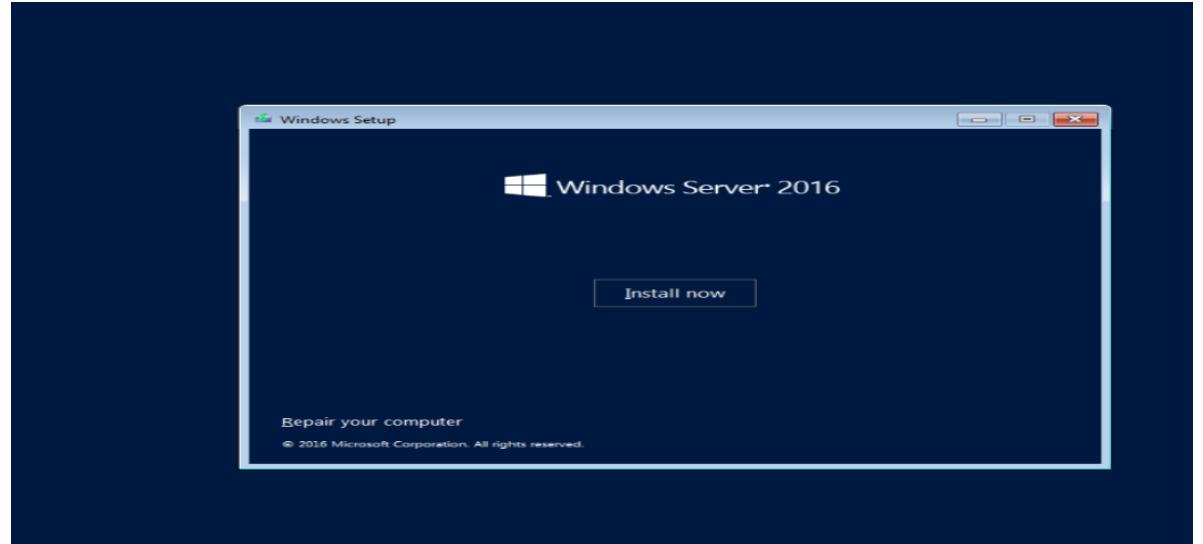
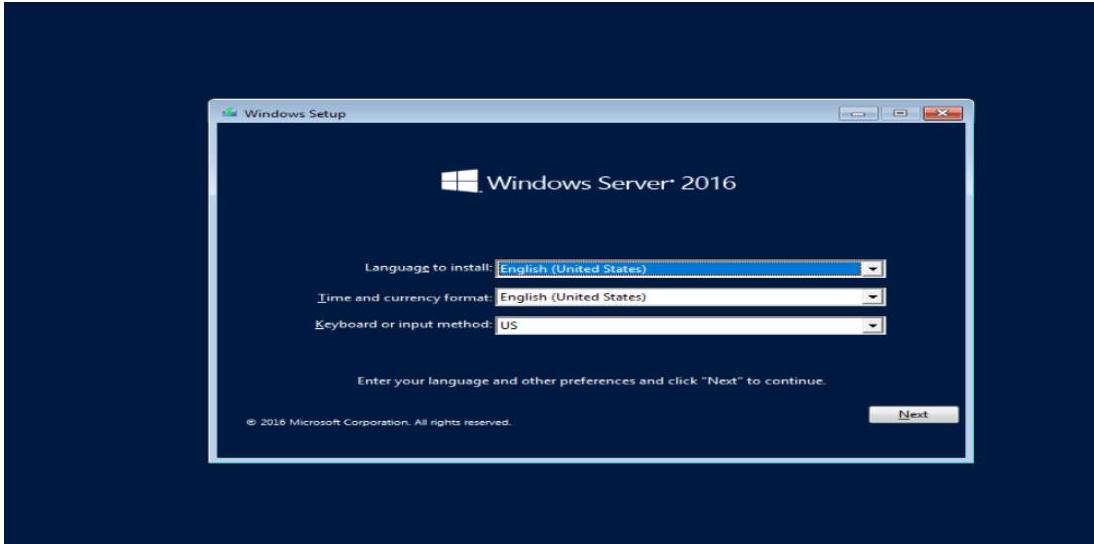


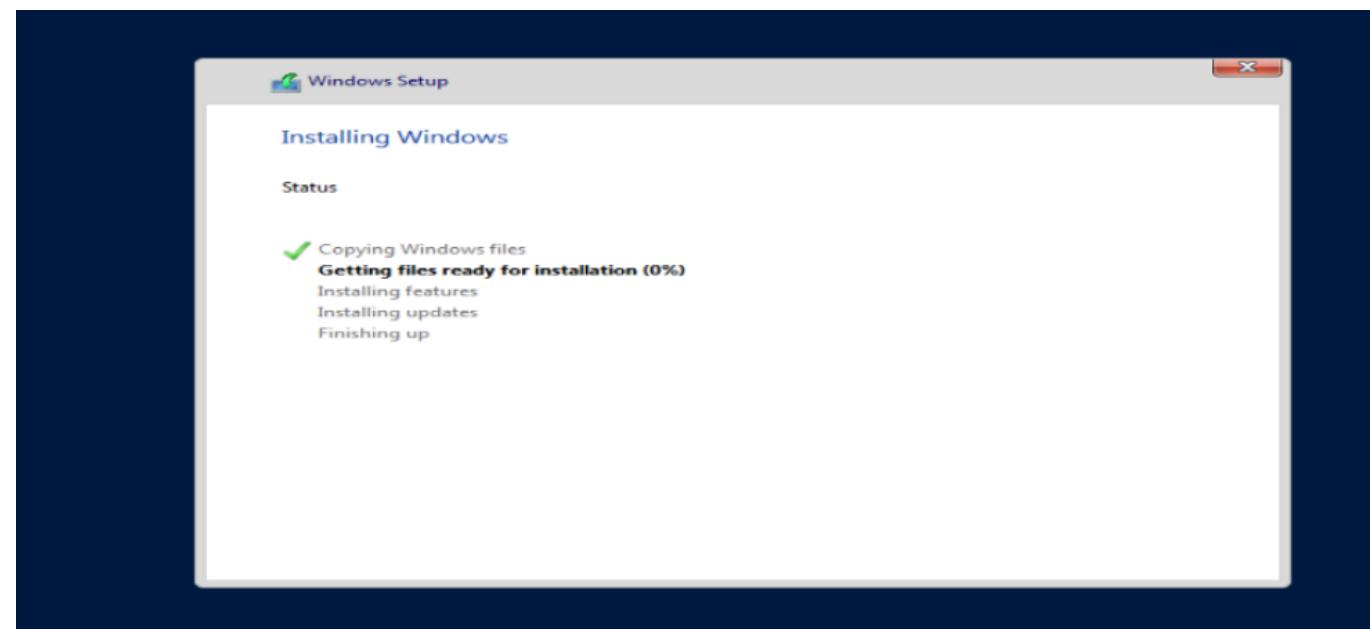
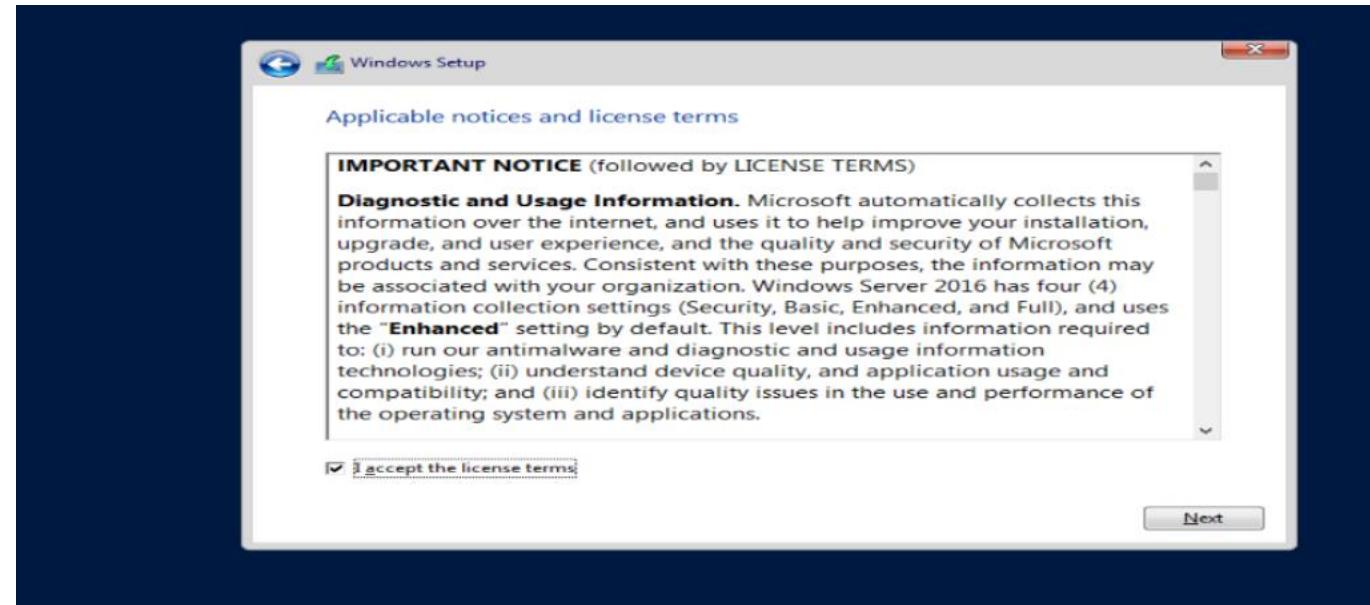
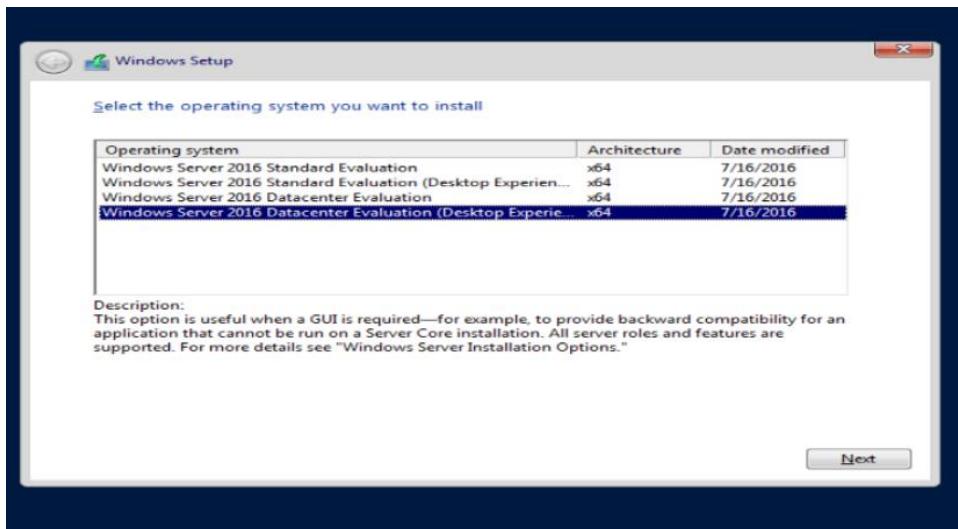


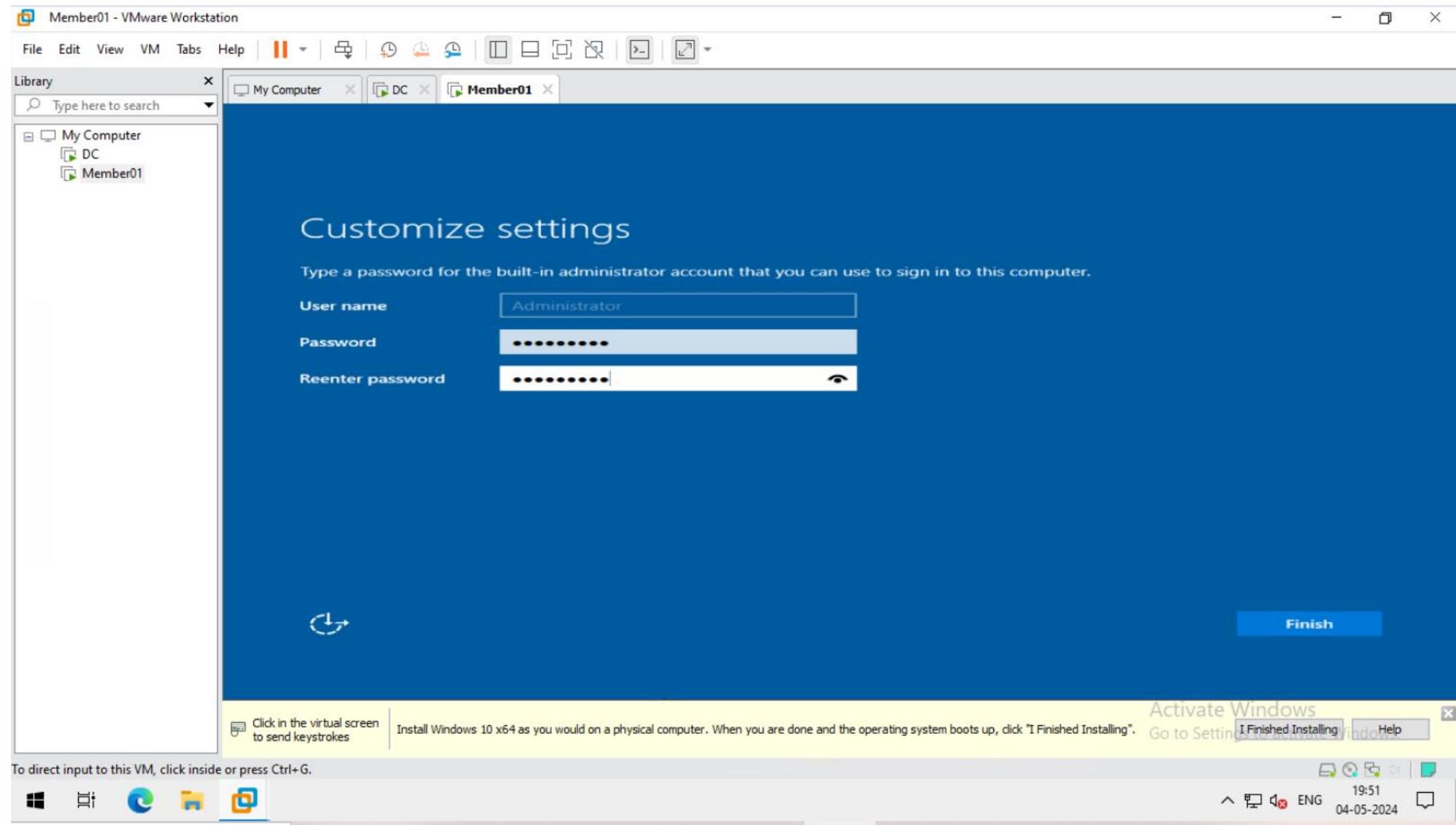










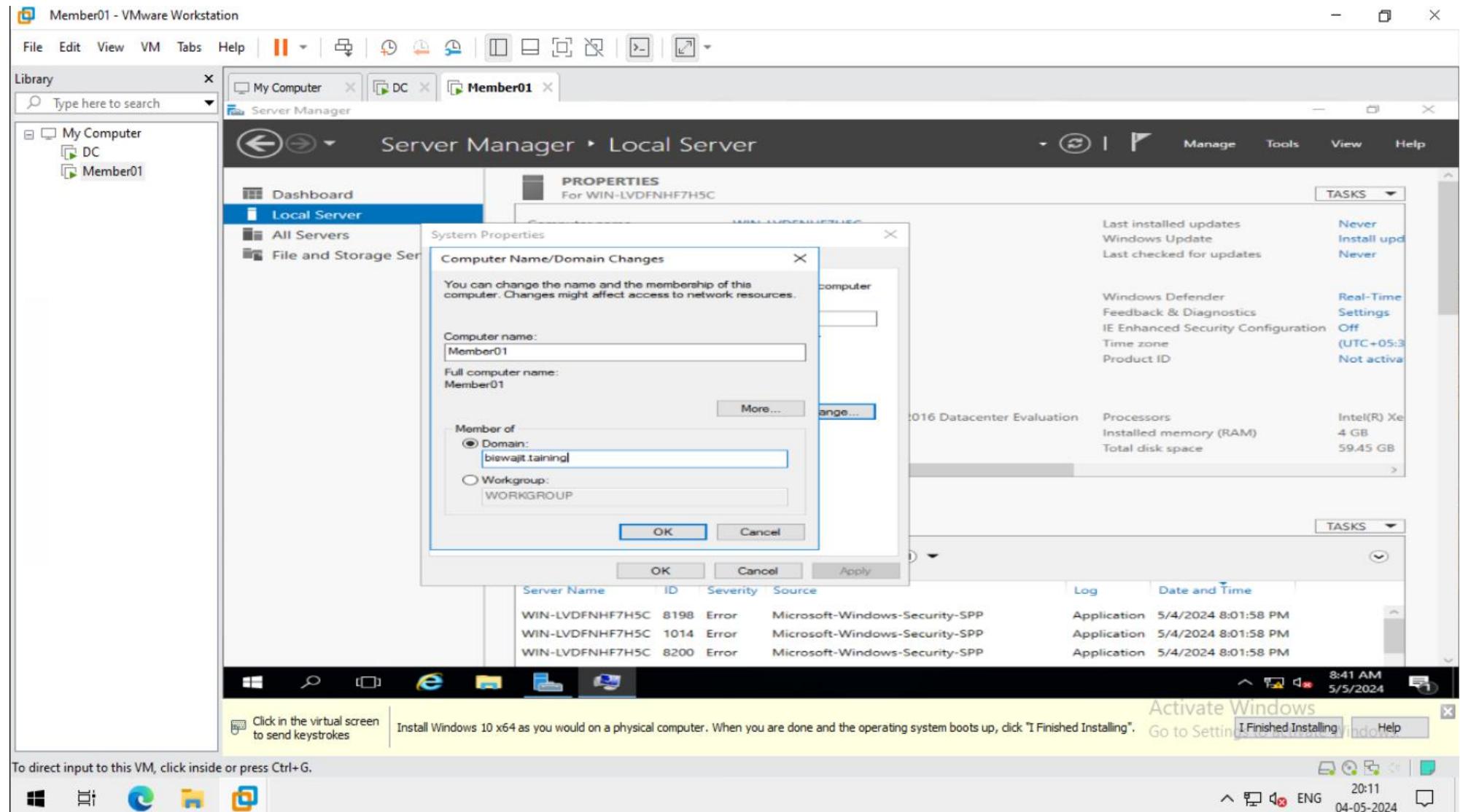


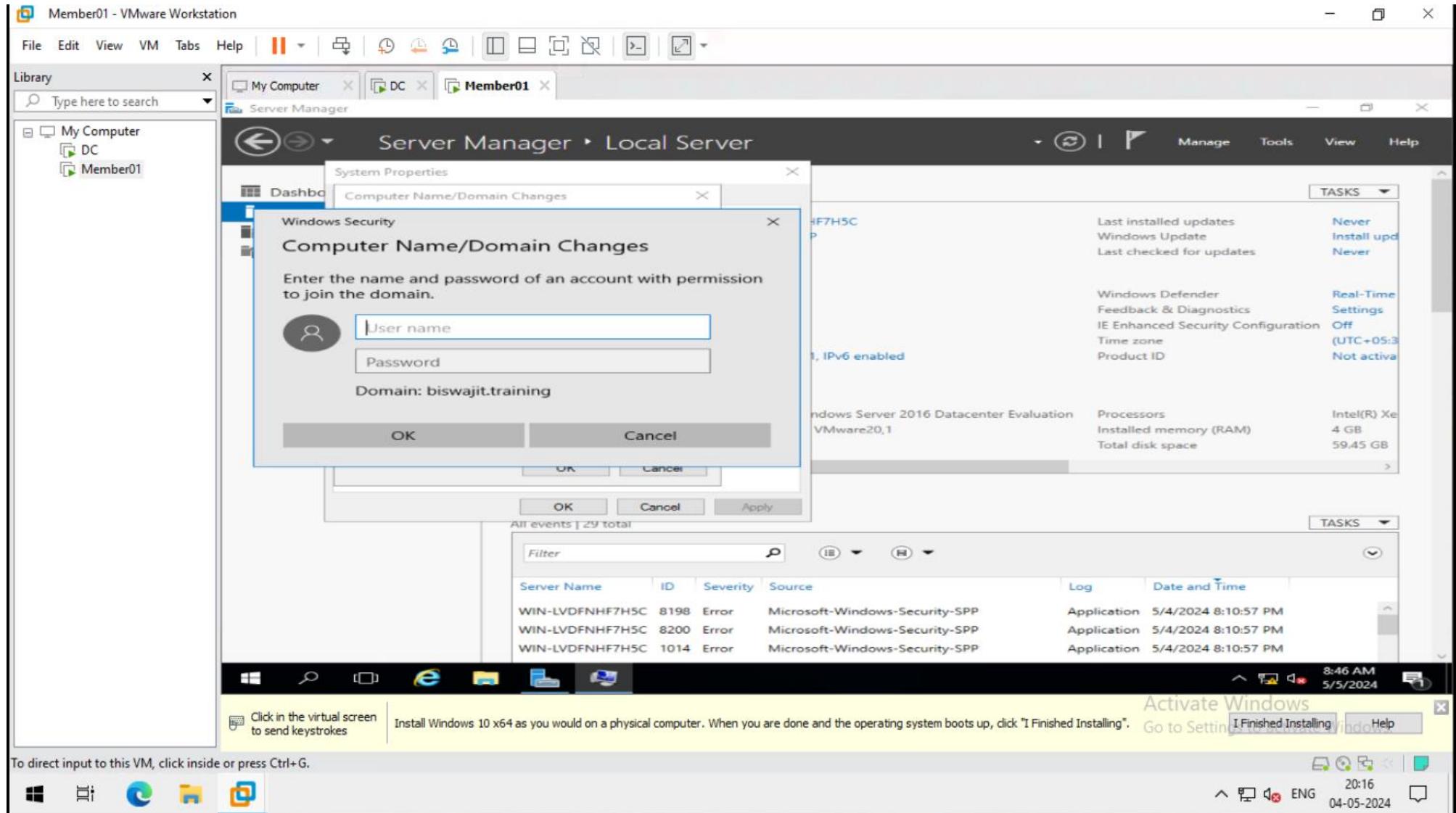
6. Post-installation configuration

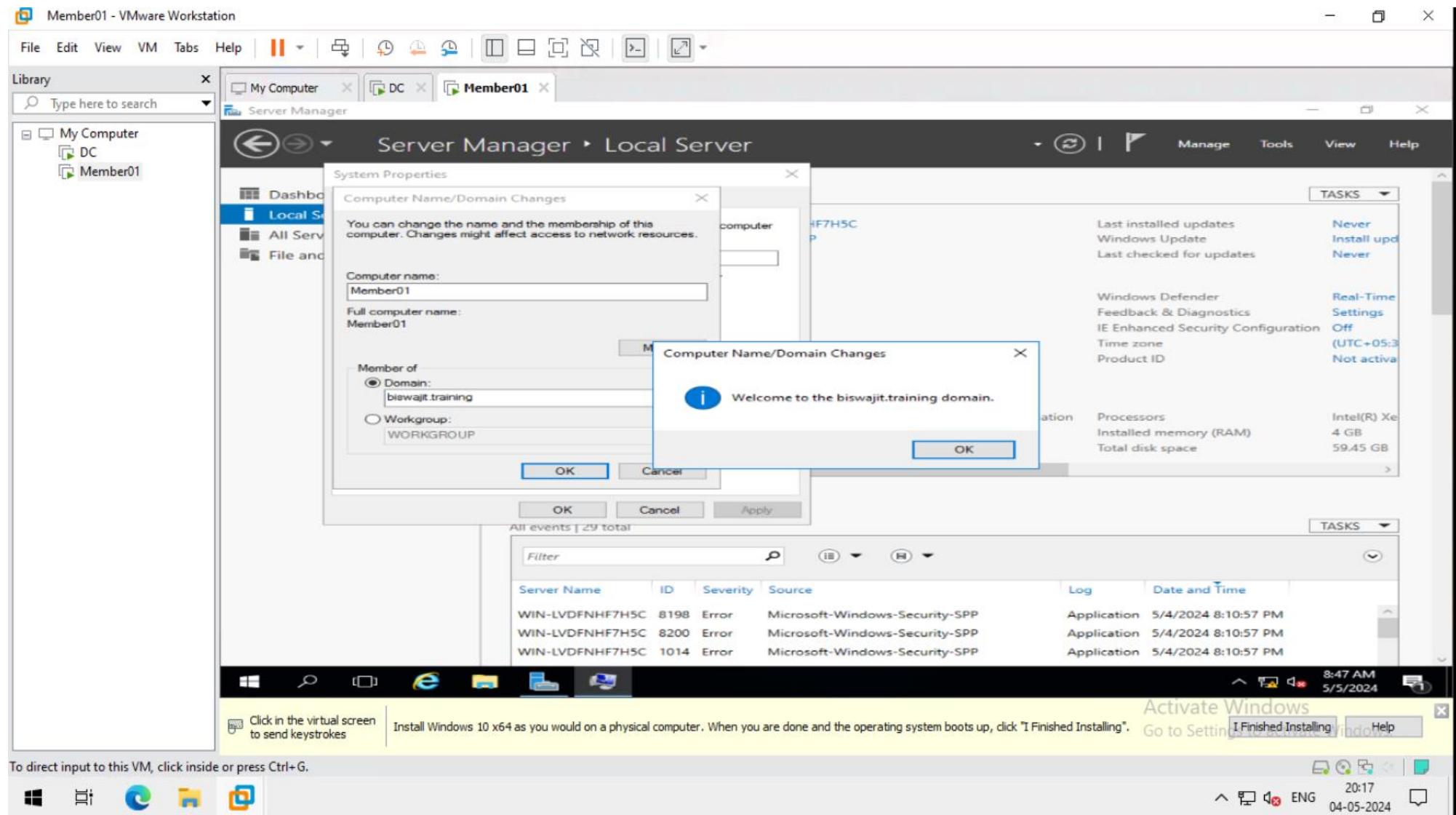
The image displays four windows from a Windows operating system, illustrating the post-installation configuration process:

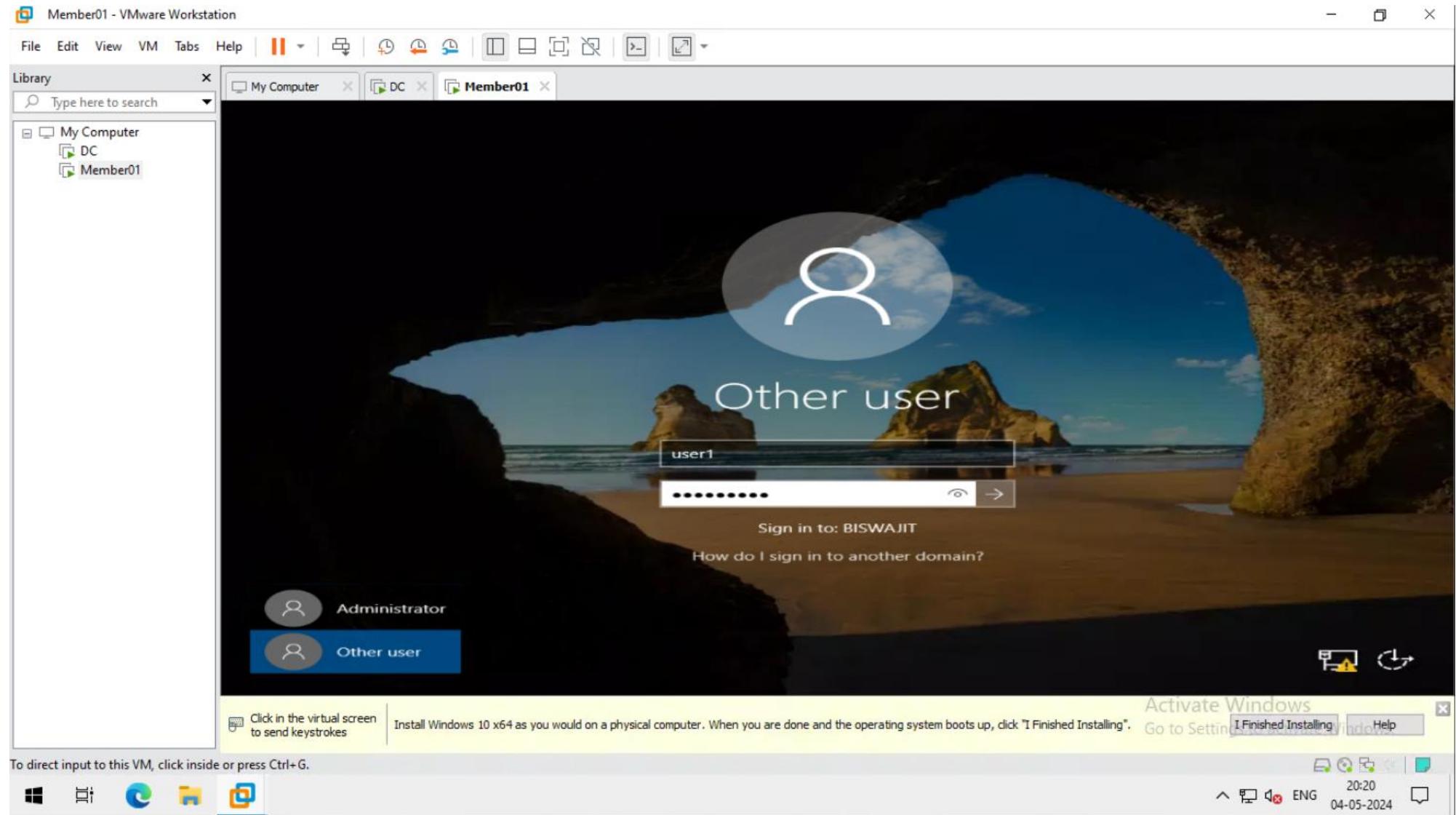
- Internet Protocol Version 4 (TCP/IPv4) Properties**: Shows manual IP configuration (IP address 192.168.10.11, Subnet mask 255.255.255.0, Default gateway 192.168.10.1).
 - General tab: "Obtain an IP address automatically" is off, "Use the following IP address" is selected.
 - Advanced tab: "Obtain DNS server address automatically" is off, "Use the following DNS server addresses" is selected (Preferred DNS server: 192.168.10.10).
- Internet Explorer Enhanced Security Configuration**: Shows security settings for Administrators and Users.
 - Administrators: "On (Recommended)" is selected.
 - Users: "Off" is selected.
- Date and Time PROPERTIES**: Displays current date and time (Sunday, May 5, 2024, 8:40:22 AM).
 - Time zone: (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi.
 - Daylight Saving Time status: Not observed.
- Customize Settings**: Shows Windows Firewall settings for Private and Public networks.
 - Private network settings: "Turn on Windows Firewall" is selected.
 - Public network settings: "Turn on Windows Firewall" is selected.

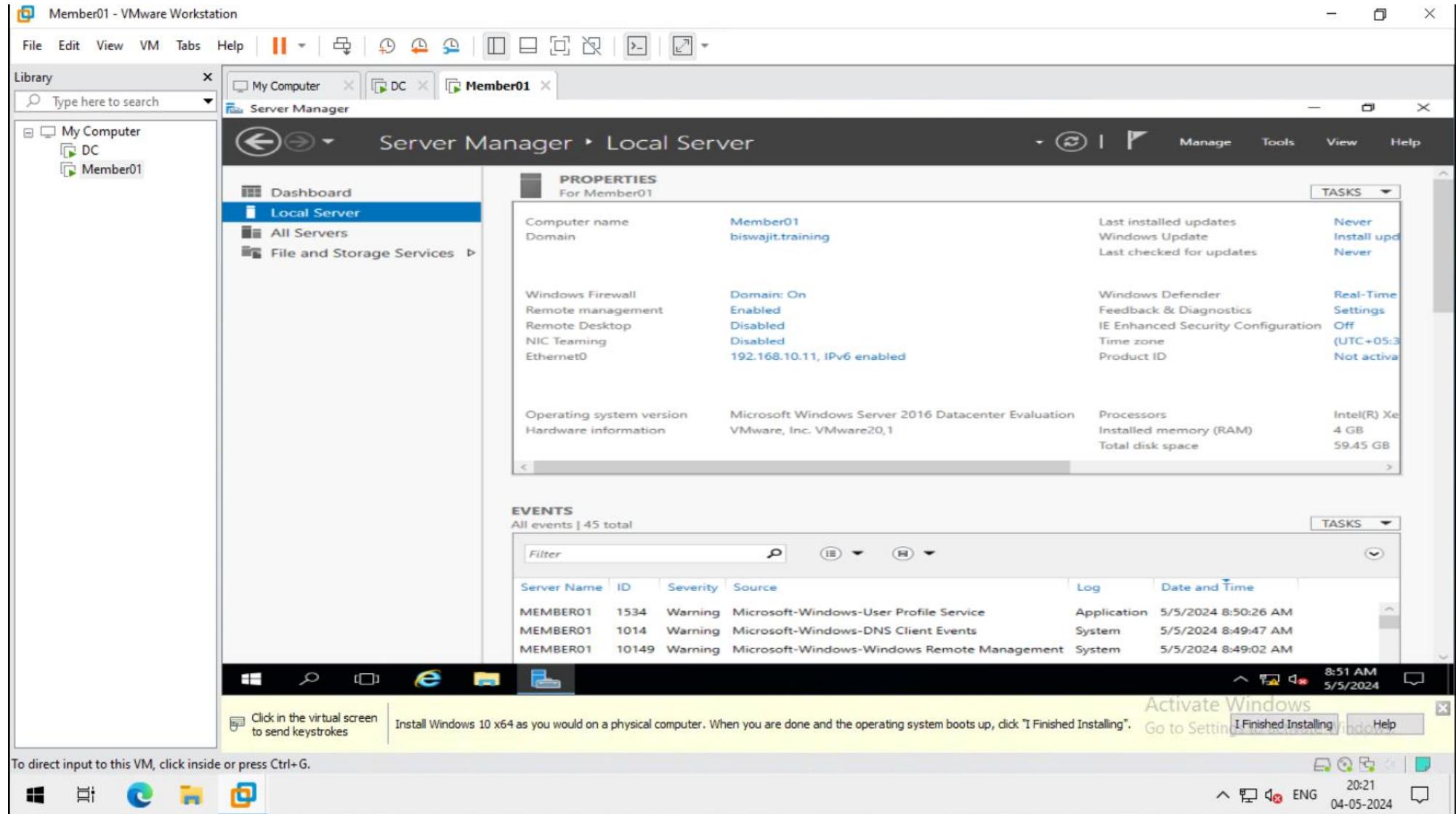
7- Domain join



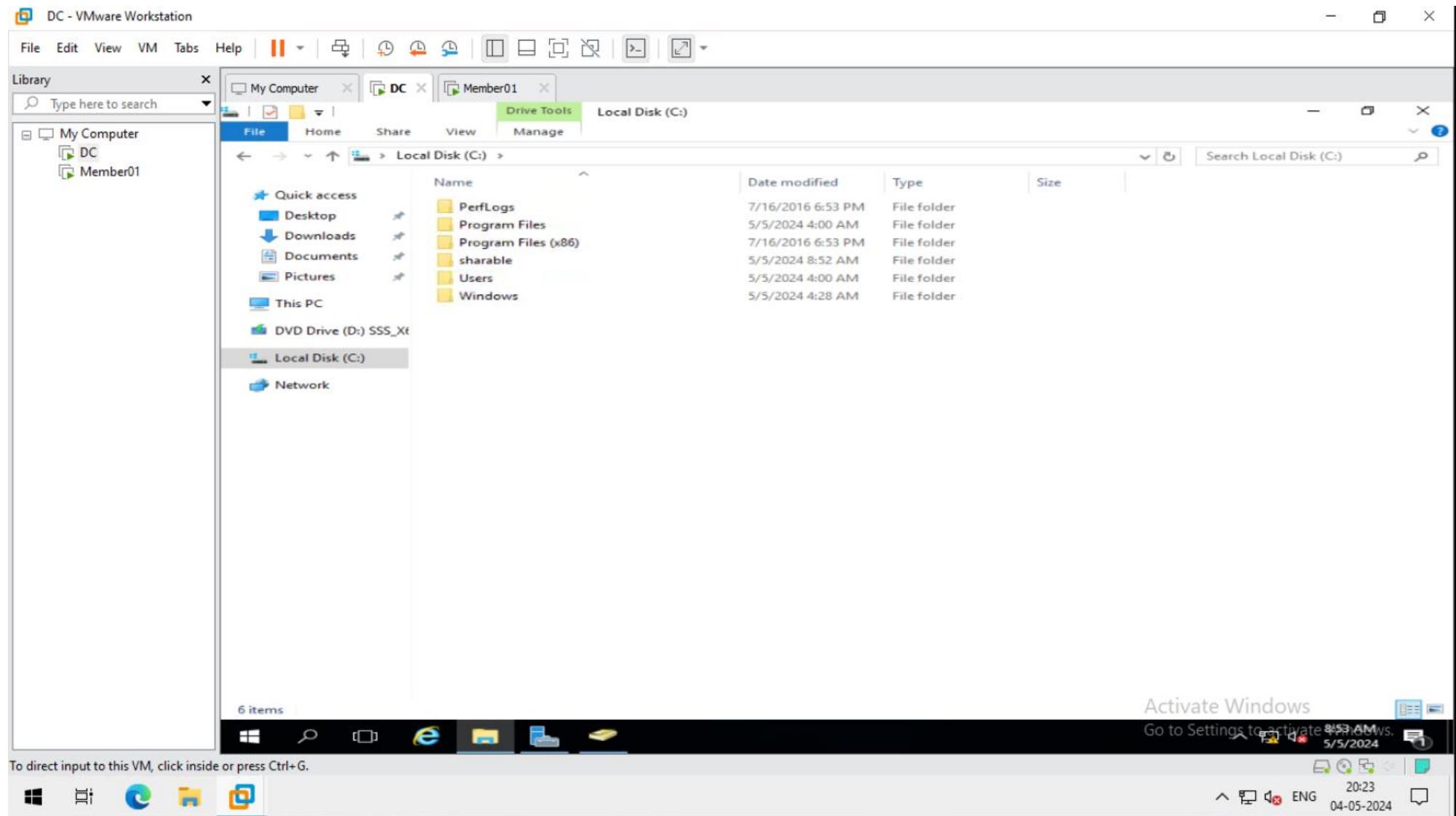




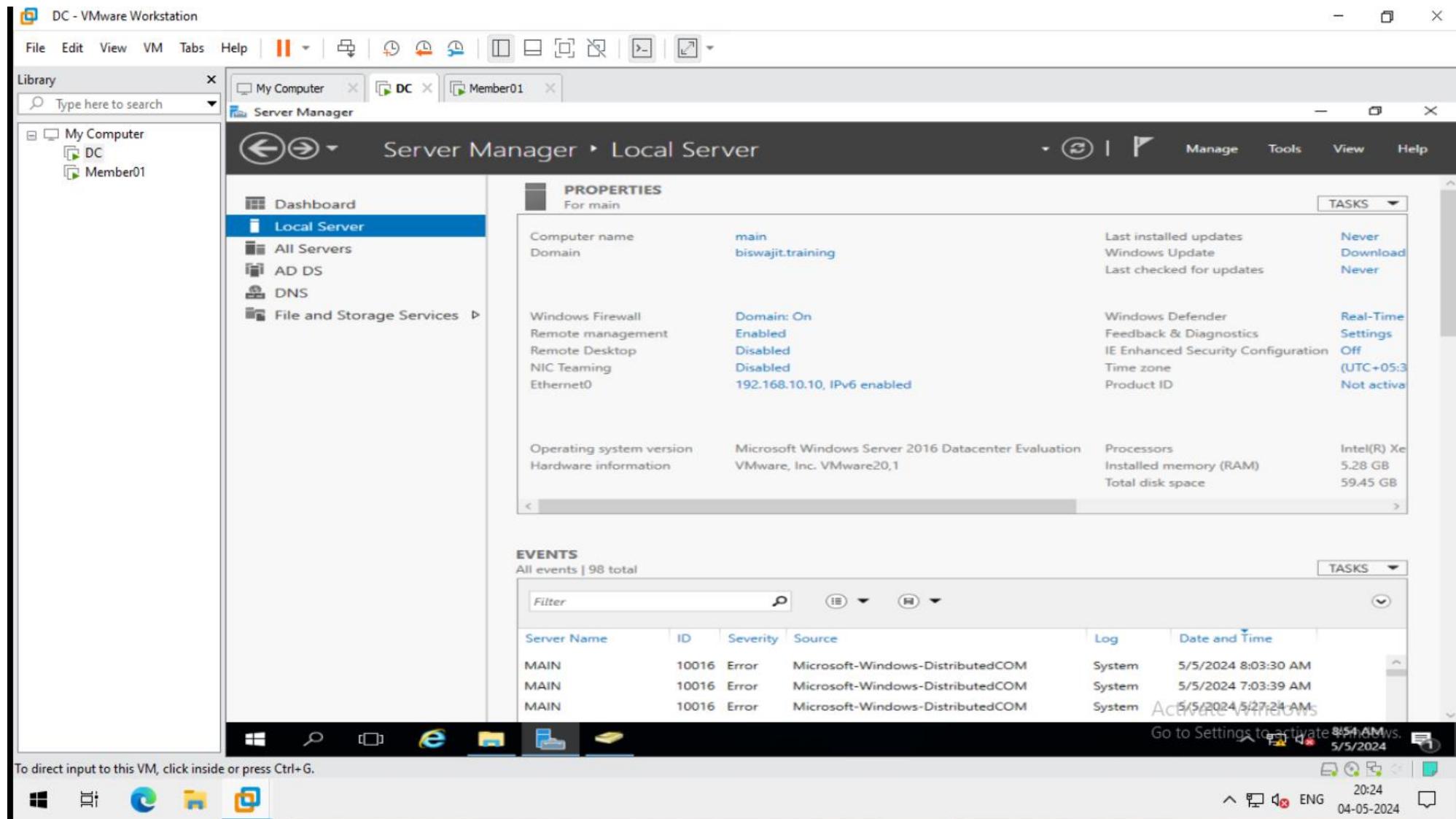


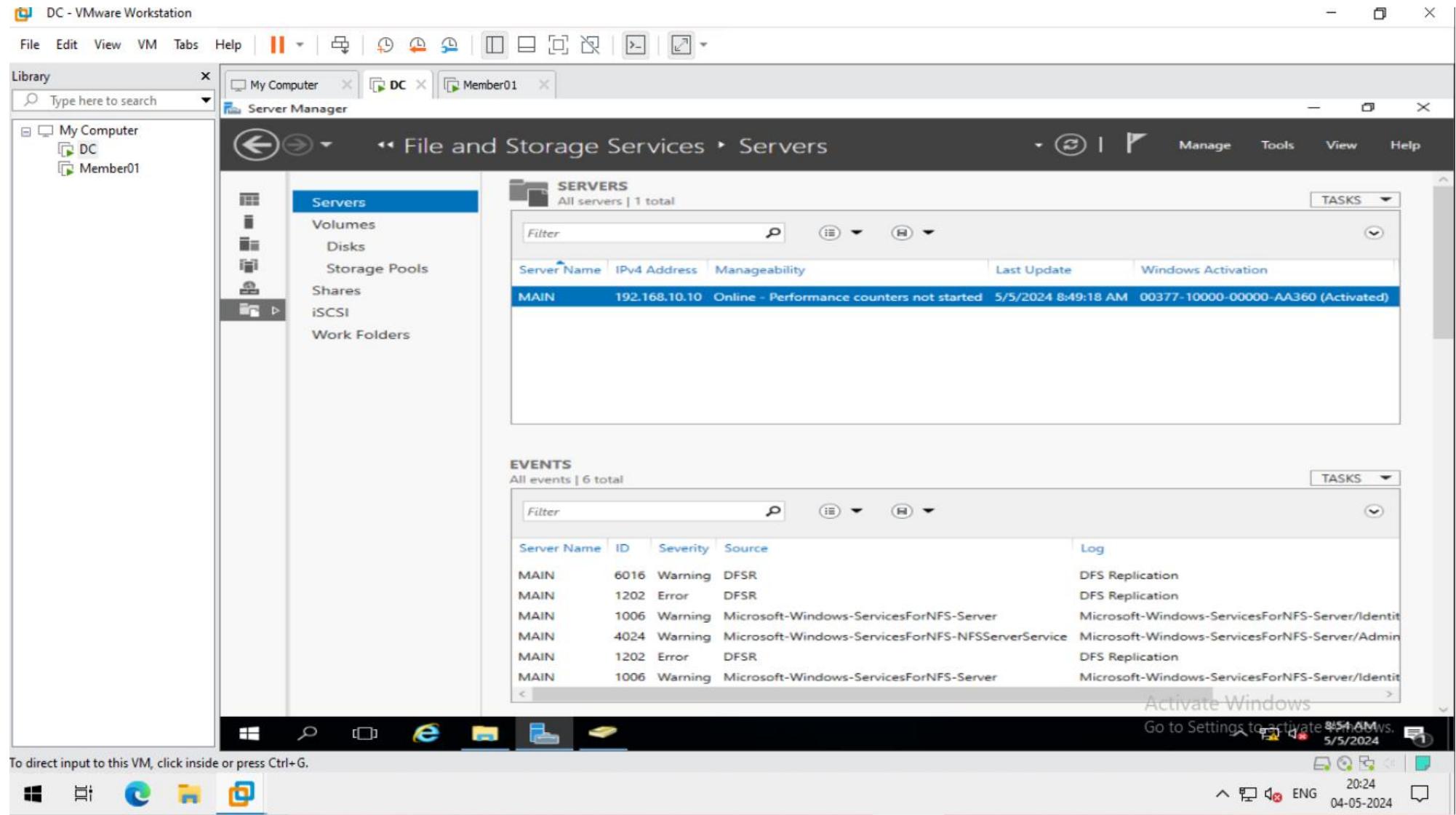


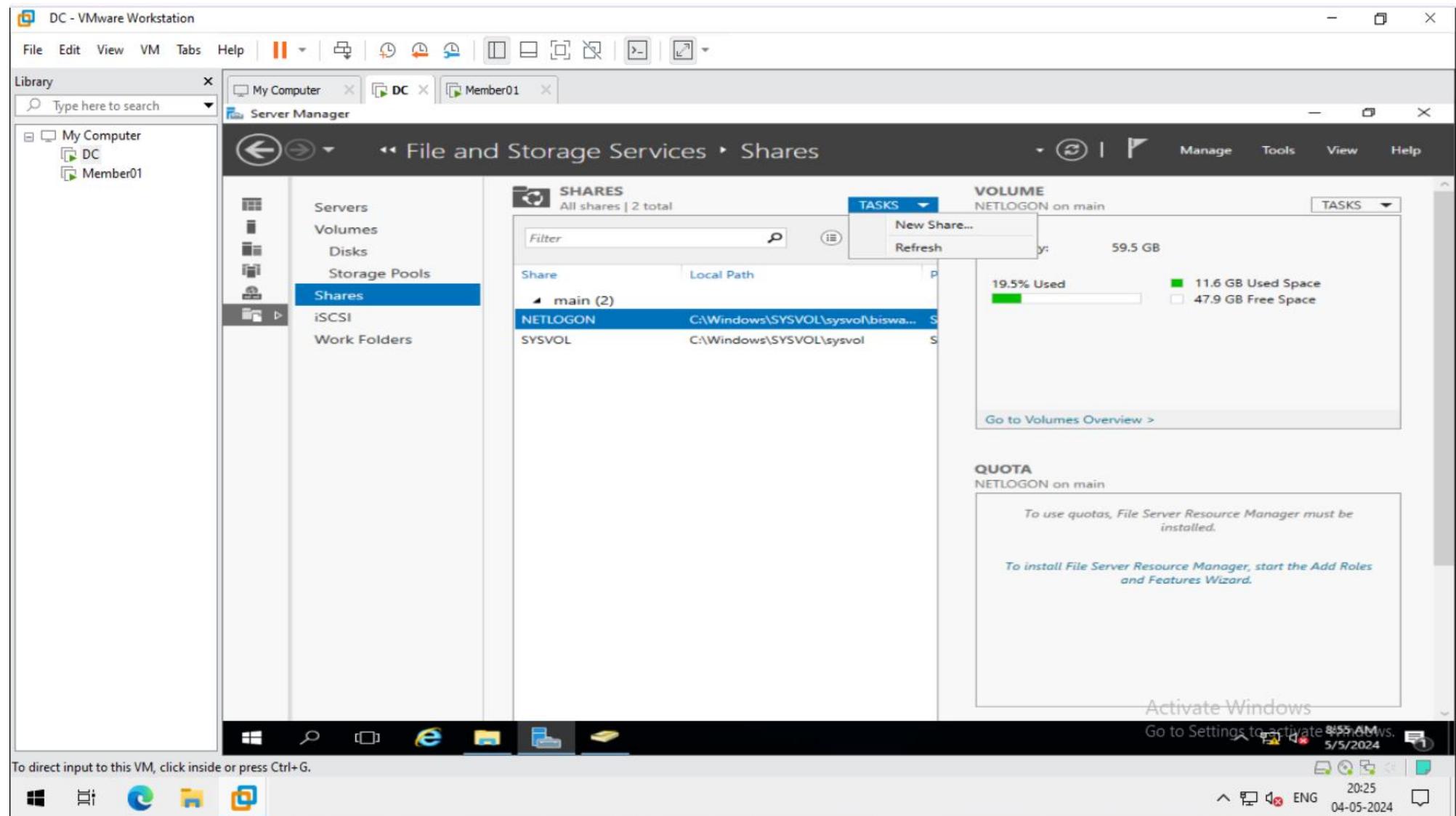
8. Create a new directory as “c:\sharable” on domain controller

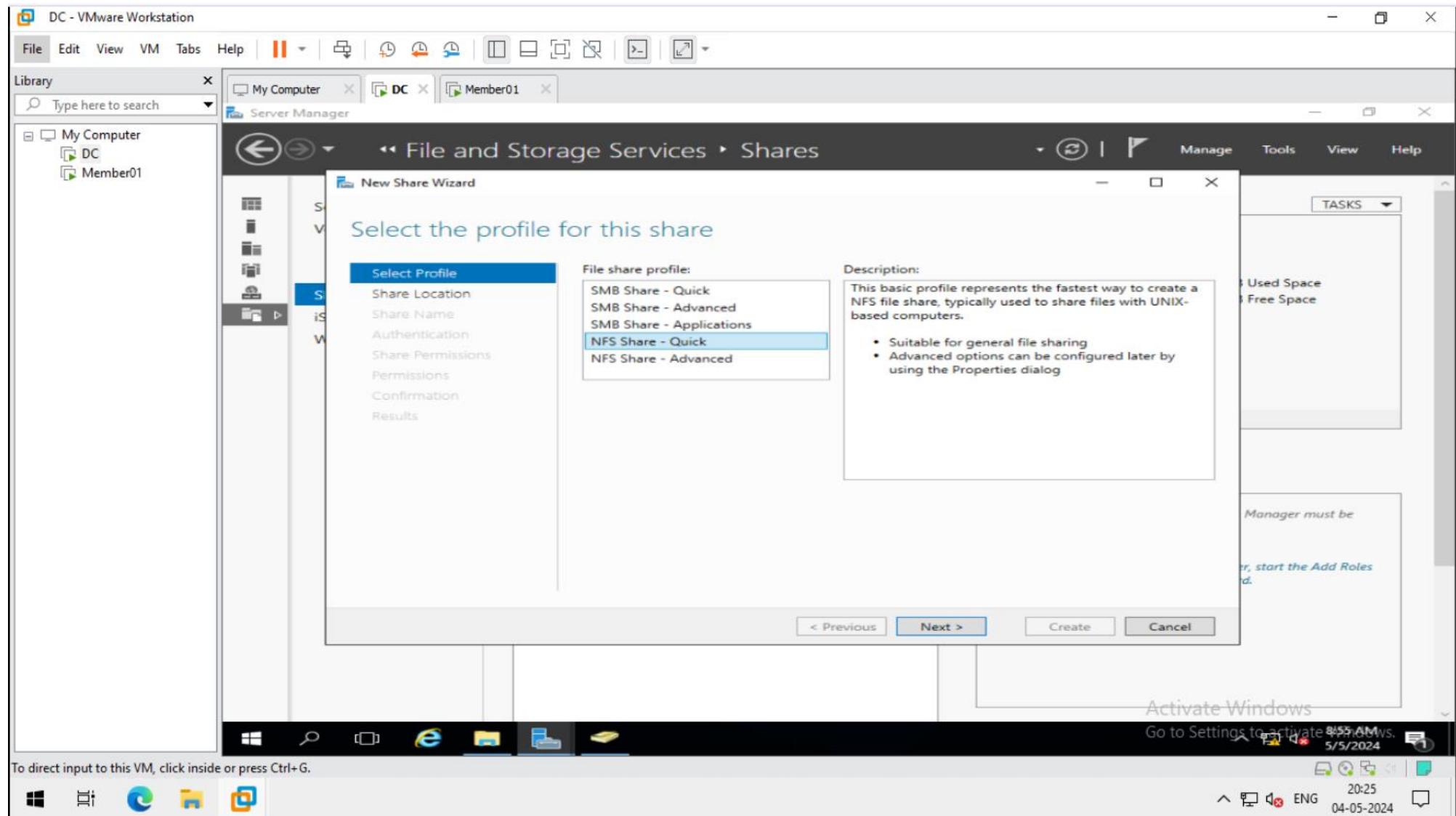


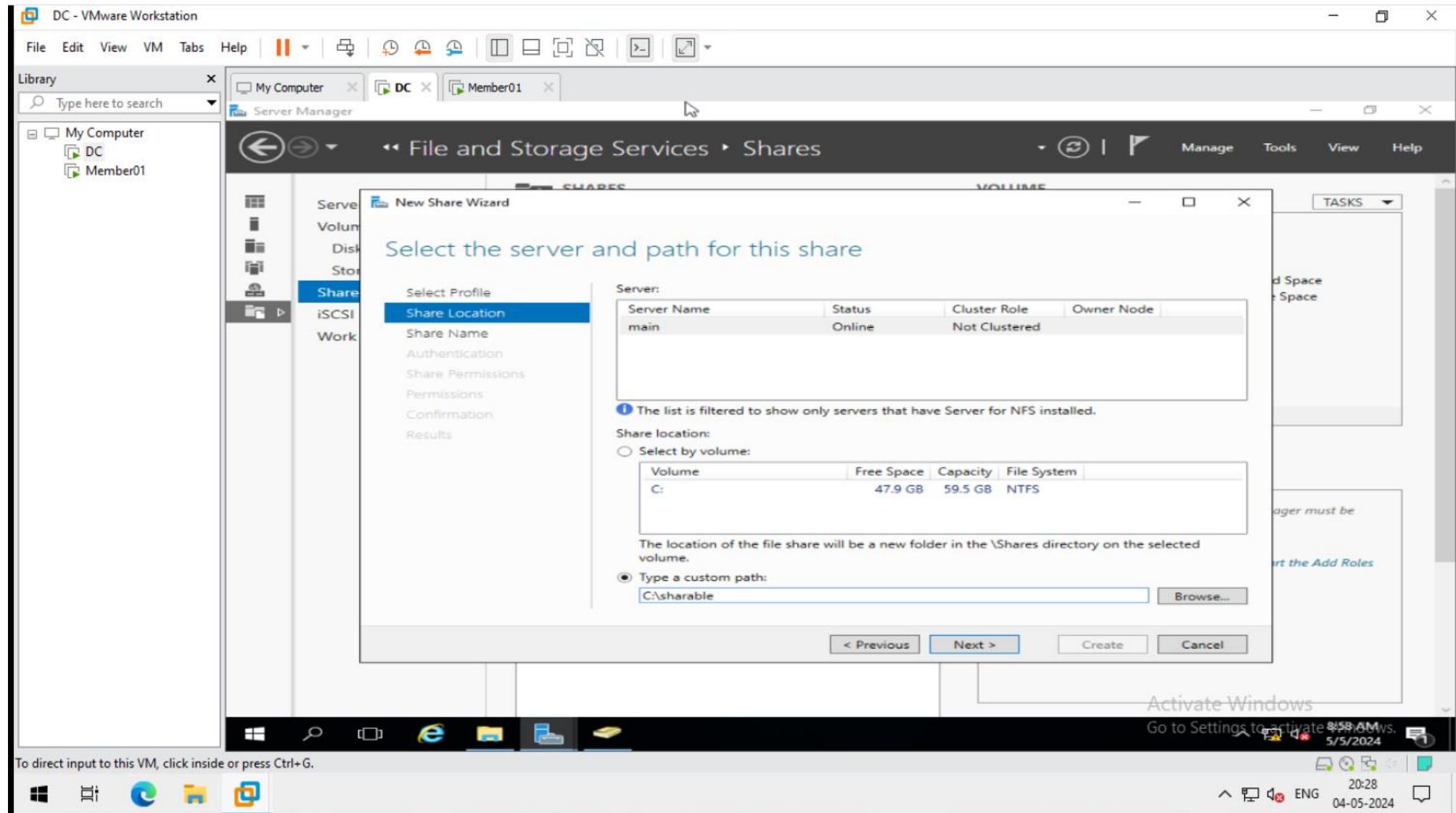
9 give read-only permission in NFS

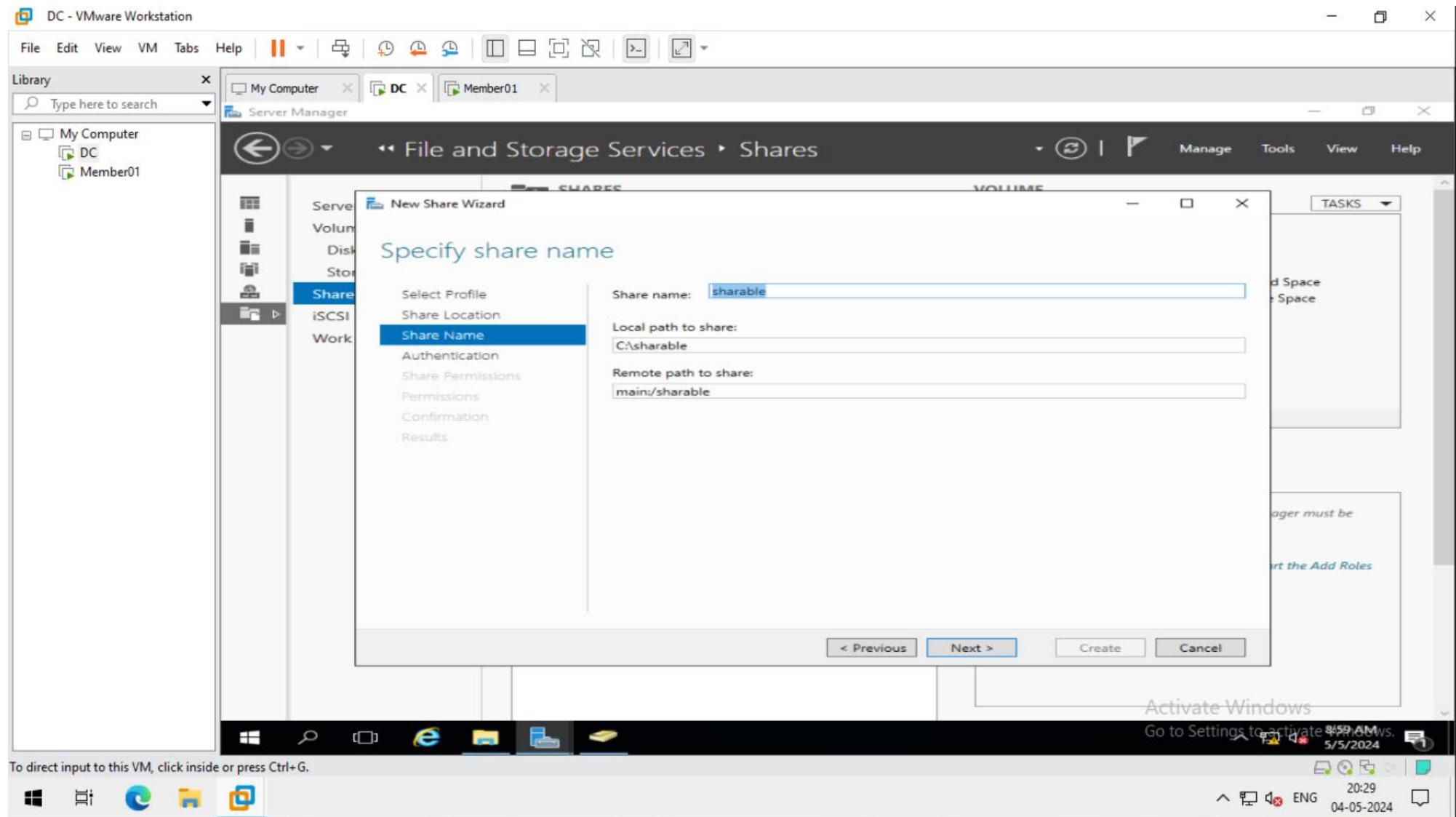


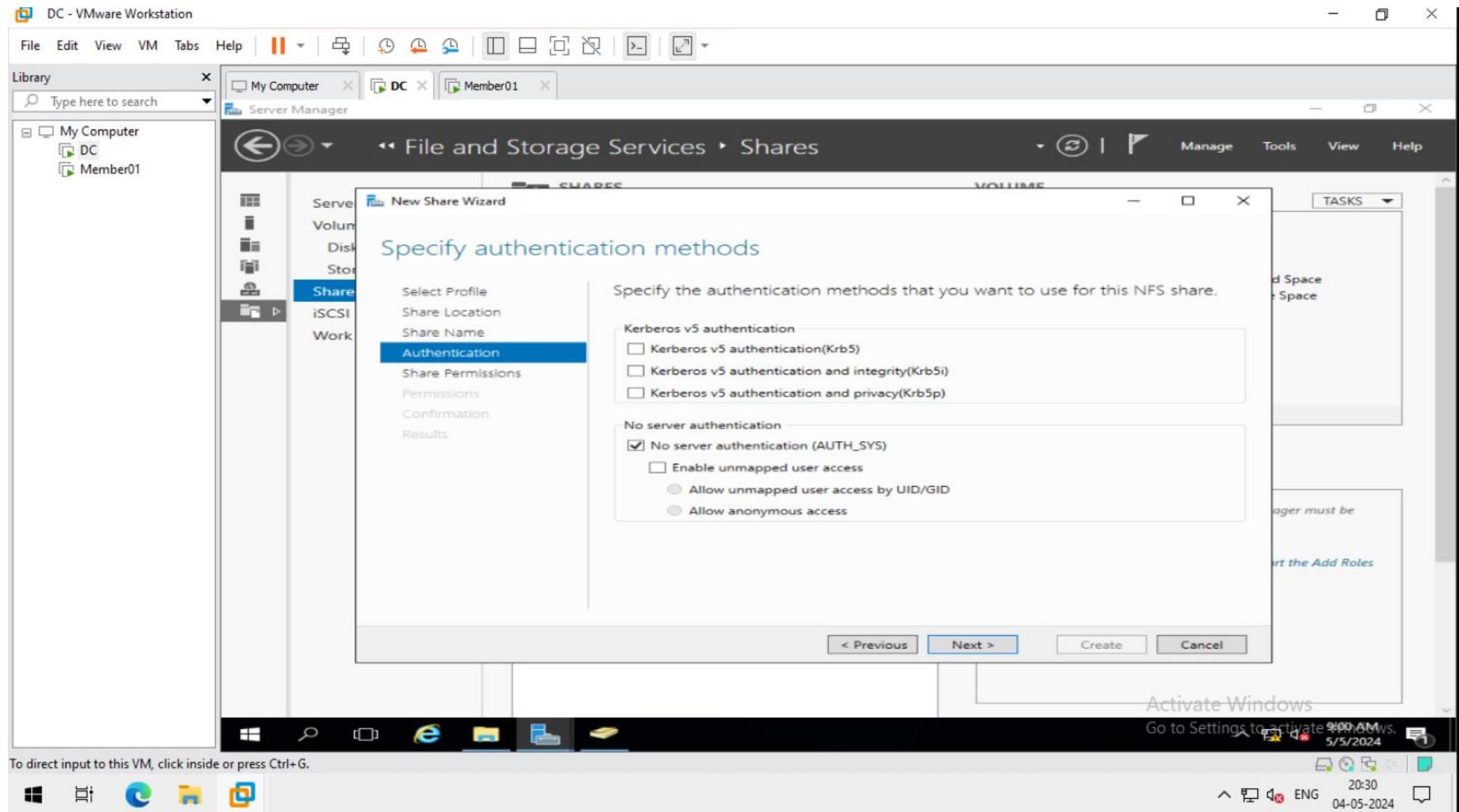


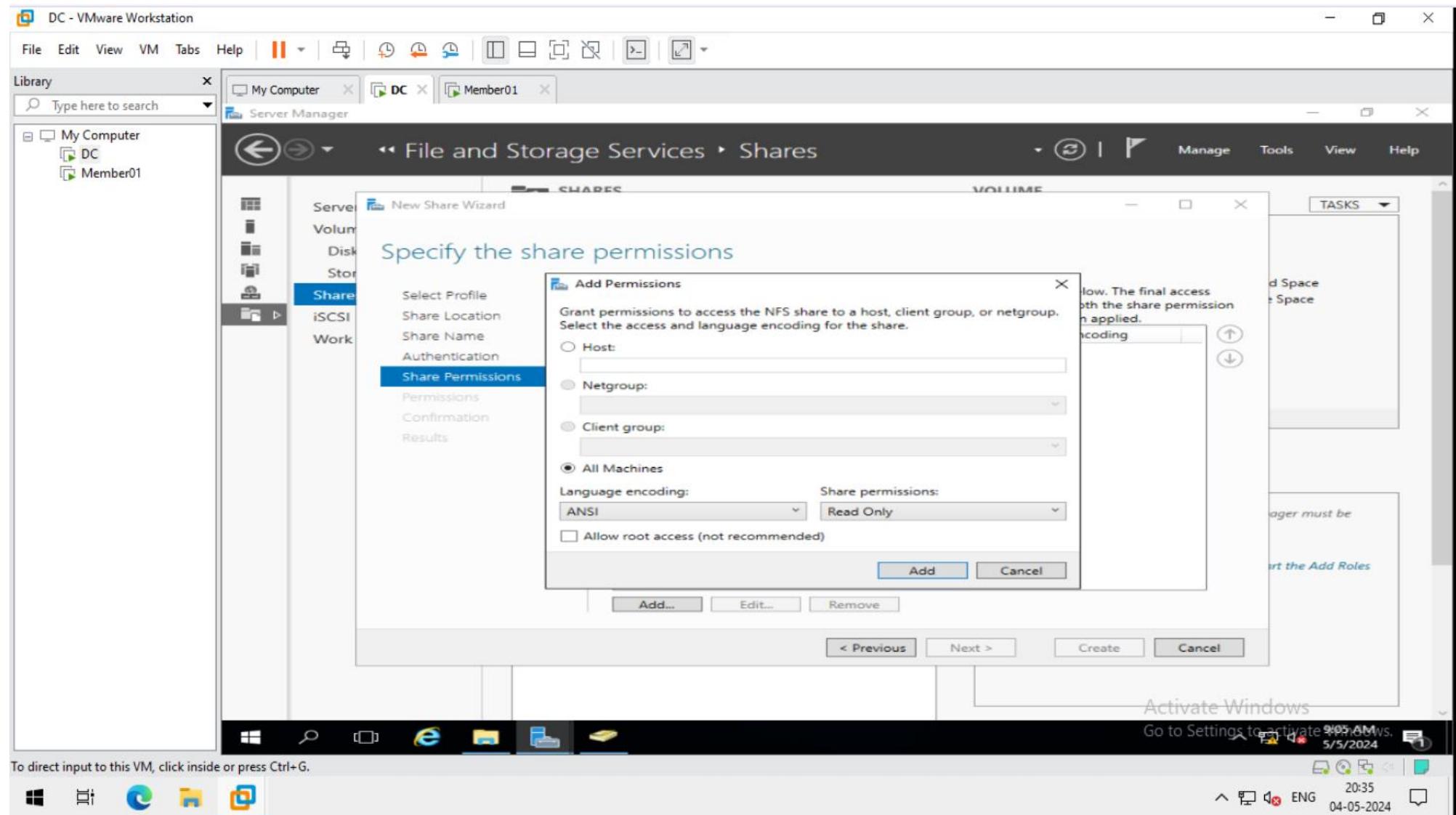


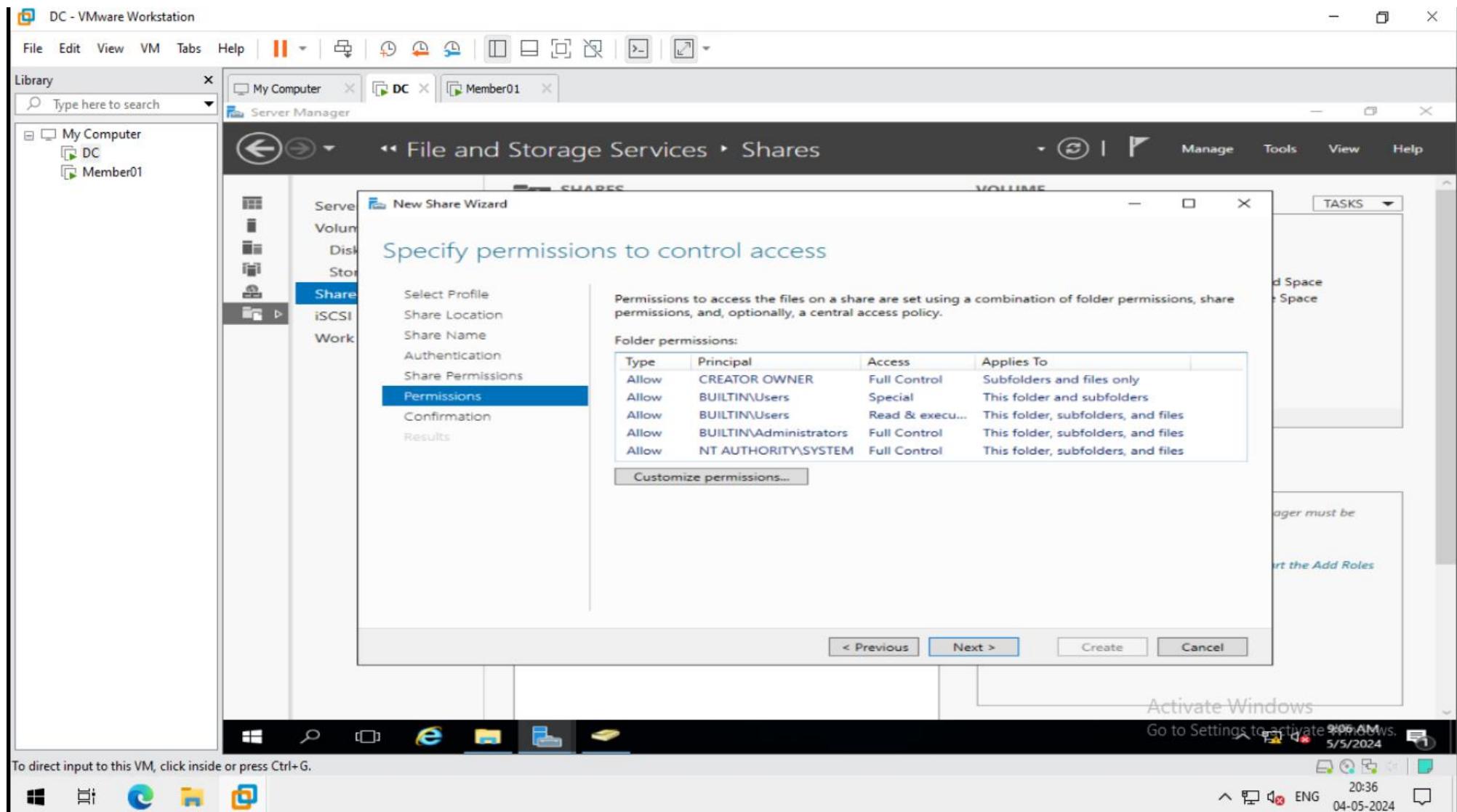


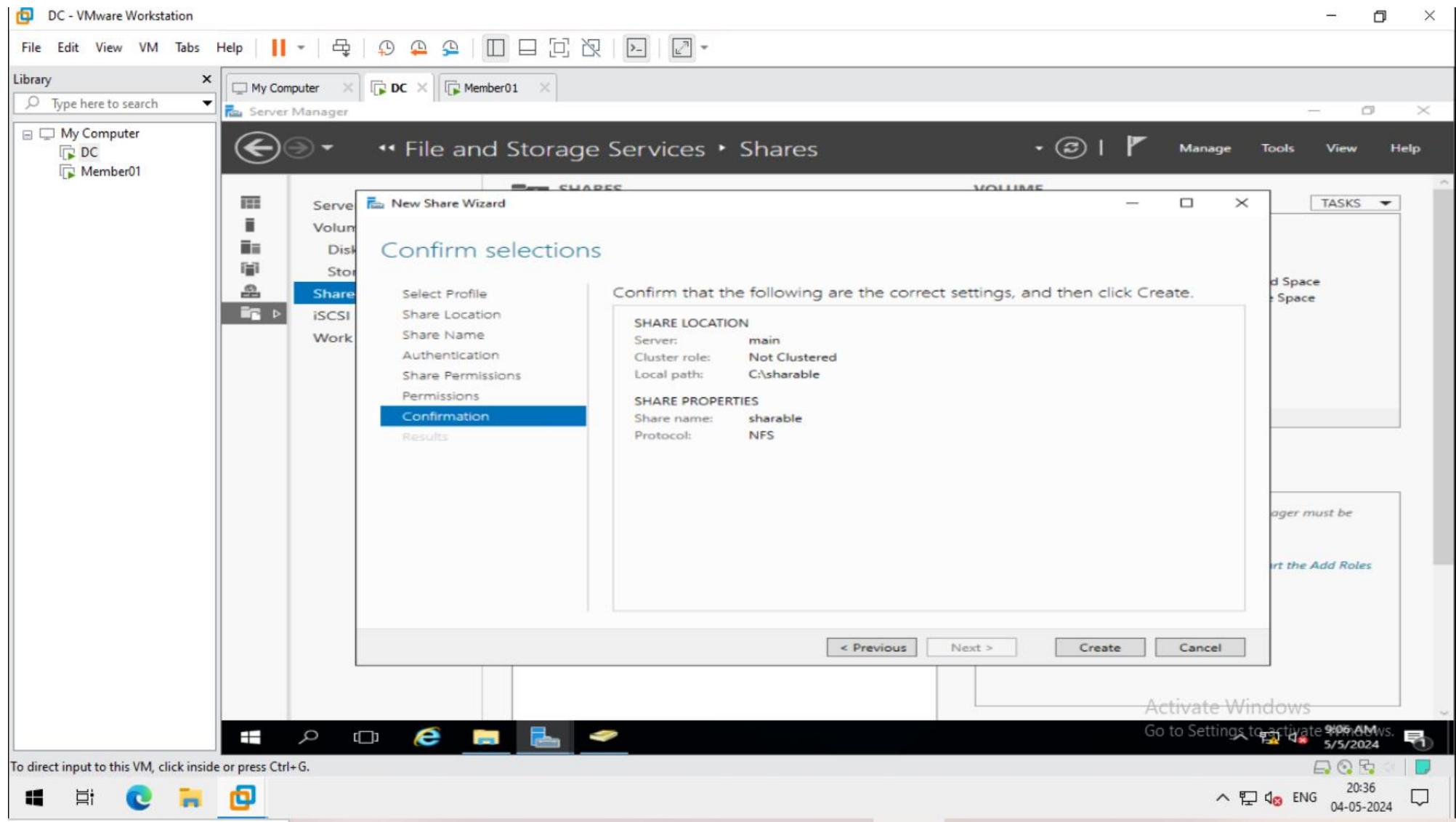


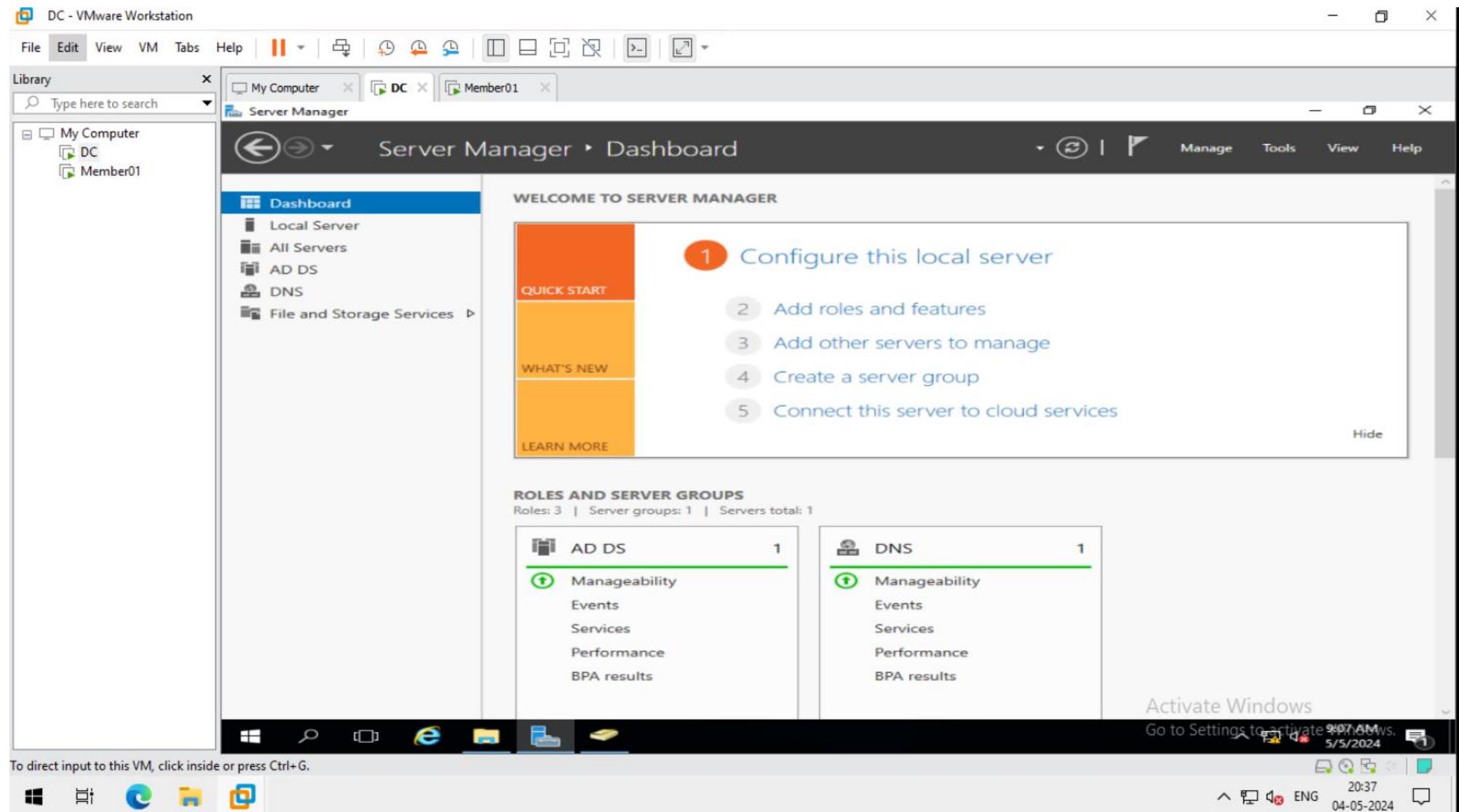


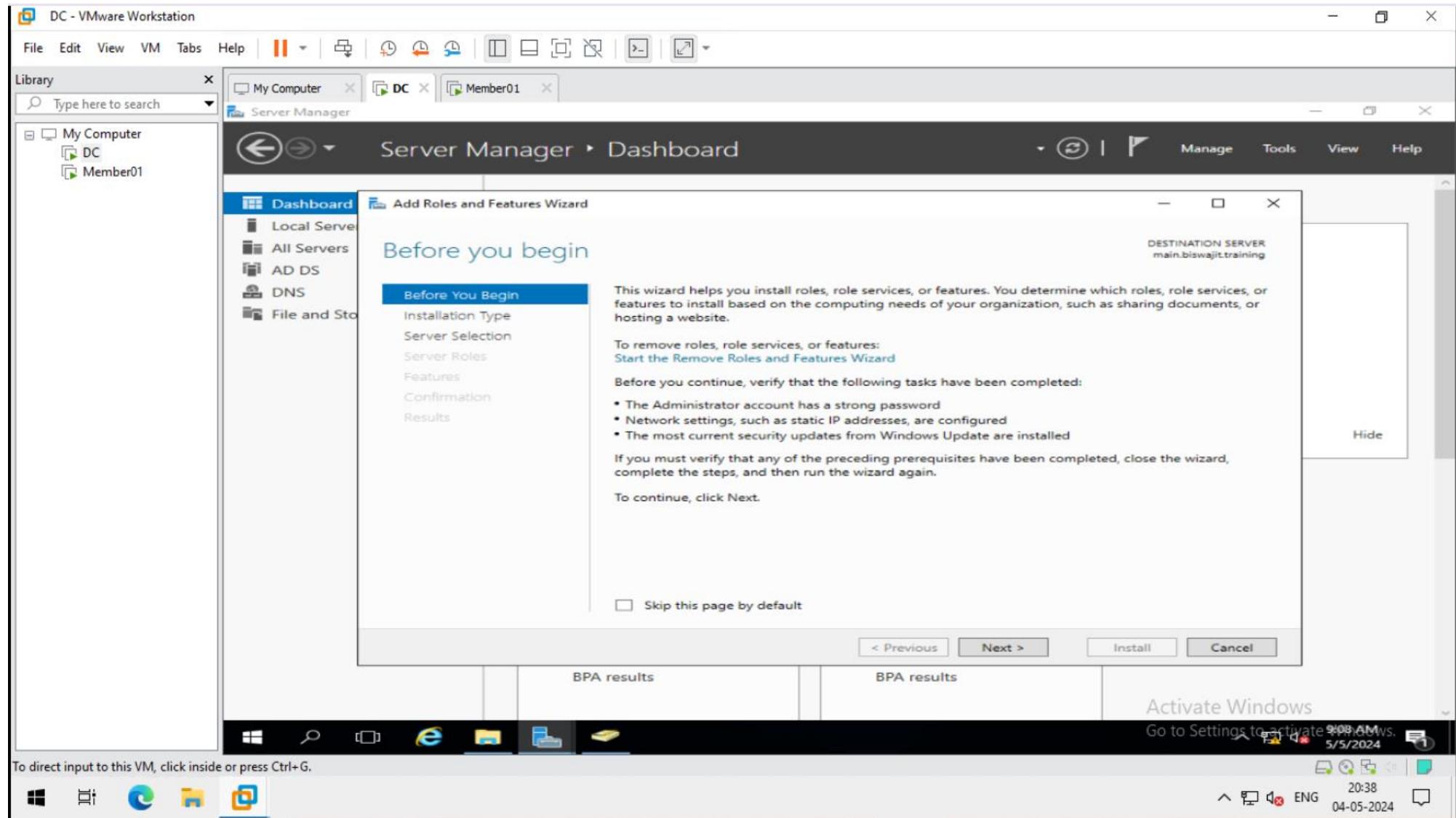


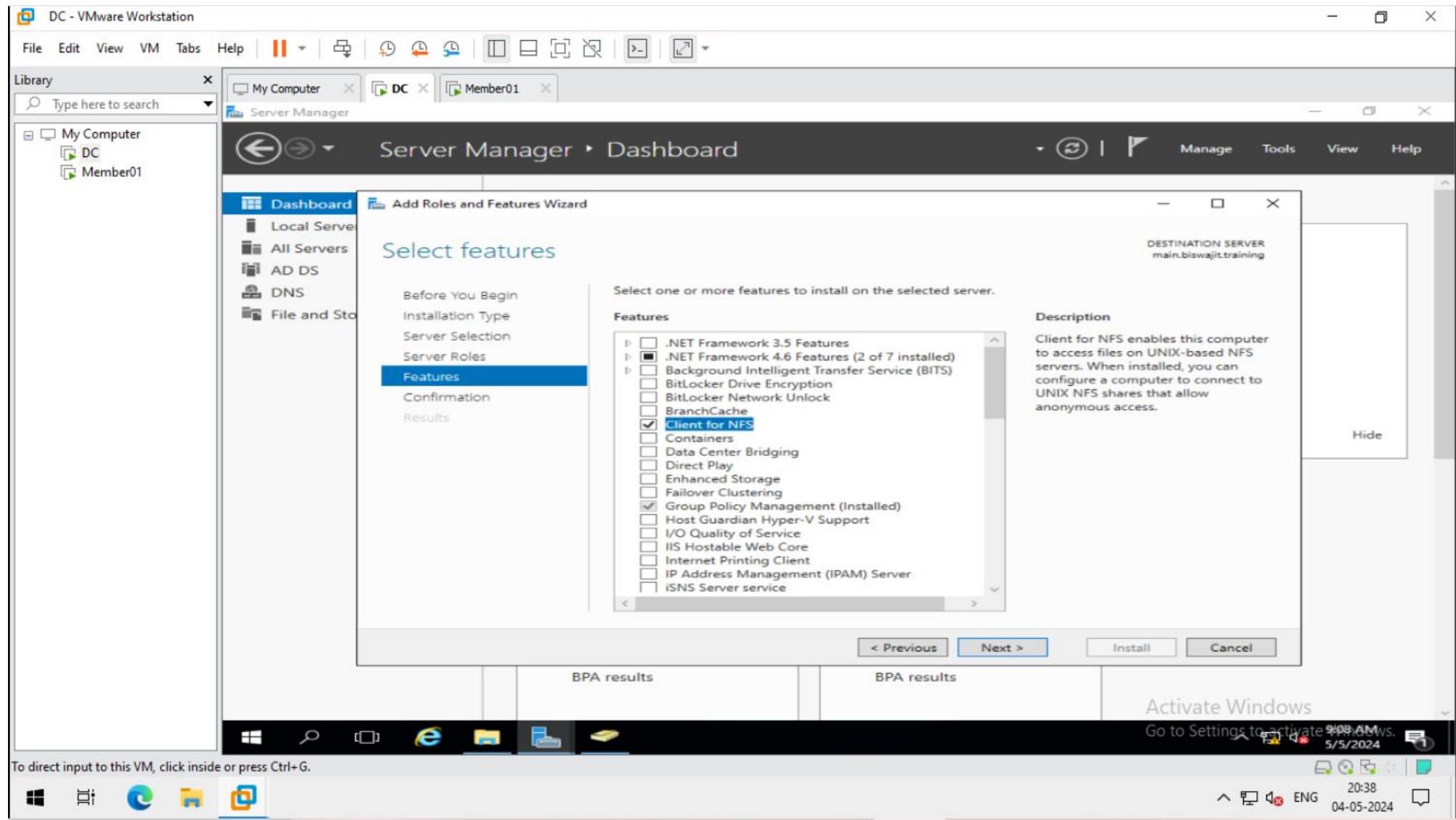


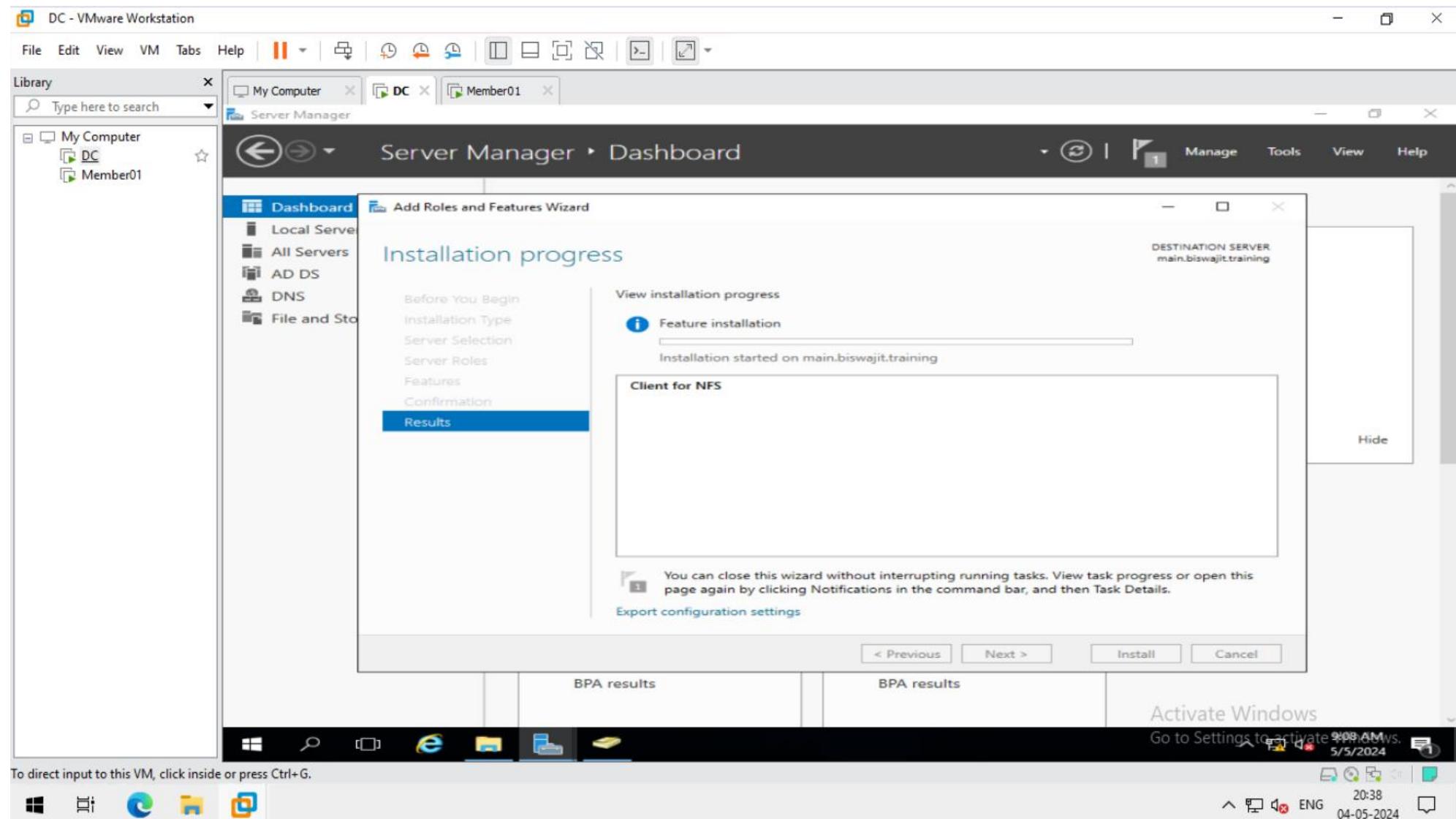


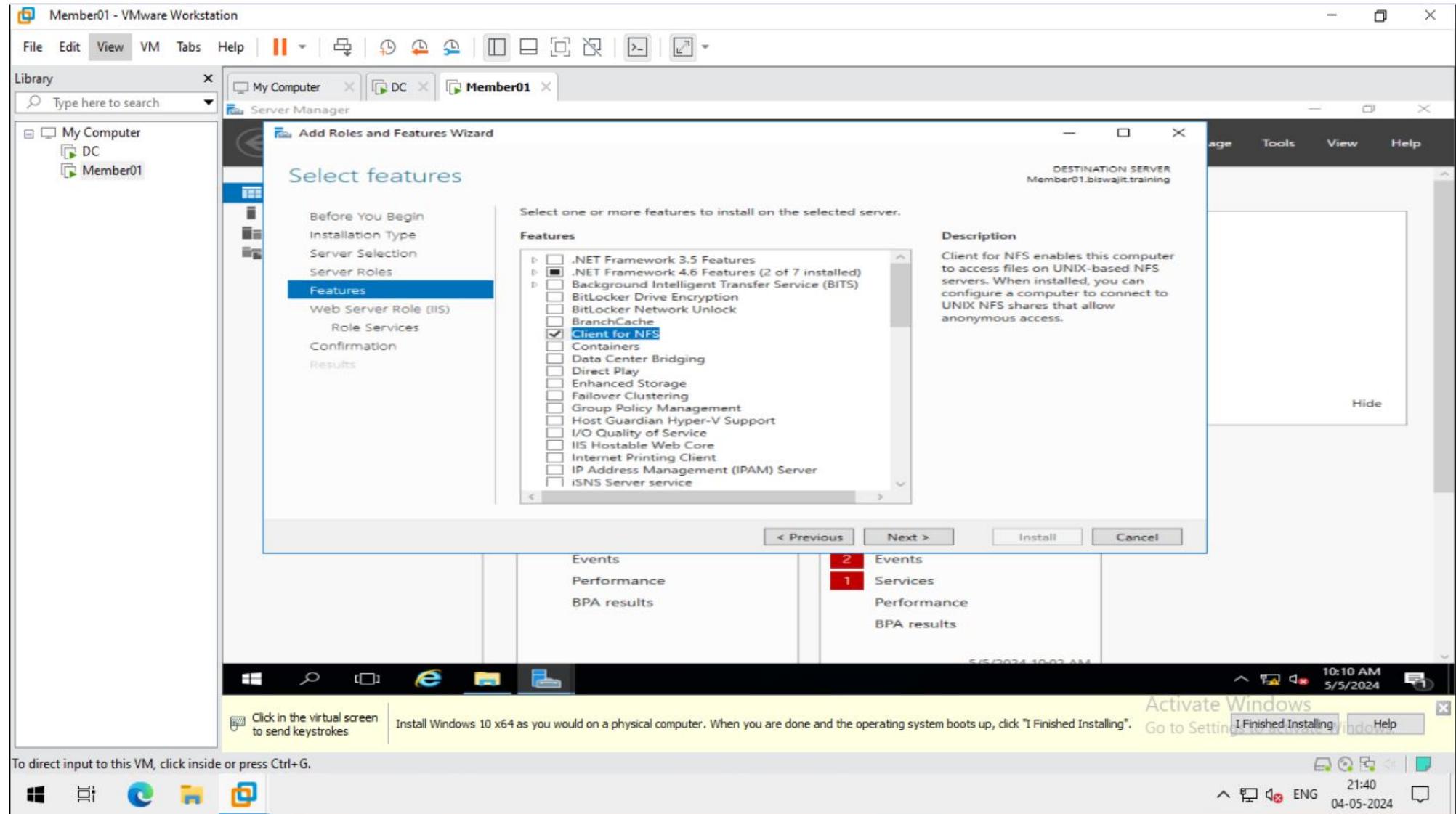


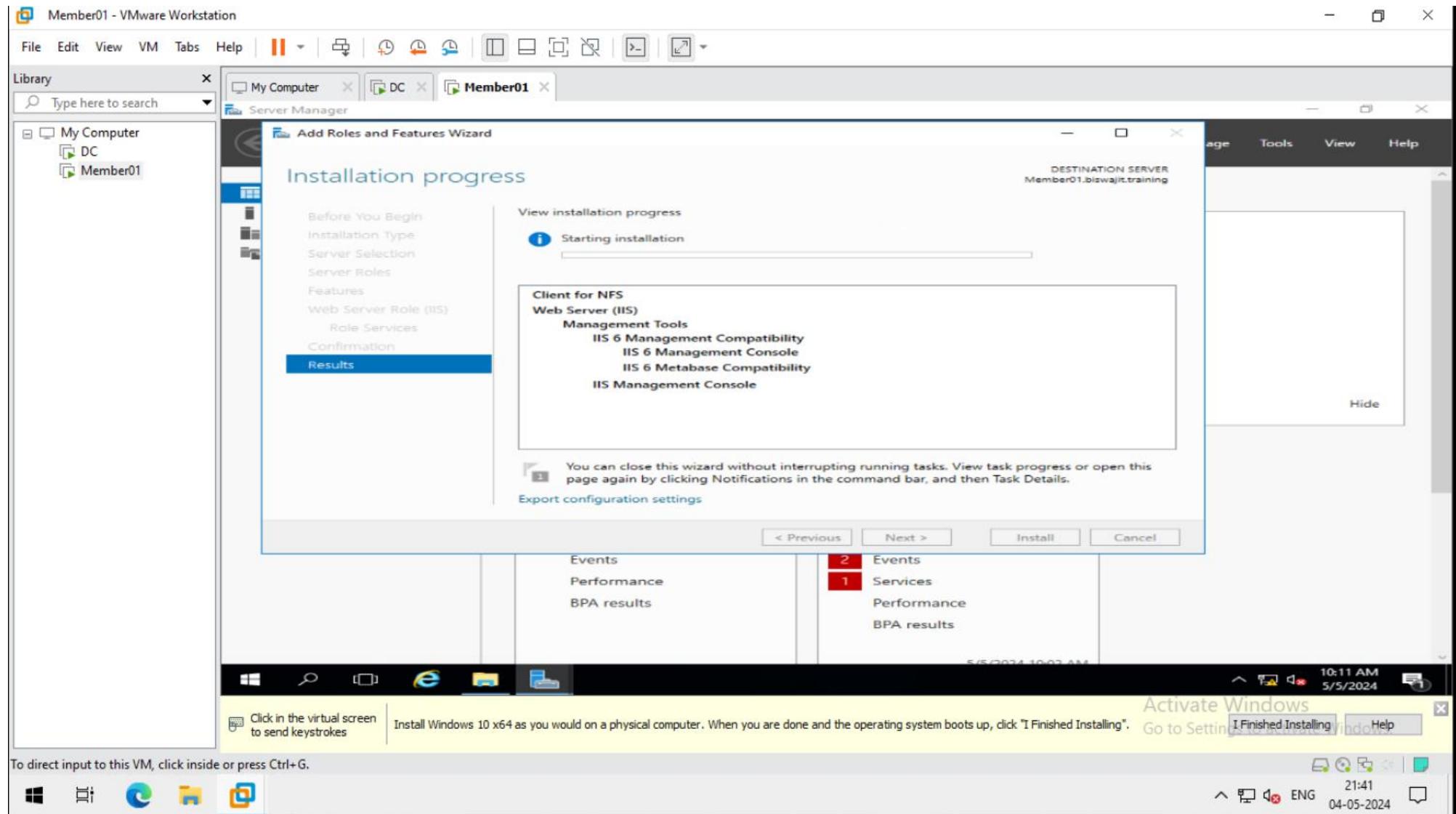




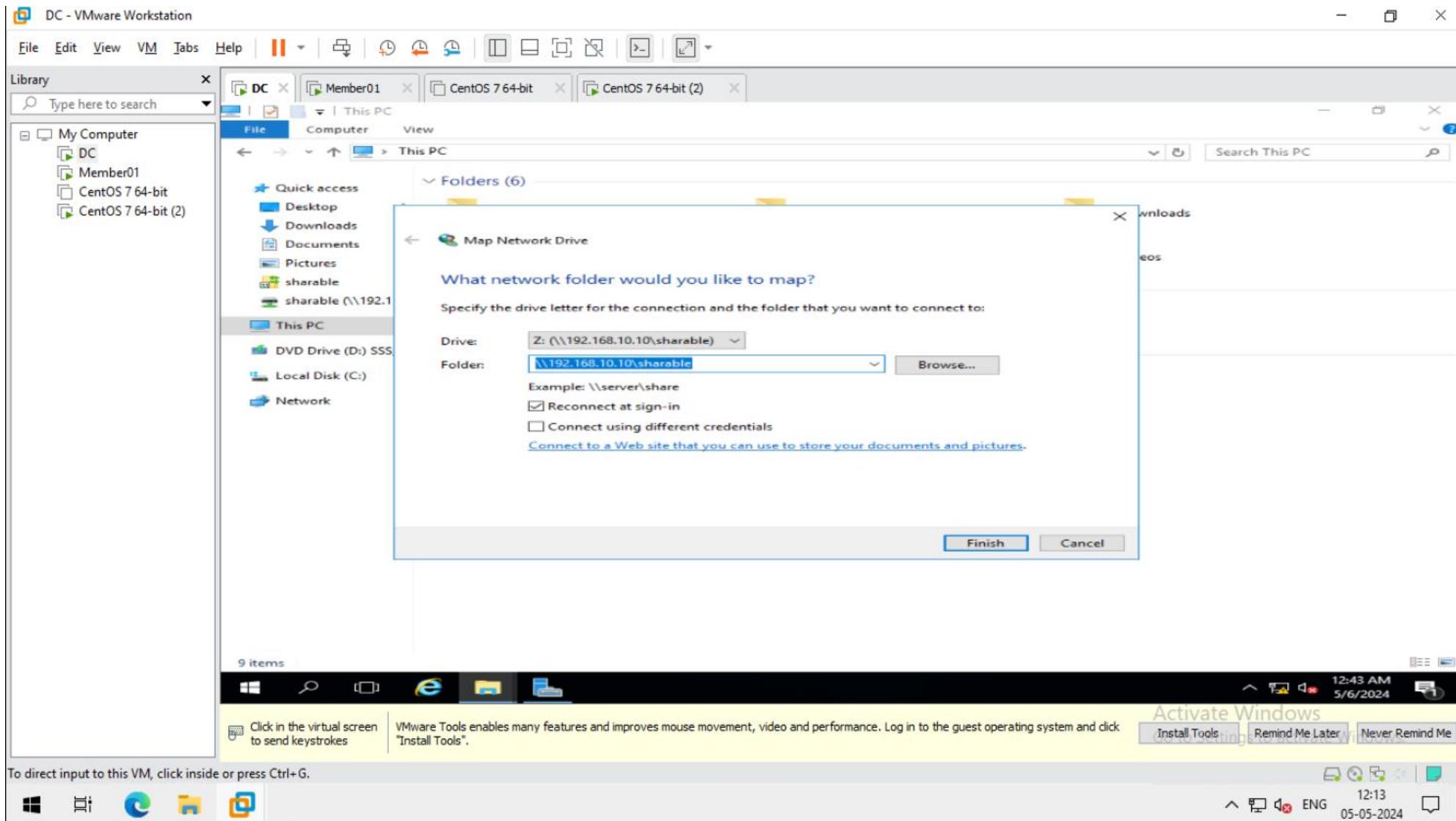


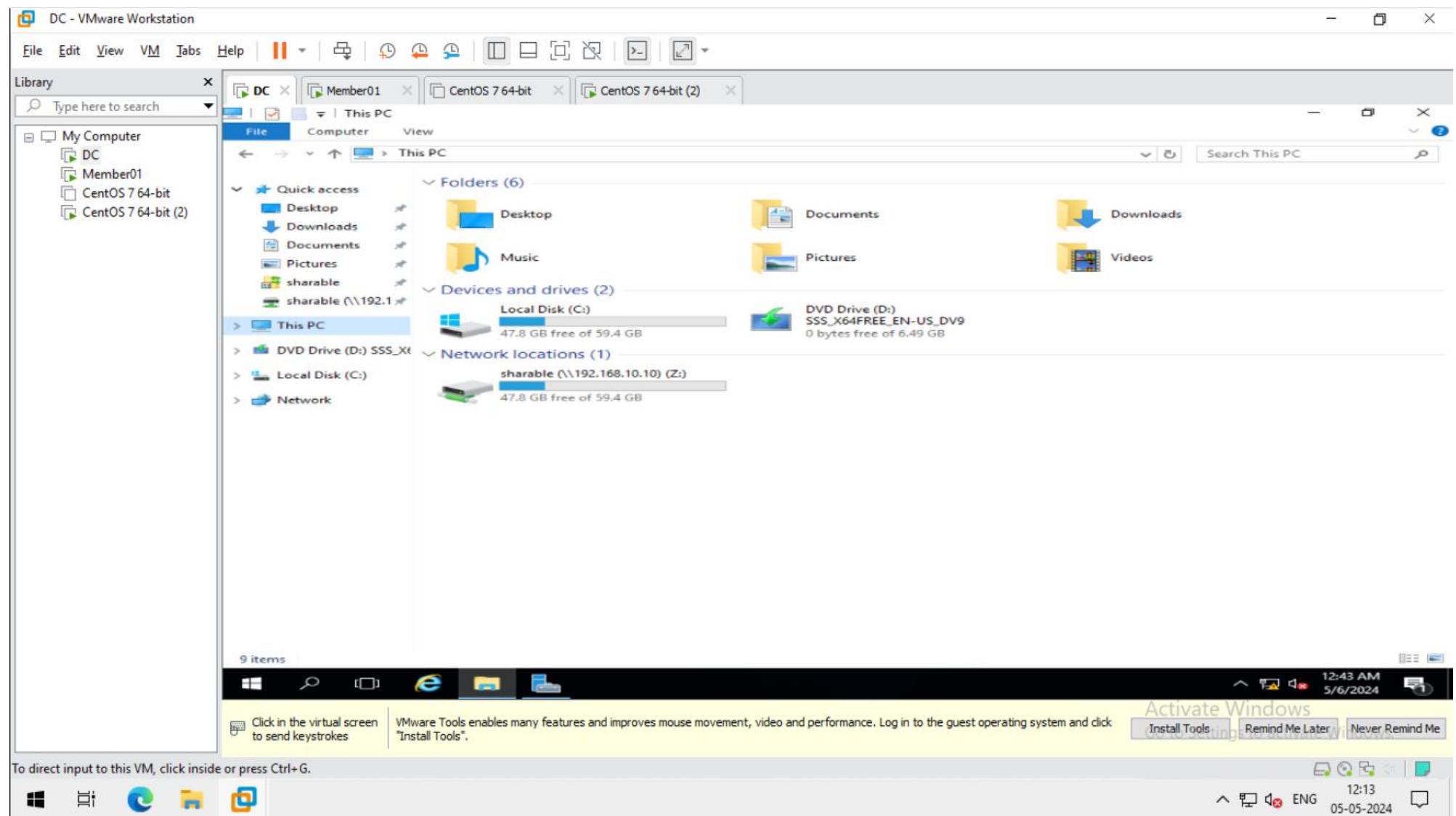


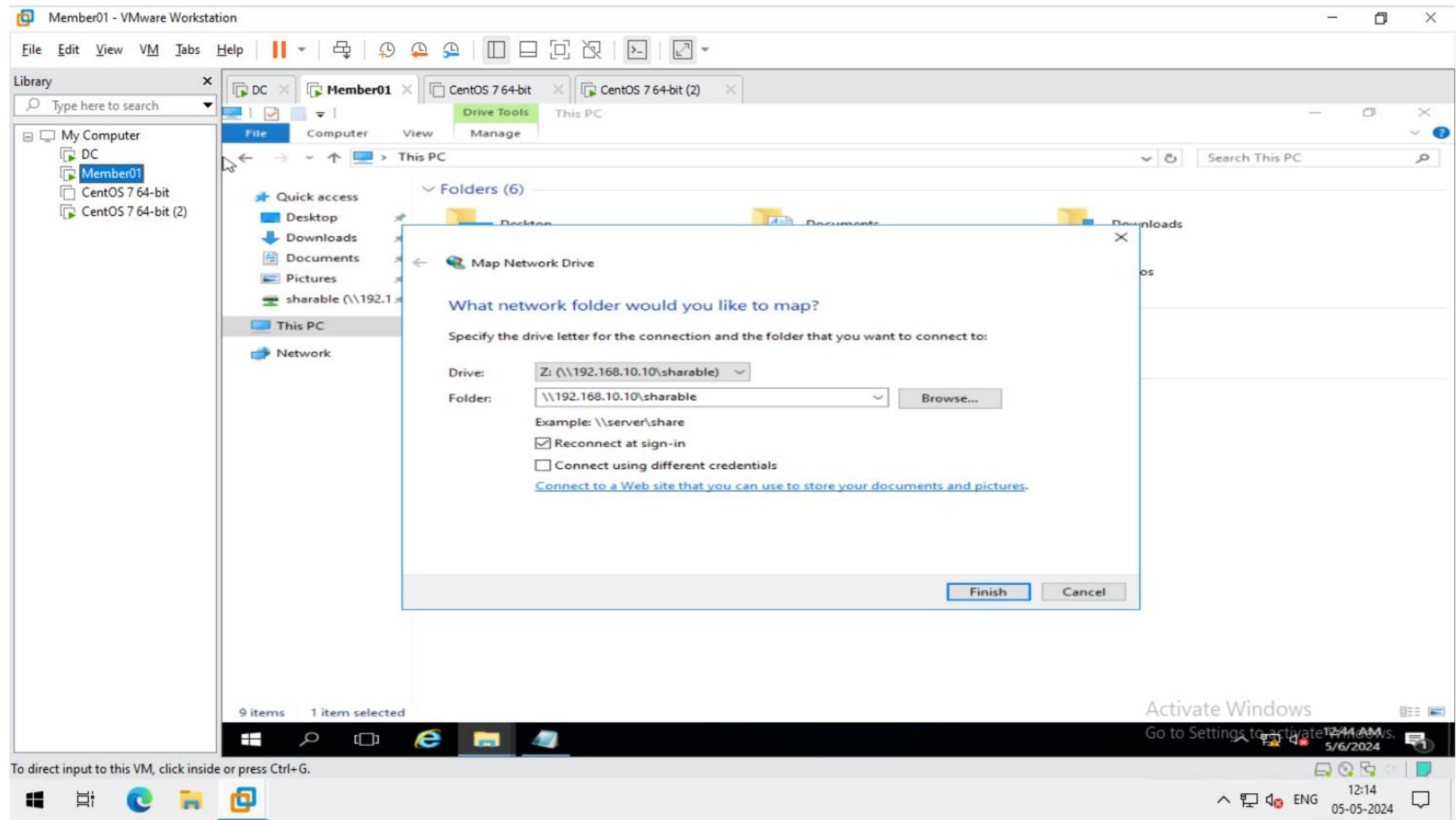


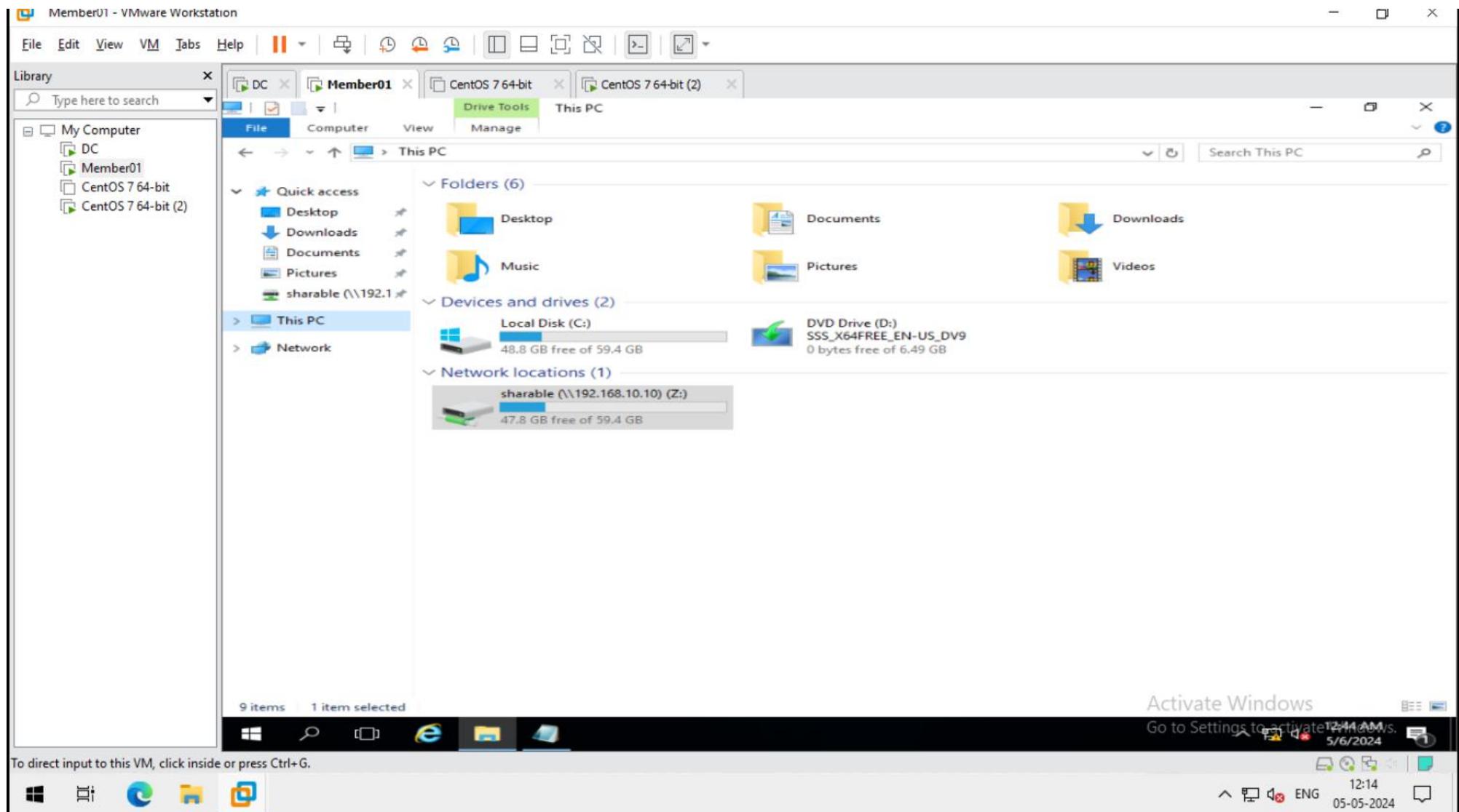


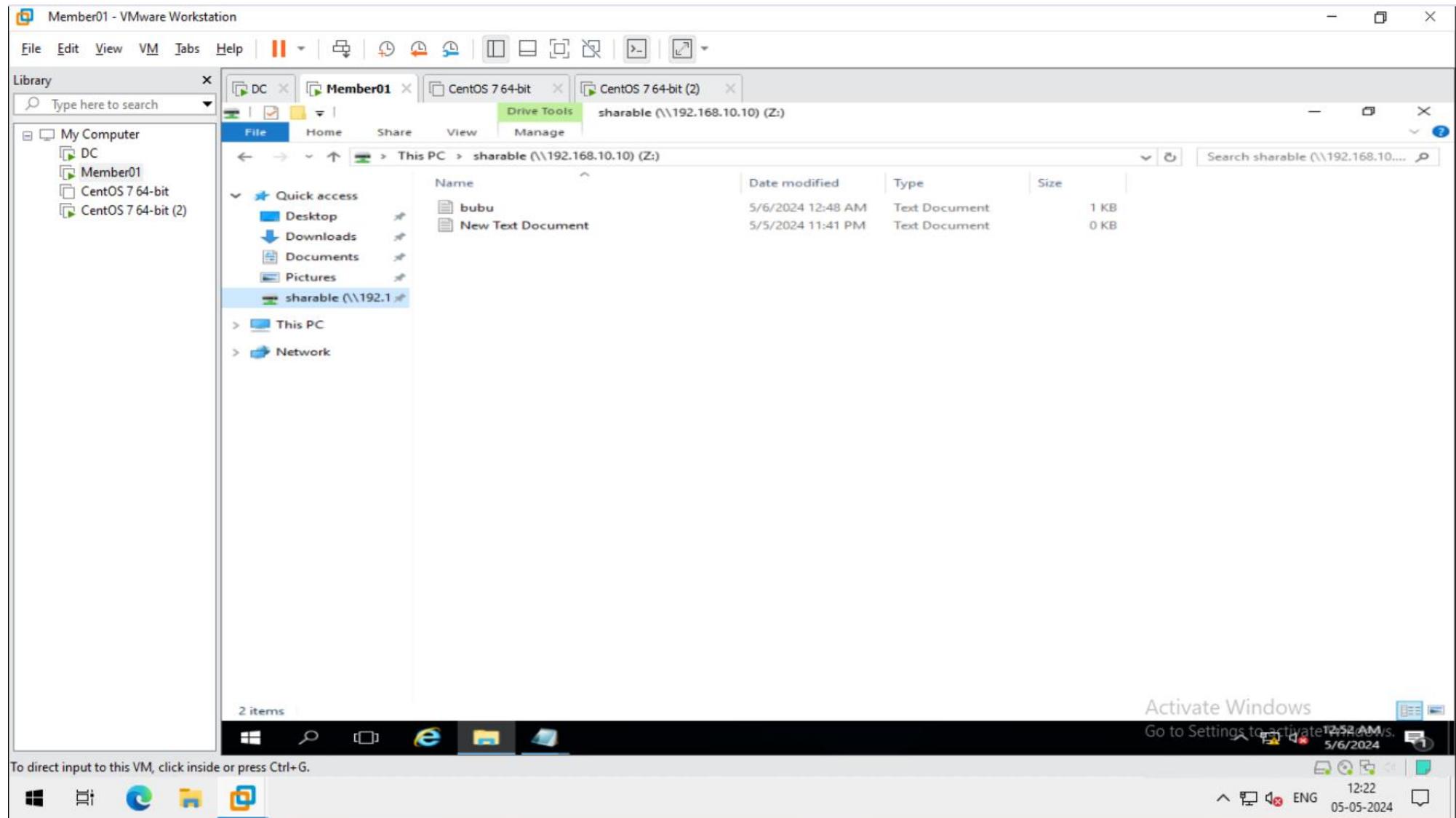
10 share it through map network device using \\IP\folder or domain name:\folder



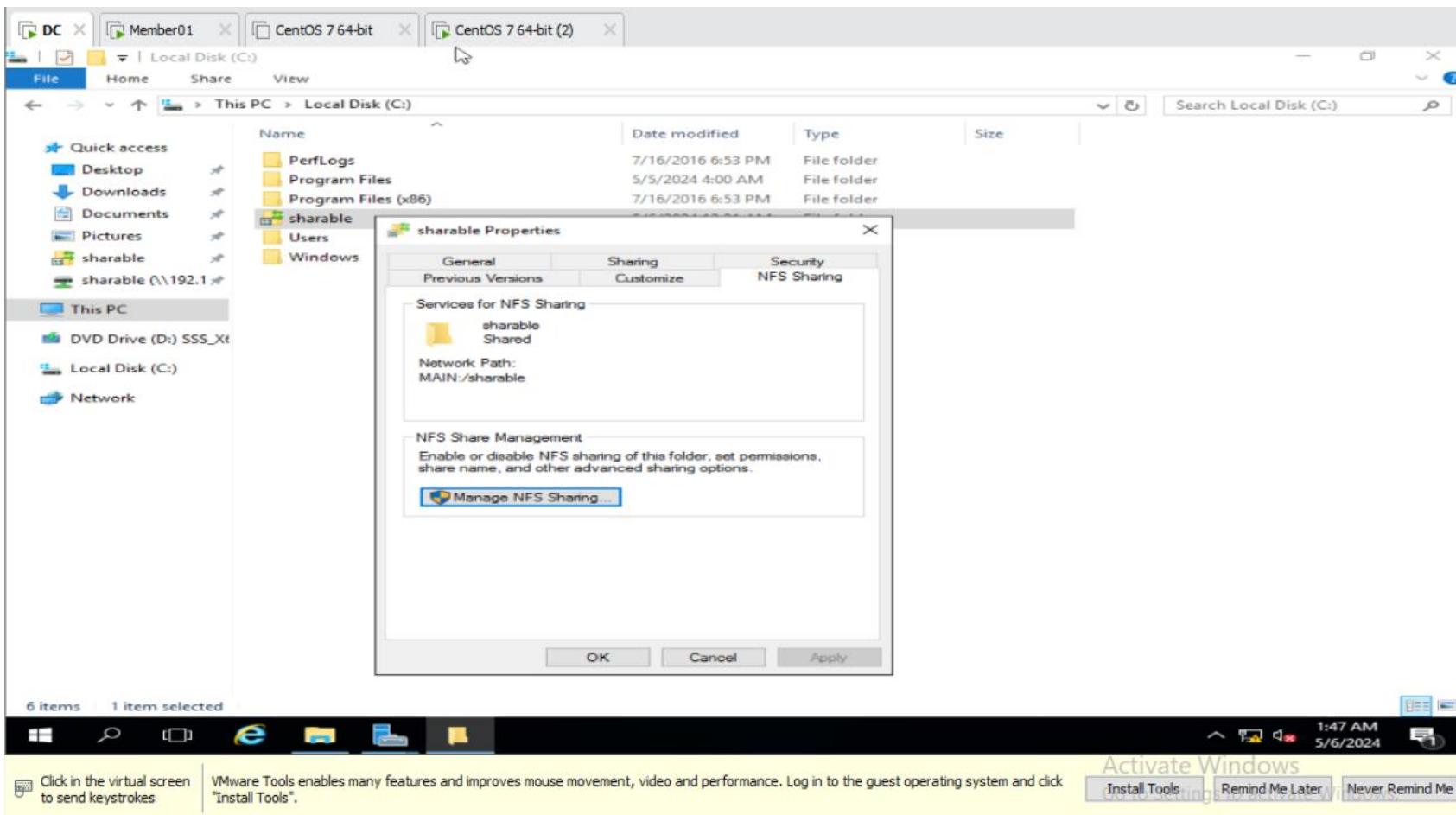


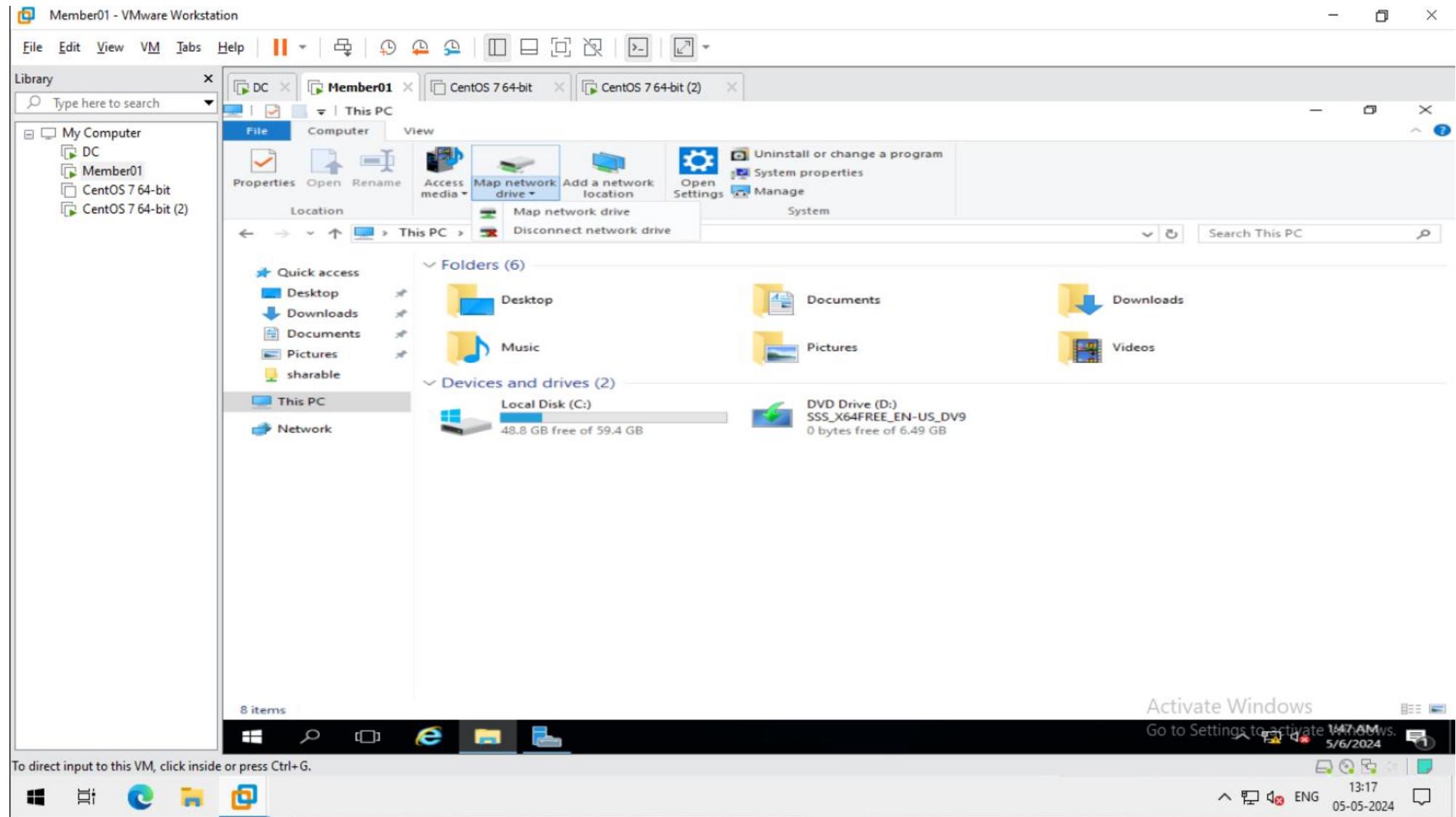


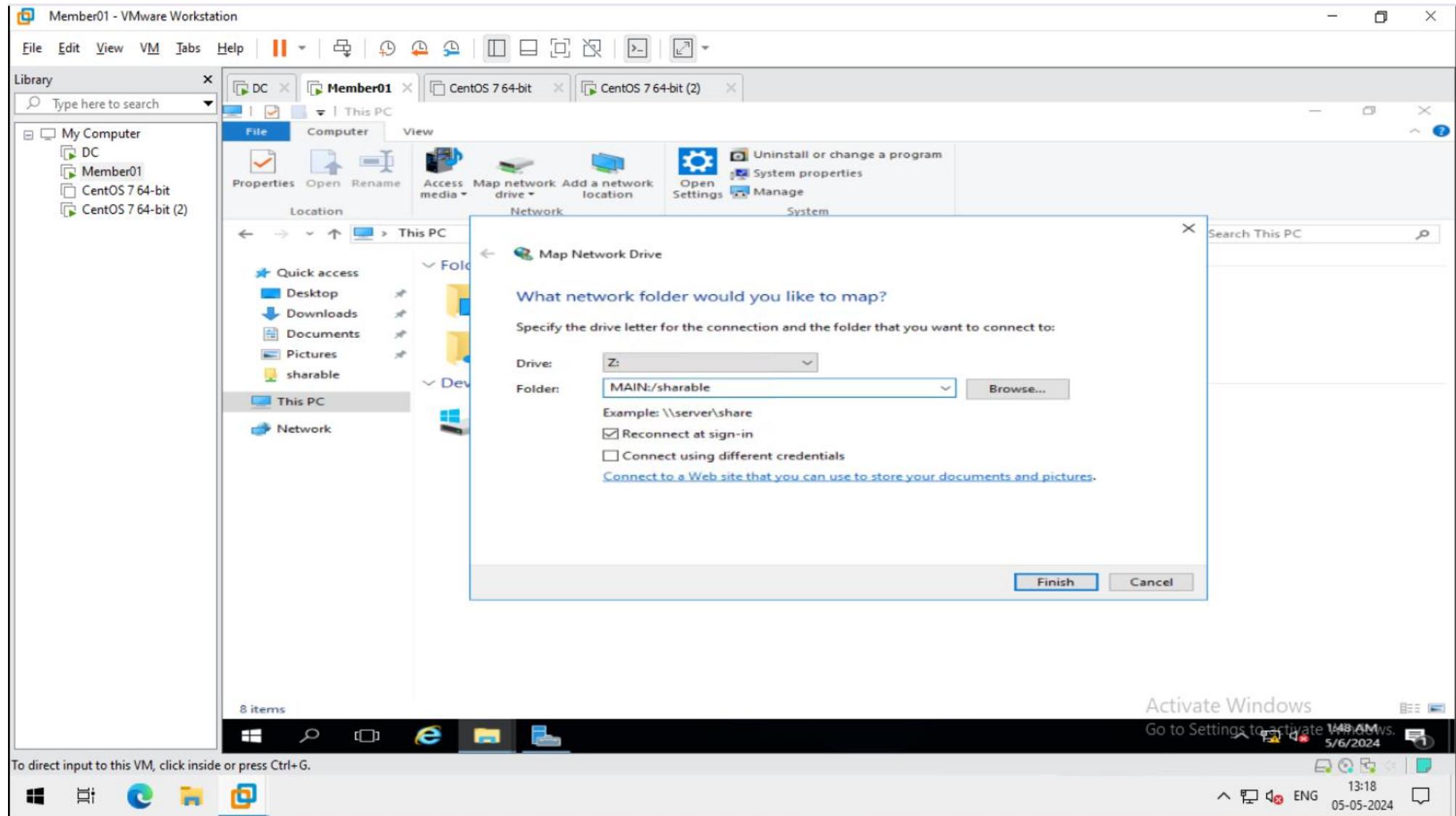


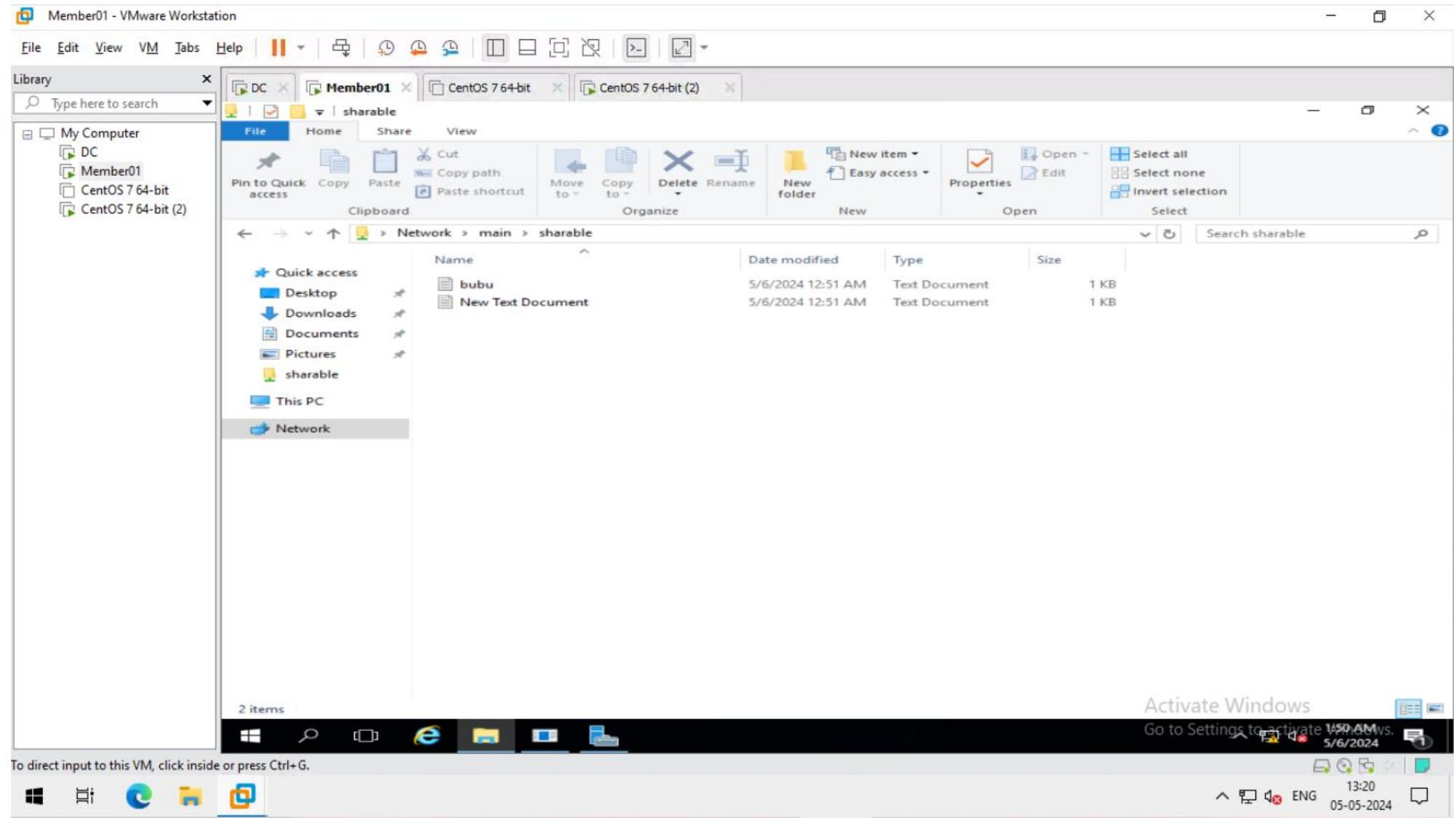


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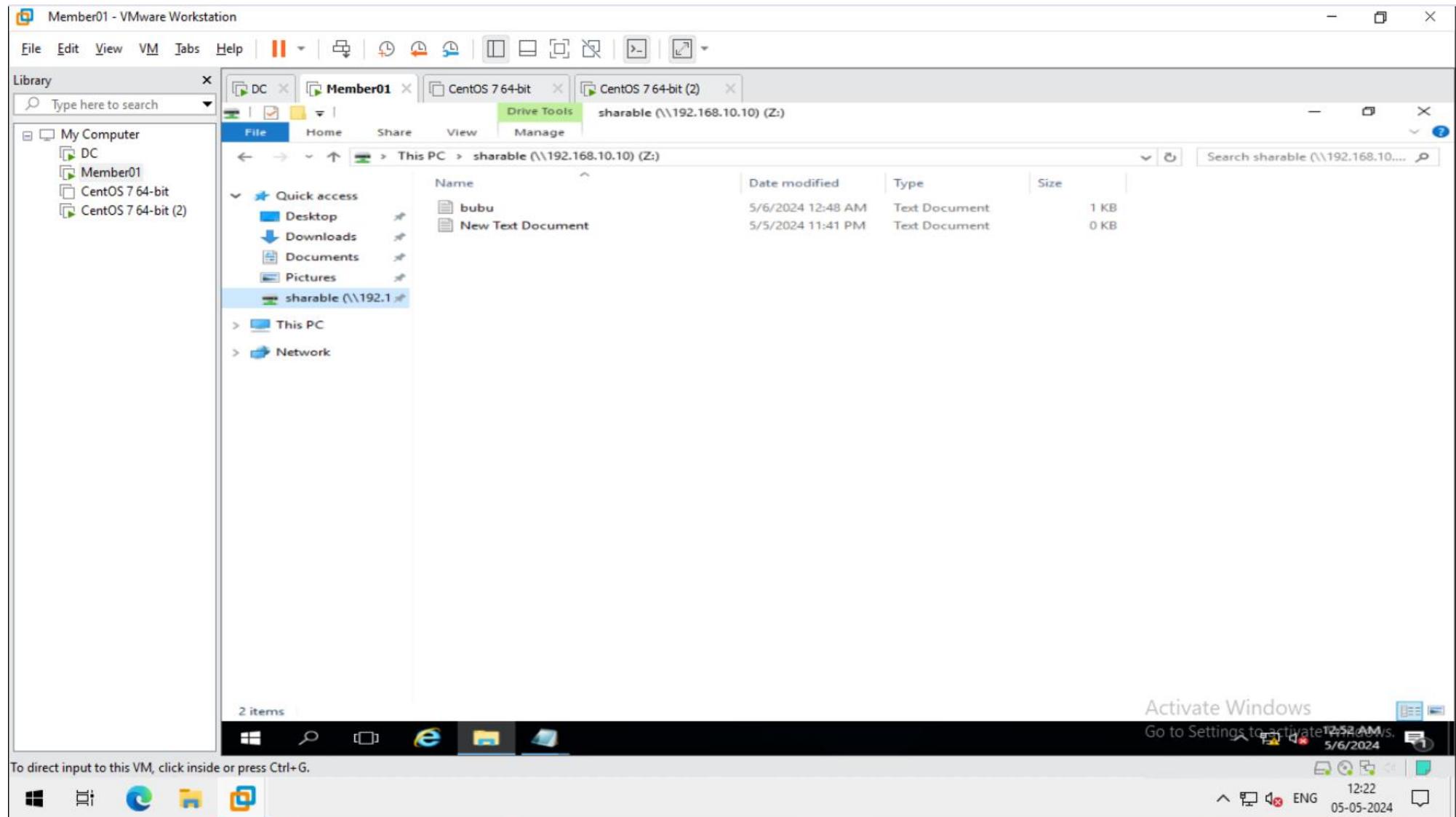


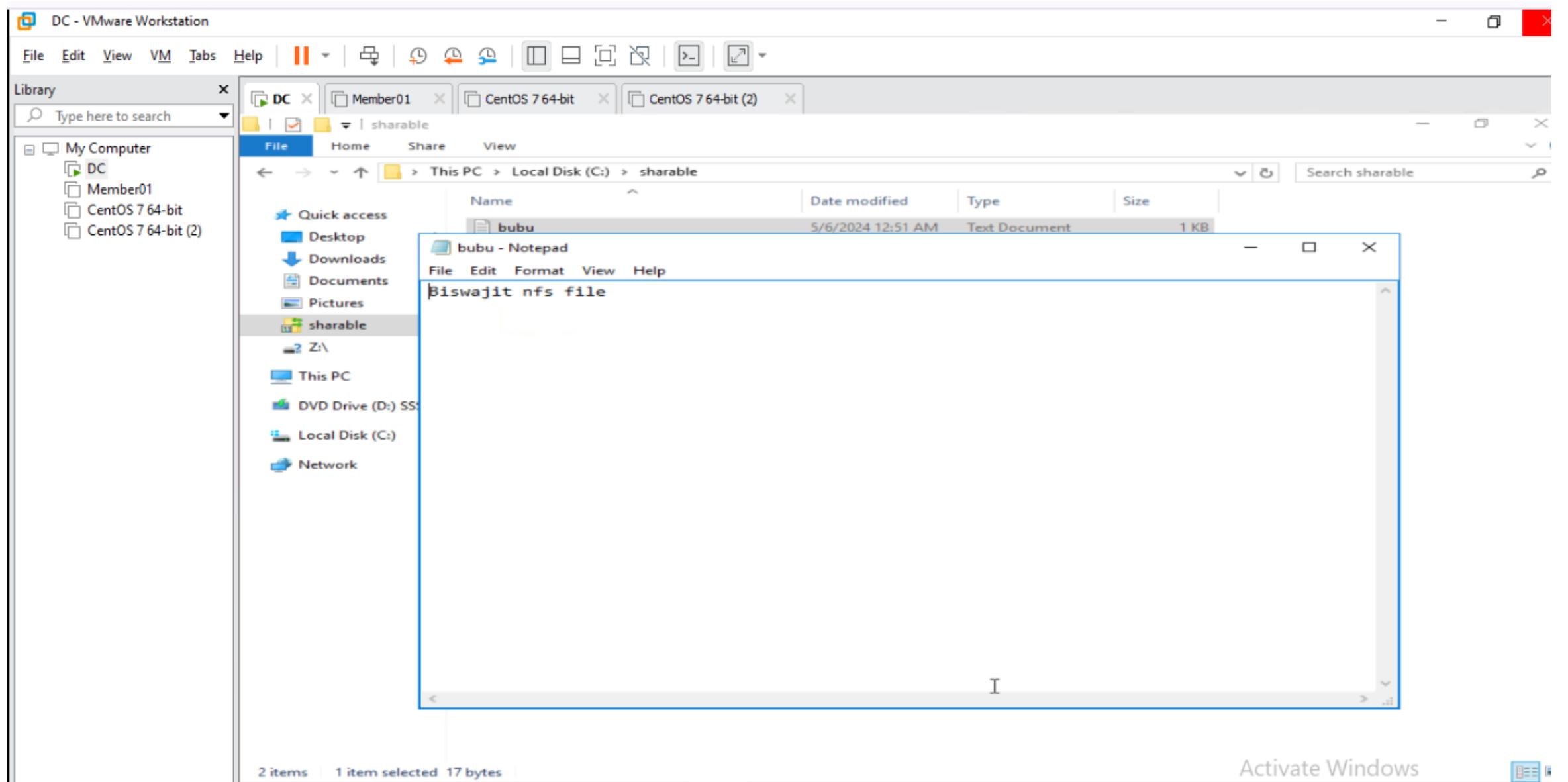




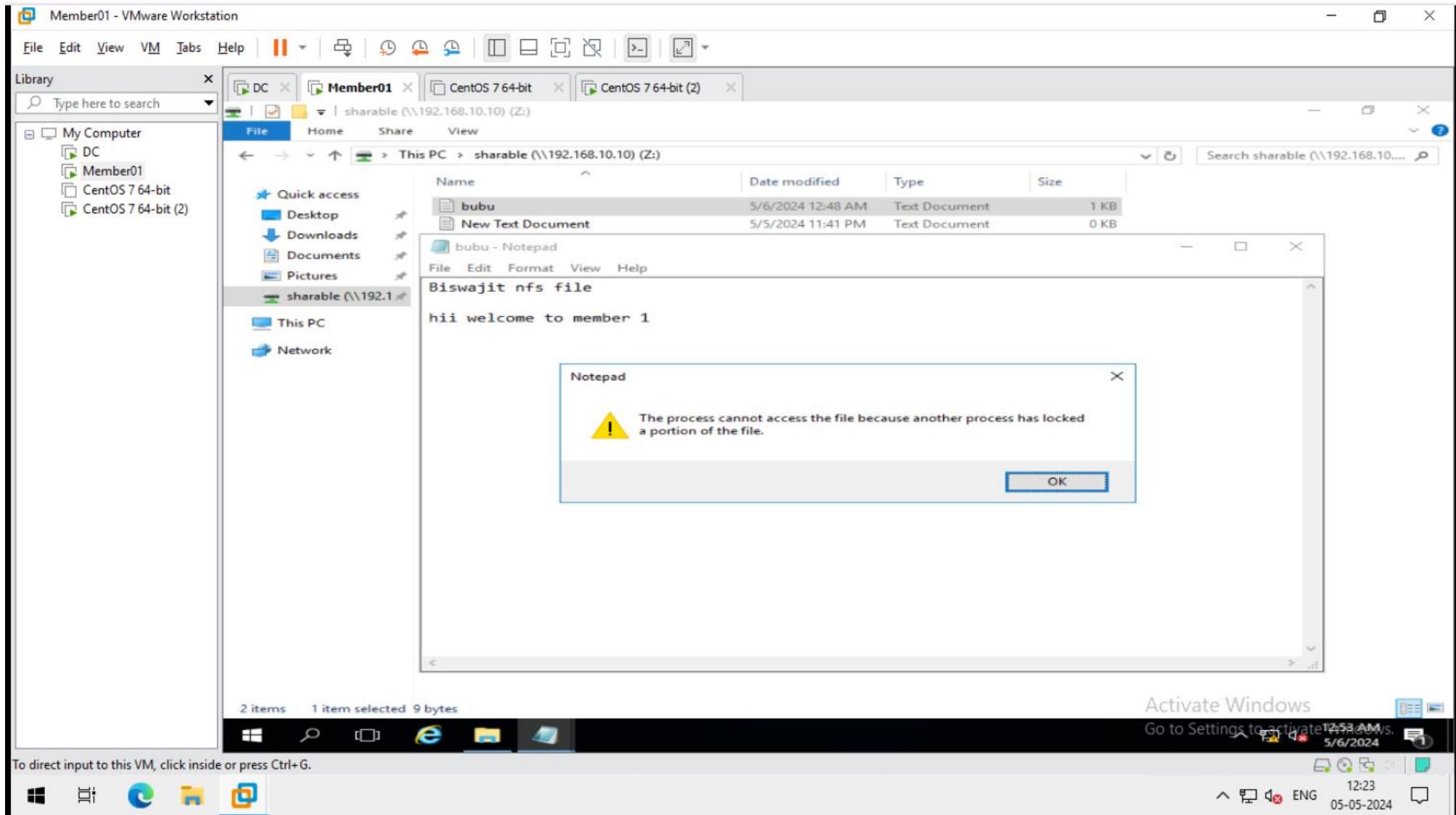


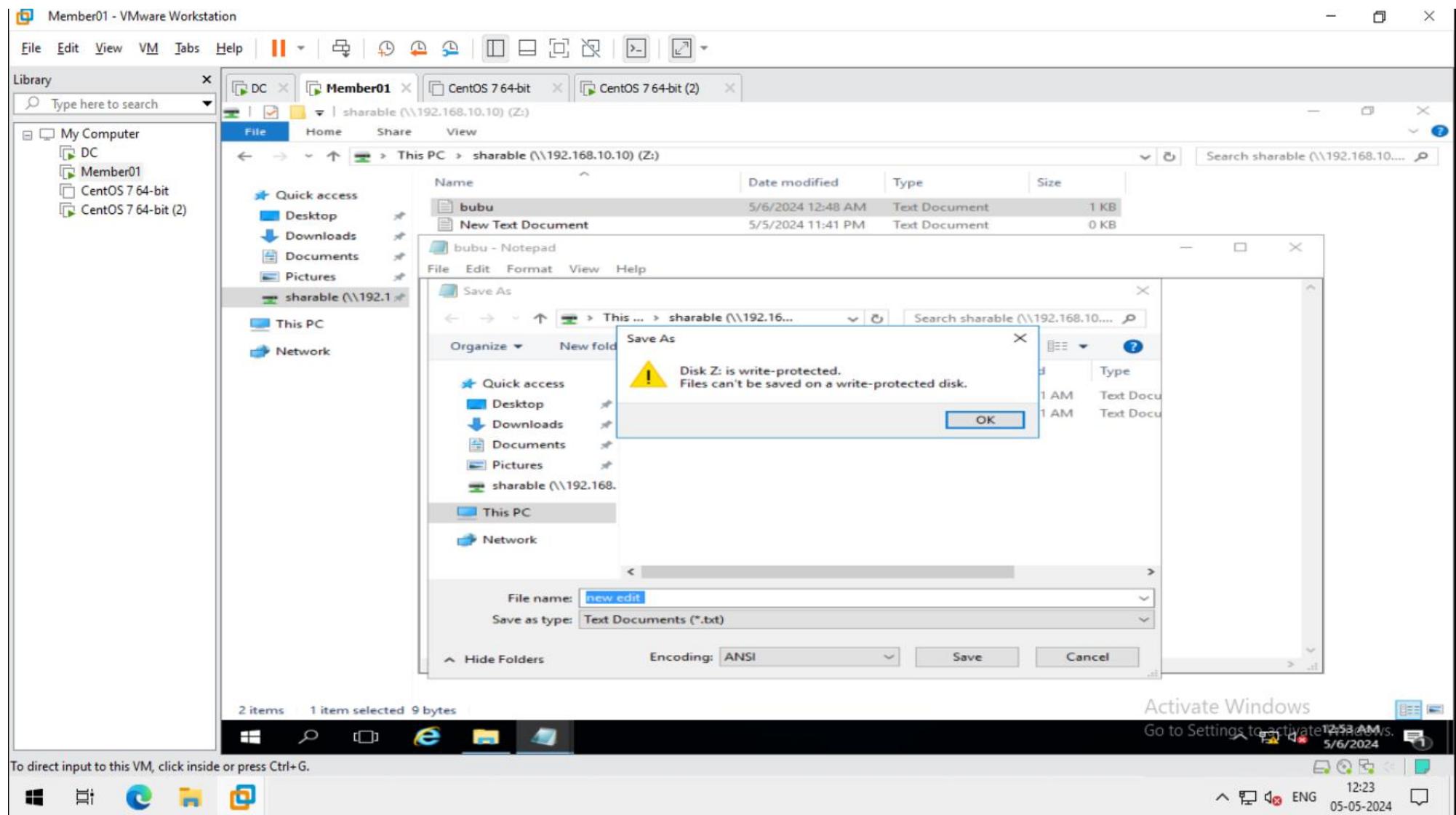
11. now try to access from member machine





Activate Windows





Thank You