

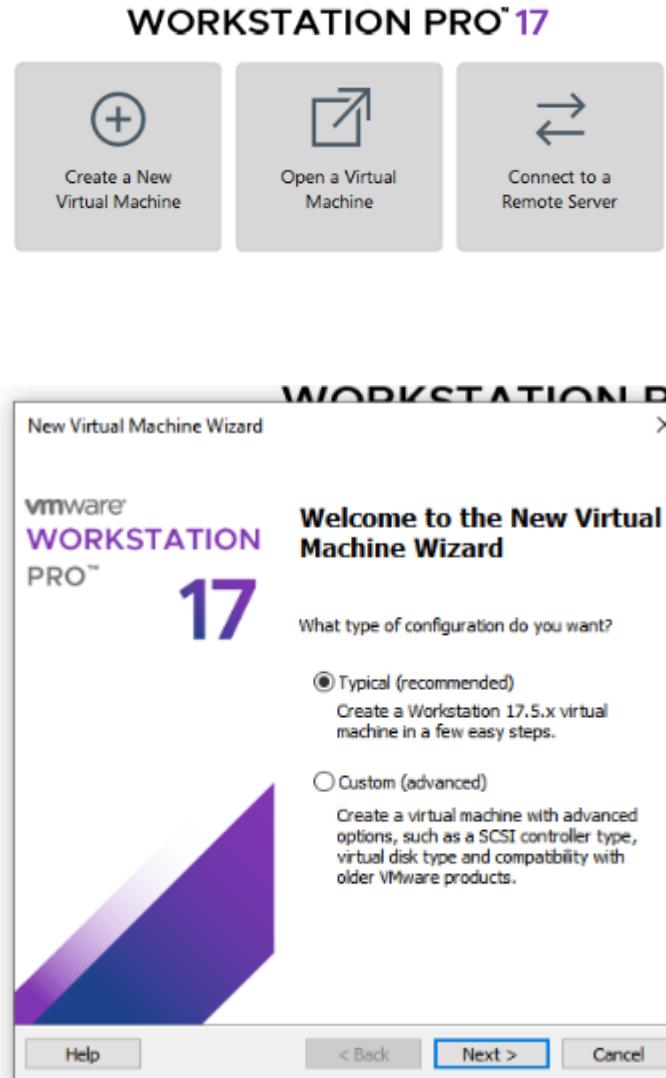
Project Task 1

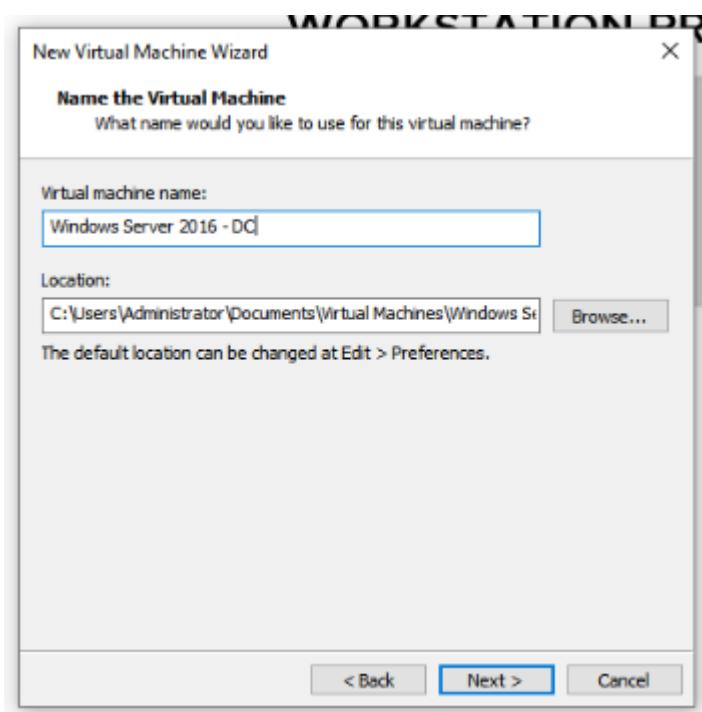
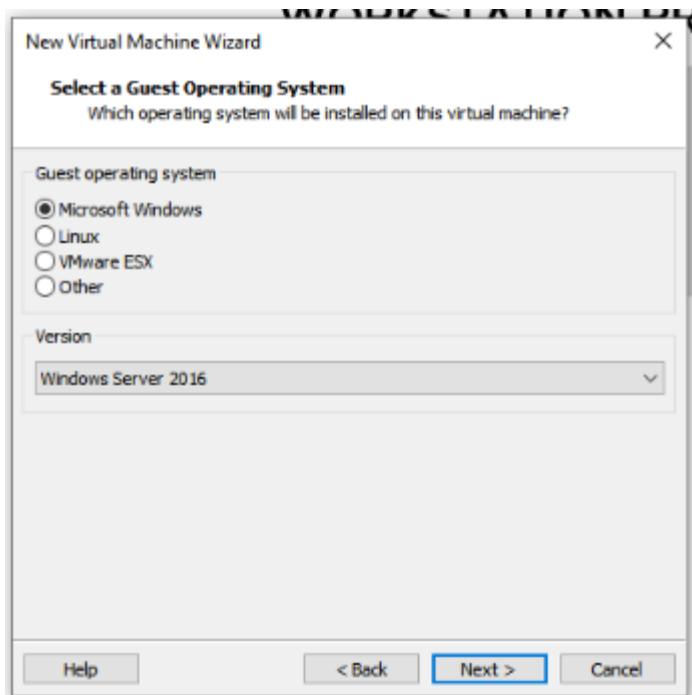
Objective: Create a domain controller using domain name as .training and create a shared NFS folder (c:\sharables) on domain controller machine with read-only permissions and access this folder on the member machine.

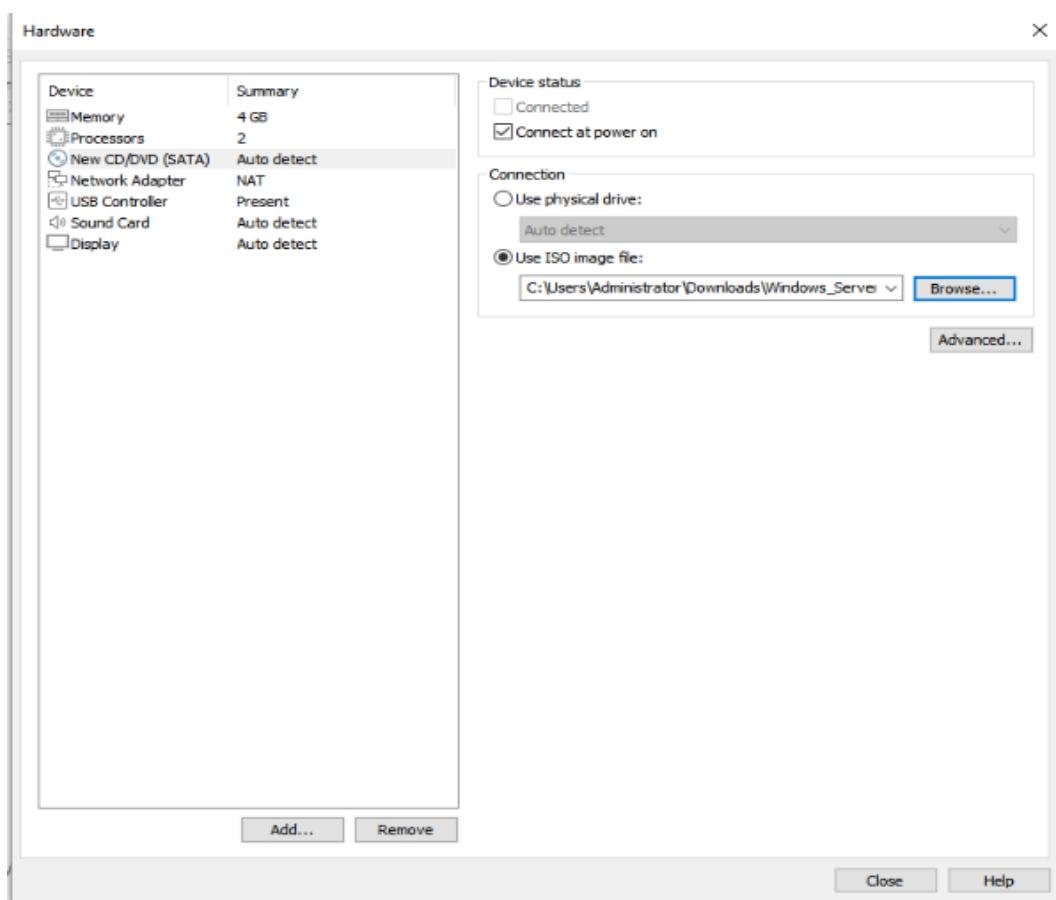
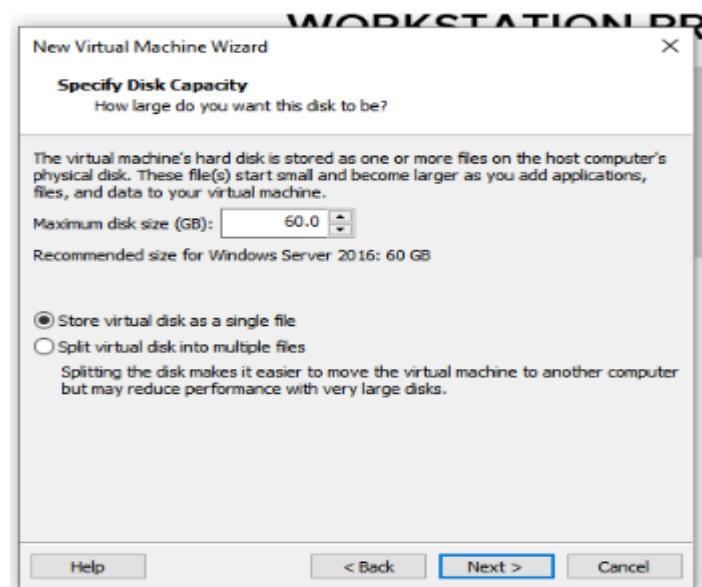
Setup: -

- Use VMWare workstation 17 or above to create a windows server 2016 as domain controller with a custom LAN Segment names as “Wipro-network”.
- Provide static IP as 192.168.10.10/24 with loopback DNS address & perform post-installation configuration.
- Install the required role and promote the server to domain controller.
- On DC, create a group using name “dcadmins” and add 2 users in it with the ‘domain admins’ permissions.
- Install another windows server 2016 (as GUI) with the name “Member01” and domain join this member to domain controller & verify.
- Create a new directory as “c:\sharable” on domain controller with read-only & list permission to a group called “dcadmins” and verify the access from the “Member01” machine.
- Create few files under “c:\sharable” and try accessing and modifying them on the member machine using the users created under “dcadmin” group.

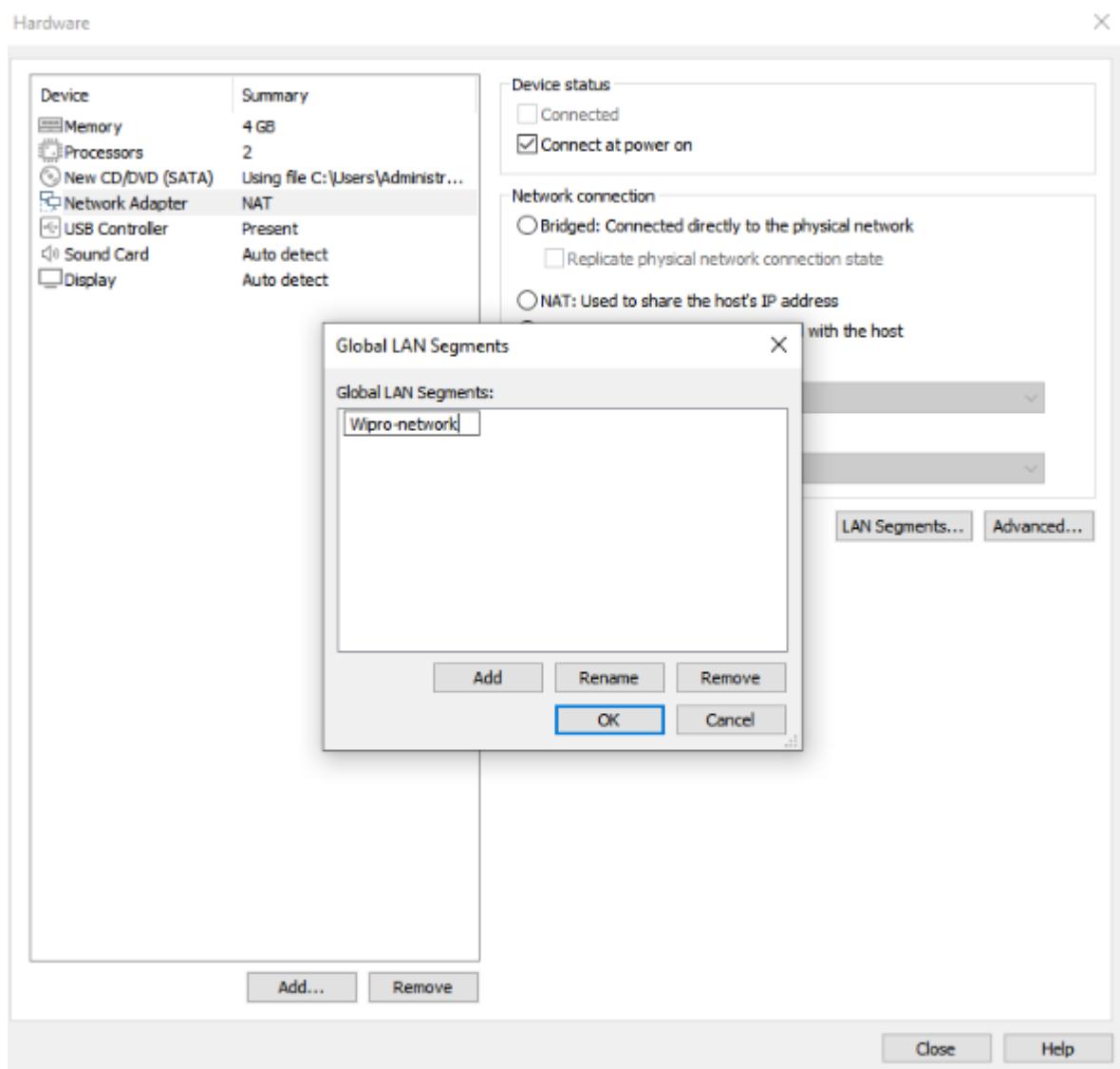
Step 1 : Creating windows server 2016 as DC with a custom LAN segment names as “Wipro-network”

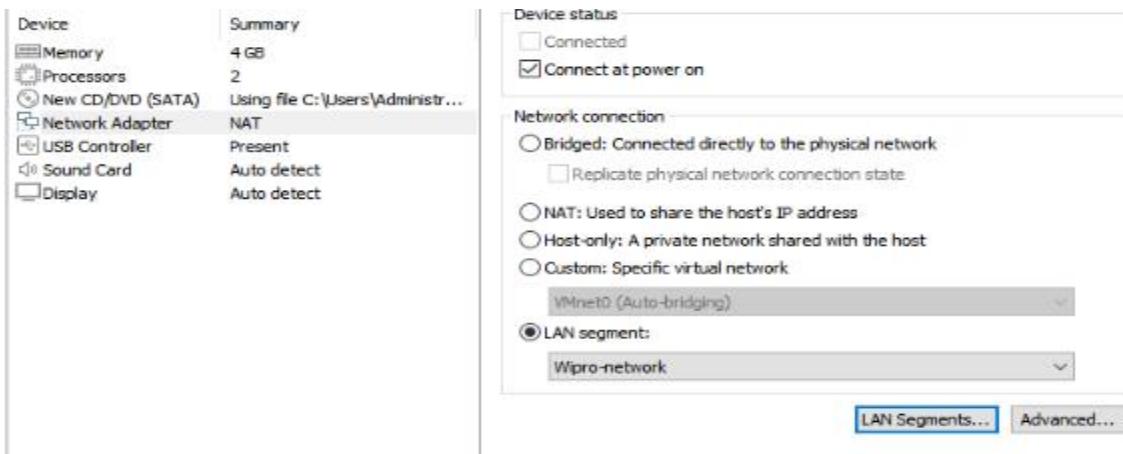




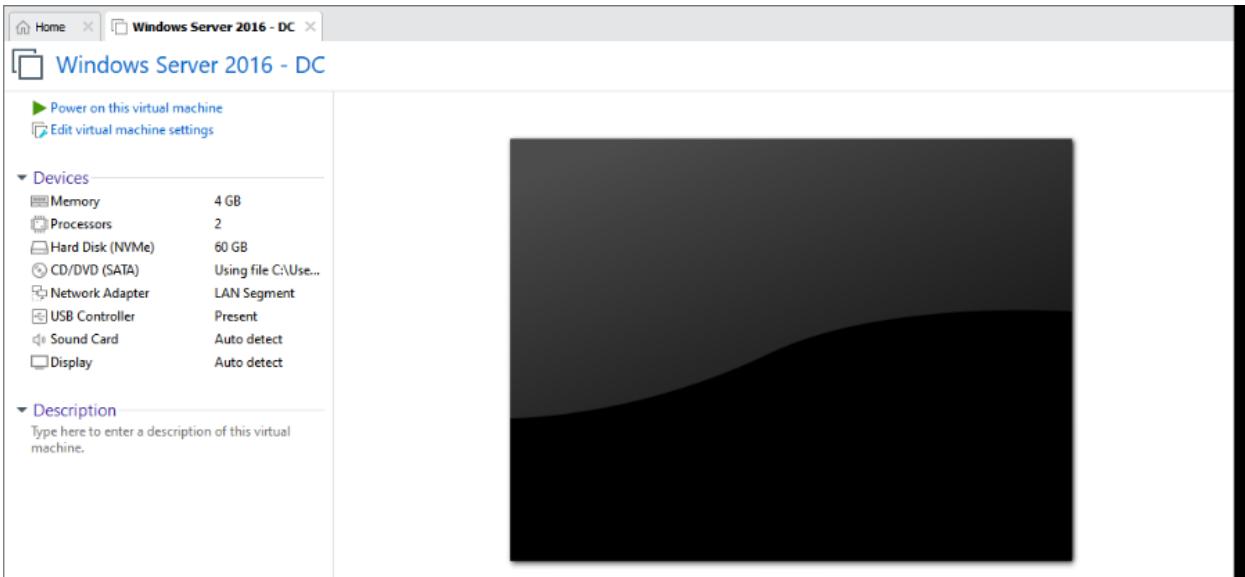


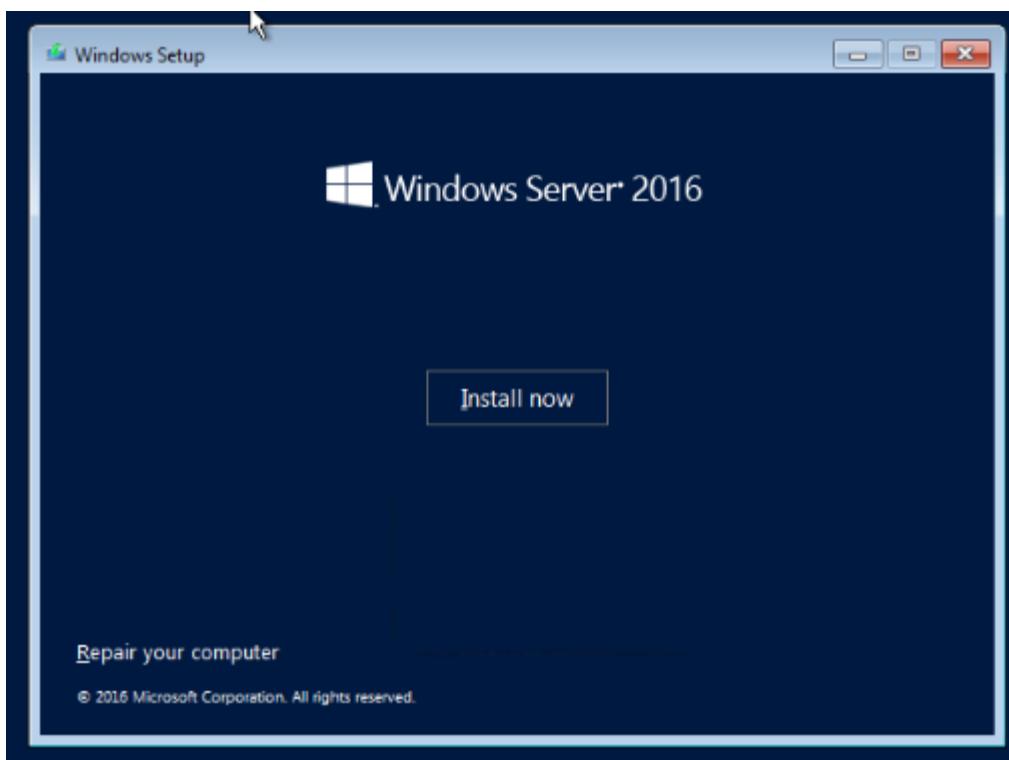
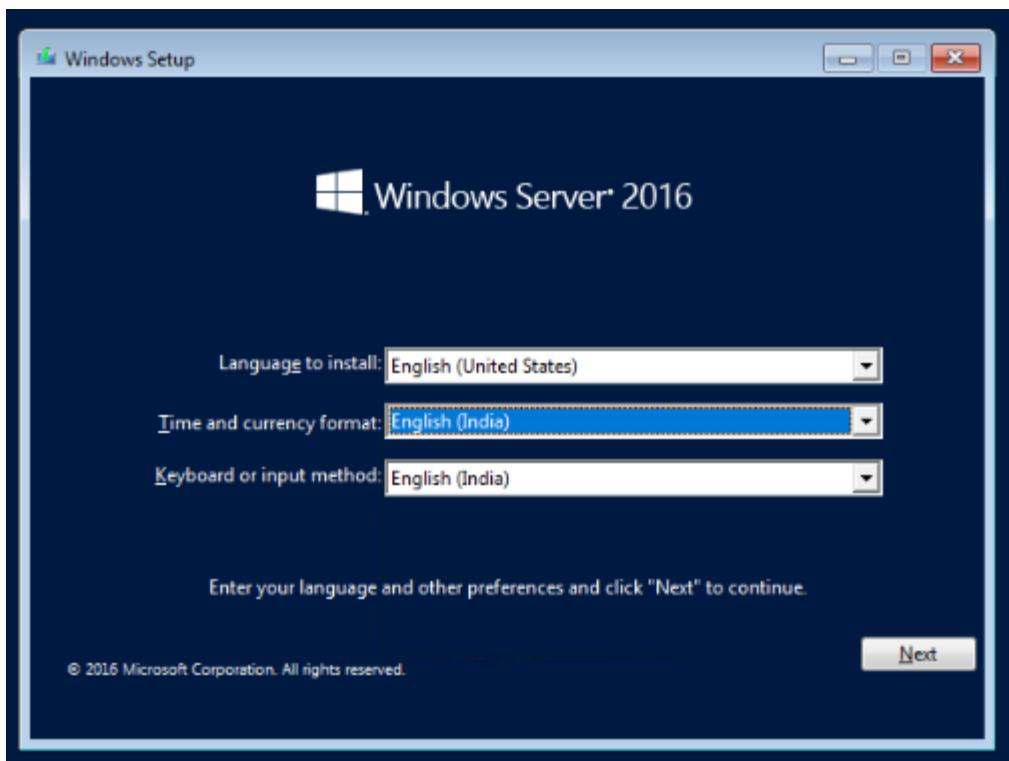
Below, creating LAN segment named “Wipro-network”

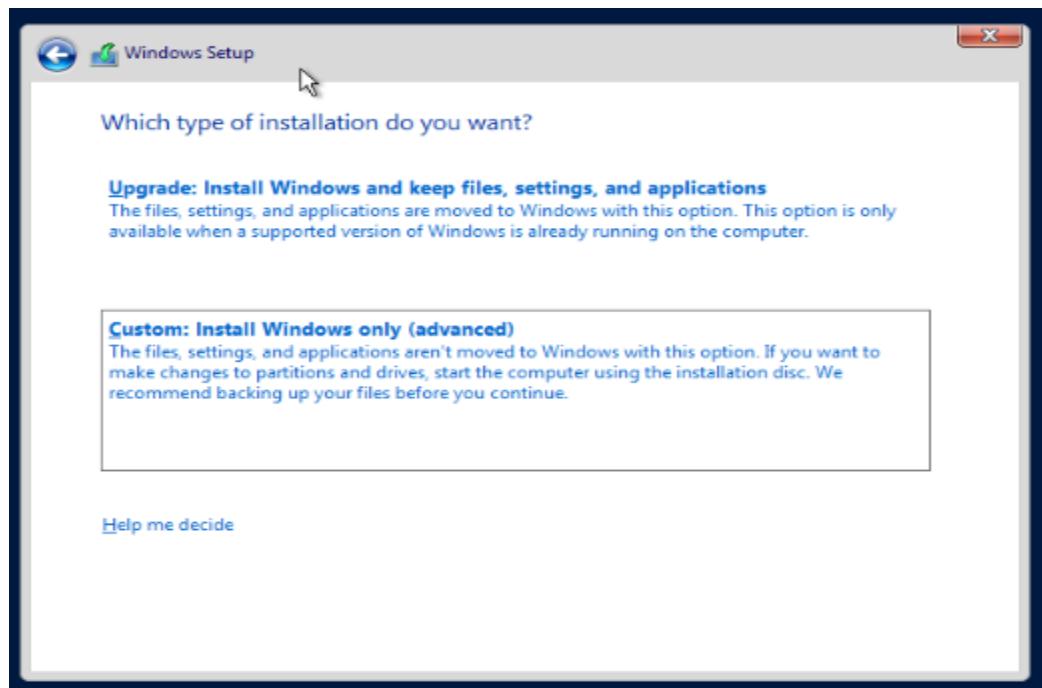
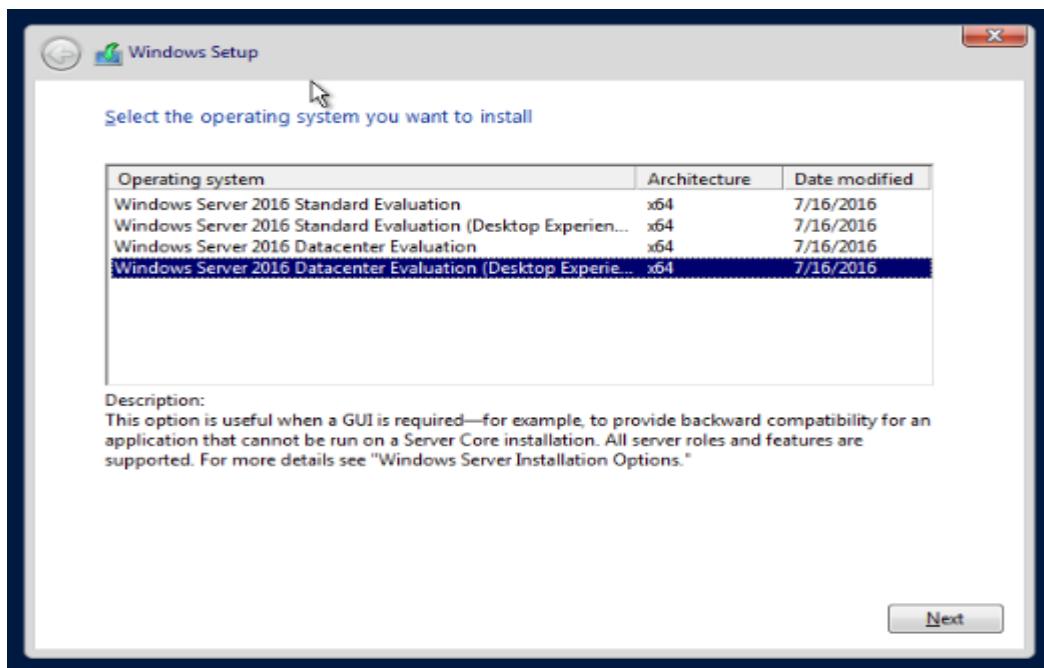


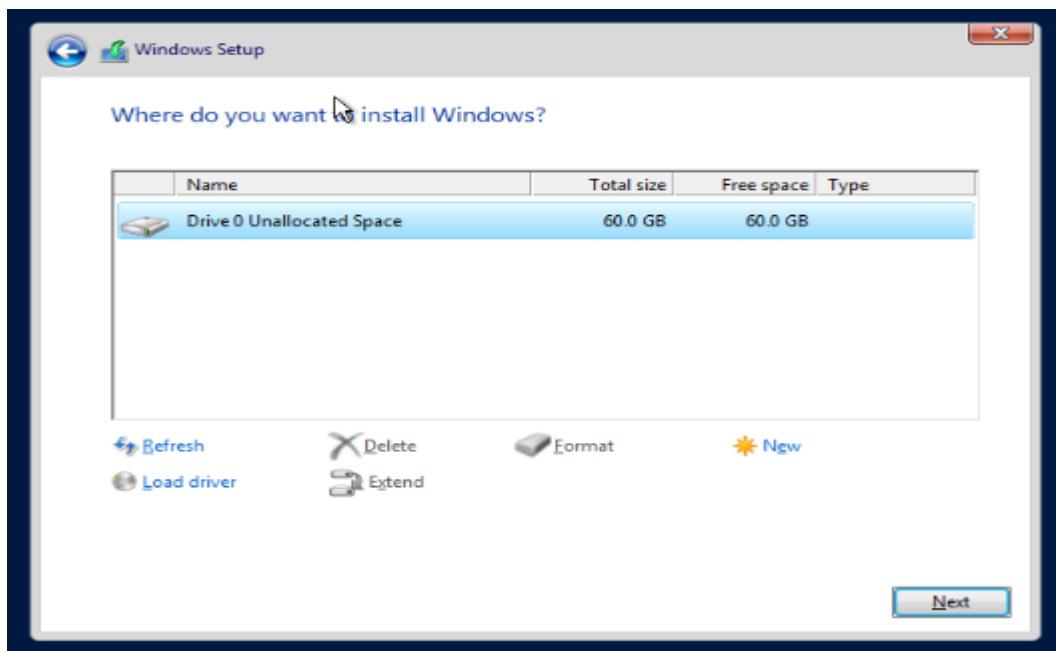


Then power on virtual machine







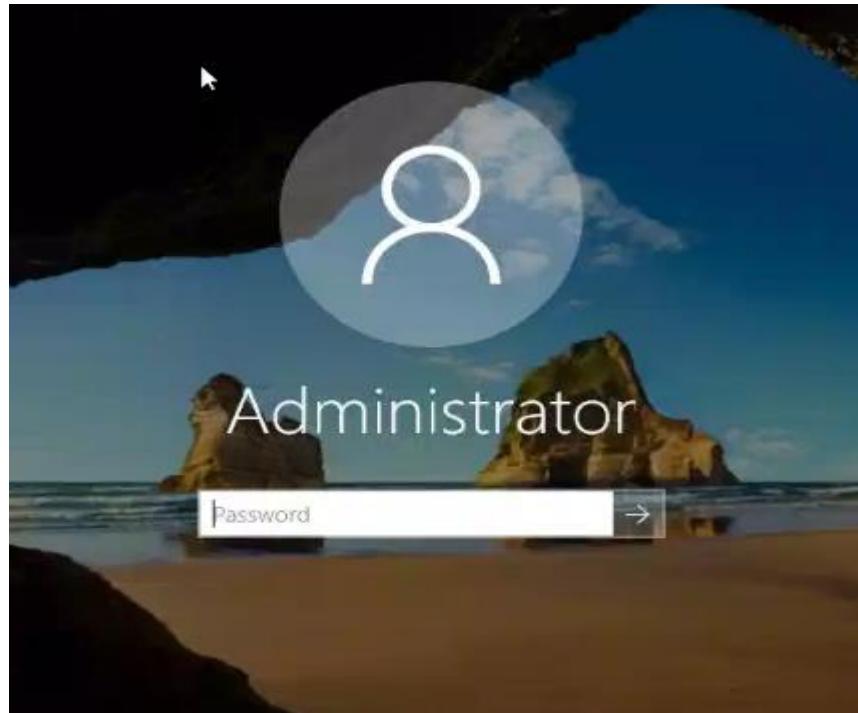


Customize settings

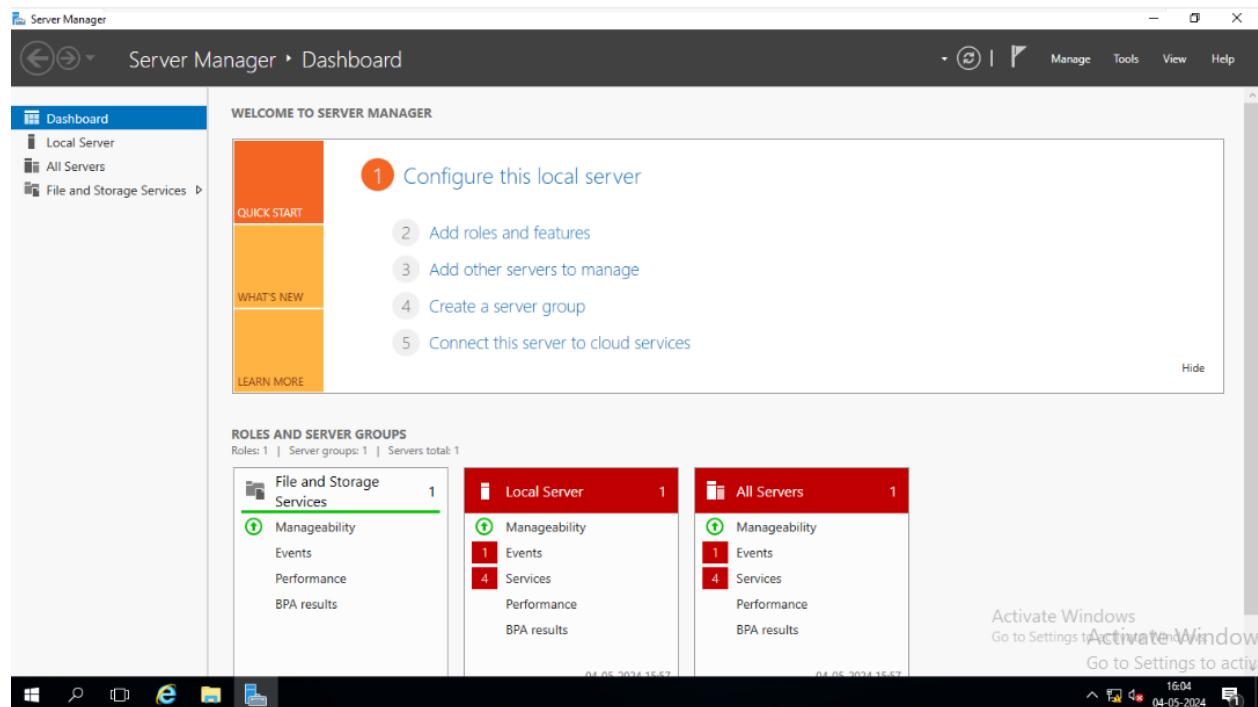
Type a password for the built-in administrator account that you can use to sign in to this computer.

User name	<input type="text" value="Administrator"/>
Password	<input type="password" value="*****"/>
Reenter password	<input type="password" value="*****"/> 

Login with password



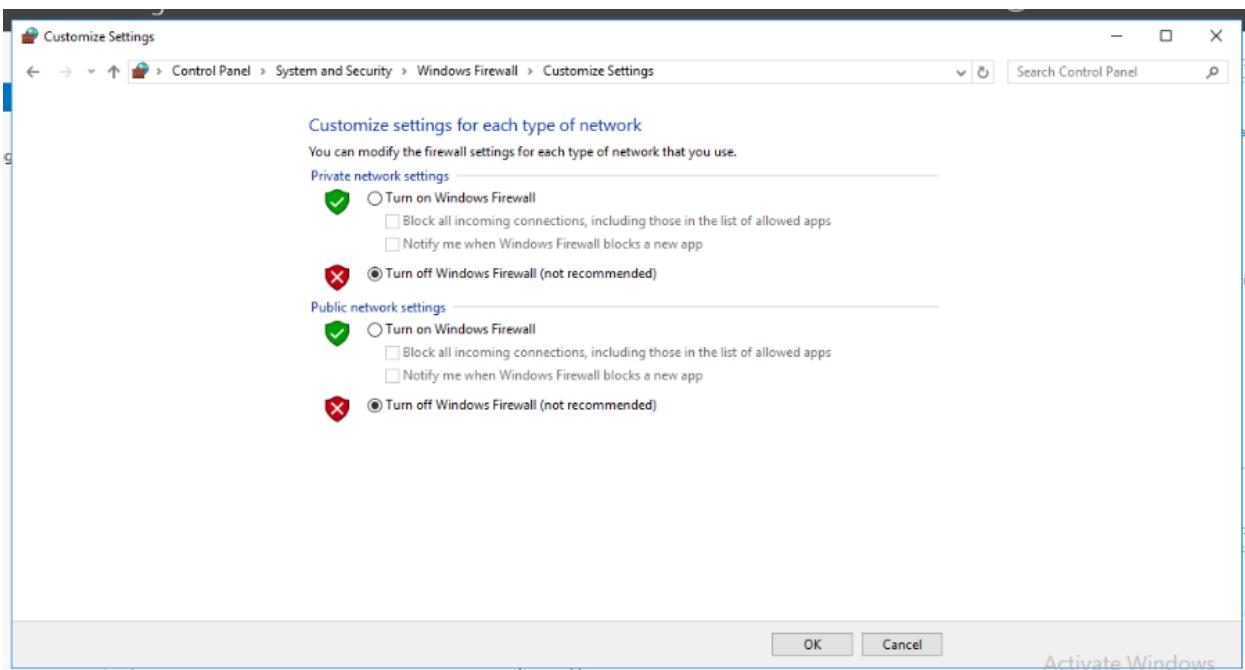
Windows server is installed . Here we need to make it as DC by installing ADDS.



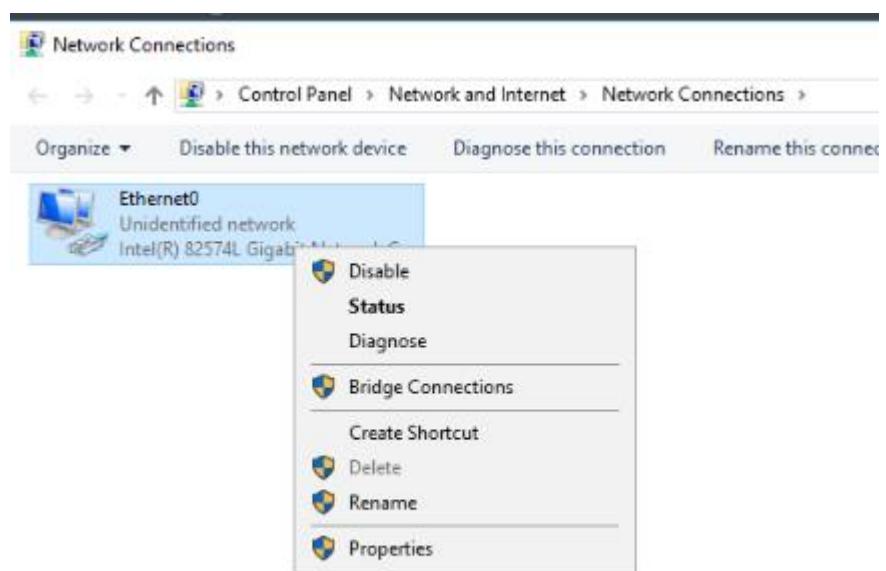
Step 2 : Local Server Configuration (post-installation)

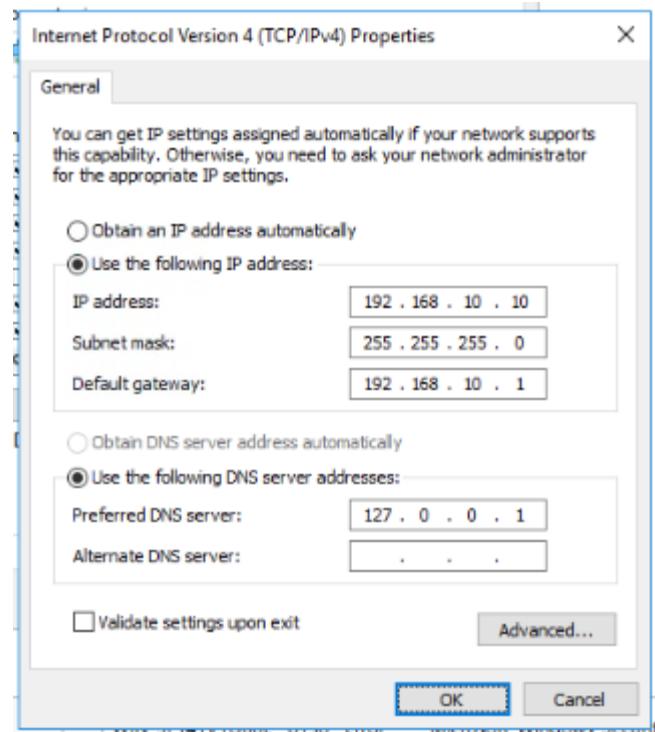
The screenshot shows the 'Local Server' properties page in the Server Manager. The left sidebar shows 'Dashboard', 'Local Server' (selected), 'All Servers', and 'File and Storage Services'. The main area displays 'PROPERTIES' for the server 'WIN-3F141V1D6BL'. It includes sections for Computer name (WIN-3F141V1D6BL), Workgroup (WORKGROUP), Windows Firewall (Public: On, Enabled), Remote management (Enabled), Remote Desktop (Disabled), NIC Teaming (Disabled), Ethernet0 (IPv4 address assigned by DHCP, IPv6 enabled), Operating system version (Microsoft Windows Server 2016 Datacenter Evaluation), and Hardware information (VMware, Inc. VMware20,1). The right side shows system details like Last installed updates (Windows Update), Last checked for updates (Never), Windows Defender (Real-Time Protection: On), and Processor (Intel(R) Xeon(R) CPU E5-2680 v3 @ 2.50GHz). An 'EVENTS' section at the bottom shows three error logs from 'Microsoft-Windows-Security-SPP' on 'WIN-3F141V1D6BL' with IDs 8198, 8200, and 1014. A status bar at the bottom right shows 'Activate Windows' and the date '04-05-2024 16:04'.

Turning off firewall

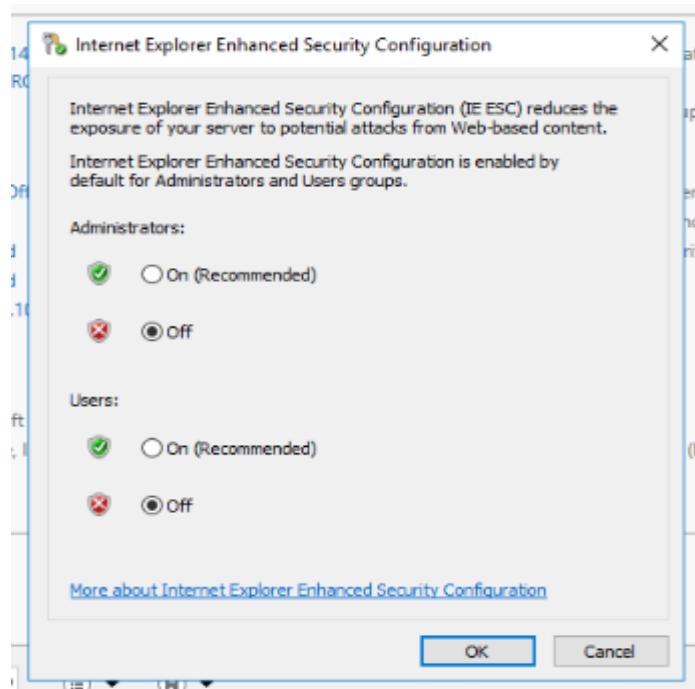


Proving ip address

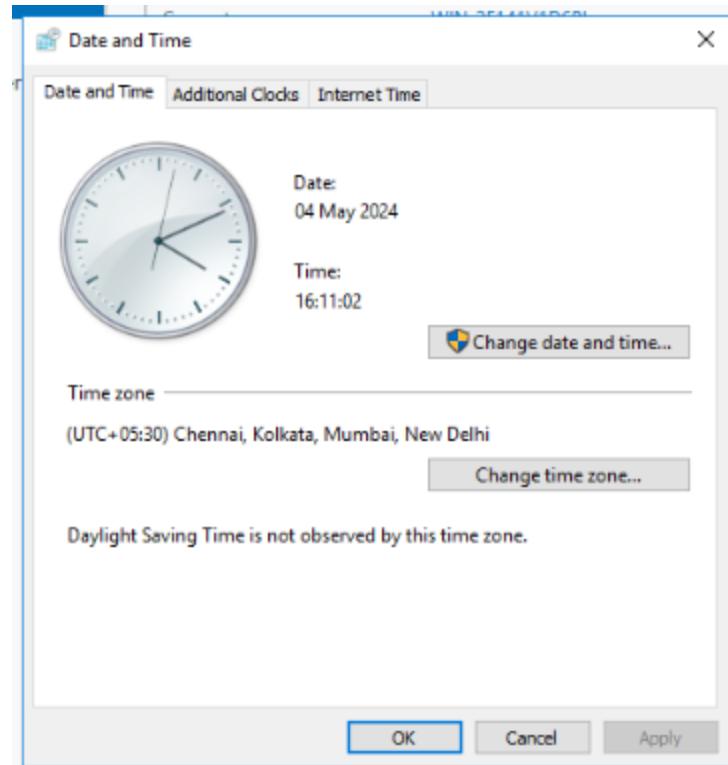




Turn off IE .

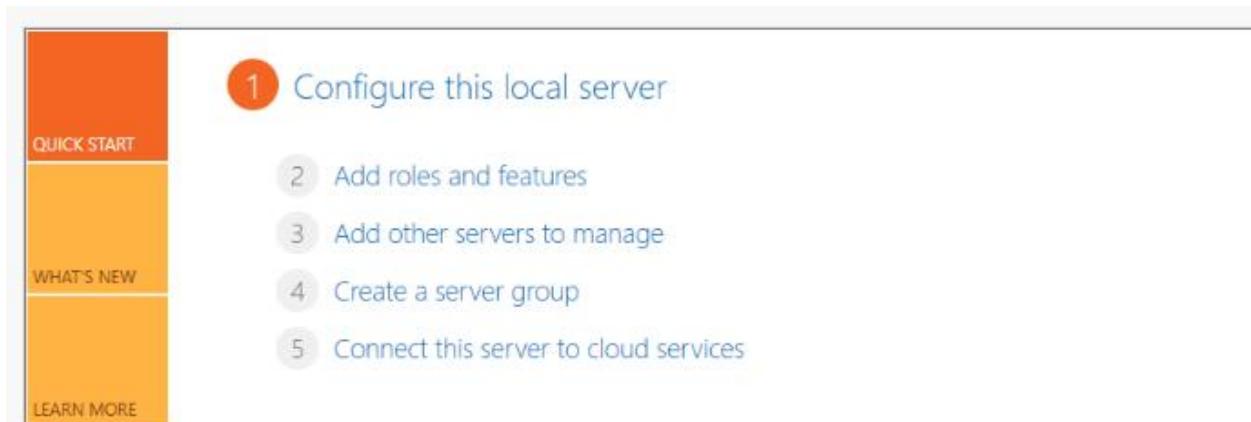


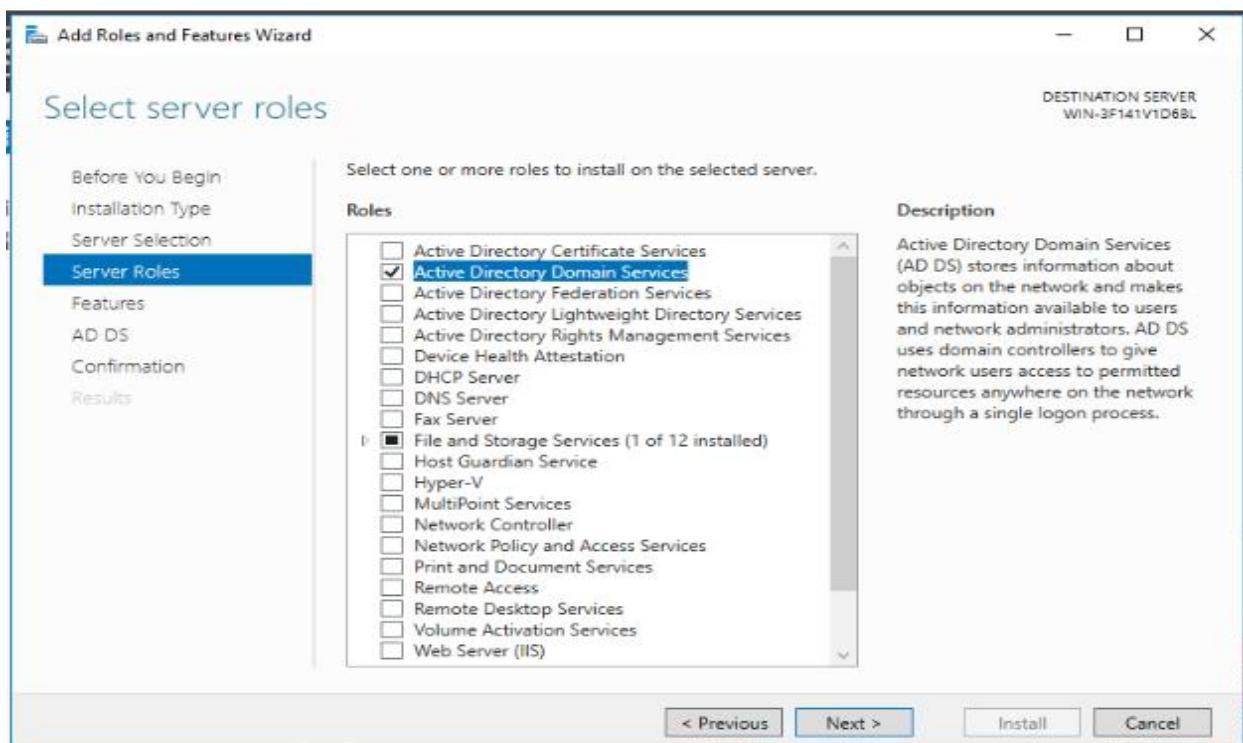
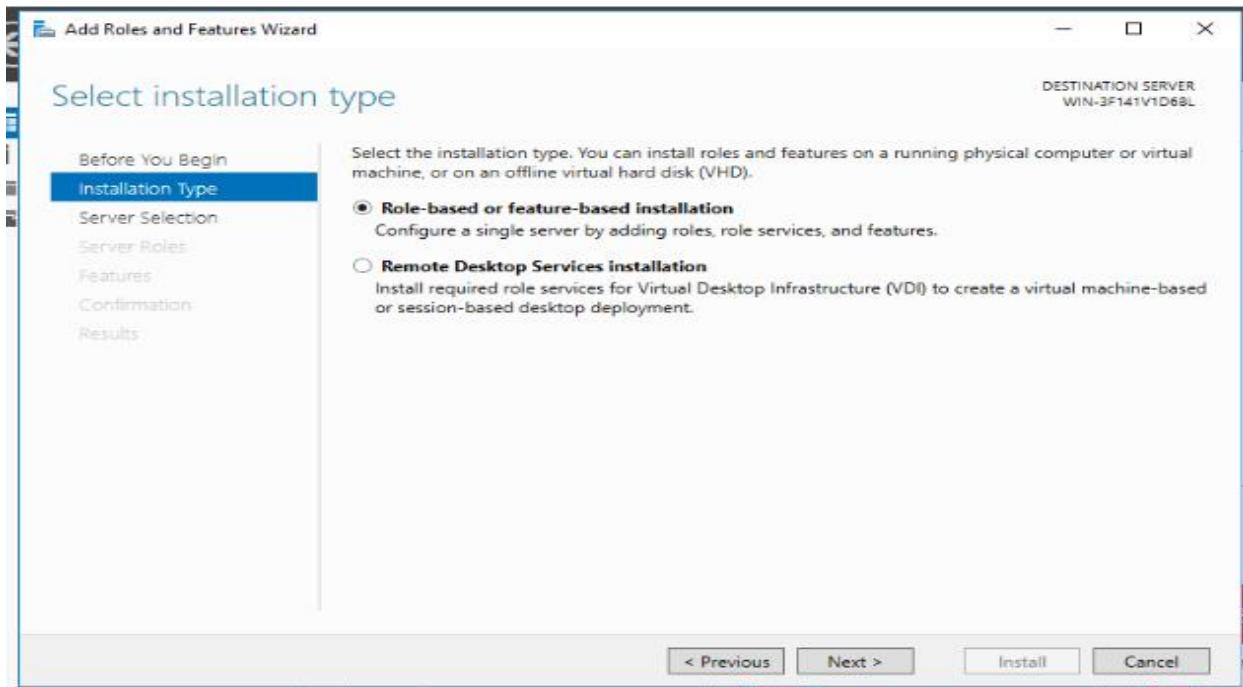
Set timezone



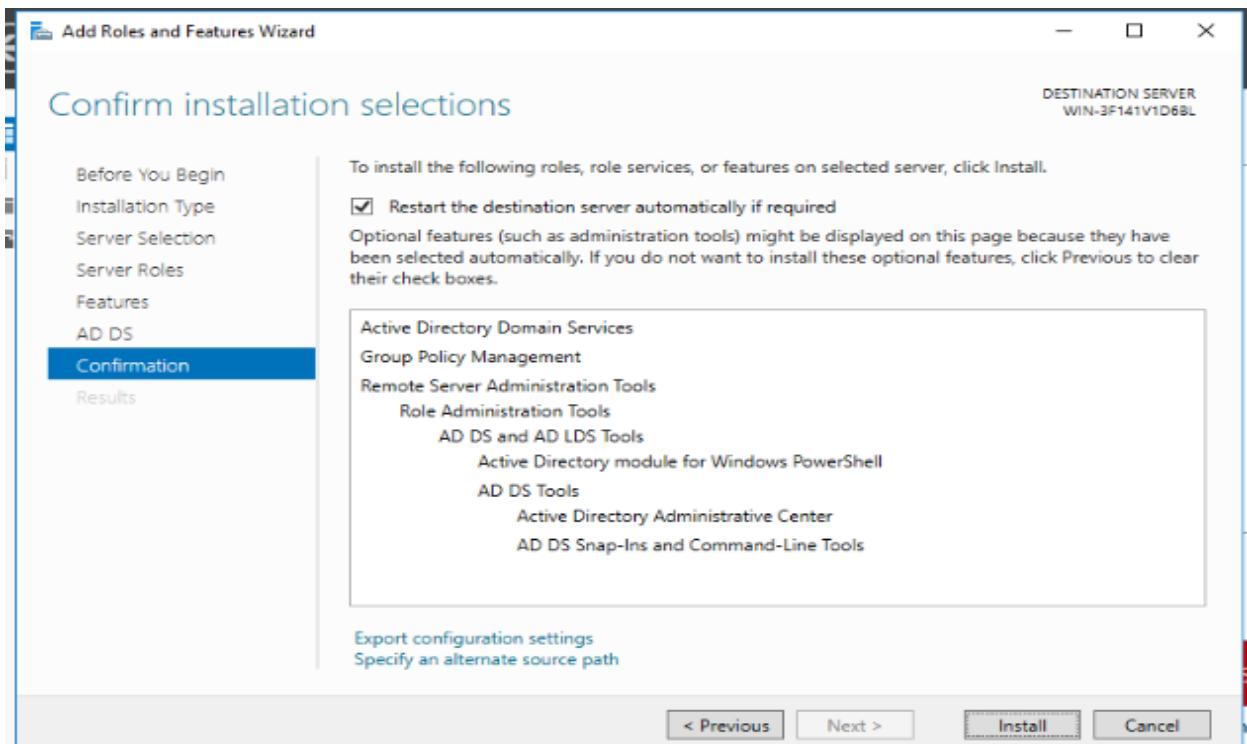
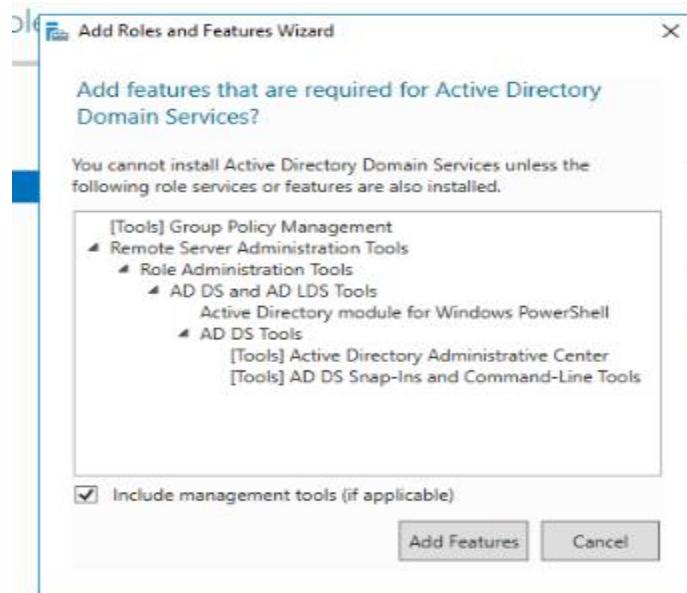
Step 3 : Installing ADDS and Promoting this server as DC

Click Add roles and features

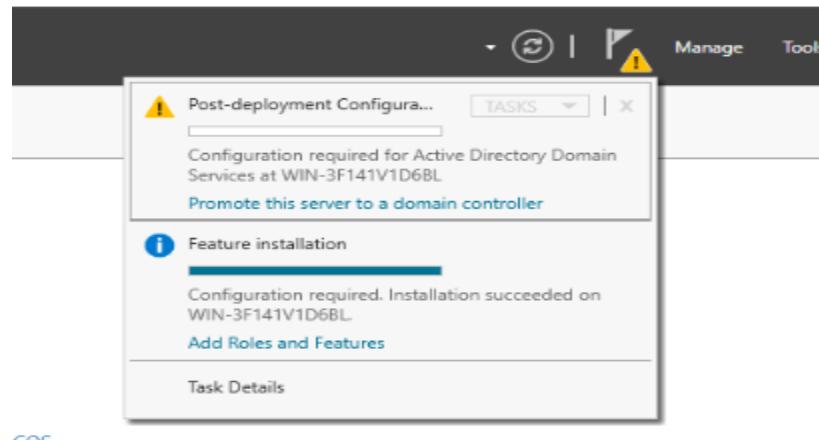




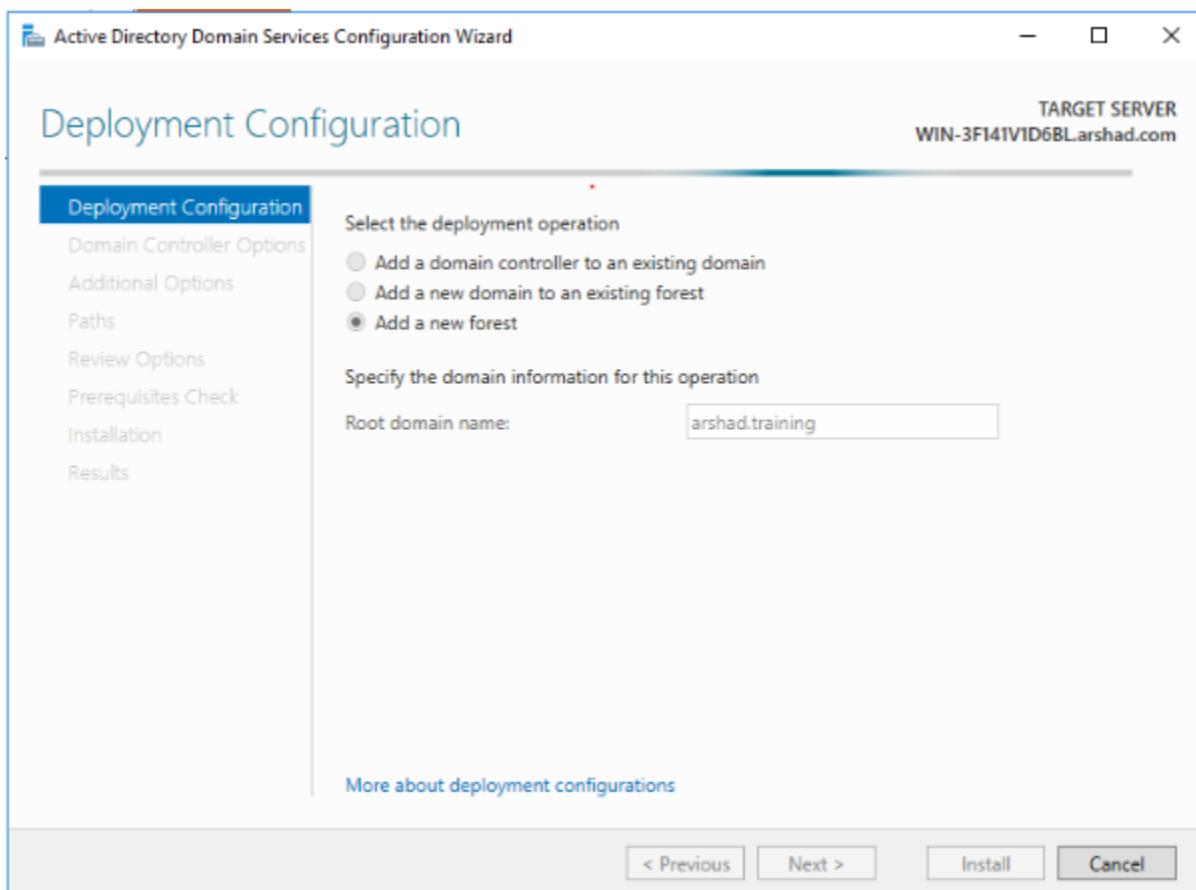
Add features

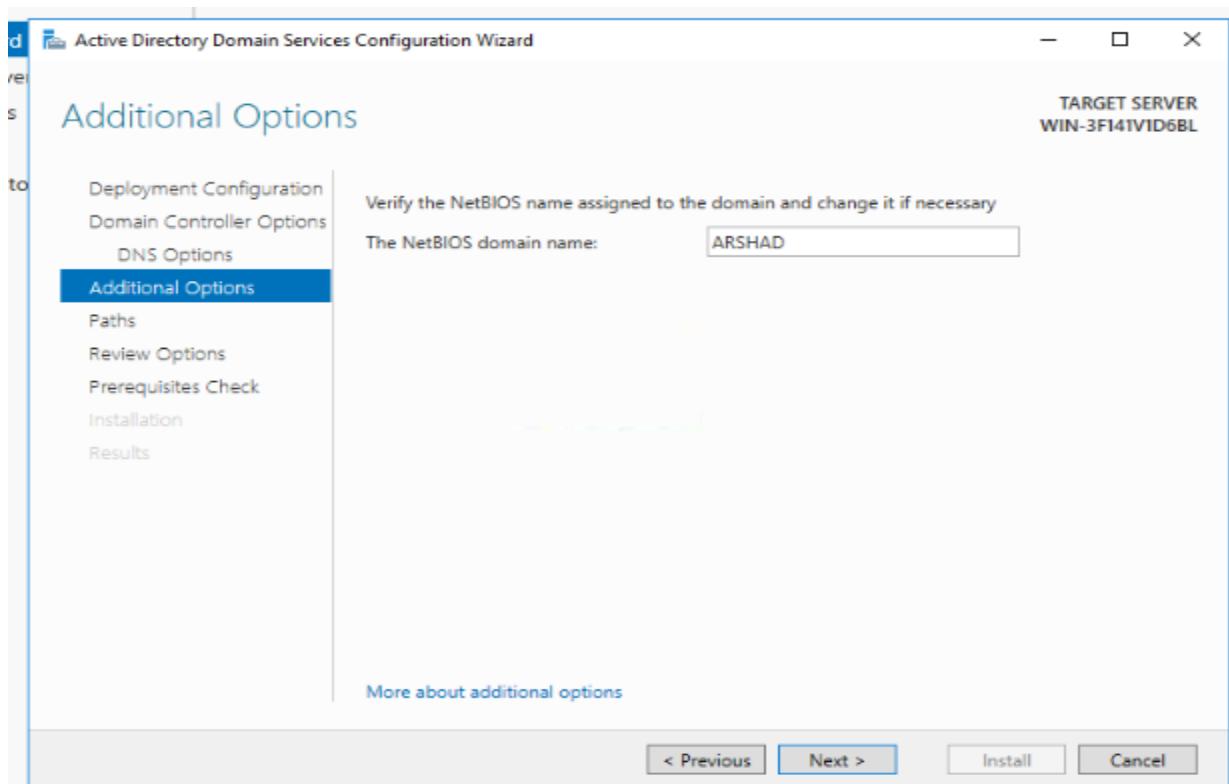
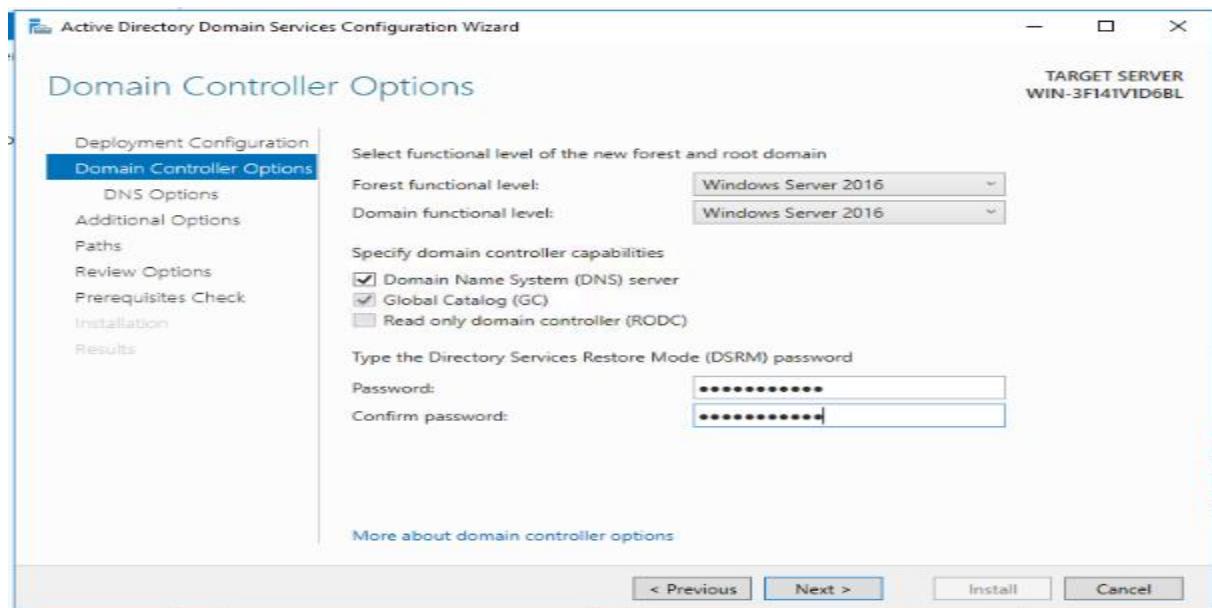


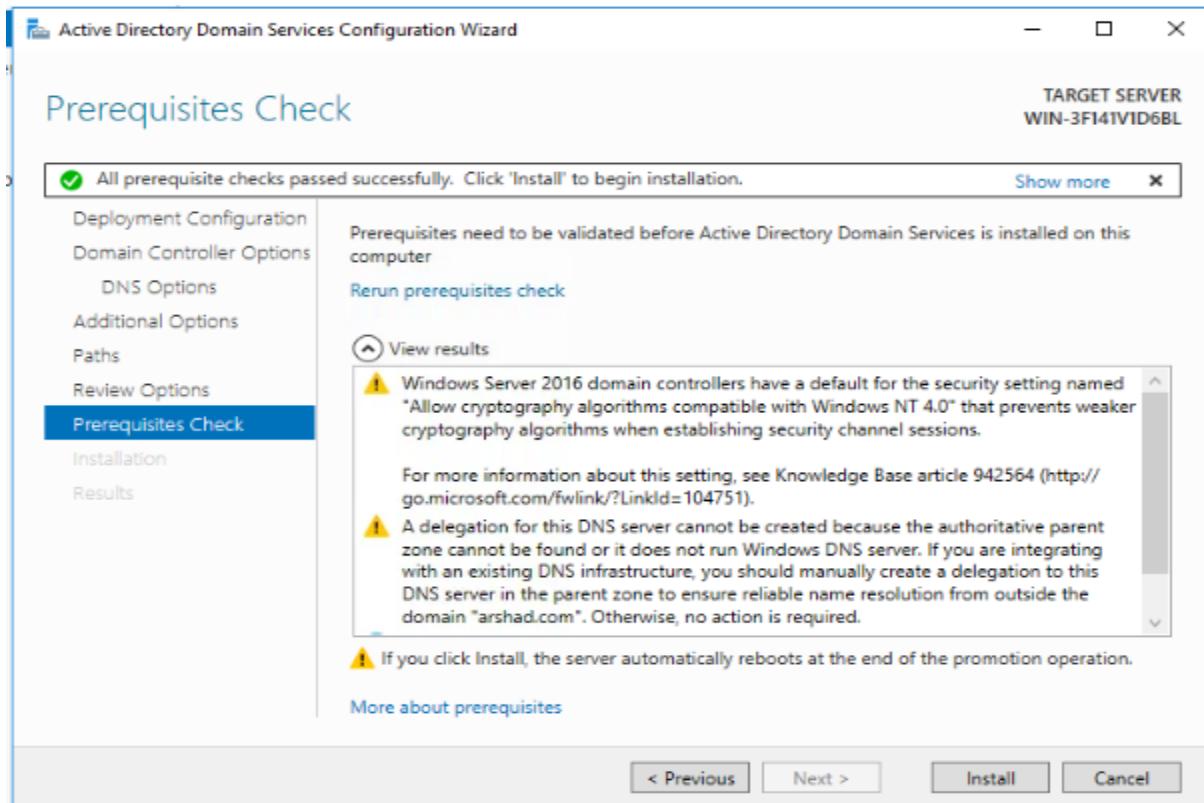
After installation , click promote this server to domain controller



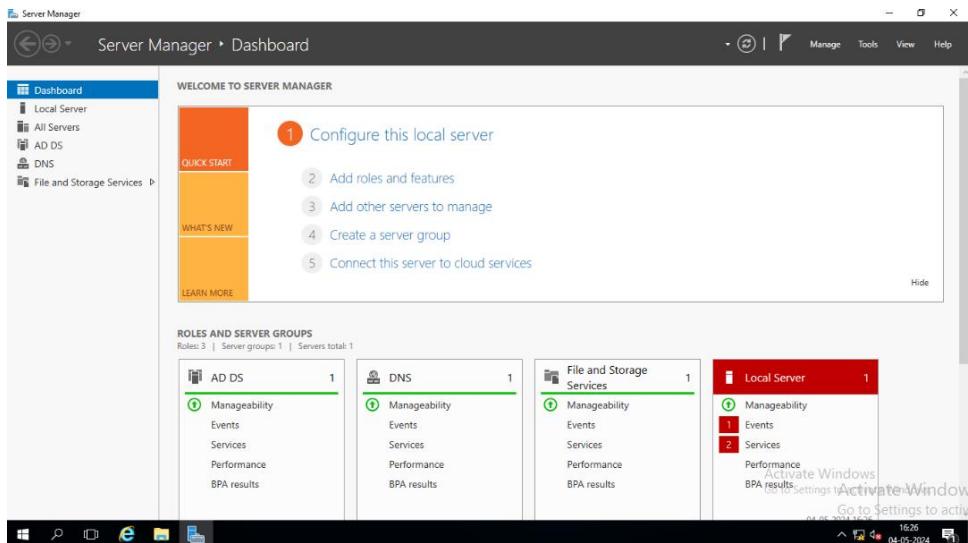
Click on forest and add domain name as “arshad.training”



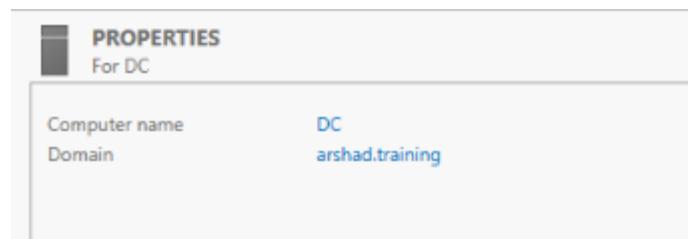




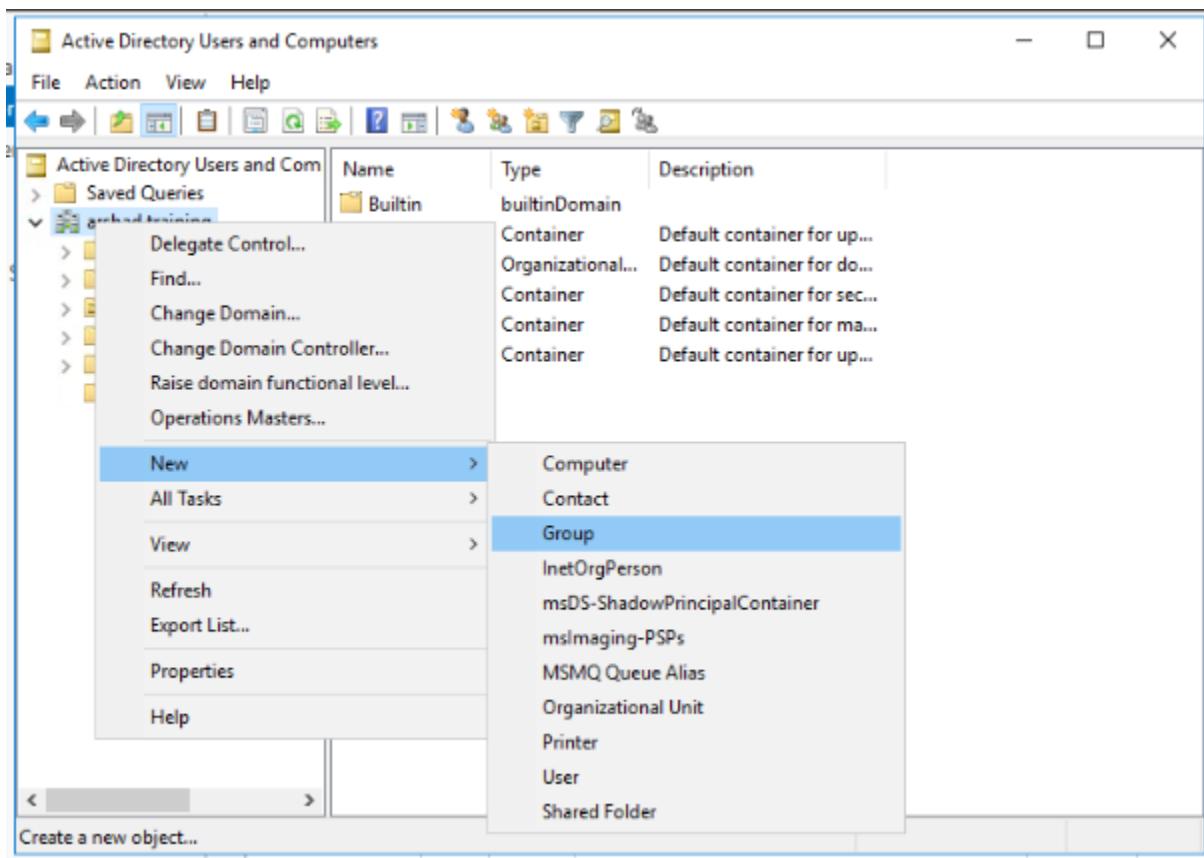
We can see below ADDS installed

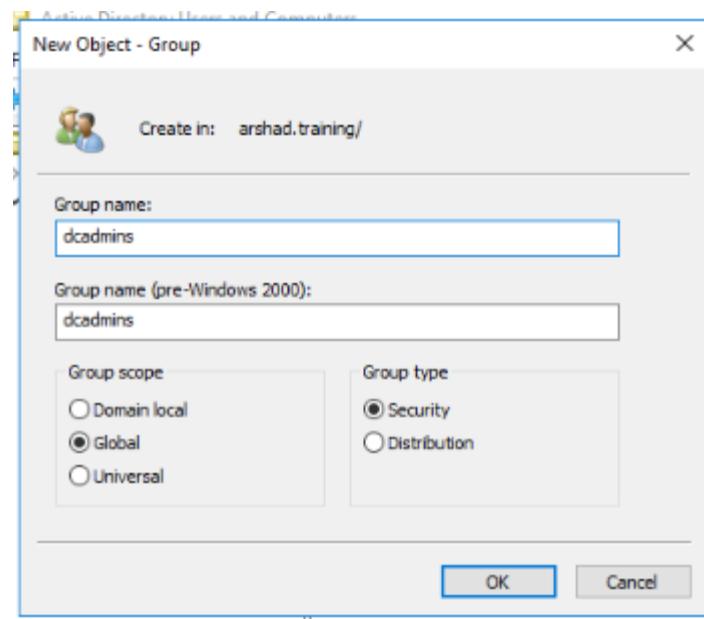


Now server is Domain Controller

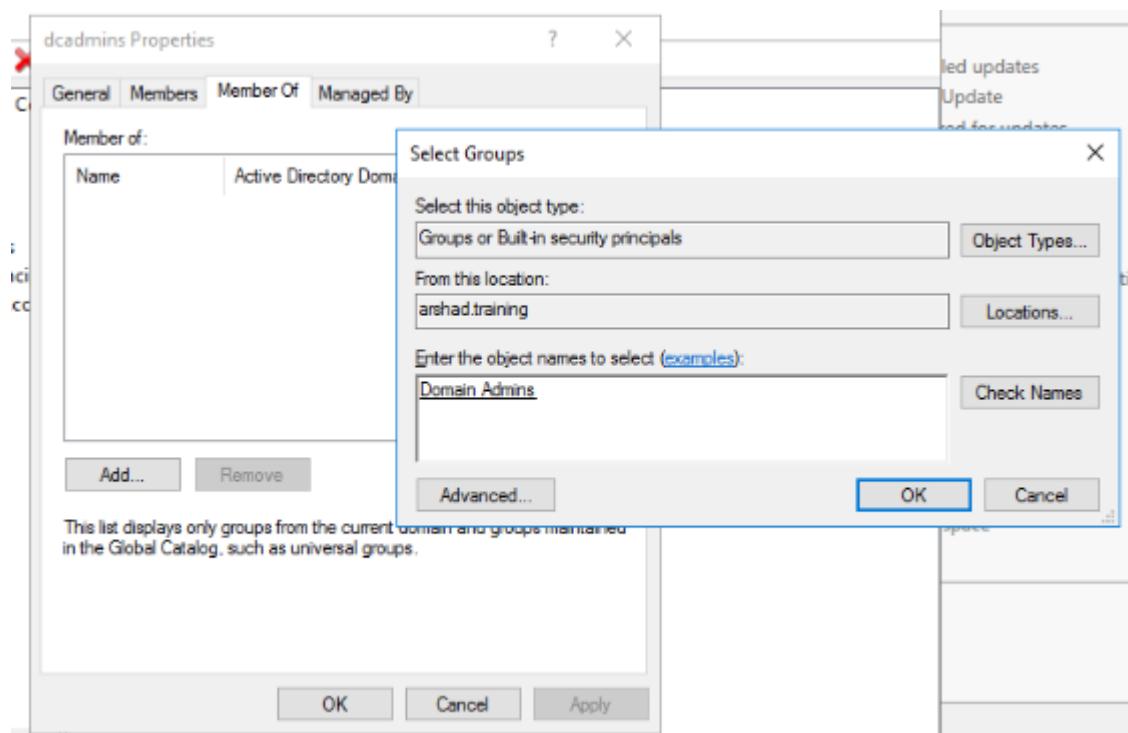


Step 3 : creating a group in DC named “dcadmins”

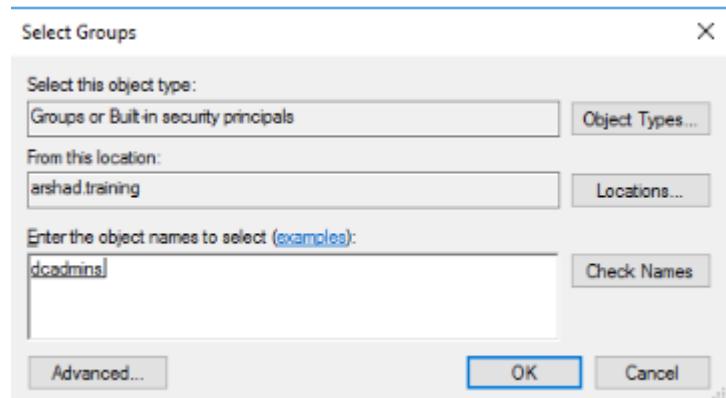
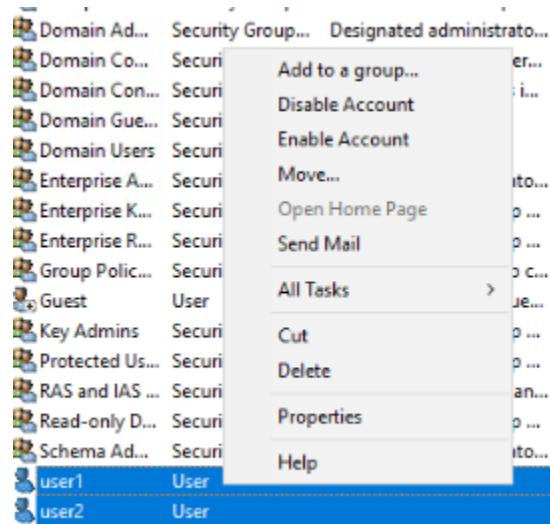


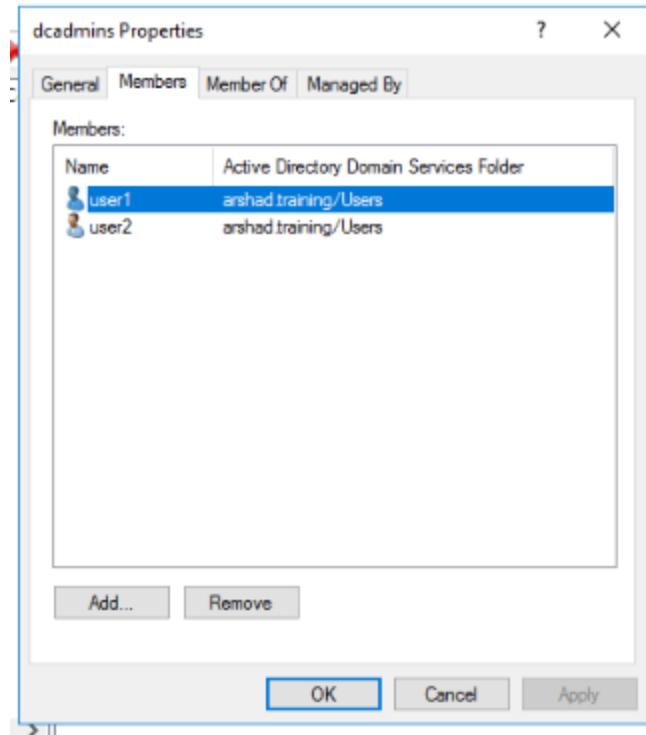


After that adding domain admins permission to the group



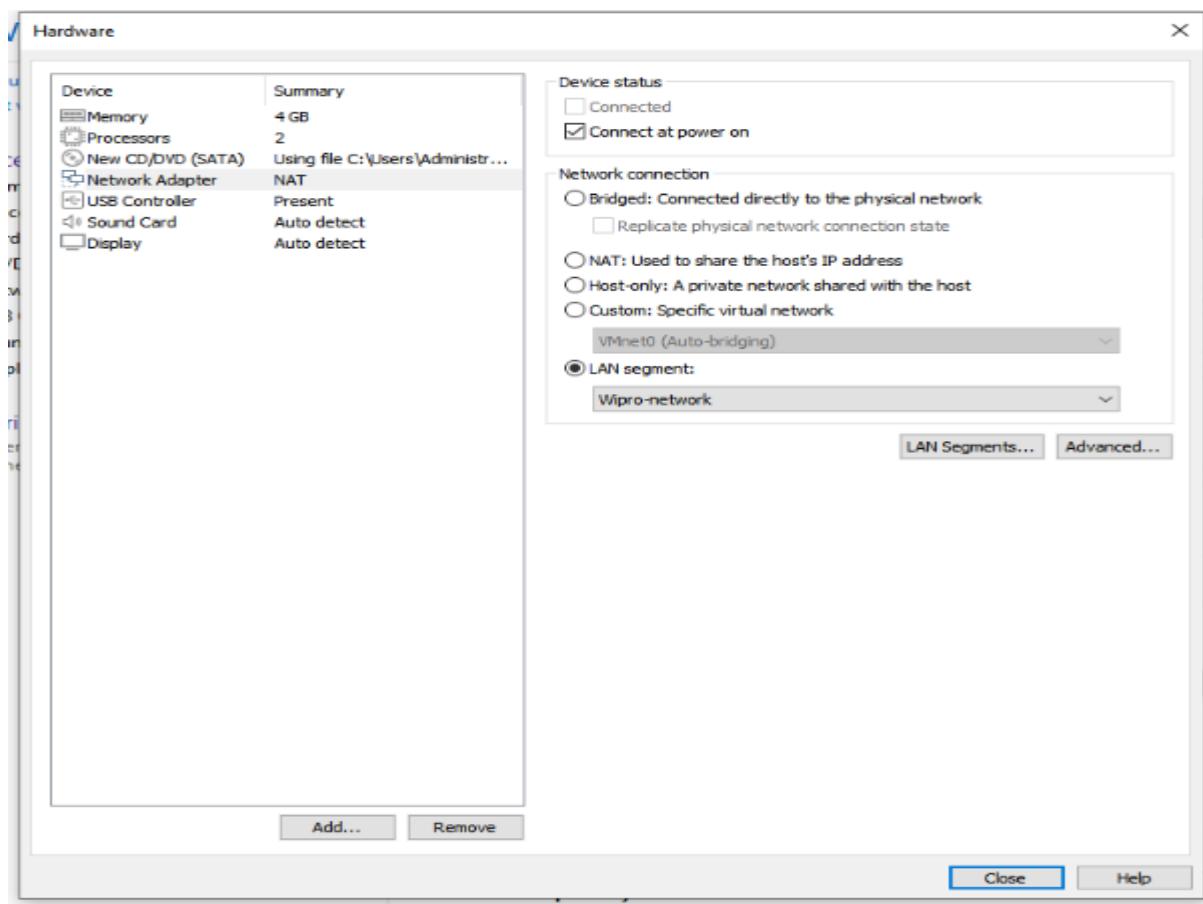
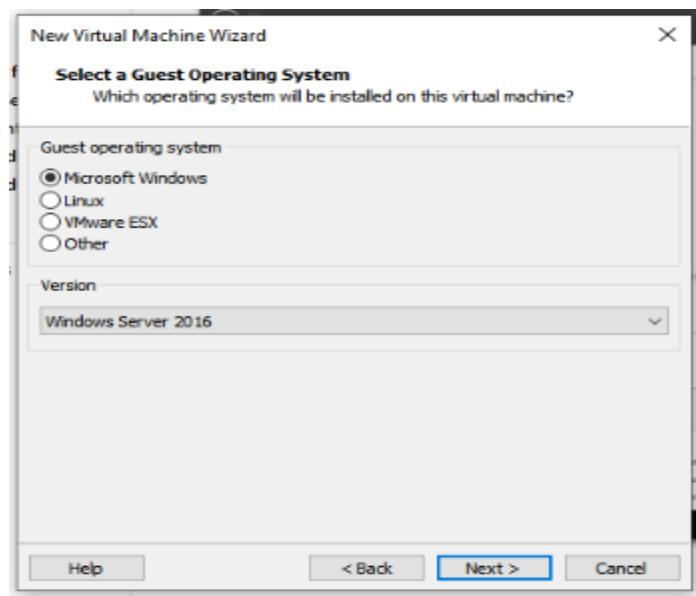
Step 4 : Create 2 users , user and user2 and add them to the dcadmins group

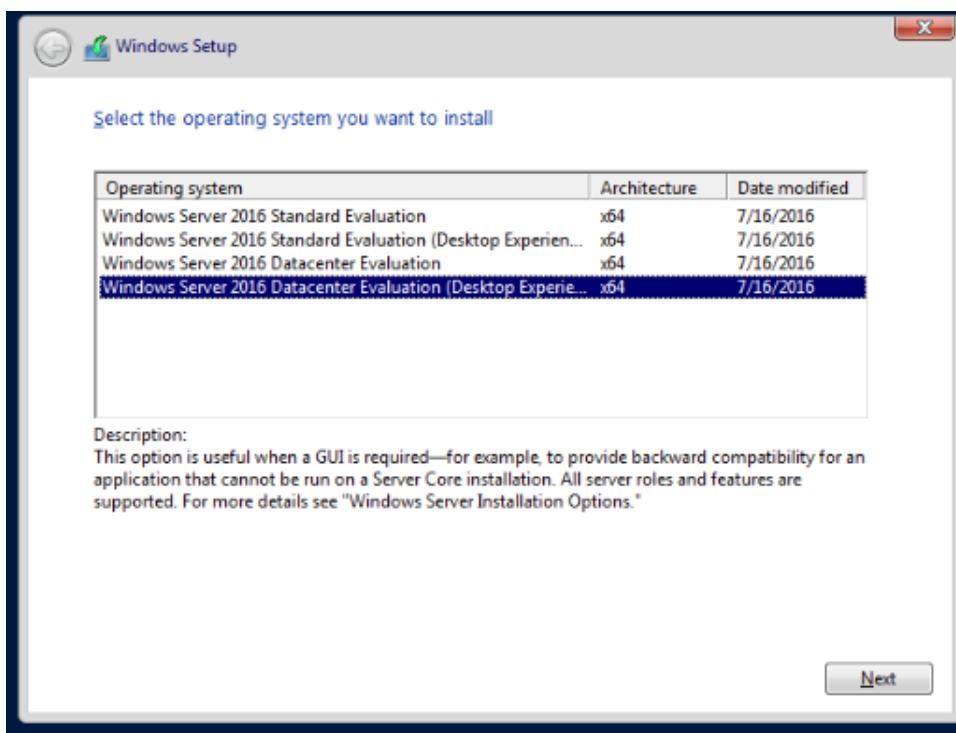


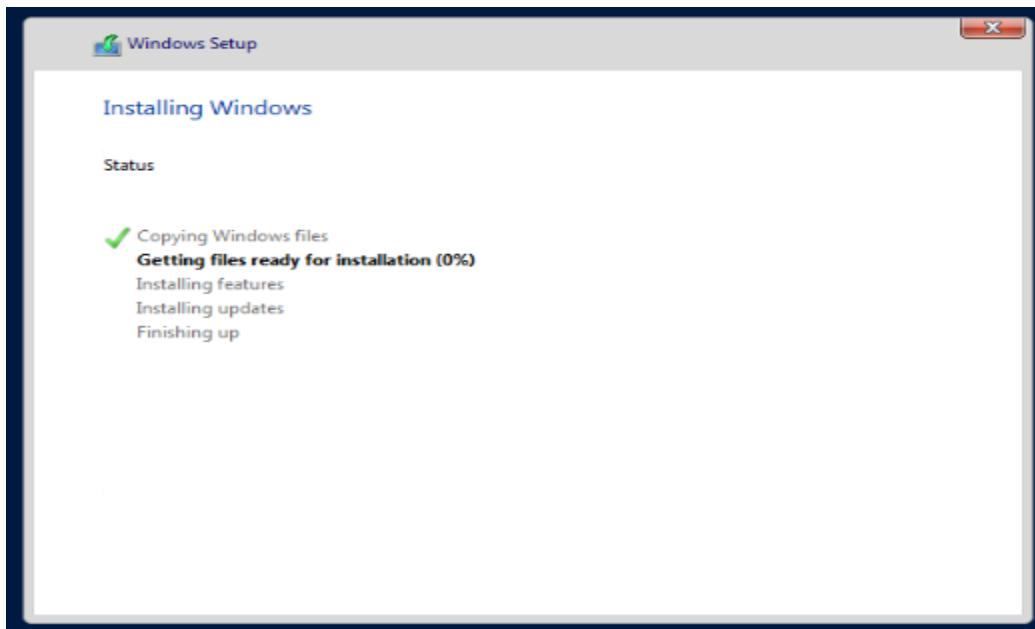


Step 5 : Install member machine named “member01”

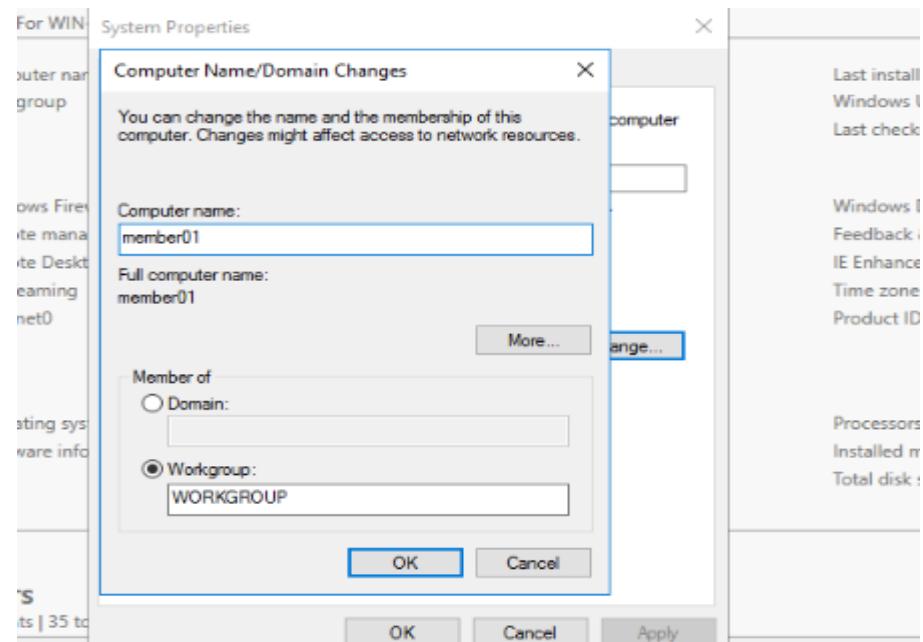




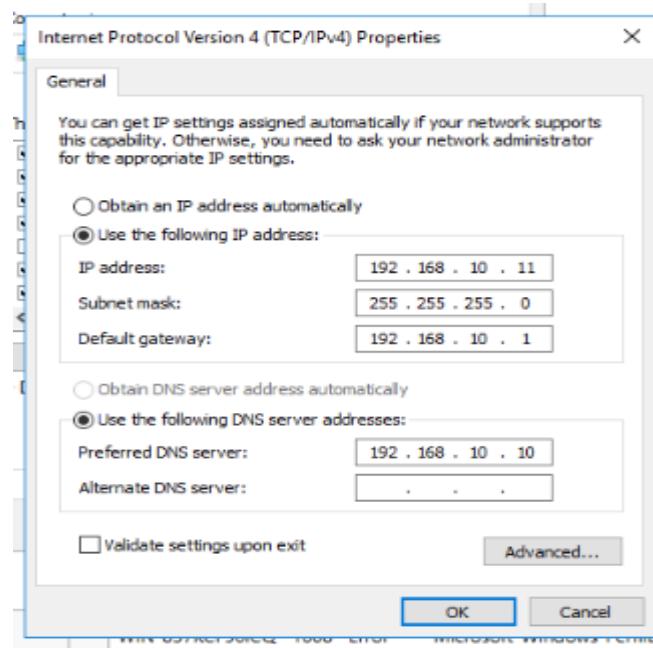




After installation change computer name (server manager – local server)



Configure ip address . DNS is DC machine ip address



Turn off firewall , IE , and set timezone

Server Manager

Server Manager > Local Server

PROPERTIES

For member01

Computer name	member01	Last installed updates	Never
Workgroup	WORKGROUP	Windows Update	Install updates automatically using Windows Update
		Last checked for updates	Never
Windows Firewall	Public: Off	Windows Defender	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	Settings
Remote Desktop	Disabled	IE Enhanced Security Configuration	Off
NIC Teaming	Disabled	Time zone	(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Ethernet0	192.168.10.11, IPv6 enabled	Product ID	Not activated

Operating system version: Microsoft Windows Server 2016 Datacenter Evaluation

Hardware information: VMware, Inc. VMware20.1

Processors: Intel(R) Xeon(R) CPU E5-2680 v3 @ 2.50GHz

Installed memory (RAM): 4 GB

Total disk space: 59.45 GB

EVENTS

All events | 61 total

Server Name	ID	Severity	Source	Log	Date and Time
MEMBER01	134	Warning	Microsoft-Windows-Time-Service	System	04-05-2024 17:47:51
MEMBER01	2006	Error	Microsoft-Windows-PerfNet	Application	04-05-2024 17:47:48
MEMBER01	134	Warning	Microsoft-Windows-Time-Service	System	04-05-2024 17:47:39

Activate Windows
Go to Settings to activate

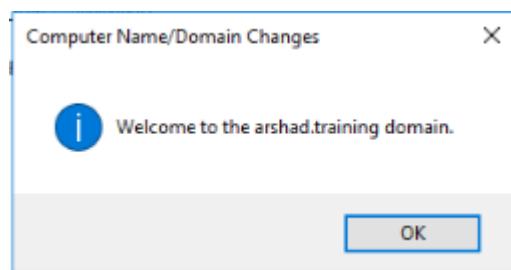
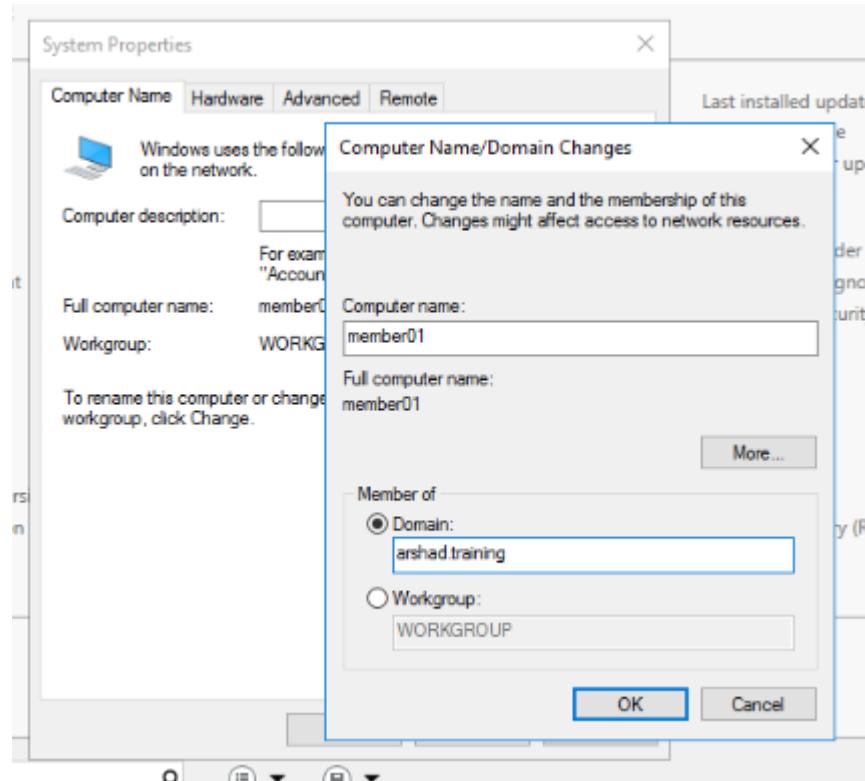
Activate Windows
Go to Settings to activate

17:47 04-05-2024

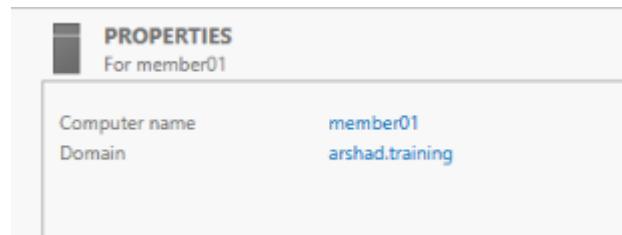
Step 6 : domain join

Click on domain under local server and click change

Then enter the domain name “arshad.training” and enter credentials



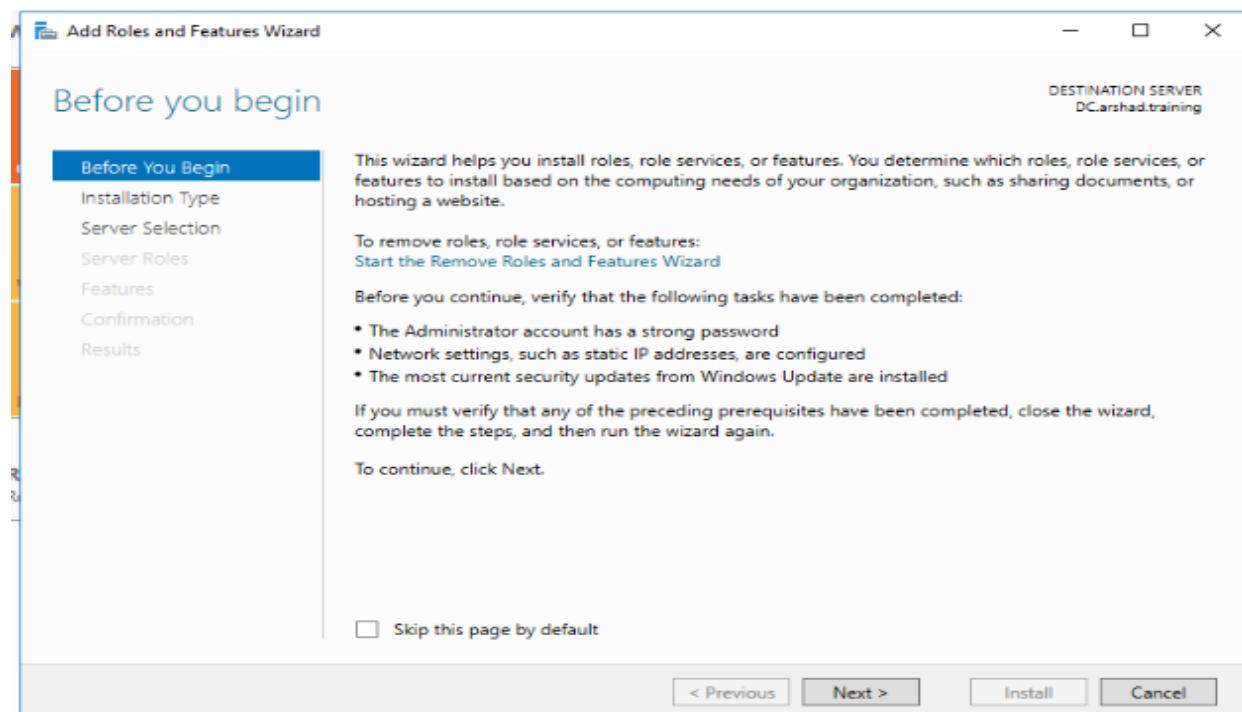
Domain joined

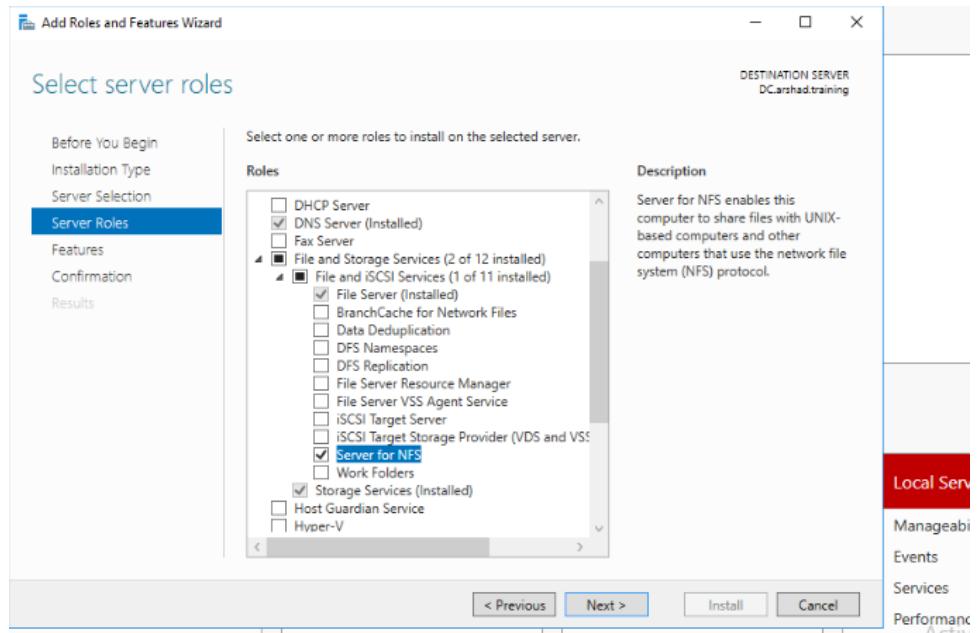
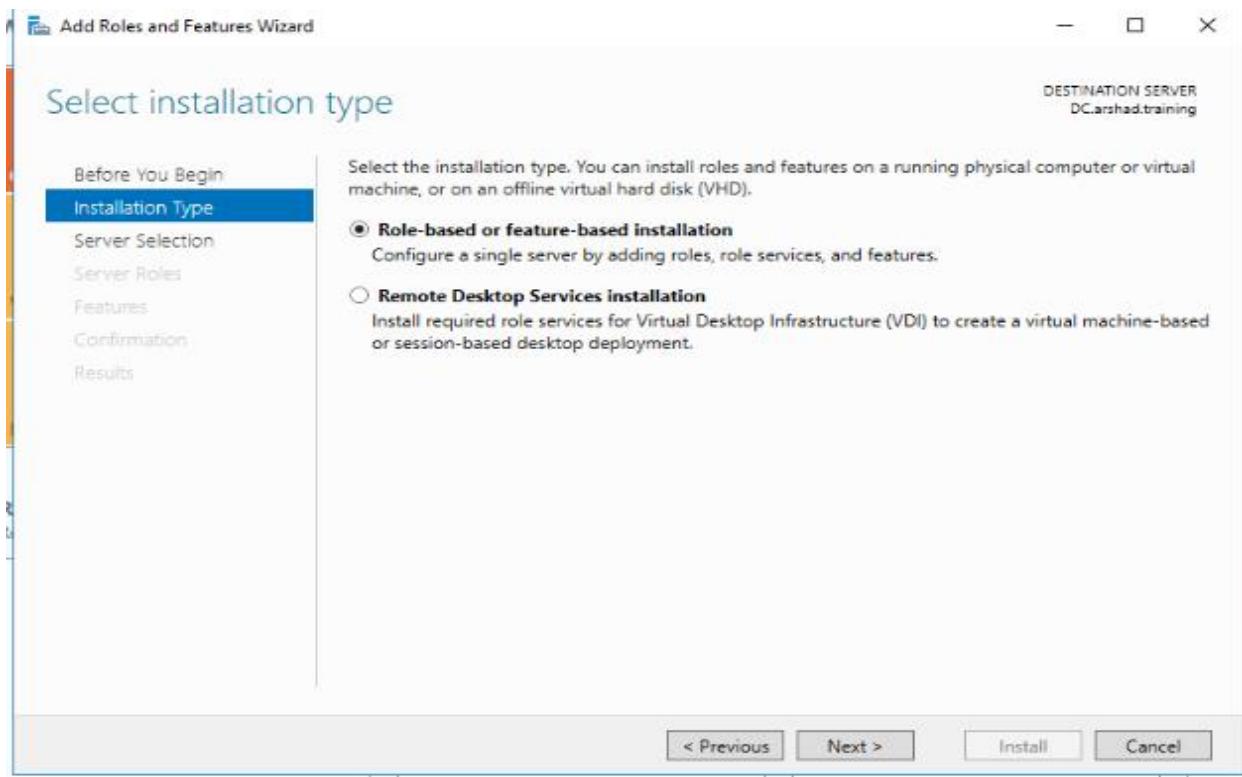


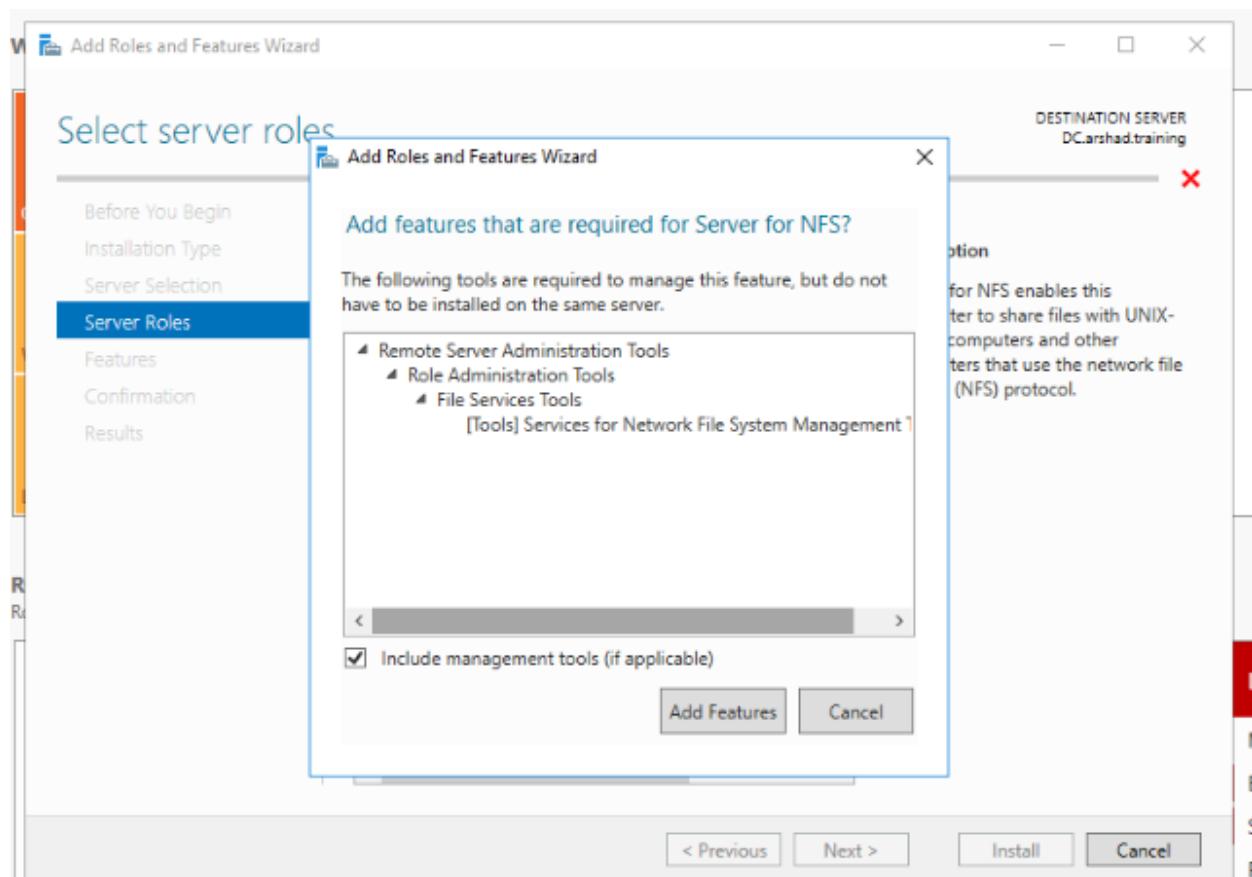
Step 7 : Open DC machine ,Create a folder in Cdrive named “sharable” for NFS sharing

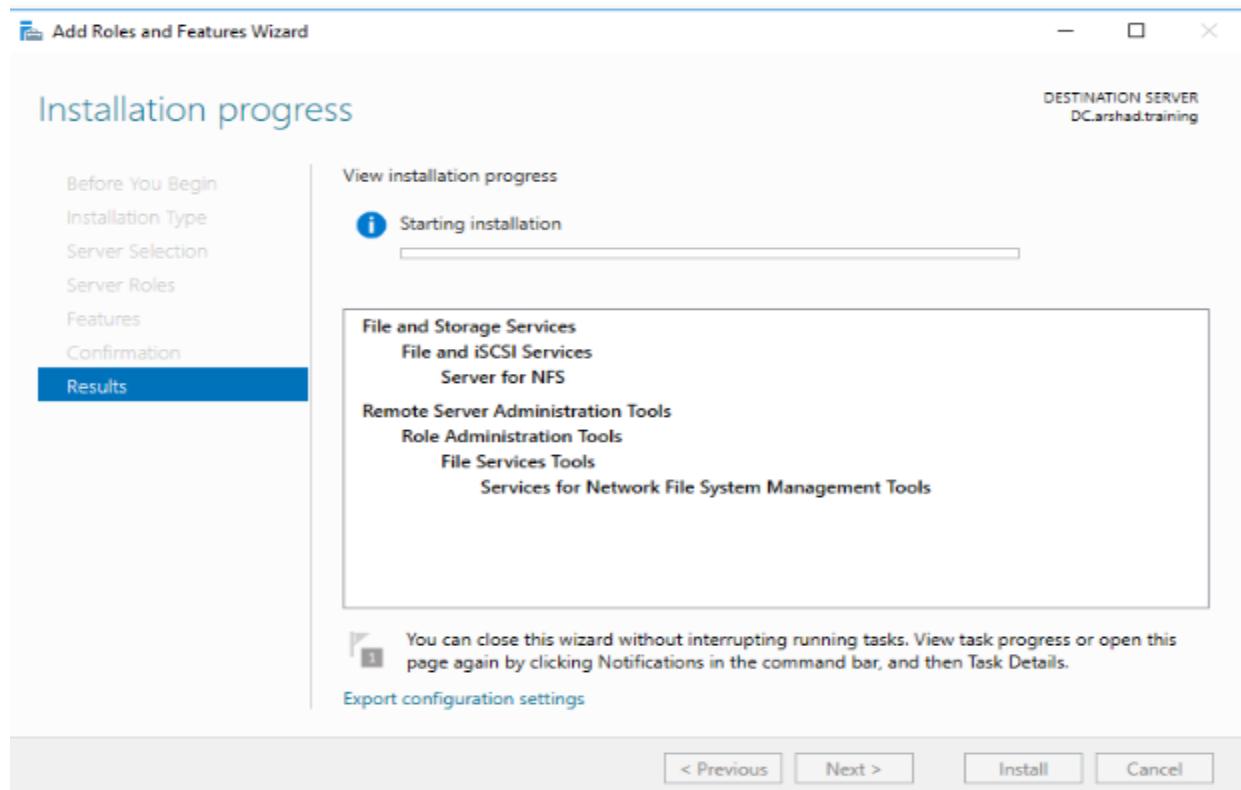
Name	Date modified	Type	Size
- PerfLogs	16-07-2016 18:53	File folder	
Program Files	04-05-2024 15:54	File folder	
Program Files (x86)	16-07-2016 18:53	File folder	
Sharable	05-05-2024 02:12	File folder	
Users	04-05-2024 16:31	File folder	
Windows	04-05-2024 16:36	File folder	

Step8 : Install NFS role and feature on DC

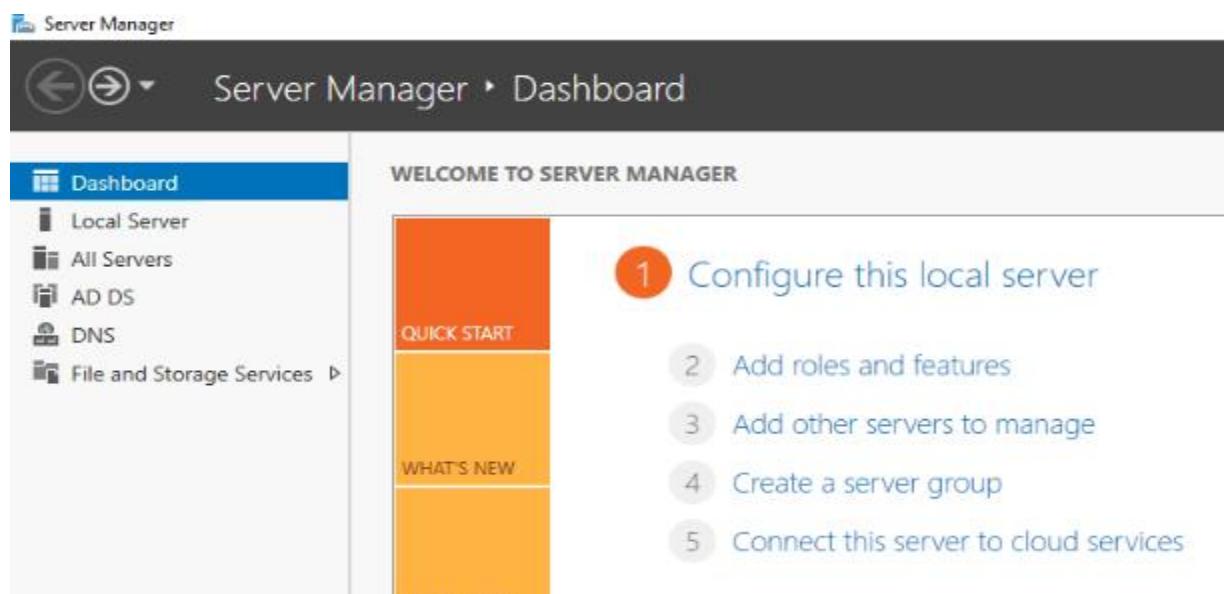




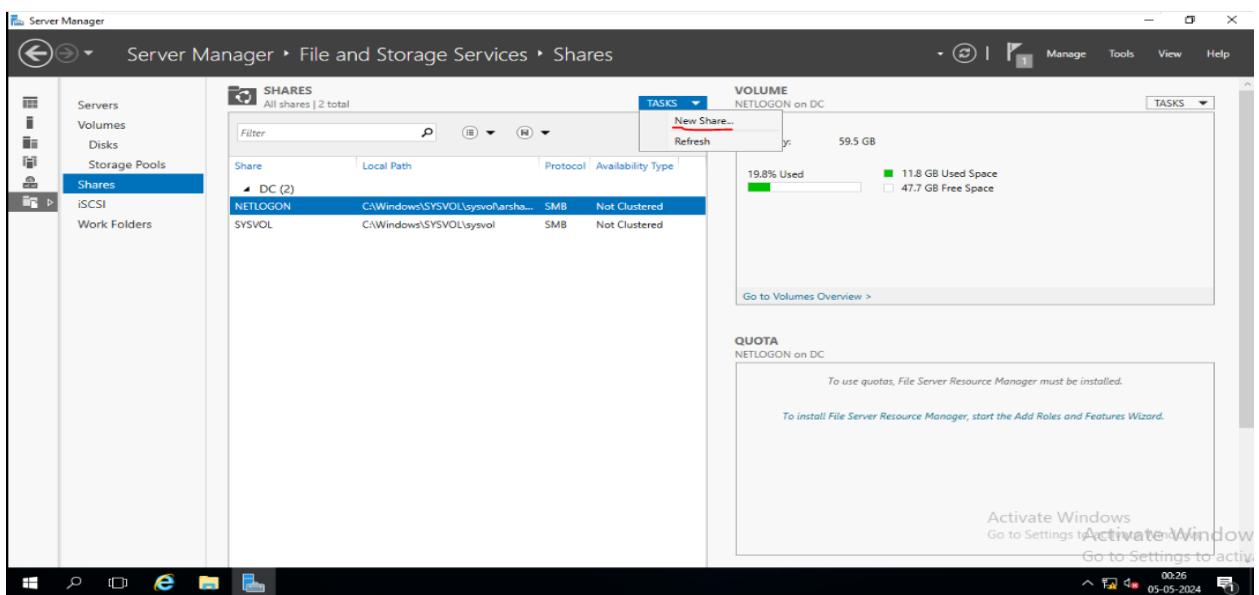




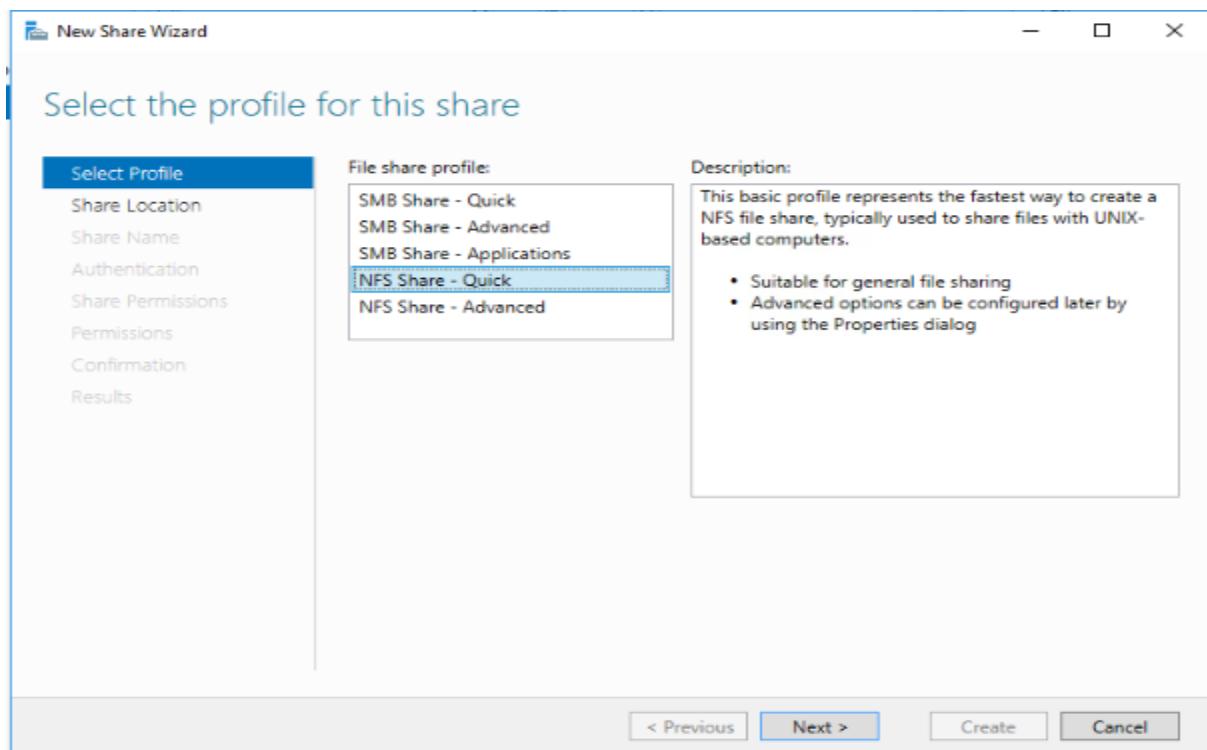
Installed . Then click on File and Storage service



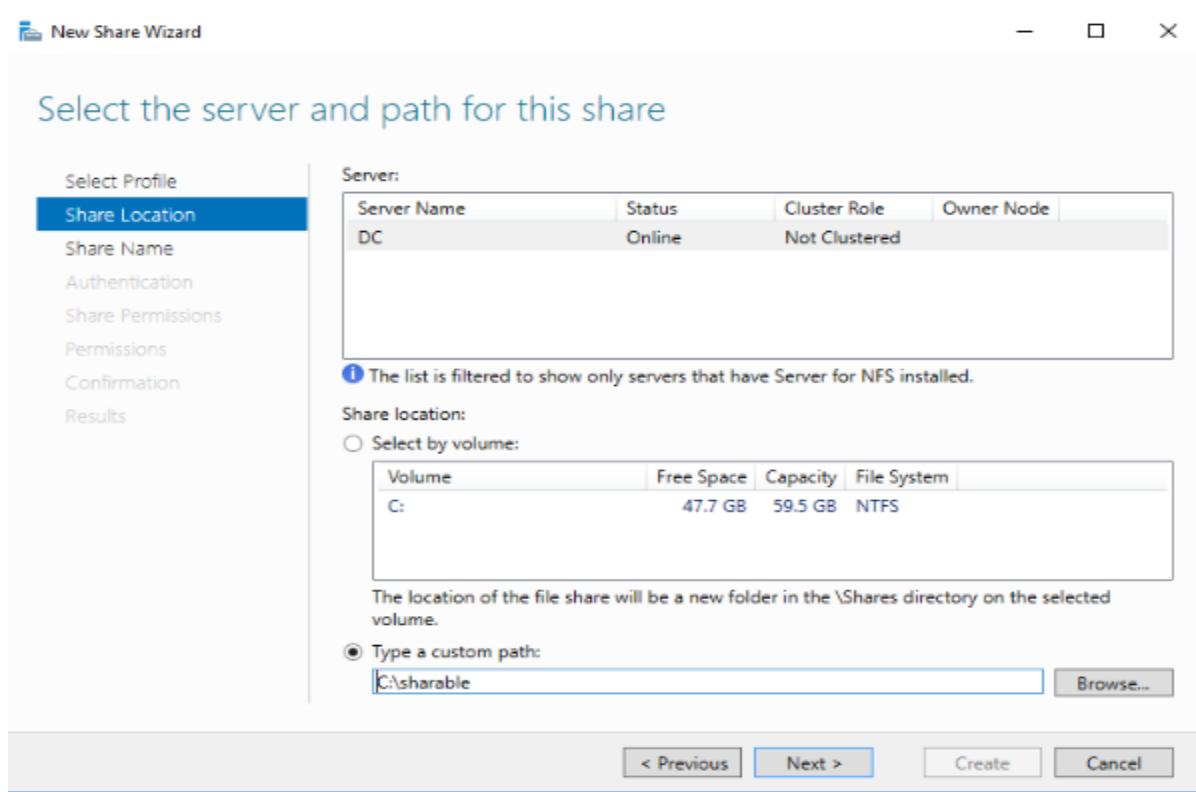
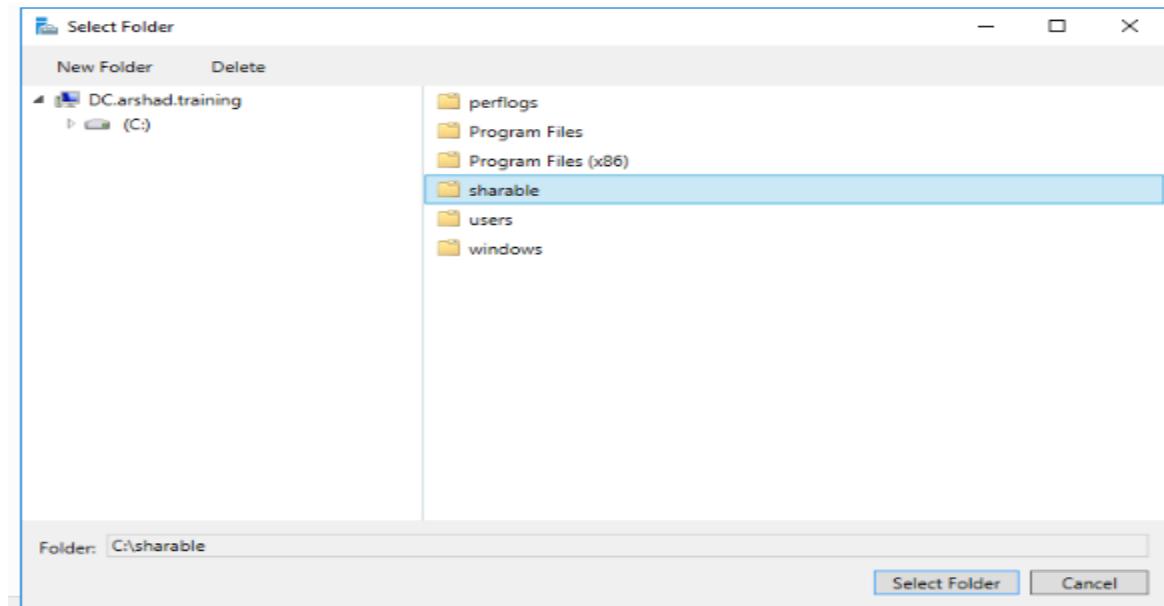
Click shares – tasks --- new share

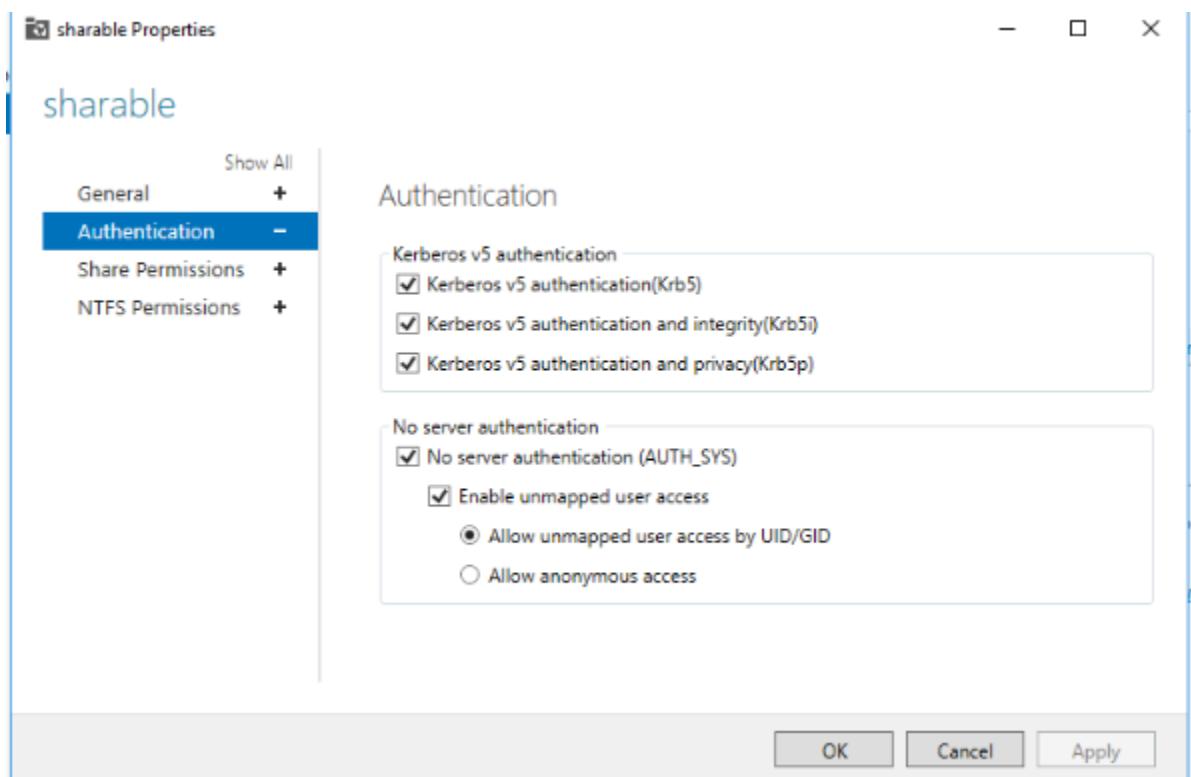
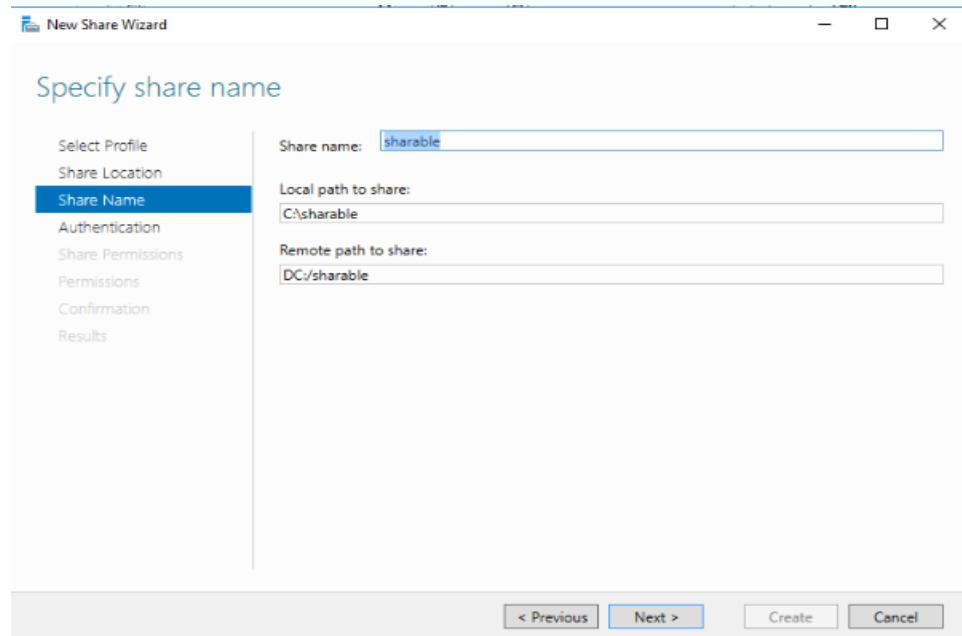


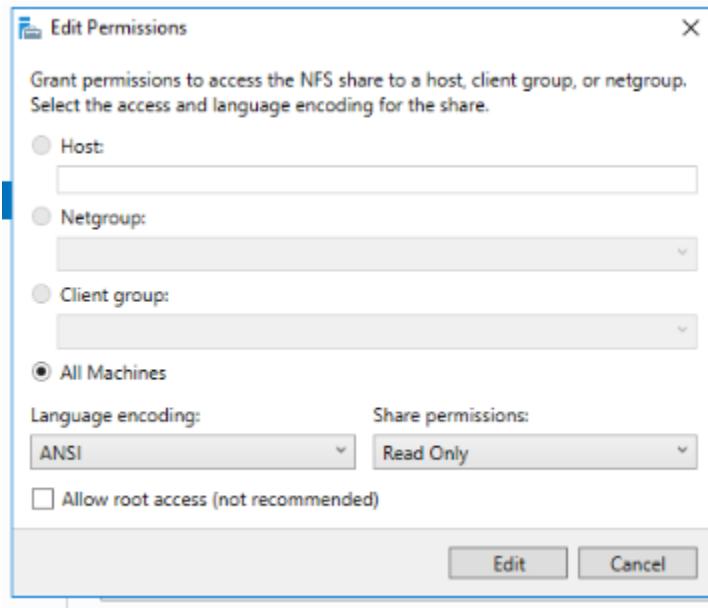
Select NFS share - Quick



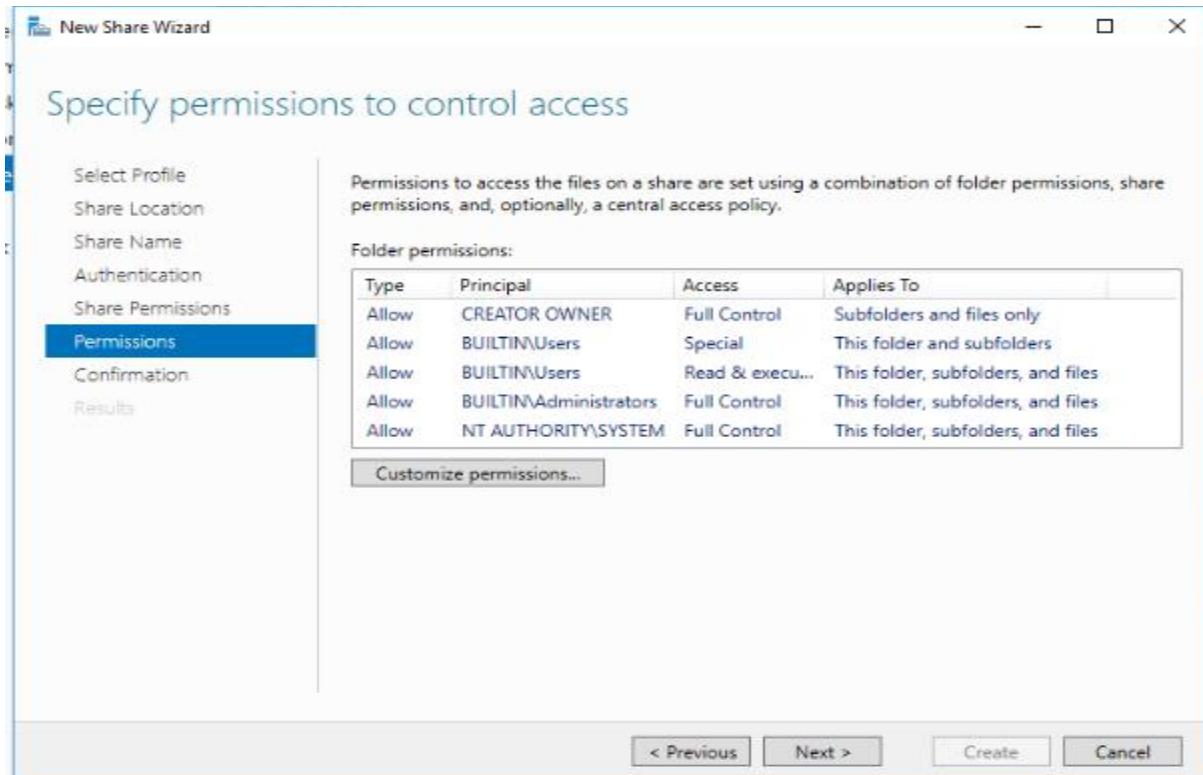
Select the folder “sharable”



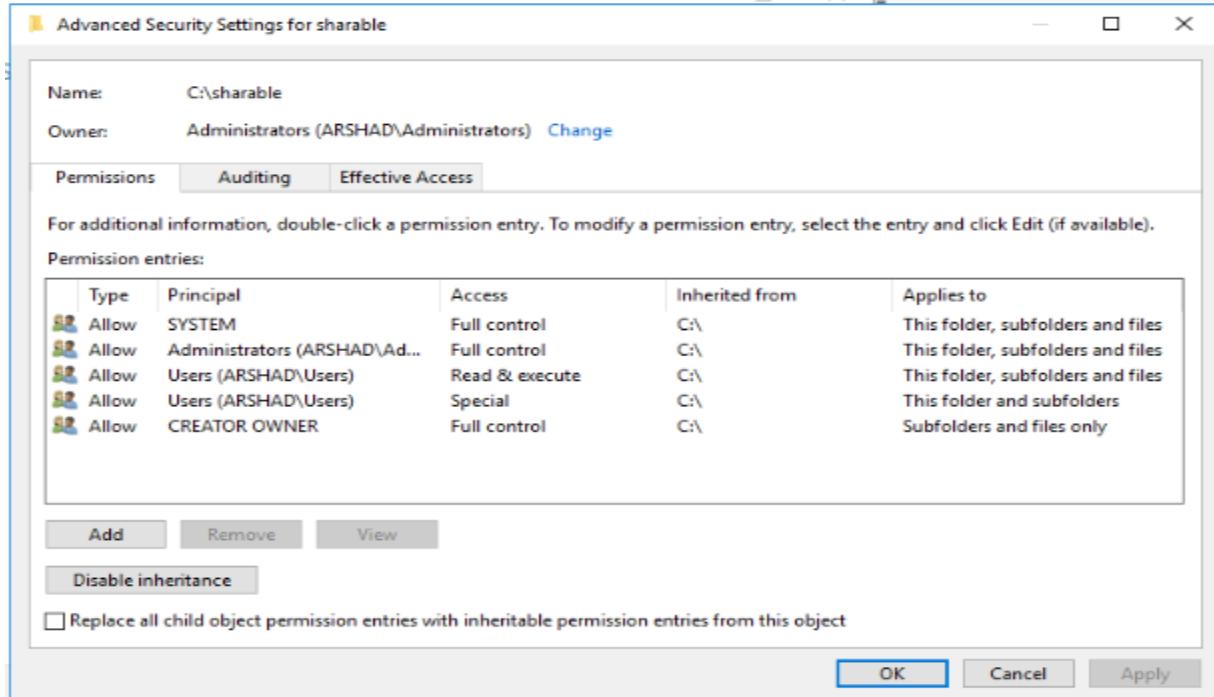




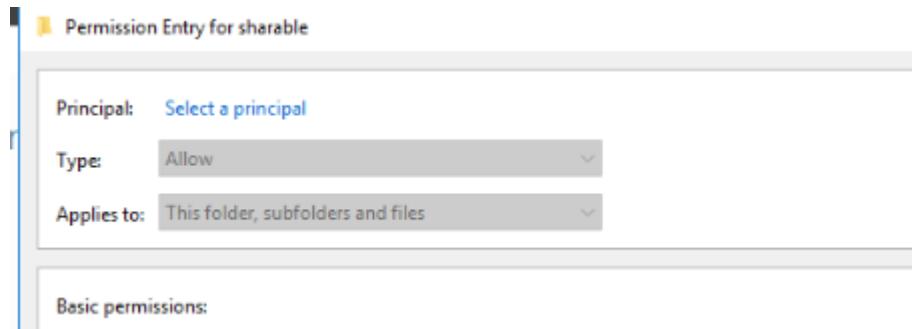
Click on customize permission and add “dcadmins” for read only



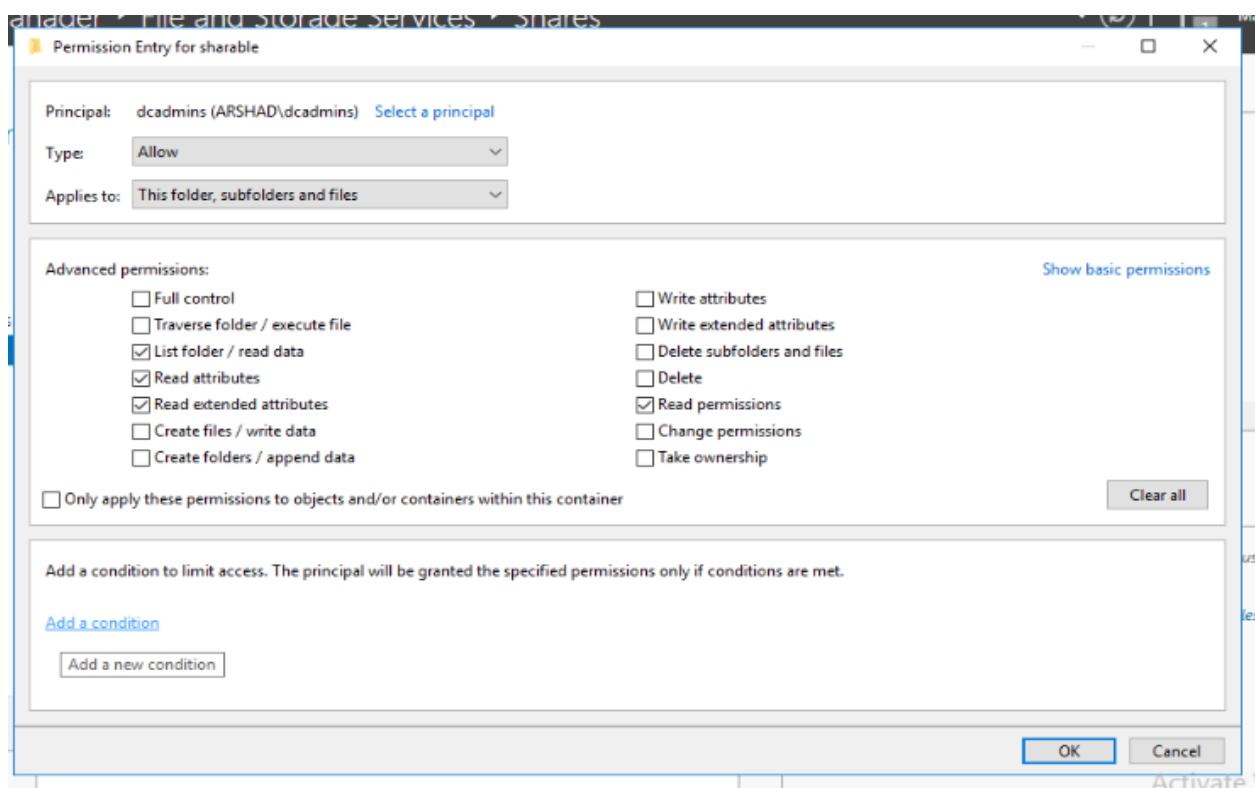
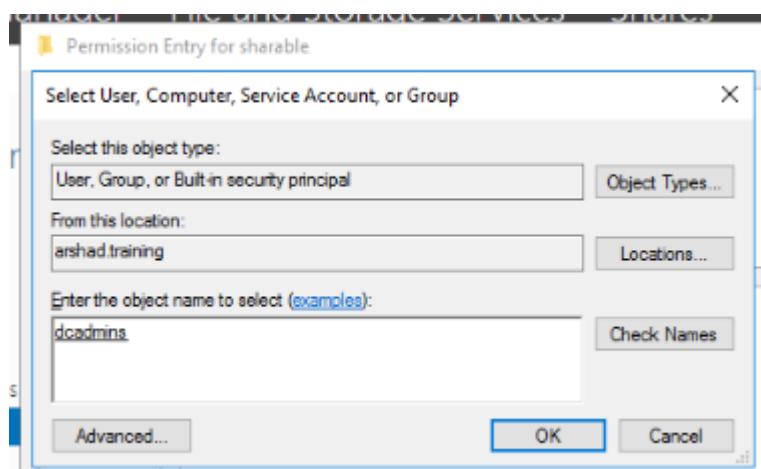
Click ADD

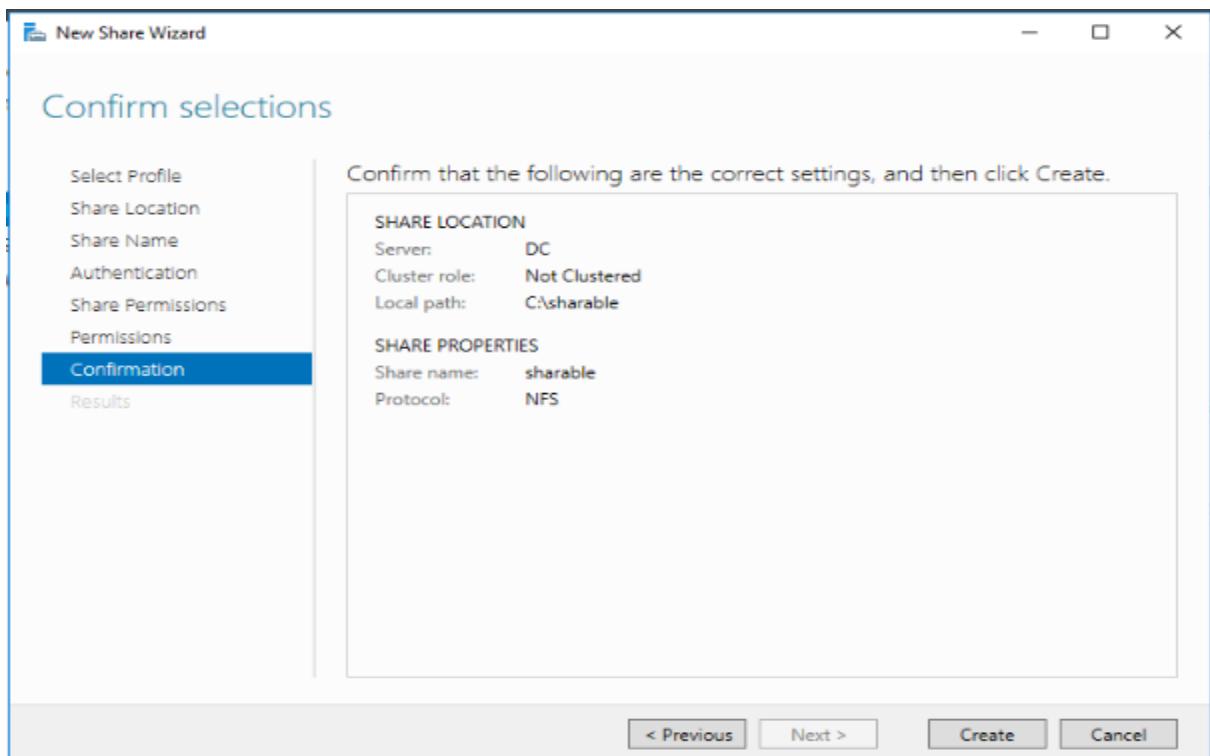


Click select a principal

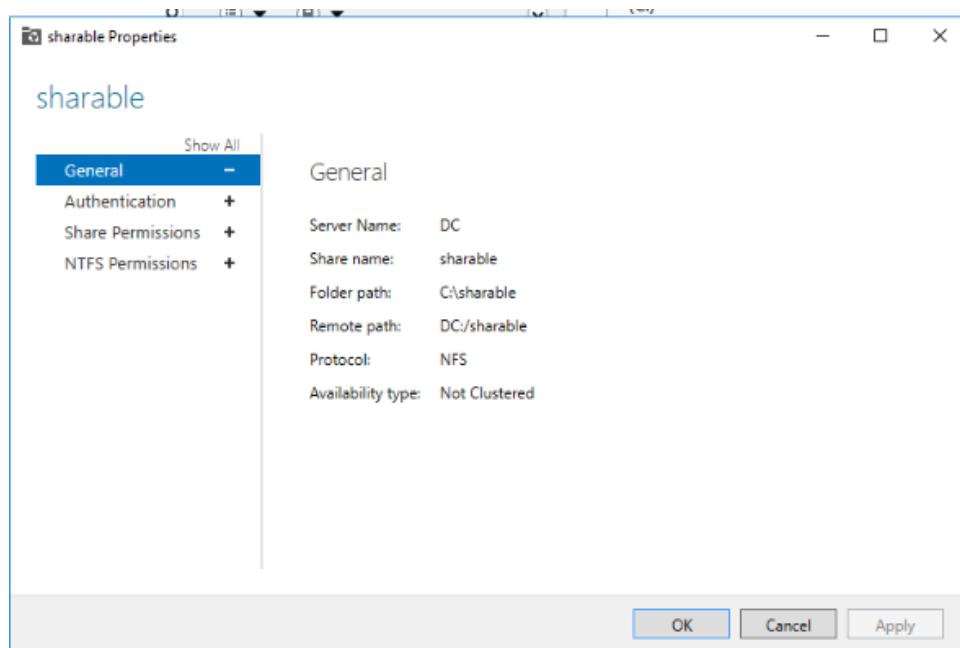


Add dcadmins



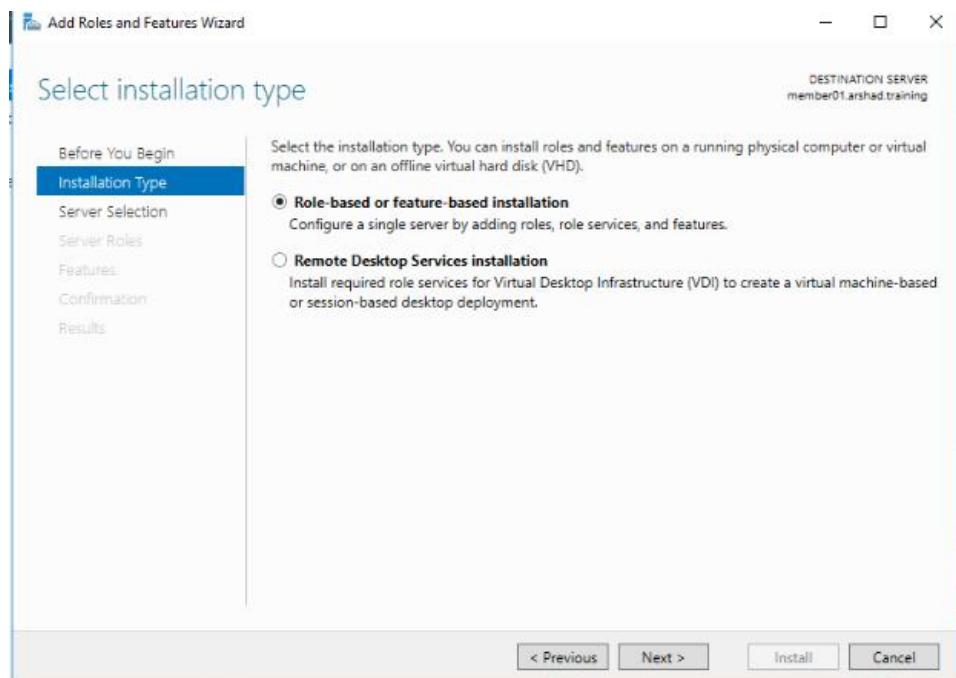
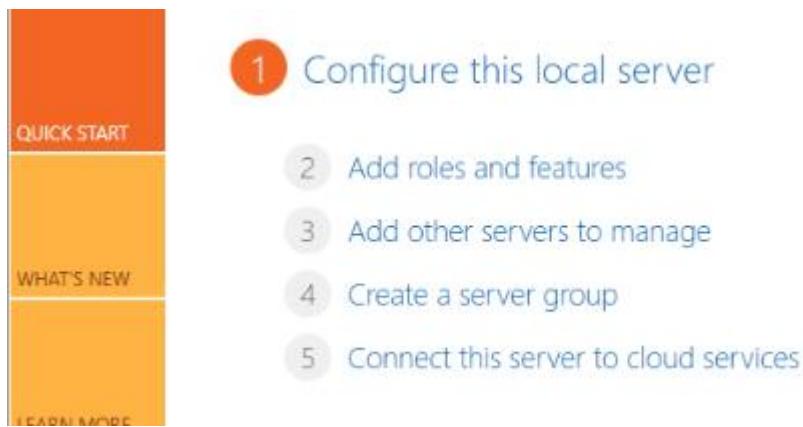


Here DC:/sharable is our remote path

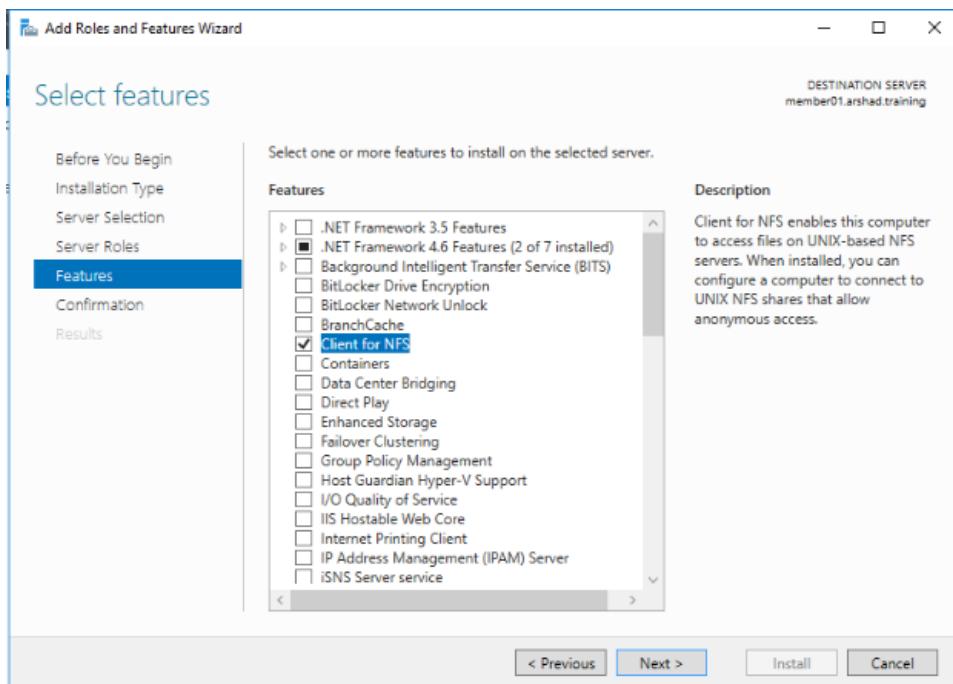


Step 8 : Install NFS Client on our member machine . Go to member01 machine

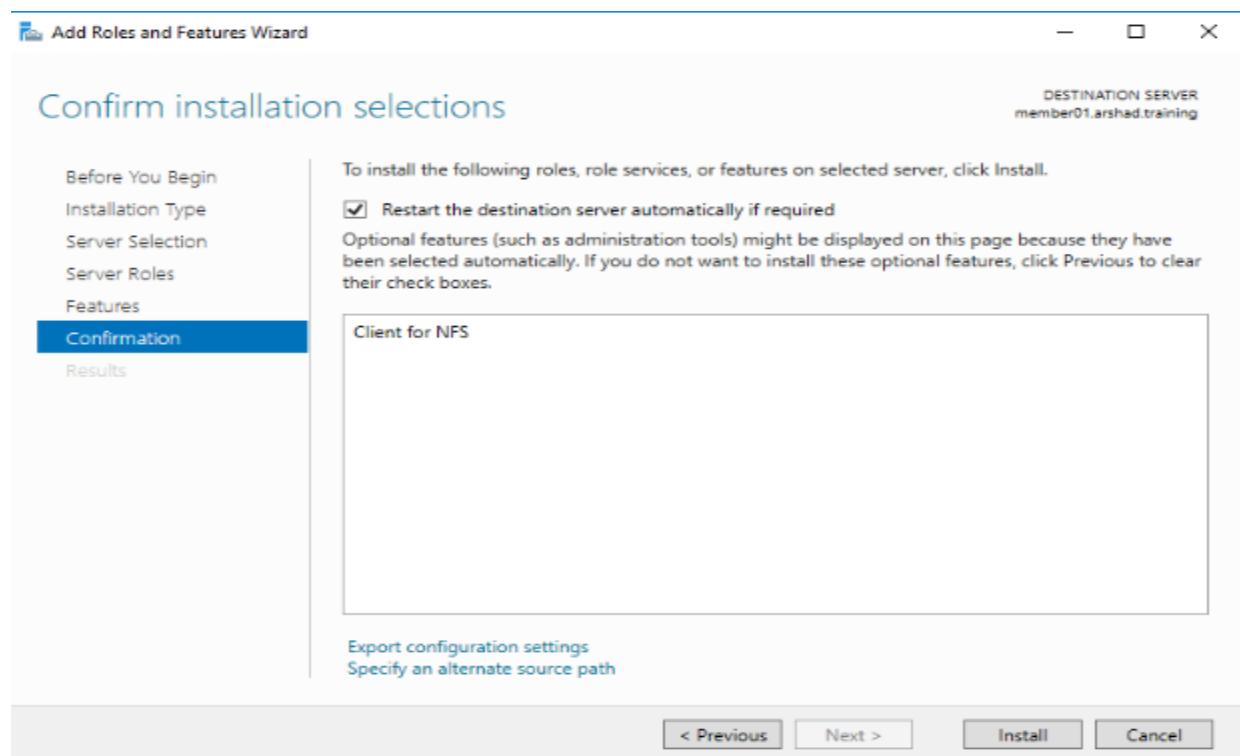
Click add roles and features



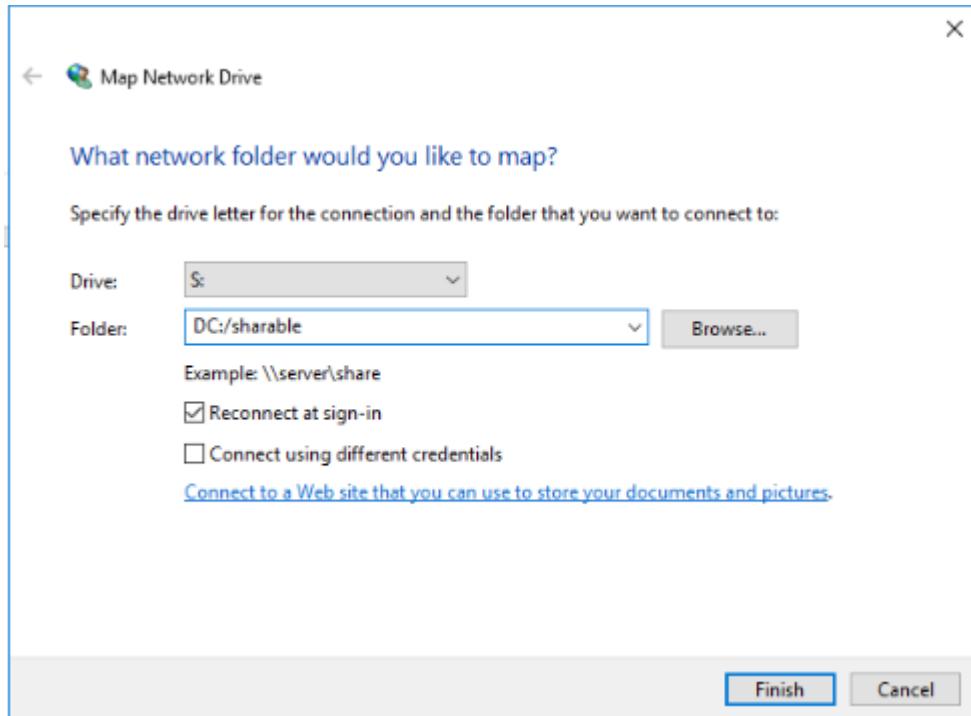
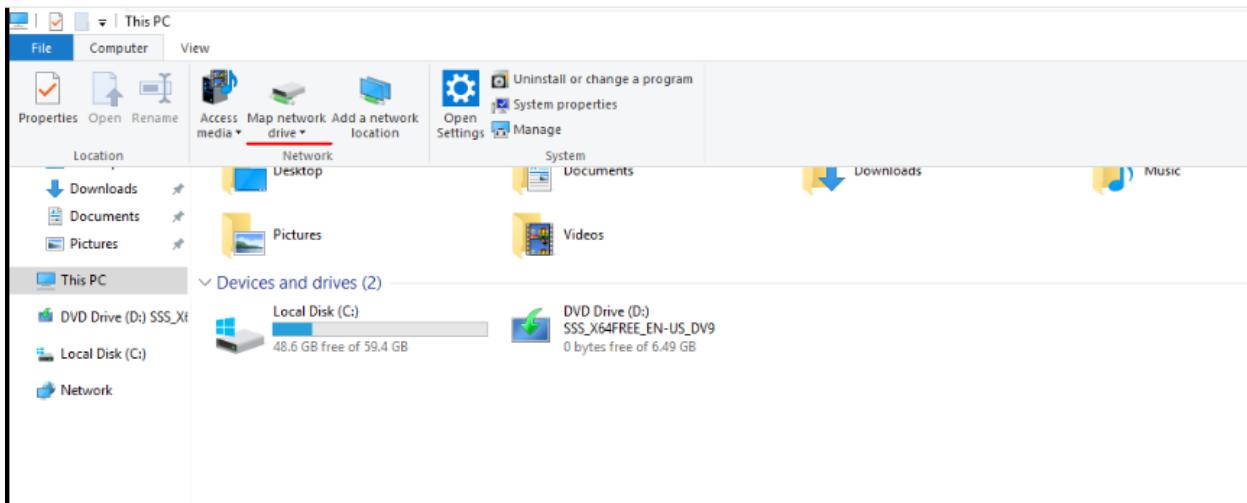
Select NFS for Client



Install



Step 9 : Map the drive on member01 machine . Click map network drive on mypc



Also we can do map drive using cmd .

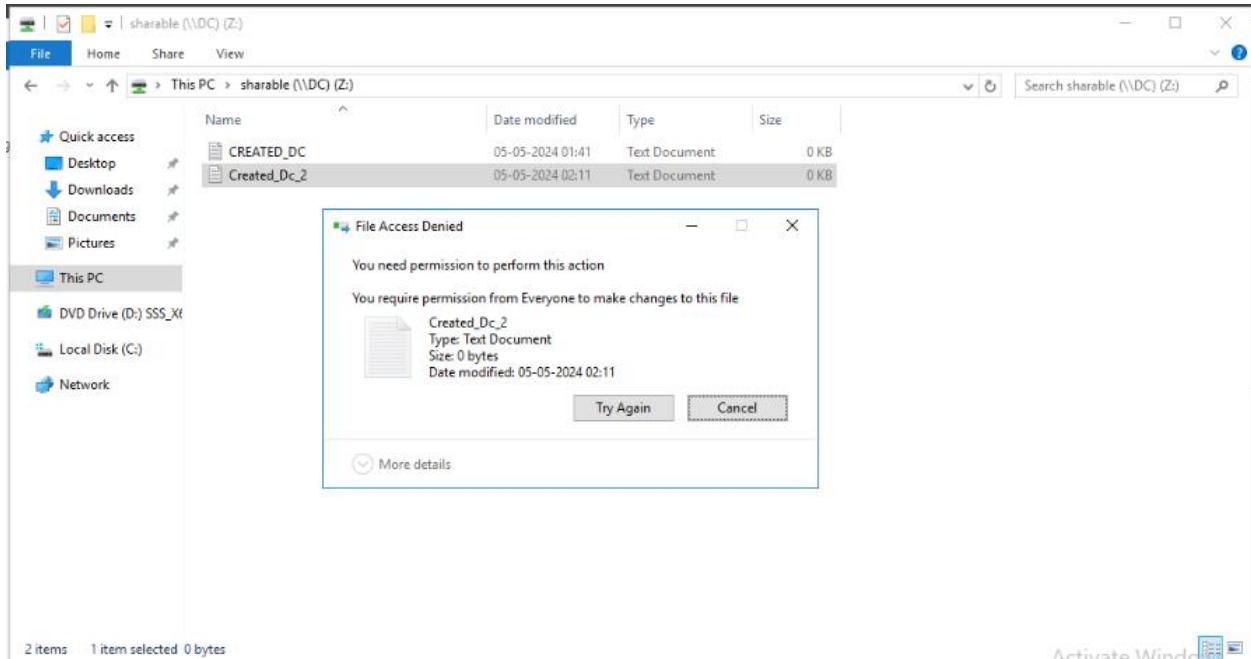
```
Command Prompt
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

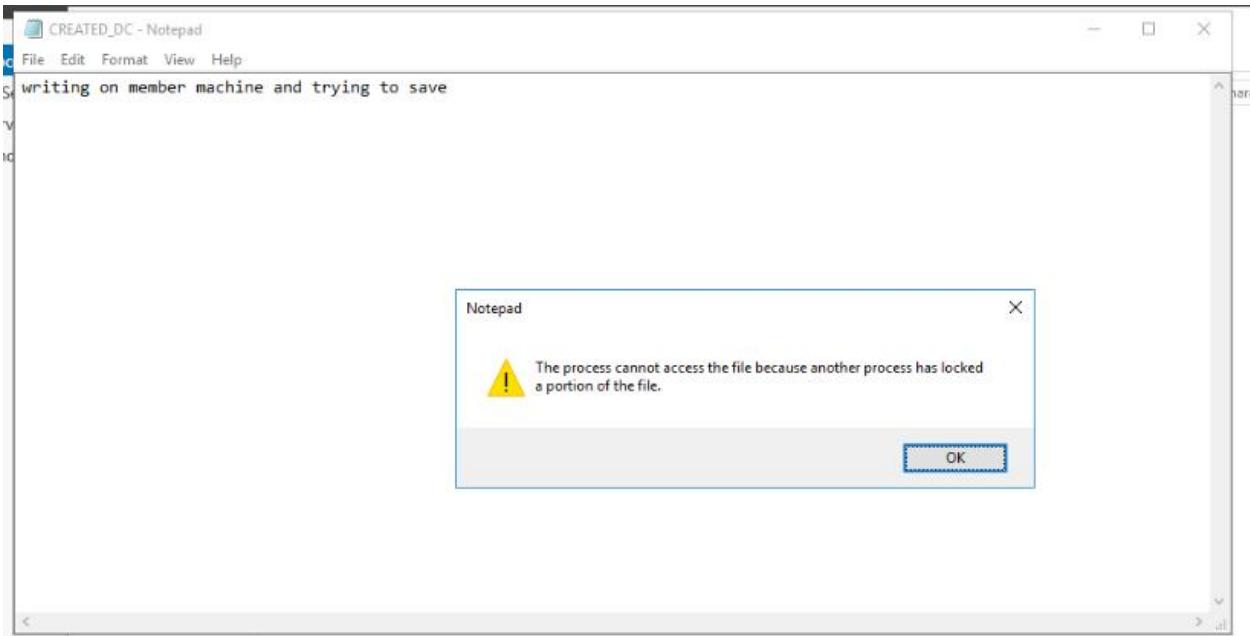
C:\Users\user2>mount DC:/sharable Y:\
Y: is now successfully connected to DC:/sharable

The command completed successfully.

C:\Users\user2>
```

Access denied while trying to delete that file from member01 machine.





=====PROJECT 1 COMPLETED=====

Project Task 2

-Install 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 single command.

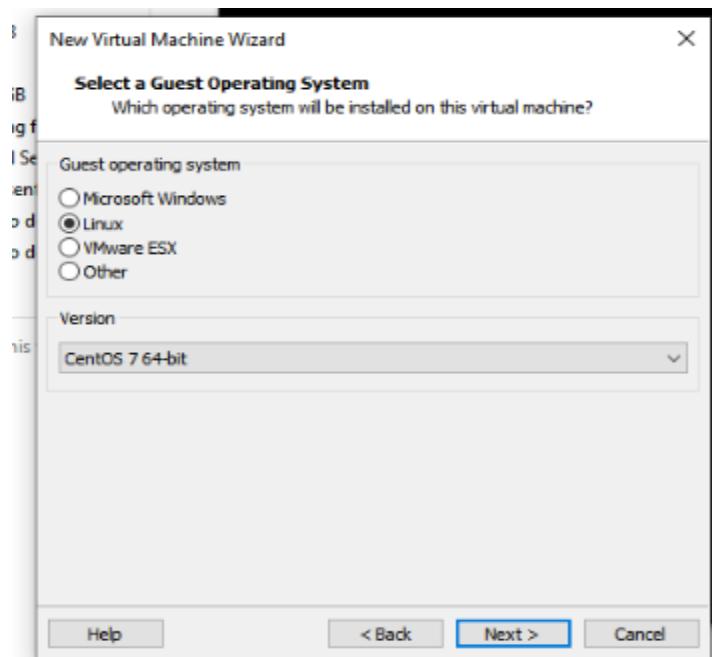
- VSFTPD
- PHP
- System-Config-Kickstart
- finger.

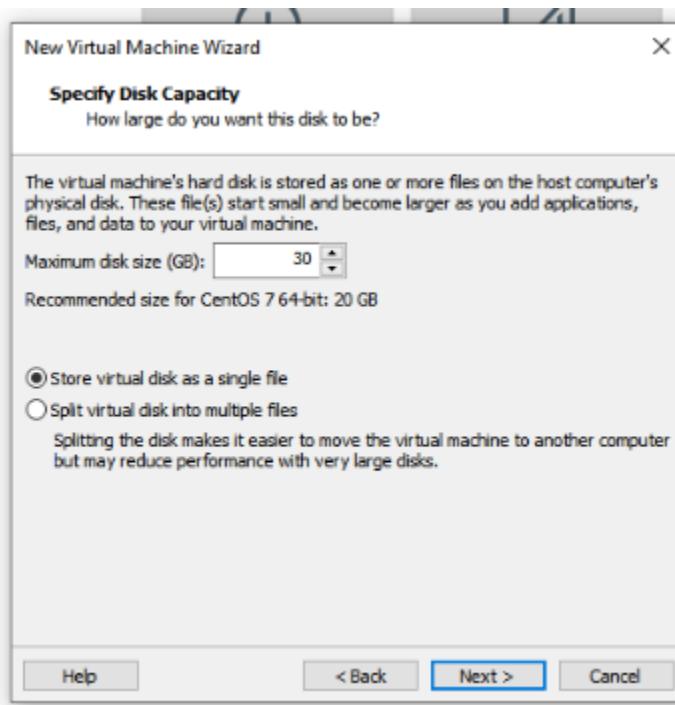
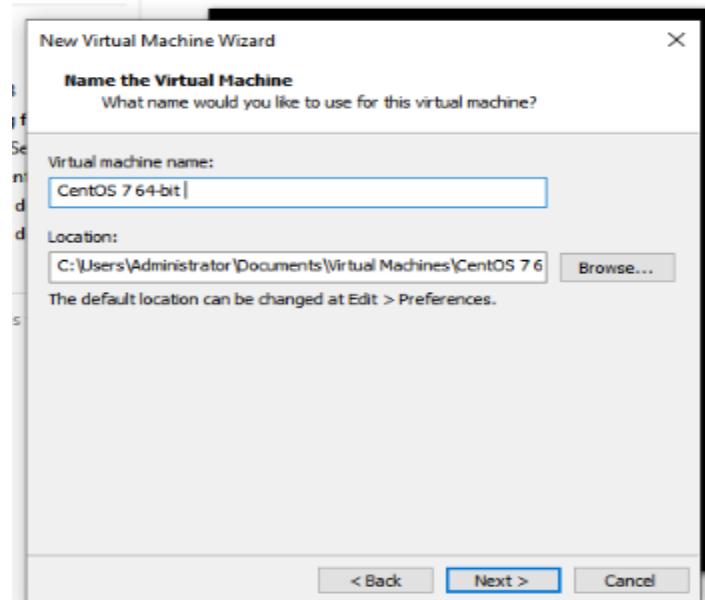
Start “YES” process and use TOP command to kill this process.

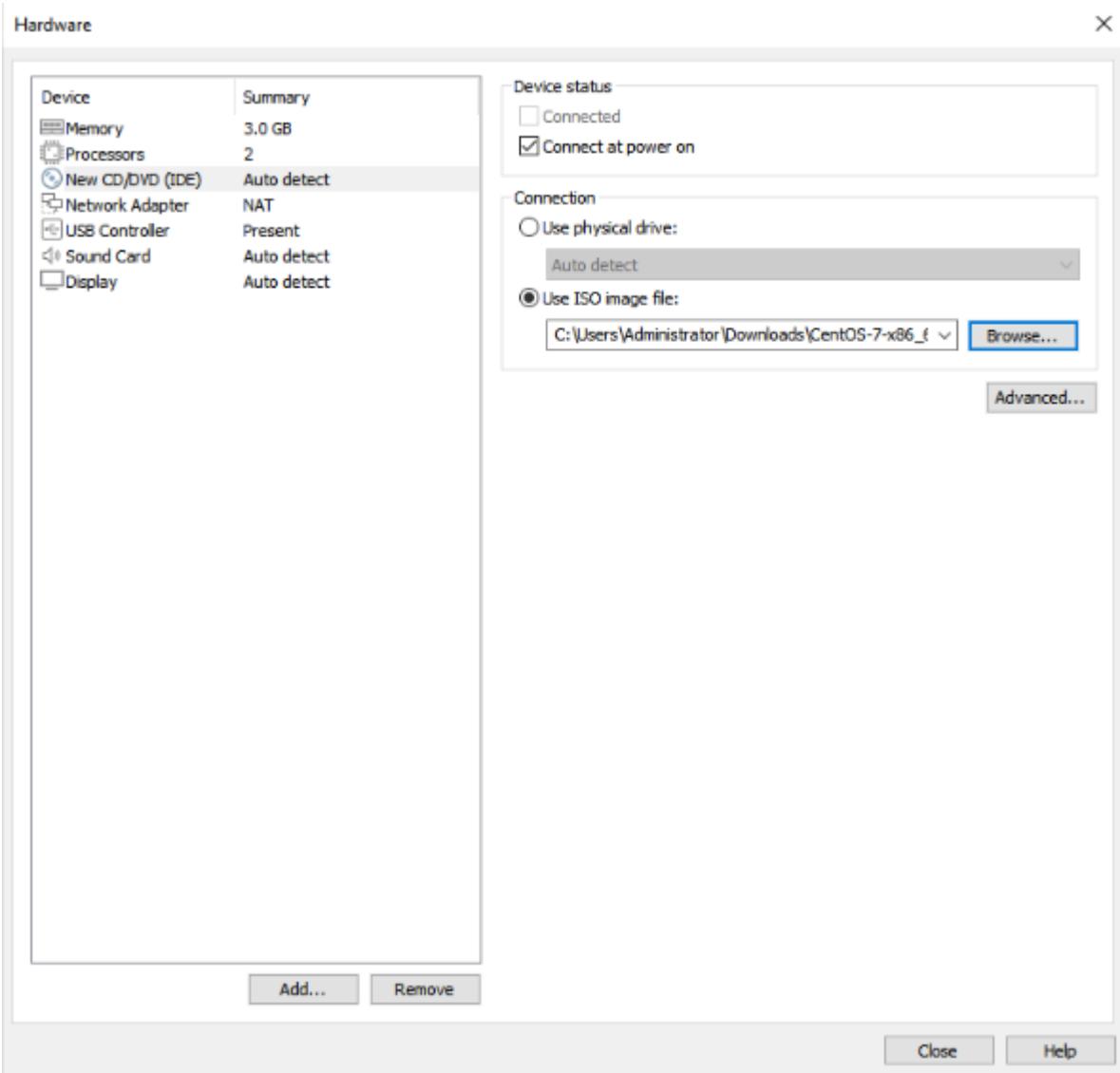
Setup:

- Use VMWare workstation 17 or above to create a new CentOS 7 using text-mode installation.
- Change your linux server name to "LNX-SVR-01" using NMTUI command. Change the IP address on linux to 192.168.10.10/24.
- Install the packages using YUM package manager. - Use appropriate commands to start and kill the ‘yes’ process and verify

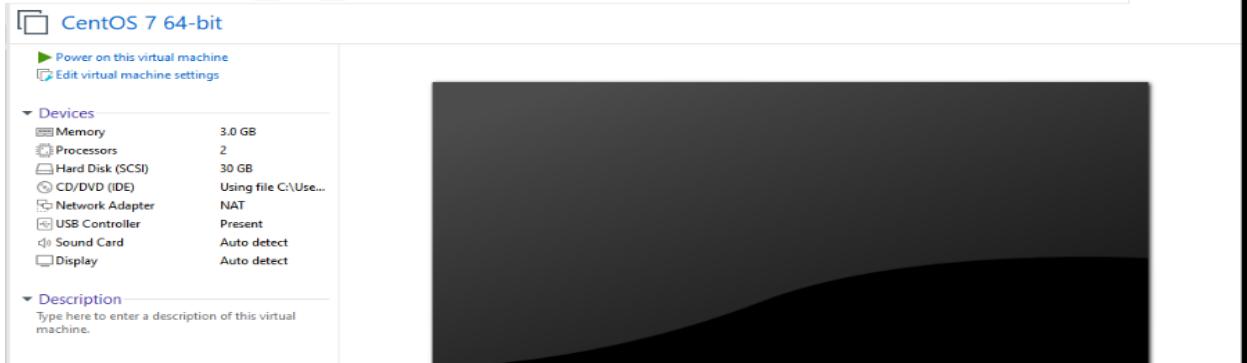
Step 1 : Installing centos server Gui via text mode installation



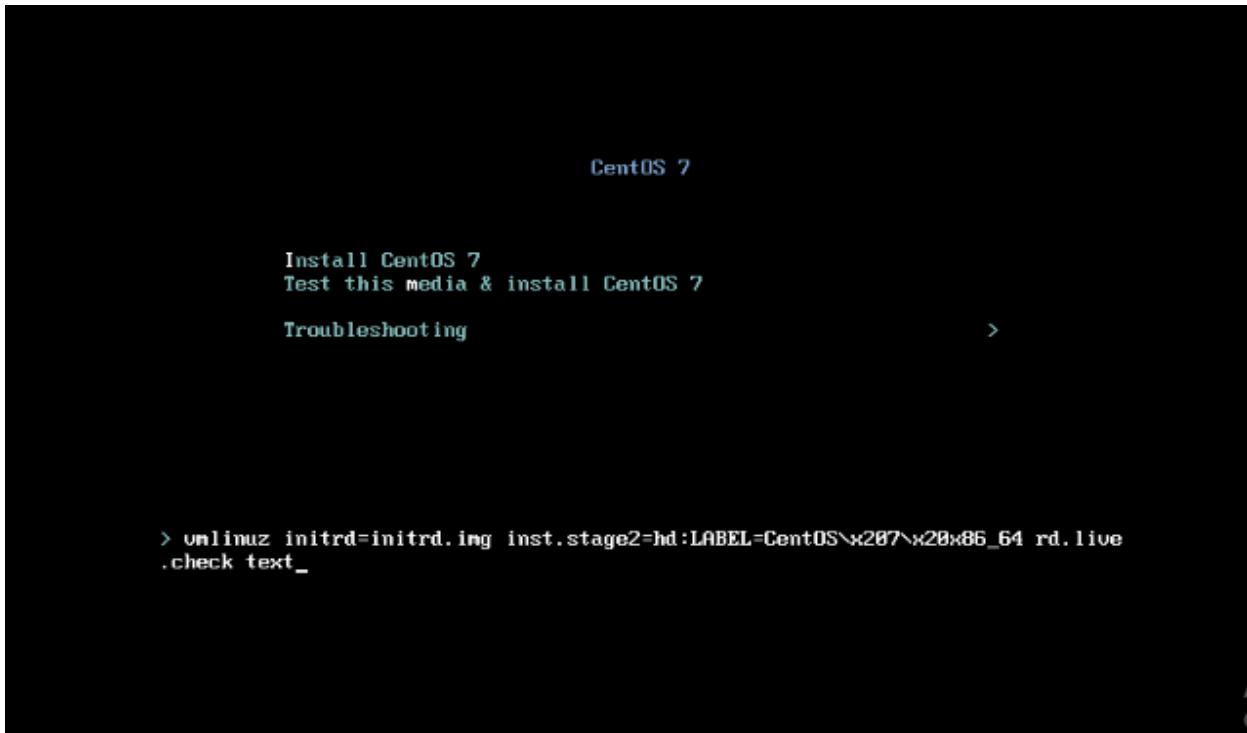




Power on virtual machine



Click Tab key and type “text” insted of queit , then press enter .



```

[ 16.816042] Console: switching to colour frame buffer device 100x37
[ 16.821893] [drm] Initialized vmmqfx 2.15.0 20180704 for 0000:00:0f.0 on minor 0
[ 16.852165] scsi target0:0:0: Domain Validation skipping write tests
[ 16.852216] scsi target0:0:0: Ending Domain Validation
[ 16.853004] scsi target0:0:0: FAST-40 WIDE SCSI 80.0 MB/s ST (25 ns, offset 127)
[ 16.883302] scsi 2:0:0:0: CD-ROM           NECUMMar VMware IDE CDR10 1.00 PQ: 0 ANSI: 5
[ 16.924319] sr 2:0:0:0: [sr0] scsi3-mmc drive: 1x/1x writer dud-ram cd/rw xa/form2 cdda tray
[ 16.924383] cdrom: Uniform CD-ROM driver Revision: 3.20
[ 16.947289] sd 0:0:0:0: [sda] 62914560 512-byte logical blocks: (32.2 GB/30.0 GiB)
[ 16.947486] sd 0:0:0:0: [sda] Write Protect is off
[ 16.947873] sd 0:0:0:0: [sda] Cache data unavailable
[ 16.948916] sd 0:0:0:0: [sda] Assuming drive cache: write through
[ 16.953880] sd 0:0:0:0: [sda] Attached SCSI disk
[ 17.001414] random: fast init done
[ 17.207290] e1000 0000:02:01.0 eth0: (PCI:66MHz:32-bit) 00:0c:29:09:19:d1
[ 17.208364] e1000 0000:02:01.0 eth0: Intel(R) PRO/1000 Network Connection
[ 17.228861] 0021q: 002.1Q ULM Support v1.8
[ 19.036442] floppy0: no floppy controllers found
[ 16.757300] dracut-initqueue[6891]: mount: /dev/sr0 is write-protected, mounting read-only
[ 19.356538] loop: module loaded
[ OK ] Started Show Plymouth Boot Screen.
[ OK ] Started Forward Password Requests to Plymouth Directory Watch.
[ OK ] Reached target Paths.
[ OK ] Reached target Basic System.
[ OK ] Started DeviceMapper Multipath Device Controller.
Starting Open-iscsi...
[ OK ] Started Open-iscsi...
Starting dracut-initqueue hook...
[ 16.757300] dracut-initqueue[6891]: mount: /dev/sr0 is write-protected, mounting read-only
[ OK ] Created slice system-checkisod5.slice.
Starting Media Check on /dev/sr0...
Fragment sums: 81cf91b42222bd051b8b4bf68cda818796ae4e9c332b739175158d555f85
Fragment count: 20
Press [Esc] to abort check.
Checking: 003.0f 21.3526301 random: crng init done
Checking: 012.8z

```

Activate Window
Go to Settings type AC
Go

Here lets start to configure ,

```

Starting installer, one moment...
anaconda 21.48.22.159-1 for CentOS 7 started.
* installation log files are stored in /tmp during the installation
* shell is available on TTY2
* when reporting a bug add logs from /tmp as separate text/plain attachments
21:20:37 Not asking for UNC because we don't have a network
=====
=====
Installation

1) [x] Language settings          2) [!] Time settings
   (English (United States))      (Timezone is not set.)
3) [!] Installation source       4) [!] Software selection
   (Processing...)
5) [!] Installation Destination  6) [x] Kdump
   (No disks selected)           (Kdump is enabled)
7) [ ] Network configuration     8) [!] Root password
   (Not connected)                (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation | 'r' to refresh]:

```

Select language , here i am selecting english by typing 16

```
(No user will be created)
Please make your choice from above [q' to quit : 'b' to begin installation :
'r' to refresh]: 1
=====
=====

Language settings

Available languages
 1) Afrikaans      25) Hindi          48) Oriya
 2) Amharic        26) Croatian        49) Punjabi
 3) Arabic          27) Hungarian       50) Polish
 4) Assamese        28) Interlingua    51) Portuguese
 5) Asturian        29) Indonesian     52) Romanian
 6) Belarusian      30) Icelandic      53) Russian
 7) Bulgarian       31) Italian         54) Sinhala
 8) Bengali         32) Japanese        55) Slovak
 9) Bosnian         33) Georgian       56) Slovenian
10) Catalan         34) Kazakh         57) Albanian
11) Czech           35) Kannada        58) Serbian
12) Welsh           36) Korean          59) Swedish
13) Danish          37) Lithuanian     60) Tamil
14) German          38) Latvian         61) Telugu
15) Greek           39) Maithili       62) Tajik
16) English         40) Macedonian    63) Thai
17) Spanish          41) Malayalam     64) Turkish
18) Estonian        42) Marathi        65) Ukrainian
19) Basque          43) Malay          66) Urdu
20) Persian          44) Norwegian Bokm l 67) Vietnamese
21) Finnish          45) Nepali          68) Chinese
22) French           46) Dutch           69) Zulu

Press ENTER to continue
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log      Switch tab: Alt+Tab | Help: F1
```

Set timezone

```
Timezone settings

Available regions
 1) Europe          6) Pacific         10) Arctic
 2) Asia             7) Australia       11) US
 3) America          8) Atlantic        12) Etc
 4) Africa           9) Indian
 5) Antarctica

Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 9
=====
=====

Timezone settings

Available timezones in region Indian
 1) Antananarivo    5) Comoro         8) Maldives
 2) Chagos          6) Kerguelen      9) Mauritius
 3) Christmas        7) Mahe          10) Mayotte
 4) Cocos            8) Reunion        11) Reunion

Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 7
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log      Switch tab: Alt+Tab | Help: F1
```

Select installation source

```
3) [x] Installation source      4) [!] Software selection  
    (Local media)            (Processing...)  
5) [!] Installation Destination 6) [x] Kdump  
    (No disks selected)       (Kdump is enabled)  
7) [ ] Network configuration    8) [!] Root password  
    (Not connected)          (Password is not set.)  
9) [!] User creation  
    (No user will be created)  
Please make your choice from above ['q' to quit : 'b' to begin installation :  
'r' to refresh]: 3  
=====  
=====  
Installation source  
  
Choose an installation source type.  
1) CD/DVD  
2) local ISO file  
3) Network  
Please make your choice from above ['q' to quit : 'c' to continue :  
'r' to refresh]: 1  
=====  
=====  
Installation
```

Software selection . Here select Server with GUI by entering 7

```
1) [x] Language settings      2) [x] Time settings  
    (English (United States))  (Indian/Mahe timezone)  
3) [x] Installation source    4) [!] Software selection  
    (Local media)            (Processing...)  
5) [!] Installation Destination 6) [x] Kdump  
    (No disks selected)       (Kdump is enabled)  
7) [ ] Network configuration    8) [!] Root password  
    (Not connected)          (Password is not set.)  
9) [!] User creation  
    (No user will be created)  
Please make your choice from above ['q' to quit : 'b' to begin installation :  
'r' to refresh]: 4  
=====  
=====  
Base environment  
Software selection  
  
Base environment  
  
1) [x] Minimal Install      7) [ ] Server with GUI  
2) [ ] Compute Node          8) [ ] GNOME Desktop  
3) [ ] Infrastructure Server 9) [ ] KDE Plasma Workspaces  
4) [ ] File and Print Server 10) [ ] Development and Creative  
5) [ ] Basic Web Server        Workstation  
6) [ ] Virtualization Host  
Please make your choice from above ['q' to quit : 'c' to continue :  
'r' to refresh]: 7  
=====  
=====
```

Choose installation destination . Type 1 and enter

```
=====
Installation

1) [x] Language settings           2) [x] Time settings
      (English (United States))   (Indian/Mahe timezone)
3) [x] Installation source        4) [x] Software selection
      (Local media)               (Server with GUI)
5) [!] Installation Destination   6) [x] Kdump
      (No disks selected)        (Kdump is enabled)
7) [ ] Network configuration      8) [!] Root password
      (Not connected)            (Password is not set.)
9) [!] User creation
      (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 5
=====
=====

Probing storage...
Installation Destination

[x] 1) VMware Virtual S: 30 GiB (sda)

1 disk selected; 30 GiB capacity; 30 GiB free ...

Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: 1
```

Select the partition

```
=====
=====

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...

=====
```

Create root password by typing 8 .

```
=====
=====
Installation
1) [x] Language settings           2) [x] Time settings
      (English (United States))   (Indian/Mahe timezone)
3) [x] Installation source        4) [x] Software selection
      (Local media)               (Server with GUI)
5) [x] Installation Destination  6) [x] Kdump
      (Automatic partitioning    (Kdump is enabled)
       selected)                 8) [!] Root password
                                  (Password is not set.)
7) [ ] Network configuration     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):
=====
=====
Question

The password you have provided is weak: The password fails the dictionary check
- it is based on a dictionary word.
Would you like to use it anyway?

Please respond 'yes' or 'no': yes
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log  Switch tab: Alt+Tab | Help: F1 | Activation: F2 | Go to S
```

Then User creation

```
=====
User creation
1) [ ] Create user
Please make your choice from above ('q' to quit | 'c' to continue | 'r' to refresh): 1
=====
=====
User creation
1) [x] Create user
2) Fullname
3) Username
4) [ ] Use password
5) [ ] Administrator
6) Groups
Please make your choice from above ('q' to quit | 'c' to continue | 'r' to refresh): 2
=====
=====
Enter new value for 'Fullname' and press enter
arshad
=====
=====
User creation
1) [x] Create user
2) Fullname
arshad
3) Username
arshad
4) [ ] Use password
5) [ ] Administrator
6) Groups
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 | Activation: F2 | Go to S
```

```
=====
User creation

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

The password you have provided is weak: The password fails the dictionary check
- it is based on a dictionary word.
Would you like to use it anyway?

Please respond 'yes' or 'no': yes
[anaconda] 1:main* 2:shell 3:log 4:storage-log 5:program-log      Switch tab: Alt+Tab | Help: F1 | Activ
Goto
```

Everything done , now begin installation by typing b .

```
=====
Installation

1) [x] Language settings
   (English (United States))
2) [x] Time settings
   (Indian/Mahe 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) [ ] Network configuration
   (Not connected)
8) [x] Root password
   (Password is set.)
9) [x] User creation
   (Administrator arshad 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 | Help: F1 | Activ
Goto
```

```
Installing pcsc-lite-libs (603/1348)
Installing sbc (604/1348)
Installing sgpio (605/1348)
Installing ustr (606/1348)
Installing libsemanage (607/1348)
Installing shadow-utils (608/1348)
Installing libutempter (609/1348)
Installing libsemanage-python (610/1348)
Installing lm_sensors-libs (611/1348)
Installing libestr (612/1348)
Installing libsss_nss_idmap (613/1348)
Installing libasyncns (614/1348)
Installing opencc (615/1348)
Installing dotconf (616/1348)
Installing jbigkit-libs (617/1348)
Installing libtiff (618/1348)
Installing gdk-pixbuf2 (619/1348)
Installing libnotify (620/1348)
Installing gtk-update-icon-cache (621/1348)
Installing poppler (622/1348)
Installing libmediaart (623/1348)
Installing libgsf (624/1348)
Installing libsmartcols (625/1348)
Installing procps-ng (626/1348)
Installing util-linux (627/1348)
Installing kpartx (628/1348)
Installing device-mapper (629/1348)
Installing dracut (630/1348)
Installing kmod (631/1348)
Installing device-mapper-libs (632/1348)
Installing cryptsetup-libs (633/1348)
Installing elfutils-libs (634/1348)
Installing systemd-libs (635/1348)
Installing dbus-libs (636/1348)
Installing systemd (637/1348)
```

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

Performing post-installation

```
Installing iwl200-firmware (1341/1348)
Installing iwl6050-firmware (1342/1348)
Installing iwl3945-firmware (1343/1348)
Installing iwl6000-firmware (1344/1348)
Installing rootfiles (1345/1348)
Installing iwl100-firmware (1346/1348)
Installing iwl6000g2a-firmware (1347/1348)
Installing words (1348/1348)
Performing post-installation setup tasks
```

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

Accept the license agreement

```
=====
=====
License information

 1) Read the License Agreement

[×] 2) I accept the license agreement.

Please make your choice from above ('q' to quit | 'c' to continue | 'r' to refresh): c
```

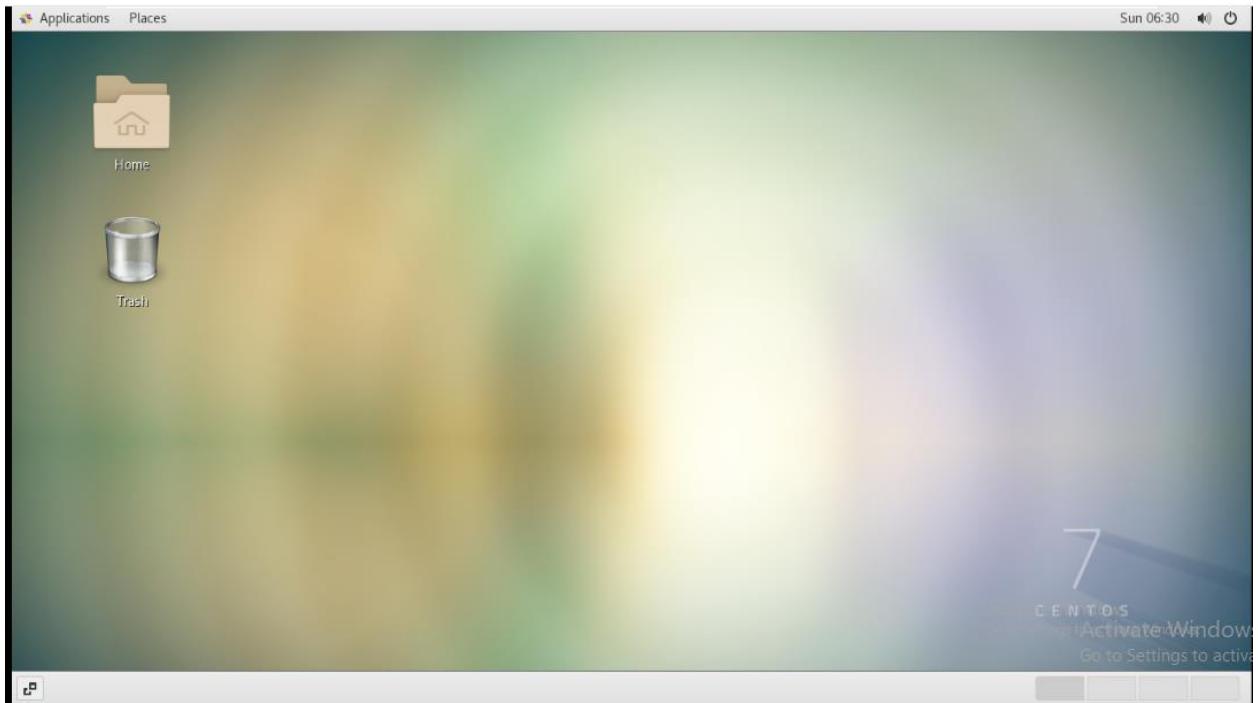
Login with root and password

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

localhost login: root
Password:
[root@localhost ~]#
```

To change text mode to Gui mode type init 5

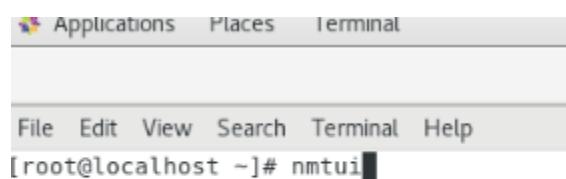
```
[root@localhost ~]# whoami
root
[root@localhost ~]# init 5
```



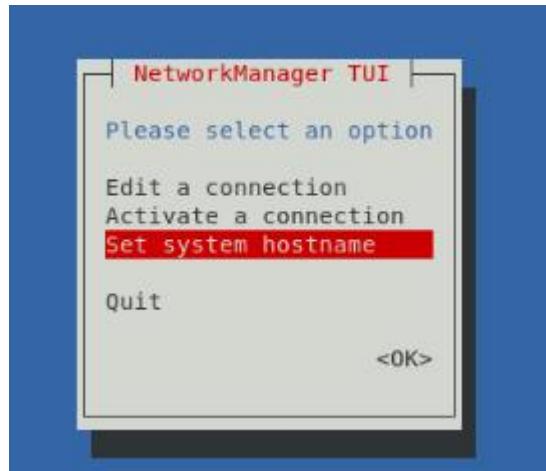
After changed to gui mode we need to make it permanent .

```
[root@LNX-SVR-01 ~]# sudo systemctl set-default graphical.target
Removed symlink /etc/systemd/system/default.target.
Created symlink from /etc/systemd/system/default.target to /usr/lib/systemd/system/graphical.target.
[root@LNX-SVR-01 ~]#
```

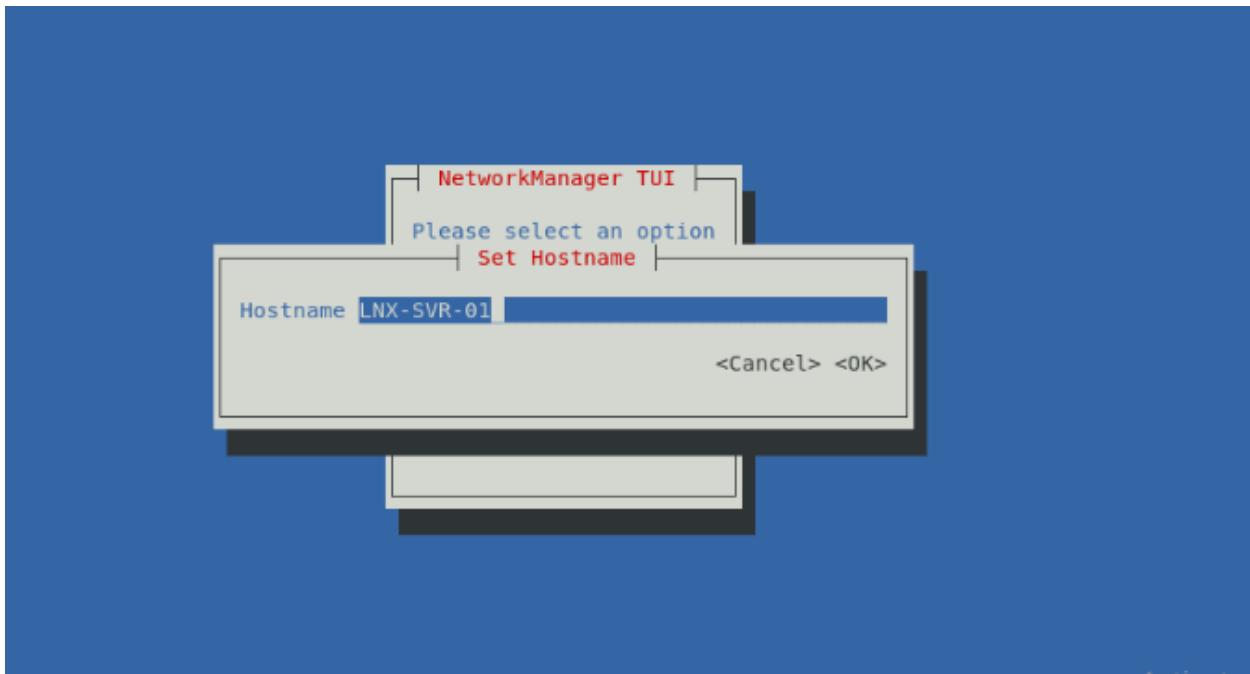
Step 2 : changing server name and ip address using nmtui command



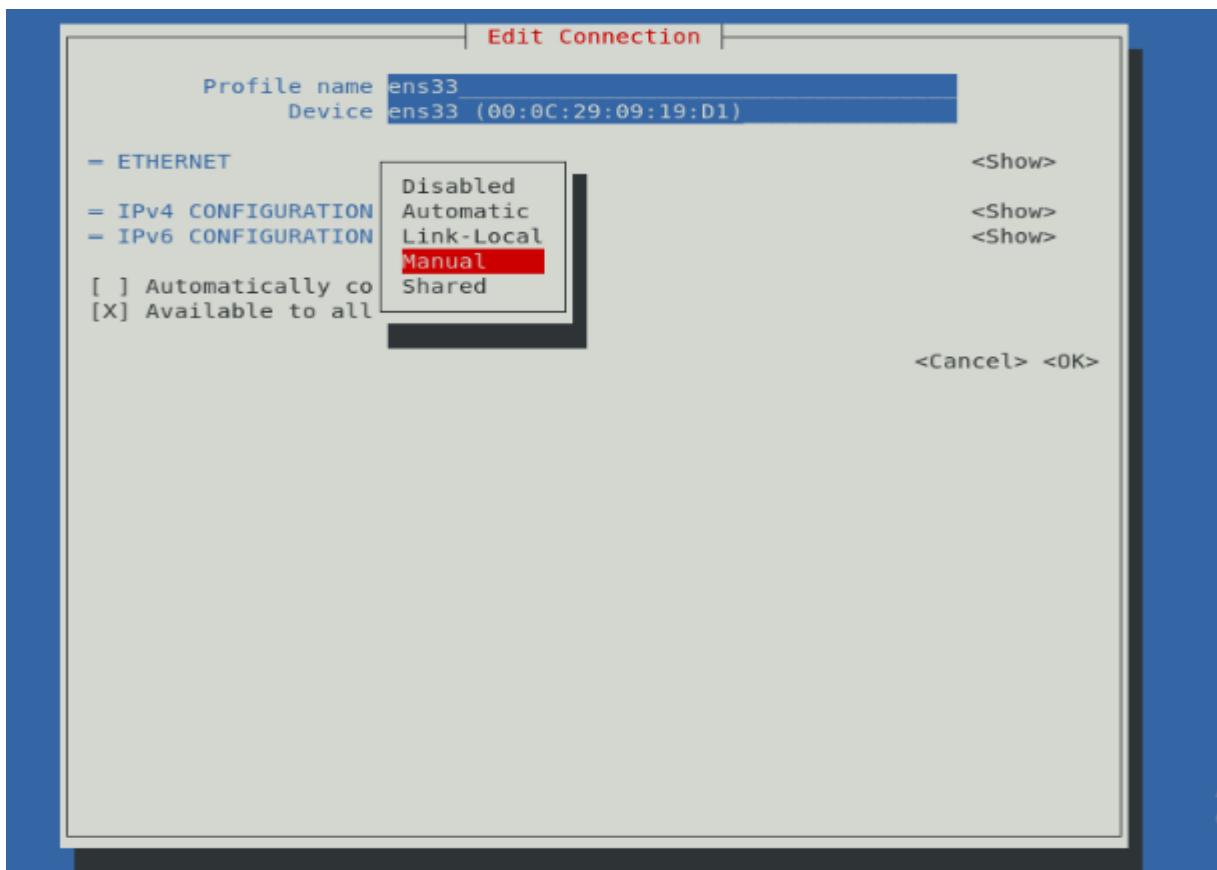
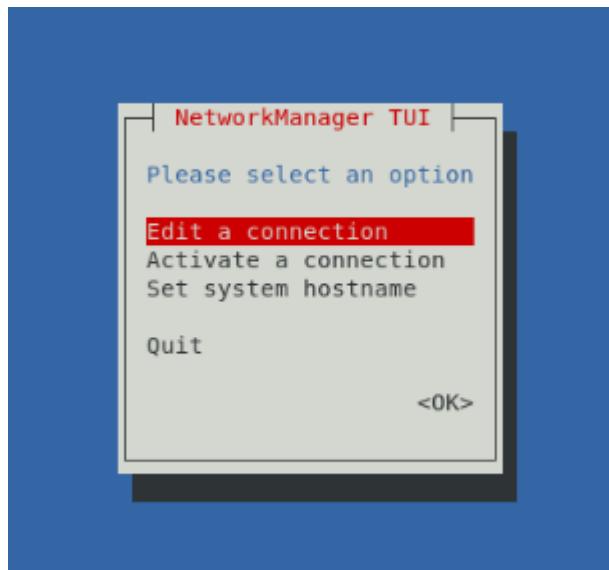
Select set system hostname

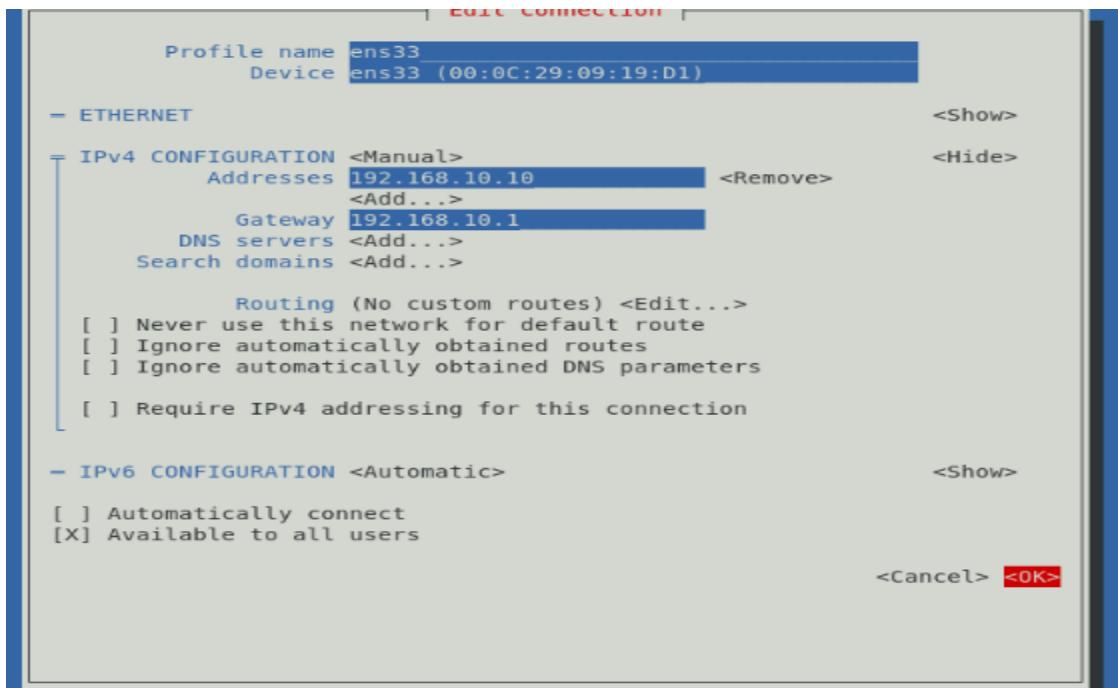


Change name to LNX-SVR-01



To change ip address select Edit a connection and select adapter





Checking ip address using ifconfig command .

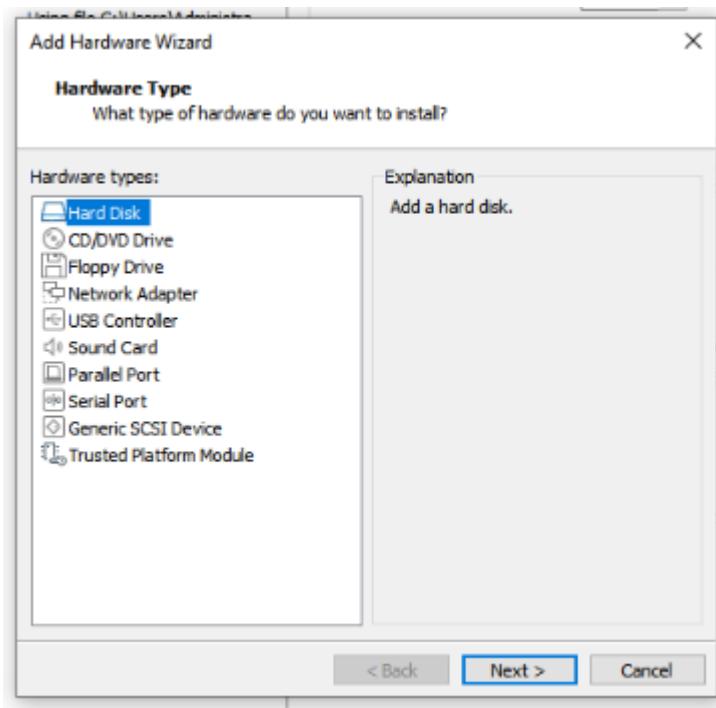
```
root@LNX-SVR-01:~ - □ ×
File Edit View Search Terminal Help

[root@LNX-SVR-01 ~]# nmtui
[root@LNX-SVR-01 ~]# 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::de86:dc83:ad18:7b9f prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:09:19:d1 txqueuelen 1000 (Ethernet)
                RX packets 10 bytes 600 (600.0 B)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 31 bytes 4341 (4.2 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 304 bytes 24480 (23.9 KiB)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 304 bytes 24480 (23.9 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:aa:c8:e1 txqueuelen 1000 (Ethernet)
```

Step 3 : add three , 5GB hdd



Virtual Machine Settings	
Hardware Options	
Device	Summary
Memory	3.0 GB
Processors	2
Hard Disk (SCSI)	30 GB
New Hard Disk (SCSI)	5 GB
New Hard Disk (SCSI)	5 GB
New Hard Disk (SCSI)	5 GB
CD/DVD (IDE)	Using file C:\Users\Administra...
Network Adapter	NAT
USB Controller	Present
Sound Card	Auto detect
Display	Auto detect

```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   30G  0 disk 
└─sda1     8:1    0    1G  0 part /boot
└─sda2     8:2    0   29G  0 part
  ├─centos-root 253:0    0   26G  0 lvm  /
  └─centos-swap 253:1    0    3G  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-SVR-01 ~]#
```

Create partition

```
File Edit View Search Terminal Help
[root@LNX-SVR-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.

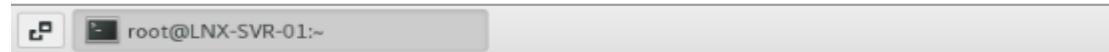
Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0x208fd702.

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): 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-SVR-01 ~]#
```



```
File Edit View Search Terminal Help
[root@LNX-SVR-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 0x79b66c5c.

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): 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-SVR-01 ~]#
```

```
[root@LNX-SVR-01:~]#
File Edit View Search Terminal Help
[root@LNX-SVR-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 0x24b57e6a.

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): 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-SVR-01 ~]#
```

```
[root@LNX-SVR-01:~]
```

```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   30G  0 disk
└─sda1     8:1    0   1G  0 part /boot
└─sda2     8:2    0   29G  0 part
  ├─centos-root 253:0  0   26G  0 lvm /
  └─centos-swap 253:1  0   3G  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-SVR-01 ~]#
```

Create physical volume

```
File Edit View Search Terminal Help
[root@LNX-SVR-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-SVR-01 ~]#
```

Create volume group

```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# vgcreate vg1 /dev/sdb1 /dev/sdc1 /dev/sdd1
  Volume group "vg1" successfully created
[root@LNX-SVR-01 ~]# vgs
  VG #PV #LV #SN Attr   VSize   VFree
  centos  1   2   0 wz--n- <29.00g     0
  vg1     3   0   0 wz--n- <14.99g <14.99g
[root@LNX-SVR-01 ~]#
```

Create logical volume lv1 and lv2 , 7gb and 8gb respectively

```
[root@LNX-SVR-01 ~]# lvcreate -L 7G -n lv1 vgl
Logical volume "lv1" created.
[root@LNX-SVR-01 ~]# lvs
LV   VG     Attr      LSize  Pool Origin Data%  Meta%  Move Log Cpy%Sync Convert
root centos -wi-ao---- <26.00g
swap centos -wi-ao----  3.00g
lv1  vgl   -wi-a----- 7.00g
[root@LNX-SVR-01 ~]# vgs
VG     #PV #LV #SN Attr    VSize   VFree
centos  1   2   0 wz--n- <29.00g     0
vg1     3   1   0 wz--n- <14.99g <7.99g
[root@LNX-SVR-01 ~]# lvcreate -l 100%FREE -n lv2 vgl
Logical volume "lv2" created.
[root@LNX-SVR-01 ~]# lvs
LV   VG     Attr      LSize  Pool Origin Data%  Meta%  Move Log Cpy%Sync Convert
root centos -wi-ao---- <26.00g
swap centos -wi-ao----  3.00g
lv1  vgl   -wi-a----- 7.00g
lv2  vgl   -wi-a----- <7.99g
[root@LNX-SVR-01 ~]# vgs
VG     #PV #LV #SN Attr    VSize   VFree
centos  1   2   0 wz--n- <29.00g     0
vg1     3   2   0 wz--n- <14.99g     0
[root@LNX-SVR-01 ~]# █
```

Created partition for new logical volume lv1 , lv2 . Xfs and ext4 respectively

```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# mkfs.xfs /dev/vg1/lv1
meta-data=/dev/vg1/lv1      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-SVR-01 ~]# mkfs.ext4 /dev/vg1/lv2
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
524288 inodes, 2094080 blocks
104704 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2145386496
64 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
      32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

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



root@LNX-SVR-01:~

```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   30G  0 disk
└─sda1     8:1    0   1G  0 part /boot
└─sda2     8:2    0   29G  0 part
  └─centos-root 253:0  0   26G  0 lvm /
  └─centos-swap 253:1  0   3G  0 lvm [SWAP]
sdb        8:16   0   5G  0 disk
└─sdb1     8:17   0   5G  0 part
  └─vg1-lv1   253:2  0   7G  0 lvm
sdc        8:32   0   5G  0 disk
└─sdc1     8:33   0   5G  0 part
  └─vg1-lv1   253:2  0   7G  0 lvm
  └─vg1-lv2   253:3  0   8G  0 lvm
sdd        8:48   0   5G  0 disk
└─sdd1     8:49   0   5G  0 part
  └─vg1-lv2   253:3  0   8G  0 lvm
sr0       11:0   1 1024M 0 rom
[root@LNX-SVR-01 ~]#
```

We can see here 7GB for lv1 and 8GB for lv2 created

Create mount point for lv1(/lvm1) and lv2(/lvm2).

```
Application - File Edit View VM Tabs Help |
```

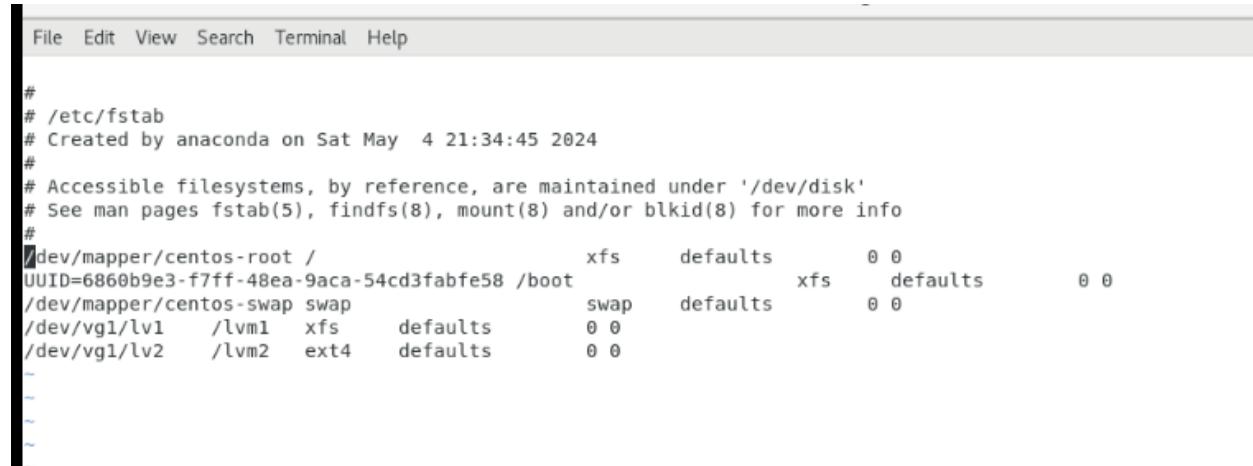
```
File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# mkdir /lvm1
[root@LNX-SVR-01 ~]# mkdir /lvm2
[root@LNX-SVR-01 ~]# vim /etc/fstab
```

Add both lvms in fstab file “/etc/fstab”

This file is used to configure and manage file systems.

To edit

```
# vi /etc/fstab
```

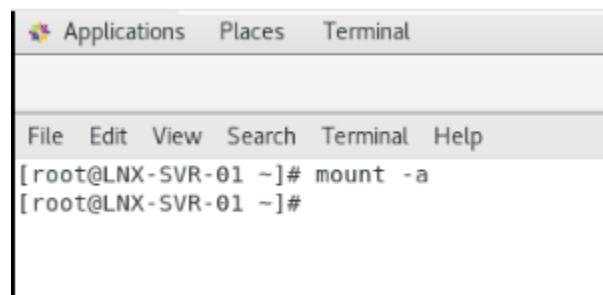


The screenshot shows a terminal window with the vi editor open to the /etc/fstab file. The file contains the following content:

```
#  
# /etc/fstab  
# Created by anaconda on Sat May 4 21:34:45 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=6860b9e3-f7ff-48ea-9aca-54cd3fabfe58 /boot xfs defaults 0 0  
/dev/mapper/centos-swap swap swap defaults 0 0  
/dev/vg1/lv1 /lvm1 xfs defaults 0 0  
/dev/vg1/lv2 /lvm2 ext4 defaults 0 0  
-  
-  
-  
-
```

After added save and quit (:wq!)

To mount all file system listed on fstab file



The screenshot shows a terminal window with the following session:

```
Applications Places Terminal  
  
File Edit View Search Terminal Help  
[root@LNX-SVR-01 ~]# mount -a  
[root@LNX-SVR-01 ~]#
```

```

File Edit View Search Terminal Help
[root@LNX-SVR-01 ~]# mount -a
[root@LNX-SVR-01 ~]# df -h
Filesystem           Size  Used Avail Use% Mounted on
devtmpfs             1.4G   0  1.4G  0% /dev
tmpfs                1.4G   0  1.4G  0% /dev/shm
tmpfs                1.4G  12M  1.4G  1% /run
tmpfs                1.4G   0  1.4G  0% /sys/fs/cgroup
/dev/mapper/centos-root  26G  3.9G  23G  15% /
/dev/sda1            1014M 185M  830M  19% /boot
tmpfs                280M  20K  280M  1% /run/user/0
/dev/mapper/vg1-lv1    7.0G  33M  7.0G  1% /lvm1
/dev/mapper/vg1-lv2    7.8G  36M  7.3G  1% /lvm2
[root@LNX-SVR-01 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0   30G  0 disk
└─sda1     8:1    0    1G  0 part /boot
└─sda2     8:2    0   29G  0 part
  ├─centos-root 253:0  0   26G  0 lvm  /
  └─centos-swap 253:1  0    3G  0 lvm  [SWAP]
sdb        8:16   0    5G  0 disk
└─sdb1     8:17   0    5G  0 part
  └─vg1-lv1    253:2  0    7G  0 lvm  /lvm1
sdc        8:32   0    5G  0 disk
└─sdc1     8:33   0    5G  0 part
  ├─vg1-lv1    253:2  0    7G  0 lvm  /lvm1
  └─vg1-lv2    253:3  0    8G  0 lvm  /lvm2
sdd        8:48   0    5G  0 disk
└─sdd1     8:49   0    5G  0 part
  └─vg1-lv2    253:3  0    8G  0 lvm  /lvm2
sr0       11:0   1 1024M 0 rom
[root@LNX-SVR-01 ~]# 

```

Lvm is completed.

Step 3 : Install the rpm packages using yum .

- vsftpd
- php
- system-config-kickstart
- finger

To do , we need to create a mount point for centos disk .

Inside centos disk there is a directory called “Packages” .

Packages contains .rpm packages. We need to from there using yum .

```
[root@LNX-SVR-01 Packages]# mkdir /centos_cd
```



```
root@LNX-SVR-01:/run/media/root...
```

Then mount cdrom to that particular directory that we created

COMPLETE!

```
[root@LNX-SVR-01 Packages]# mount /dev/cdrom /centos_cd/
```



```
root@LNX-SVR-01:/run/media/root...
```

We need to edit yum repo using yum.repos.d directory.

/etc/yum.repos.d is used for find configuration files for software in linux systems that use yum.

```
[root@LNX-SVR-01 Packages]# cd /etc/yum.repos.d
```

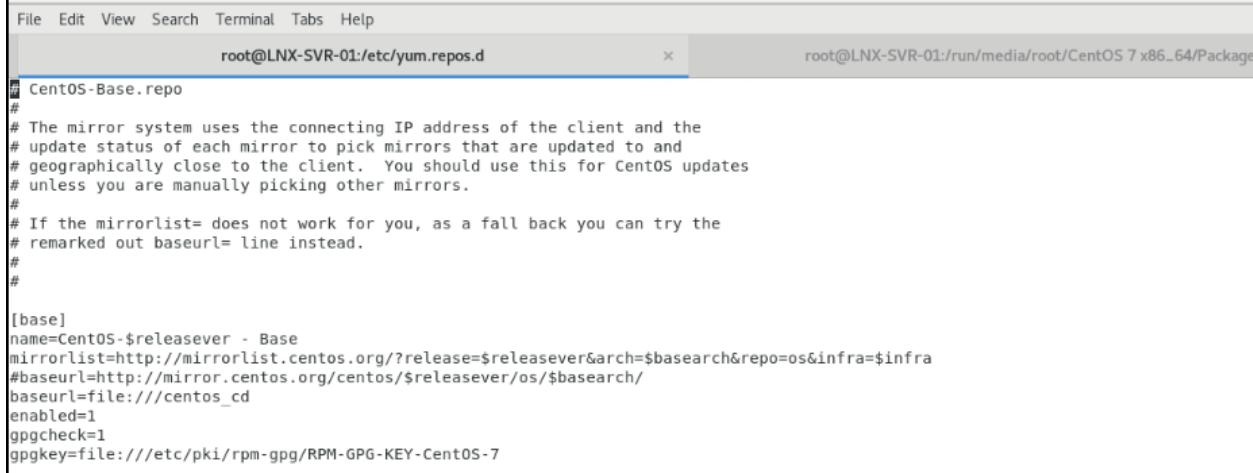


```
root@LNX-SVR-01:/run/media/root...
```

Here Base.repo is default repository. Edit CentOS-Base.repo using vi editor

```
[root@LNX-SVR-01 yum.repos.d]# ls
CentOS-Base.repo  CentOS-Debuginfo.repo  CentOS-Media.repo  CentOS-Vault.repo
CentOS-CR.repo    CentOS-fasttrack.repo  CentOS-Sources.repo  CentOS-x86_64-kernel.repo
[root@LNX-SVR-01 yum.repos.d]# vi CentOS-Base.repo
```

Here mention the base url that was our mount point of cdrom that contains rpm packages.



```
File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/etc/yum.repos.d
root@LNX-SVR-01:/run/media/root/CentOS 7 x86_64/Package

CentOS-Base.repo
#
# The mirror system uses the connecting IP address of the client and the
# update status of each mirror to pick mirrors that are updated to and
# geographically close to the client. You should use this for CentOS updates
# unless you are manually picking other mirrors.
#
# If the mirrorlist= does not work for you, as a fall back you can try the
# remarked out baseurl= line instead.
#
#
[base]
name=CentOS-$releasever - Base
mirrorlist=http://mirrorlist.centos.org/?release=$releasever&arch=$basearch&repo=os&infra=$infra
#baseurl=http://mirror.centos.org/centos/$releasever/os/$basearch/
baseurl=file:///centos_cd
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
```

Save and exit

After that ,

#Yum clean all. Is used for clearing local cache , and force yum to download latest package information from repo next time.



```
[root@LNX-SVR-01 yum.repos.d]# yum clean all
Loaded plugins: fastestmirror, langpacks
Cleaning repos: base extras local updates
Cleaning up list of fastest mirrors
[root@LNX-SVR-01 yum.repos.d]# yum update
Loaded plugins: fastestmirror, langpacks
Determining fastest mirrors
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=os&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=extras&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=updates&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
base
extras
local
updates
(1/8): base/7/x86_64/group_gz
(2/8): extras/7/x86_64/group_gz
(3/8): extras/7/x86_64/primary_db
(4/8): local/group_gz
(5/8): local/primary_db
(6/8): updates/7/x86_64/group_gz
(7/8): updates/7/x86_64/primary_db
(8/8): base/7/x86_64/primary_db
No packages marked for update
[root@LNX-SVR-01 yum.repos.d]#
```

Open the path of where rpm packages are located and then ,

Install using yum

```
[root@LNX-SVR-01 yum.repos.d]# cd /run/media/root/CentOS\ 7_x86_64/Packages/
[root@LNX-SVR-01 Packages]# yum localinstall vsftpd-3.0.2-28.el7.x86_64.rpm php-5.4.16-48.el7.x86_64.rpm system-config-kickstart-2.9.7-1.el7.noarch.rpm
Loaded plugins: fastestmirror, langpacks
Examining vsftpd-3.0.2-28.el7.x86_64.rpm: vsftpd-3.0.2-28.el7.x86_64
Marking vsftpd-3.0.2-28.el7.x86_64.rpm to be installed
Examining php-5.4.16-48.el7.x86_64.rpm: php-5.4.16-48.el7.x86_64
Marking php-5.4.16-48.el7.x86_64.rpm to be installed
Examining system-config-kickstart-2.9.7-1.el7.noarch.rpm: system-config-kickstart-2.9.7-1.el7.noarch
Marking system-config-kickstart-2.9.7-1.el7.noarch.rpm to be installed
Examining finger-0.17-52.el7.x86_64.rpm: finger-0.17-52.el7.x86_64
Marking finger-0.17-52.el7.x86_64.rpm to be installed
Resolving Dependencies
--> 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
--> Processing Dependency: httpd-mmn = 20120211x8664 for package: php-5.4.16-48.el7.x86_64
Loading mirror speeds from cached hostfile
Could not retrieve mirrorlist: http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=os&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist: http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=extras&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist: http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=updates&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
--> Processing Dependency: php-common(x86-64) = 5.4.16-48.el7 for package: php-5.4.16-48.el7.x86_64
--> Processing Dependency: php-cli(x86-64) = 5.4.16-48.el7 for package: php-5.4.16-48.el7.x86_64
--> Processing Dependency: httpd for package: php-5.4.16-48.el7.x86_64
--> Package system-config-kickstart.noarch 0:2.9.7-1.el7 will be installed
--> Processing Dependency: system-config-keyboard >= 1.3.1 for package: system-config-kickstart-2.9.7-1.el7.noarch
--> Processing Dependency: system-config-date for package: system-config-kickstart-2.9.7-1.el7.noarch
--> Processing Dependency: system-config-language for package: system-config-kickstart-2.9.7-1.el7.noarch
```

Activate Windows
Go to Settings to activate
Activate Windows
Go to Settings to activate

```
File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/run/media/root/CentOS 7 x86_64/Packages x root@LNX-SVR-01:/run/media/root/CentOS 7 x86_64/Packages x
rarian x86_64 0.8.1-11.el7 base 98 k
rarian-compat x86_64 0.8.1-11.el7 base 66 k
system-config-date noarch 1.10.6-3.el7.centos base 591 k
system-config-date-docs noarch 1.0.11-4.el7 base 527 k
system-config-keyboard noarch 1.4.0-5.el7 base 33 k
system-config-keyboard-base noarch 1.4.0-5.el7 base 103 k
system-config-language noarch 1.4.0-9.el7 base 133 k
usermode-gtk x86_64 1.111-6.el7 base 110 k

Transaction Summary
=====
Install 4 Packages (+20 Dependent packages)

Total size: 15 M
Total download size: 8.4 M
Installed size: 36 M
Is this ok [y/d/N]: y
Downloading packages:
warning: /centos_cd/Packages/apr-1.4.8-7.el7.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID f4a80eb5: NOKEY
Public key for apr-1.4.8-7.el7.x86_64.rpm is not installed
-----
Total
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
Userid : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"
Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
Package : centos-release-7-9.2009.0.el7.centos.x86_64 (@anaconda)
From   : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
```

Activate Windows
Go to Settings to activate
Activate Windows
Go to Settings to activate

```

File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/run/media/root/CentOS 7 x86_64/Packages
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.4.8-7.el7.x86_64 1/24
  Installing : apr-util-1.5.2-6.el7.x86_64 2/24
  Installing : libart_lgpl-2.3.21-10.el7.x86_64 3/24
  Installing : libgnomecanvas-2.30.3-8.el7.x86_64 4/24
  Installing : httpd-tools-2.4.6-95.el7.centos.x86_64 5/24
  Installing : libzip-0.10.1-8.el7.x86_64 6/24
  Installing : php-common-5.4.16-48.el7.x86_64 7/24
  Installing : php-cli-5.4.16-48.el7.x86_64 8/24
  Installing : rarian-0.8.1-11.el7.x86_64 9/24
  Installing : rarian-compat-0.8.1-11.el7.x86_64 10/24
  Installing : gnome-python2-2.28.1-14.el7.x86_64 11/24
  Installing : gnome-python2-canvas-2.28.1-14.el7.x86_64 12/24
  Installing : system-config-date-docs-1.0.11-4.el7.noarch 13/24
  Installing : system-config-date-1.10.6-3.el7.centos.noarch 14/24
  Installing : system-config-keyboard-base-1.4.0-5.el7.noarch 15/24
  Installing : system-config-keyboard-1.4.0-5.el7.noarch 16/24
  Installing : usermode-gtk-1.11.6.el7.x86_64 17/24
  Installing : system-config-language-1.4.0-9.el7.noarch 18/24
  Installing : mailcap-2.1.41-2.el7.noarch 19/24
  Installing : httpd-2.4.6-95.el7.centos.x86_64 20/24
  Installing : php-5.4.16-48.el7.x86_64 21/24
  Installing : system-config-kickstart-2.9.7-1.el7.noarch 22/24
  Installing : finger-0.17-52.el7.x86_64 23/24
  Installing : vsftpd-3.0.2-28.el7.x86_64 24/24
Verifying : system-config-language-1.4.0-9.el7.noarch
Verifying : mailcap-2.1.41-2.el7.noarch
Verifying : libgnomecanvas-2.30.3-8.el7.x86_64
Verifying : rarian-compat-0.8.1-11.el7.x86_64

Activate Windows 1/24
Go to Settings to activate Windows 3/24
Activate Windows 1/24
Go to Settings 3/24
Go to Settings 1/24

```

The screenshot shows two terminal windows. The left window displays the output of a yum install command for various packages from a CentOS 7 media root. The right window shows the same process with a progress bar indicating the completion of the transaction.

```

[root@LNX-SVR-01 Packages]# yum list installed vsftpd php system-config-kickstart finger
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=os&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=extras&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=updates&infra=stock error was
14: curl#6 - "Could not resolve host: mirrorlist.centos.org; Unknown error"
Installed Packages
finger.x86_64          0.17-52.el7.x86_64          @/finger-0.17-52.el7.x86_64
php.x86_64              5.4.16-48.el7.x86_64          @/php-5.4.16-48.el7.x86_64
system-config-kickstart.noarch 2.9.7-1.el7.x86_64      @/system-config-kickstart-2.9.7-1.el7.noarch
vsftpd.x86_64           3.0.2-28.el7.x86_64        @/vsftpd-3.0.2-28.el7.x86_64
[root@LNX-SVR-01 Packages]# █

```

The screenshot shows a terminal window displaying the output of a yum list installed command. It lists several packages that are currently installed on the system, including finger, php, system-config-kickstart, and vsftpd.

Installed .

Step 4 : Start Yes process and kill process using top

```

File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/

```

```

[root@LNX-SVR-01 /]# yes █

```

The screenshot shows a terminal window with a single command being run: 'yes'. This command is used to respond 'y' to all prompts, which is often done to automate certain processes.

Processing



```
#top
```

```
root@LNX-SVR-01:/
```

File Edit View Search Terminal Tabs Help

```
root@LNX-SVR-01:/
```

```
top - 11:59:10 up 1:53, 3 users, load average: 3.13, 1.11, 0.43
Tasks: 226 total, 3 running, 223 sleeping, 0 stopped, 0 zombie
%Cpu(s): 68.4 us, 25.3 sy, 0.0 ni, 6.1 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0 st
KiB Mem : 2859828 total, 526720 free, 908328 used, 1424780 buff/cache
KiB Swap: 3145724 total, 3145724 free, 0 used, 1646436 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2334	root	20	0	3392624	213820	71160	S	68.2	7.5	3:27.91	gnome-shell
58073	root	20	0	108056	352	280	S	63.9	0.0	1:08.10	yes
3581	root	20	0	750948	32772	18672	R	34.1	1.1	1:00.26	gnome-terminal-
1491	root	20	0	349832	60852	29272	R	19.5	2.1	1:24.61	X
56825	root	20	0	0	0	0	S	0.7	0.0	0:02.08	kworker/1:1
9	root	20	0	0	0	0	S	0.3	0.0	0:07.54	rcu_sched
305	root	-51	0	0	0	0	S	0.3	0.0	0:01.67	irq/16-vmwgfx
58172	root	20	0	162096	2364	1572	R	0.3	0.1	0:00.11	top
1	root	20	0	128652	7280	4220	S	0.0	0.3	0:08.17	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.03	kthreadd
4	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0H
6	root	20	0	0	0	0	S	0.0	0.0	0:01.01	ksoftirqd/0
7	root	rt	0	0	0	0	S	0.0	0.0	0:00.57	migration/0
8	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_bh
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	0:00.07	watchdog/0
12	root	rt	0	0	0	0	S	0.0	0.0	0:00.08	watchdog/1
13	root	rt	0	0	0	0	S	0.0	0.0	0:00.13	migration/1
14	root	20	0	0	0	0	S	0.0	0.0	0:00.44	ksoftirqd/1
16	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/1:0H
18	root	20	0	0	0	0	S	0.0	0.0	0:00.03	kdevtmpfs
19	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	netns
20	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khungtaskd
21	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	writeback
22	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kintegrityd
23	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	bioset

```
root@LNX-SVR-01:/
```

Here we can see the process id of “yes” is 58073

To kill that process type “k” and enter process id

```
File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/
top - 11:59:31 up 1:53, 3 users, load average: 3.70, 1.40, 0.55
Tasks: 226 total, 4 running, 222 sleeping, 0 stopped, 0 zombie
%Cpu(s): 68.5 us, 26.4 sy, 0.0 ni, 5.1 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 2859828 total, 526488 free, 908292 used, 1425048 buff/cache
KiB Swap: 3145724 total, 3145724 free, 0 used. 1646252 avail Mem
PID to signal/kill [default pid = 2334] 58073
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2334 root 20 0 3392624 213848 71160 S 69.4 7.5 3:42.15 gnome-shell
58073 root 20 0 108056 352 280 R 65.4 0.0 1:22.06 yes
3581 root 20 0 750948 32772 18672 S 34.6 1.1 1:07.69 gnome-terminal-
1491 root 20 0 349832 60852 29272 R 19.3 2.1 1:28.67 X
9 root 20 0 0 0 0 R 0.3 0.0 0:07.63 rcu_sched
```

After that type 9 for kill the process .

```
File Edit View Search Terminal Tabs Help
root@LNX-SVR-01:/
top - 11:59:31 up 1:53, 3 users, load average: 3.70, 1.40, 0.55
Tasks: 226 total, 4 running, 222 sleeping, 0 stopped, 0 zombie
%Cpu(s): 68.5 us, 26.4 sy, 0.0 ni, 5.1 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 2859828 total, 526488 free, 908292 used, 1425048 buff/cache
KiB Swap: 3145724 total, 3145724 free, 0 used. 1646252 avail Mem
Send pid 58073 signal [15/sigterm] 9
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2334 root 20 0 3392624 213848 71160 S 69.4 7.5 3:42.15 gnome-shell
58073 root 20 0 108056 352 280 R 65.4 0.0 1:22.06 yes
3581 root 20 0 750948 32772 18672 S 34.6 1.1 1:07.69 gnome-terminal-
1491 root 20 0 349832 60852 29272 D 19 2 2 1 1:28.67 X
y
y
y
y
Killed
[root@LNX-SVR-01 /]#
```

=====PROJECT 2 COMPLETED=====

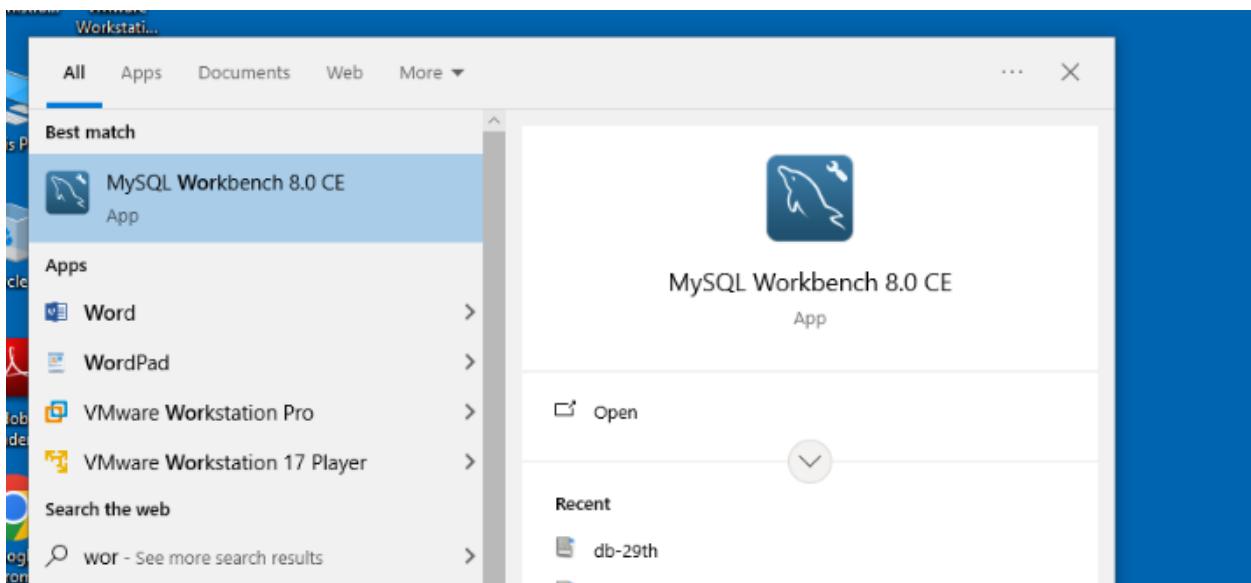
PROJECT TASK 3

Use MySQL workbench and create an employee database. Create a table empdetails (emp_id, Name, Age, Salary, Position). Create another table emplocation (emp_id, location). Create primary key & foreign key in the tables accordingly and perform CRUD operation on the table. Use joins to display “emp_id, Name, Age, Salary, location” using primary key & foreign key concept. Setup: - Use existing MySQL workbench

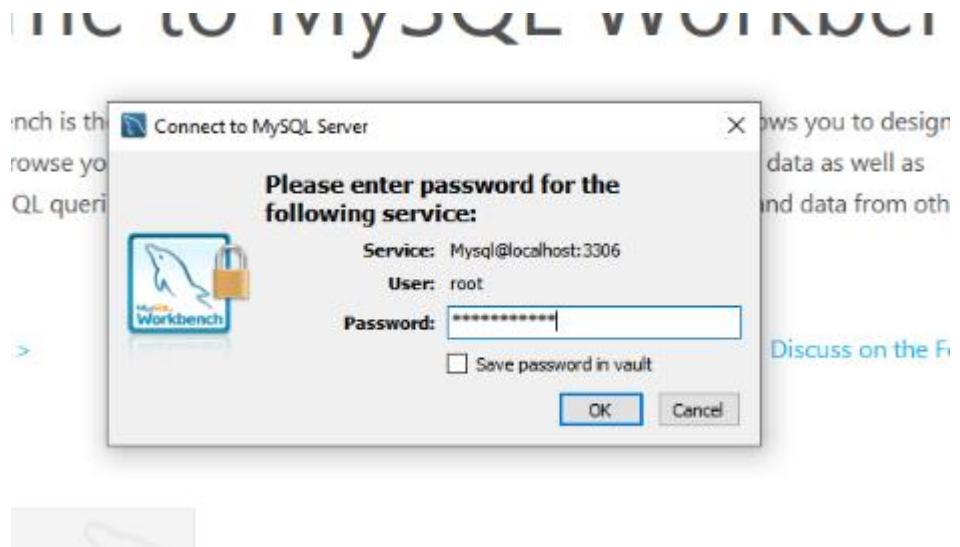
Setup.

- Create a database.
- Create 2 tables in it & verify.
- Insert data (according to your wish) & verify.
- Display (emp_id, Name, Age, Salary, location) as a single output.

Open MySQL Workbench



Connect



#create a database

A screenshot of the MySQL Workbench interface showing a SQL editor window. The title bar says "db1 db-29th SQL File 4*". The editor contains the command "CREATE database employee;". In the status bar, it shows "1 • CREATE database employee;". On the right, there's a "SQLAdditions" panel with a note about context help being disabled. Below the editor is an "Output" panel with a table showing the execution details: one row was affected in 0.015 seconds. The table has columns for #, Time, Action, Message, and Duration / Fetch.

Use the database and create a table named “empdetails”

The screenshot shows the SQL Server Management Studio interface. In the top-left pane, there is a code editor window titled "SQL File 4*". It contains the following SQL script:

```
1 • CREATE database employees;
2
3 • use employee;
4
5 • CREATE table empdetails (
6     empid INT auto_increment primary key,
7     name varchar(40),
8     age int,
9     salary decimal(10,2),
10    position varchar(60)
11 );
```

In the top-right pane, there is a "SQLAdditions" toolbar with various icons. A tooltip message is displayed: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

At the bottom of the interface, there is an "Output" window titled "Action Output". It displays the execution log:

#	Time	Action	Message	Duration / Fetch
6	13:26:43	use employee	0 row(s) affected	0.000 sec
7	13:26:43	use employee	0 row(s) affected	0.000 sec
8	13:26:44	use employee	0 row(s) affected	0.000 sec
9	13:26:51	CREATE table empdetails (empid INT auto_increment primary key, name varchar(40), age int, salary decimal(10,2), position varchar(60));	0 row(s) affected	0.031 sec

#create another table named emplocation

The screenshot shows the SQL Server Management Studio interface. In the top-left pane, there is a code editor window titled "SQL File 4*". It contains the following SQL script:

```
2
3 • use employee;
4
5 • CREATE table empdetails (
6     empid INT auto_increment primary key,
7     name varchar(40),
8     age int,
9     salary decimal(10,2),
10    position varchar(60)
11 );
12
13 • CREATE table emplocation(
14     emp_id INT primary key,
15     location varchar(50),
16     foreign key(emp_id) references empdetails(empid)
17 );
```

In the top-right pane, there is a "SQLAdditions" toolbar with various icons. A tooltip message is displayed: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

At the bottom of the interface, there is an "Output" window titled "Action Output". It displays the execution log:

#	Time	Action	Message	Duration / Fetch
8	13:26:44	use employee	0 row(s) affected	0.000 sec
9	13:26:51	CREATE table empdetails (empid INT auto_increment primary key, name varchar(40), age int, salary decimal(10,2), position varchar(60));	0 row(s) affected	0.031 sec
10	13:39:06	CREATE table emplocation(emp_id INT primary key, location varchar(50), foreign key(emp_id) references empdetails(empid));	Error Code: 3734. Failed to add the foreign key constraint. Missing column 'emp_id' for constraint.	0.015 sec
11	13:39:46	CREATE table emplocation(emp_id INT primary key, location varchar(50), foreign key(emp_id) references empdetails(empid));	0 row(s) affected	0.032 sec

#insert data into table empdetails

db1 db-29h SQL File 4* ×

```

16     foreign key(emp_id) references empdetails(empid)
17   );
18
19 •   insert into empdetails(name,age,salary,position) values
20     ("arshad",23,70000,"security analyst"),
21     ("sinan",24,75000,"developer"),
22     ("james",27,90000,"manager");
23
24 •   select * from empdetails;

```

Result Grid | Filter Rows: [] | Edit: [] | Export/Import: [] | Wrap Cell Content: []

	empid	name	age	salary	position
▶	1	arshad	23	70000.00	security analyst
2	2	sinan	24	75000.00	developer
3	3	james	27	90000.00	manager
*	NULL	NULL	NULL	NULL	NULL

emodetails 1 ×

Output

Action Output

#	Time	Action	Message
11	13:39:46	CREATE table emplocation(emp_id INT primary key, location varchar(50), foreign key(emp_id) references empdetails(empid));	0 row(s) affected
12	13:45:01	insert into empdetails(empid,name,age,salary,position) values ("arshad",23,70000,"security analyst")	Error Code: 1136. Column count doesn't match value count at row 1
13	13:46:12	insert into empdetails(name,age,salary,position) values ("arshad",23,70000,"security analyst")	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
14	13:46:25	select * from empdetails LIMIT 0, 1000	3 row(s) returned

Activate Go to Se

#insert data into table emplocation

```

26 •   insert into emplocation(emp_id , location) values
27     (1, "kochi"),
28     (2, "bangluru"),
29     (3, "kolkata");
30
31 •   select * from emplocation;
32

```

Result Grid | Filter Rows: [] | Edit: [] | Export/Import: [] | Wrap Cell Content: []

	emp_id	location
1	1	kochi
2	2	bangluru
3	3	kolkata
*	NULL	NULL

emplocation 2 ×

#Doing CRUD operations

```

33
34      #CRUD OPERATIONS
35      #1 create
36 •   insert into empdetails(name,age,salary,position) values
37      ("naseeh",21,60000,"network engineer");
38
39      #2 read
40 •   select name from empdetails where salary > 70000;

```

Result Grid	
	name
▶	sinan
▶	james

```

41
42      #3 update
43 •   update empdetails set salary=65000 where position = "network engineer";
44 •   select * from empdetails;

```

Result Grid					
	empid	name	age	salary	position
▶	1	arshad	23	70000.00	security analyst
▶	2	sinan	24	75000.00	developer
▶	3	james	27	90000.00	manager
▶	4	naseeh	21	65000.00	network engineer
*	NULL	NULL	NULL	NULL	NULL

empdetails 4 ✓

#join table

```

42
43      #2 read
44 •   select name from empdetails where salary > 70000;
45
46      #3 update
47 •   update empdetails set salary=65000 where position = "network engineer";
48 •   select * from empdetails;
49
50      #4 delete
51 •   delete from empdetails where empid = 2;
52
53      #join table
54 •   select empdetails.empid,empdetails.name,empdetails.age,empdetails.salary,empdetails.position,emplocation.location
55      from empdetails join emplocation on empdetails.empid = emplocation.emp_id;

```

< | Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	empid	name	age	salary	position	location
1	1	arshad	23	70000.00	security analyst	kochi
2	2	sinan	24	75000.00	developer	banguluru
3	3	james	27	90000.00	manager	kolkata

Result 1 x

=====PROJECT COMPLETED=====