

WIPRO NGA Program – Datacenter Batch5

Capstone Project Presentation – 06 April 2024

Project Title Here – Installation of CentOS-7 & LVM configuration

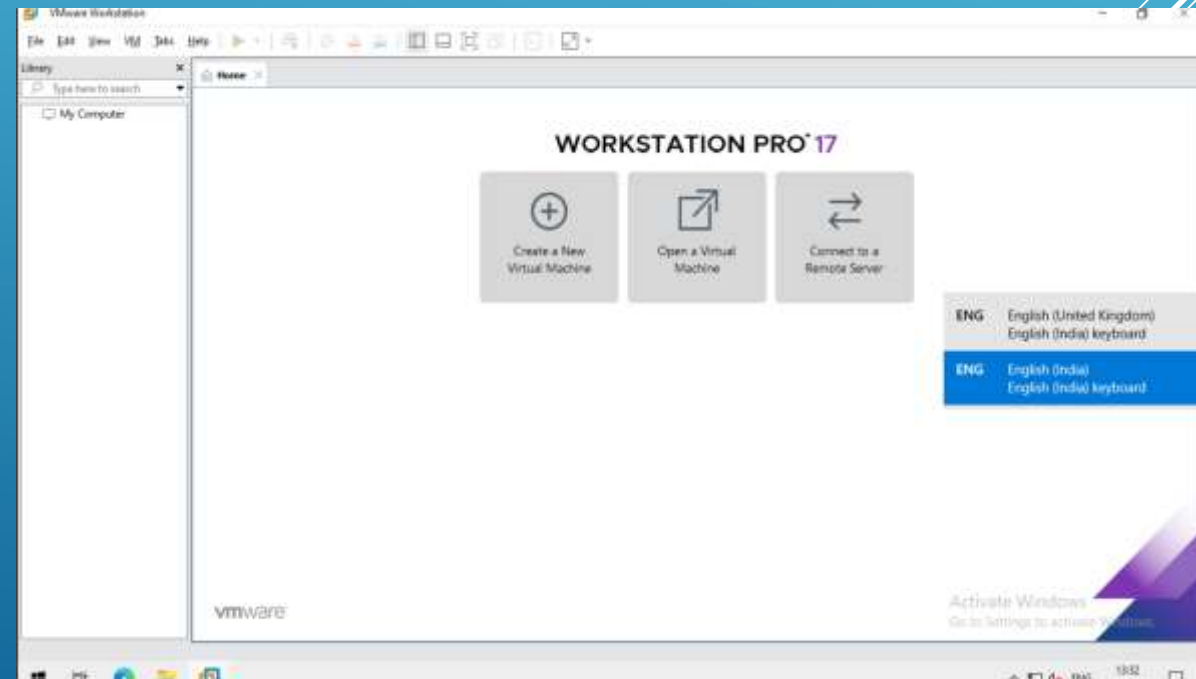
Presented by - Kishor Chandra Sahoo

Slide Title

❑ Here is the first page of cloud Environment.



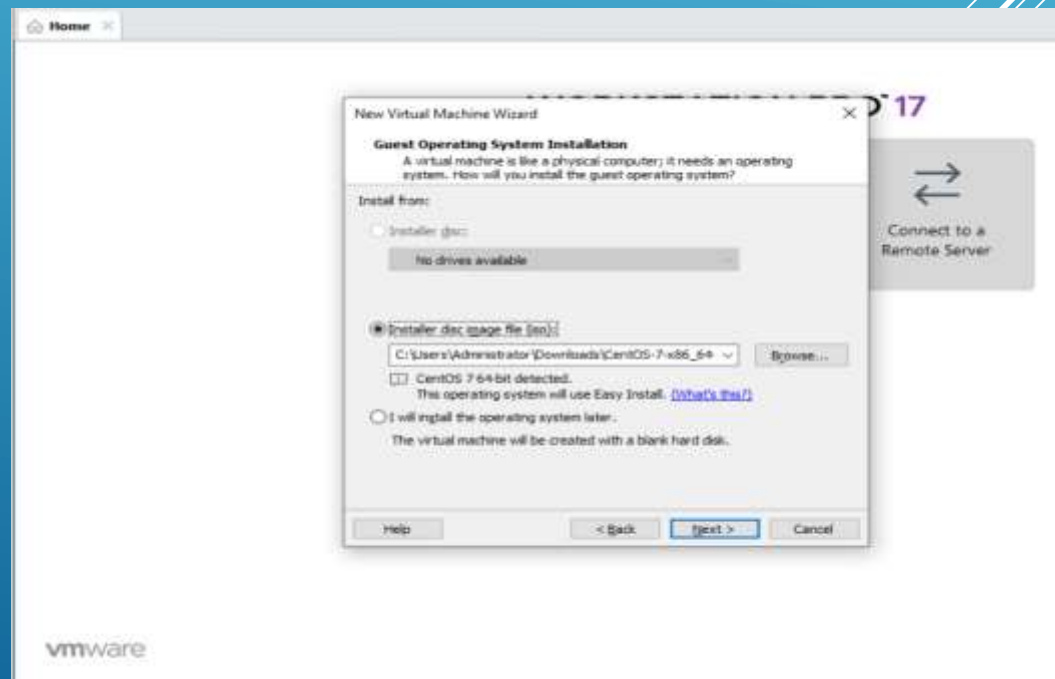
❑ Here is the first step of installation and open view of vmware.



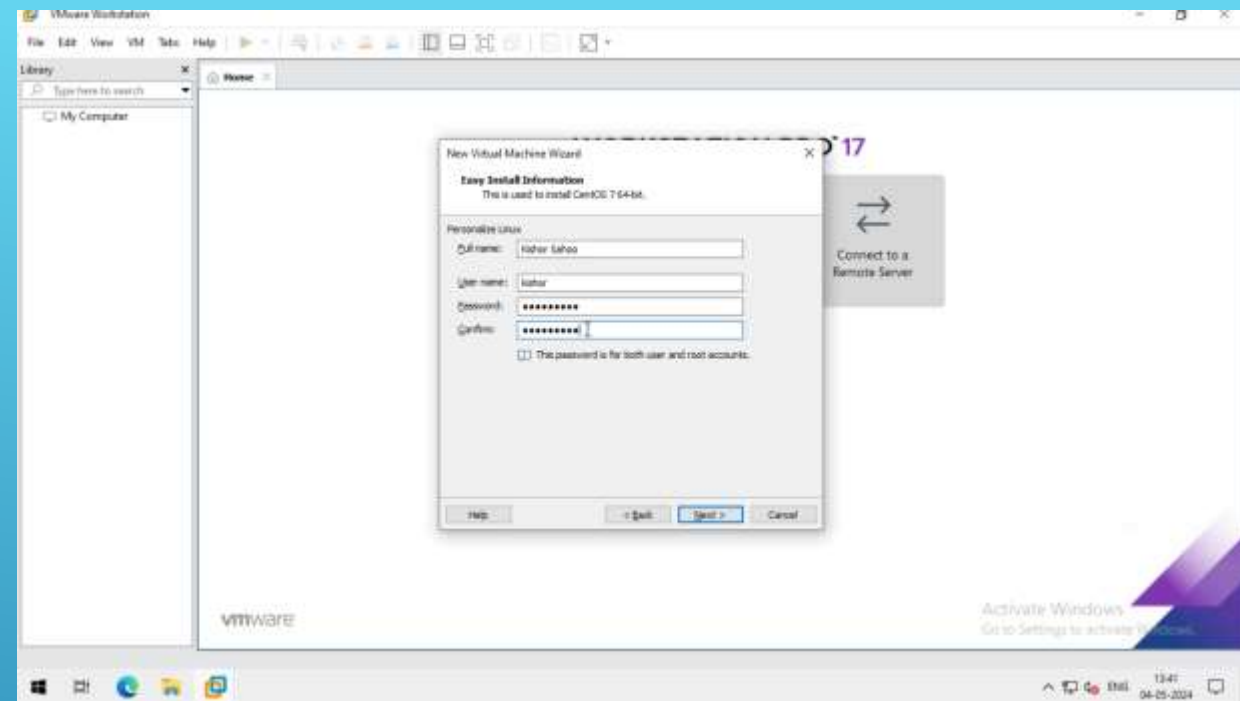
- ❑ After clicking Create a new virtual machine ,Then we have this interface.
- ❑ In this step choose typical.



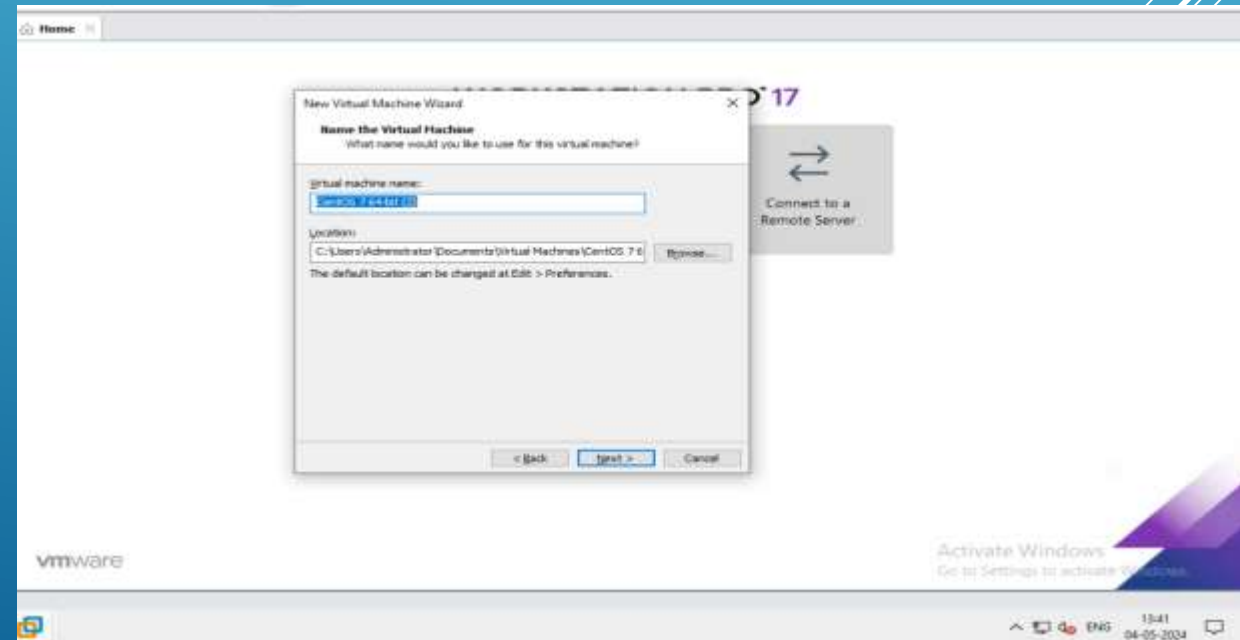
- ❑ After Clicking Typical this is the next step , In here we browse CentOS7 -7 Click Next.



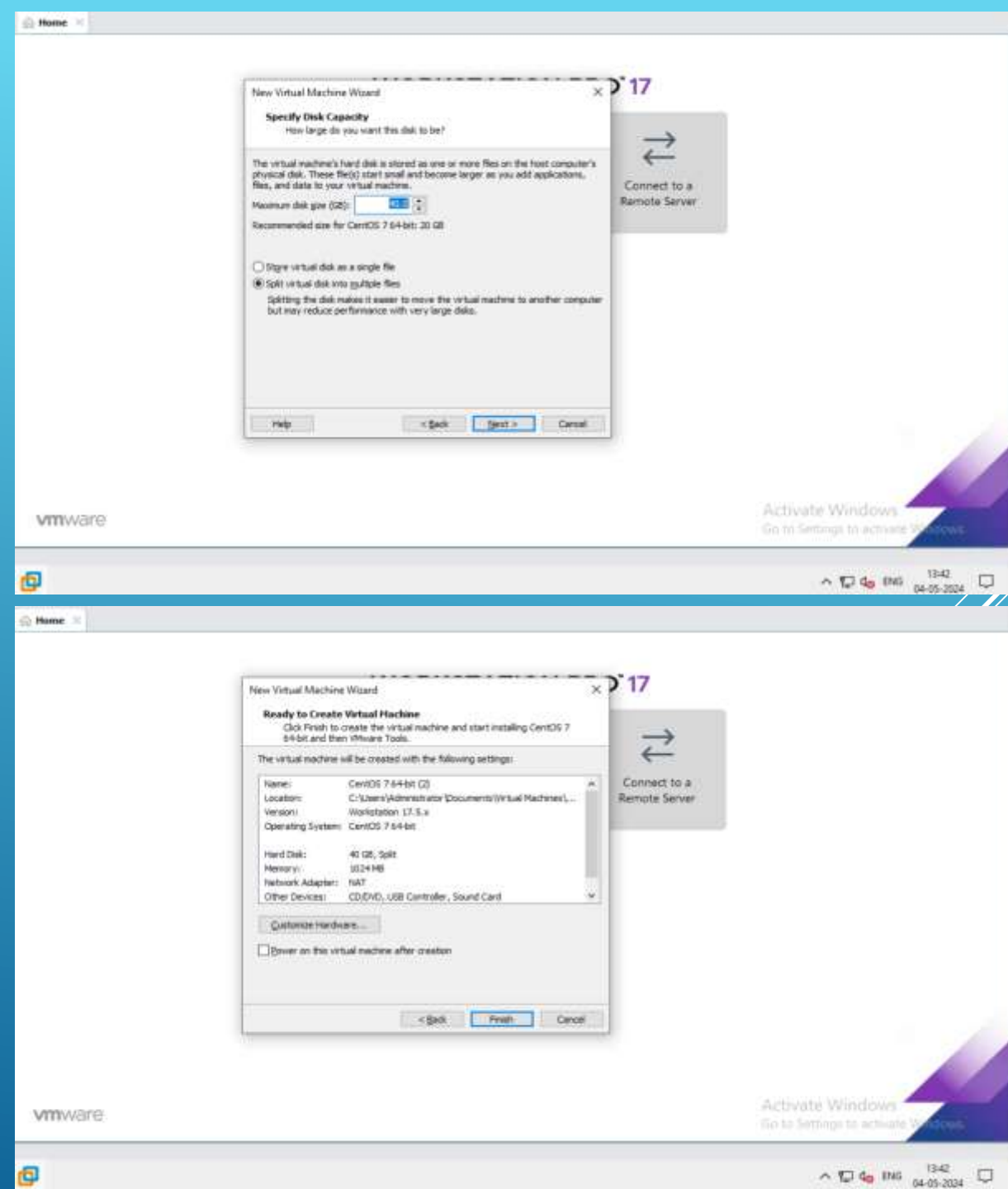
- ❑ After browse next step is assign full name, user name & password.
- ❑ Then click next.



- ❑ After that give the name of the virtual machine.

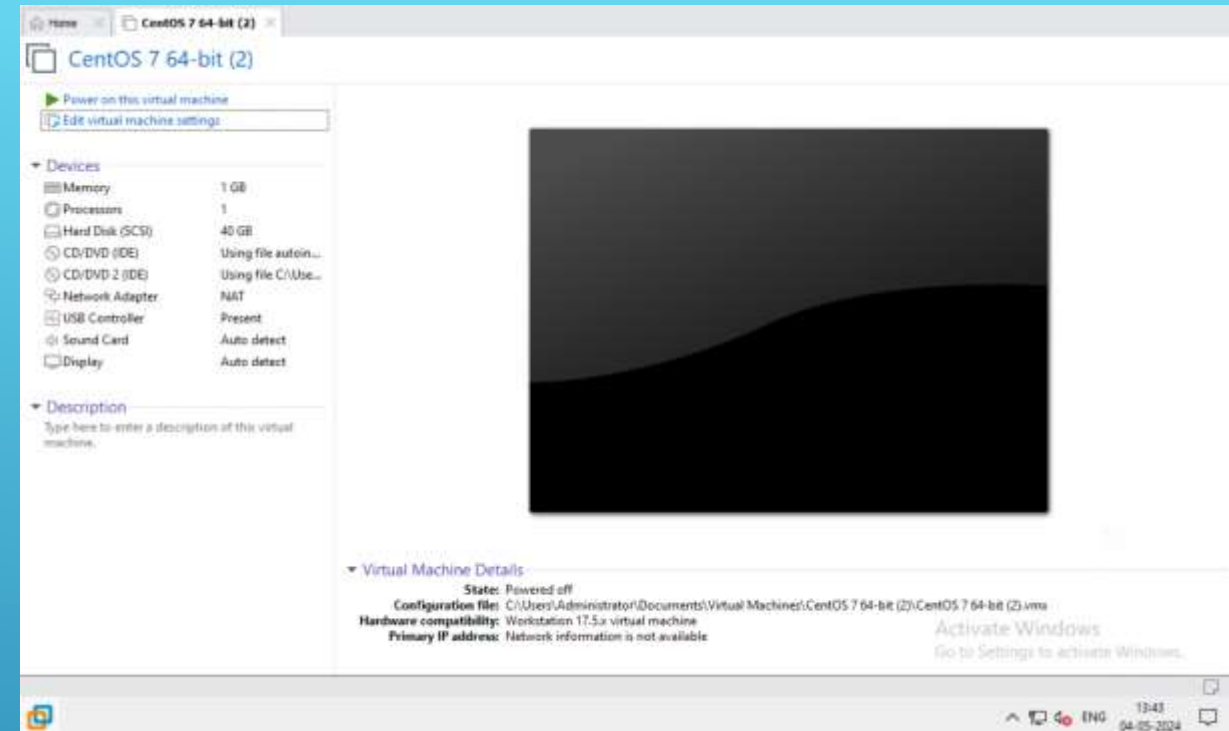


- ❑ After that here we give Disk size of the machine.
- ❑ Click Next.



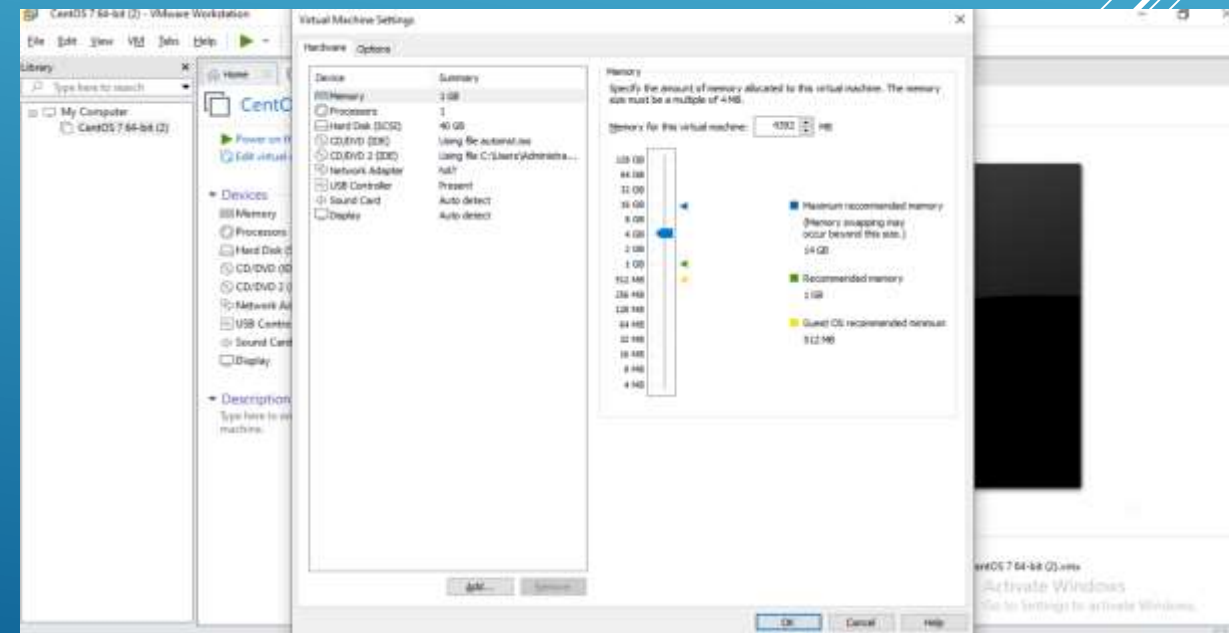
- ❑ In this step ,our CentOS-7 Virtual machine ready to create.
- ❑ Then click Next.

❑ Here is the first step after finished or first look of CentOS-7.

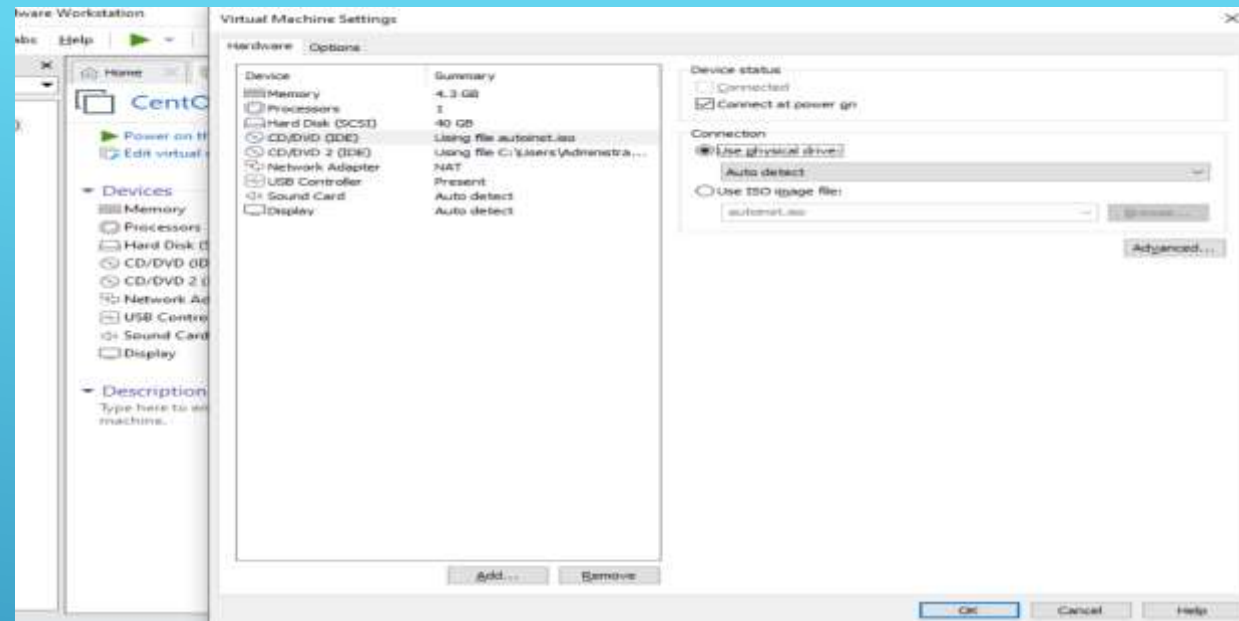


❑ After that edit the virtual machine setting.

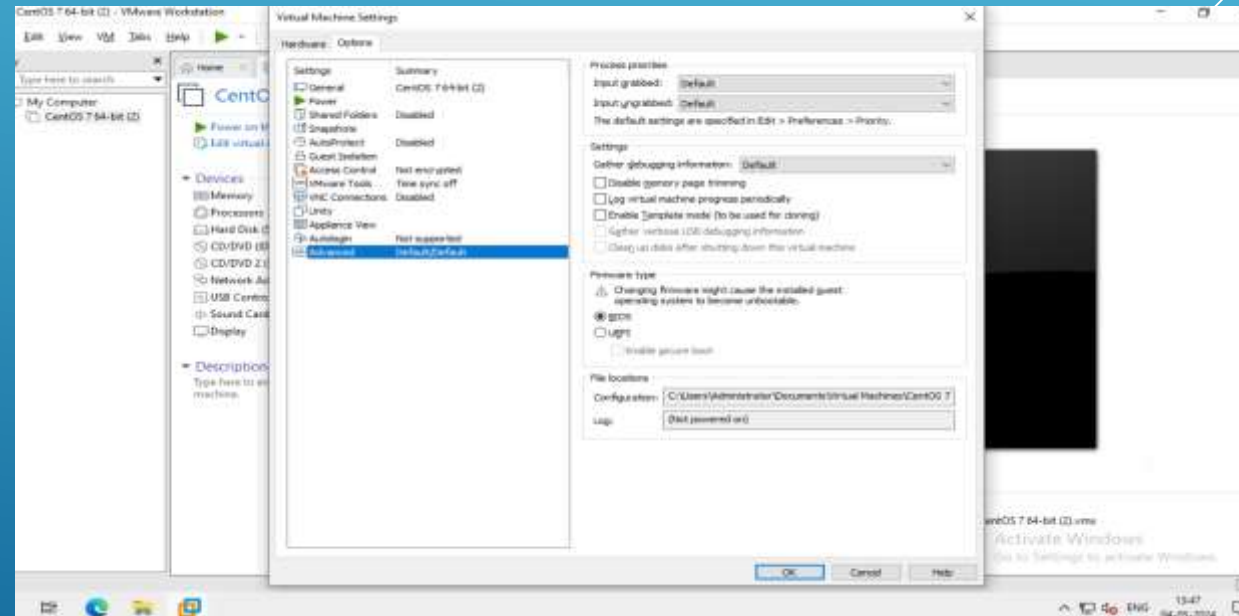
❑ Here is the first look.



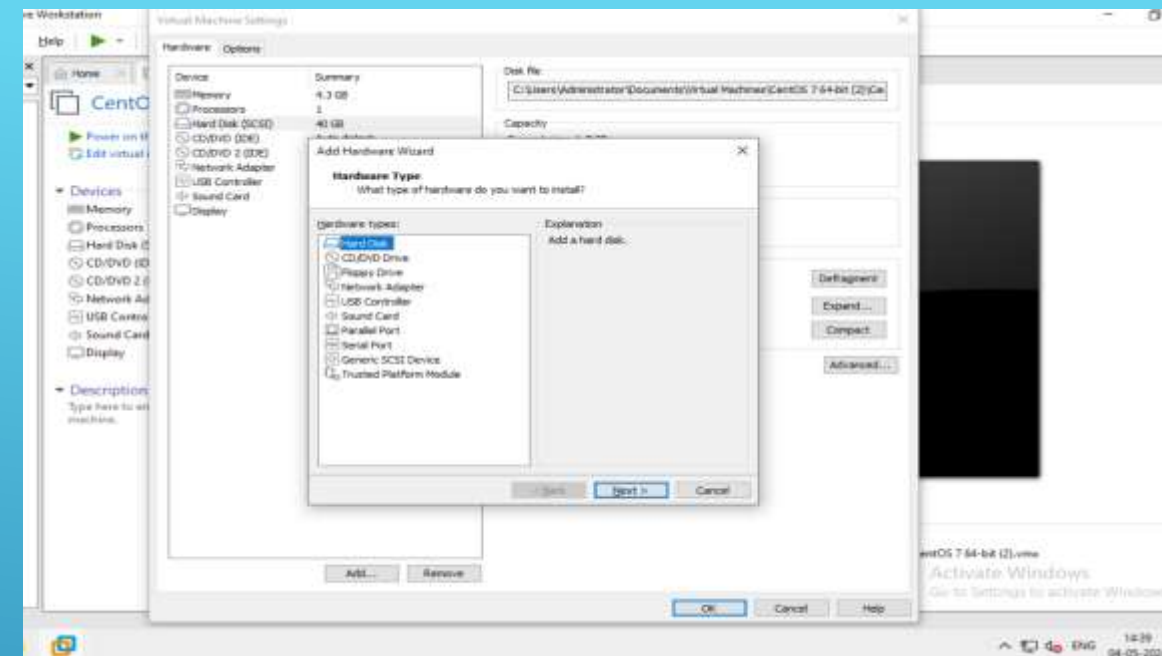
- ❑ Now go to the CD/DVD Choose physical drive.
- ❑ Click ok.



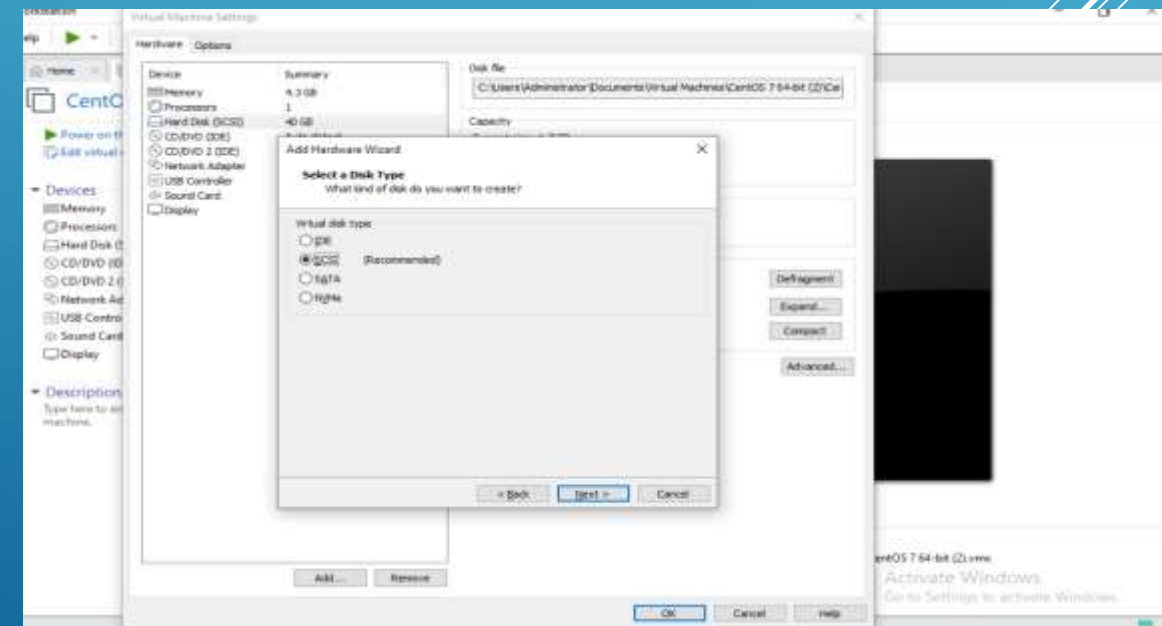
- ❑ Now go to the advance choose BIOS.
- ❑ Click ok.



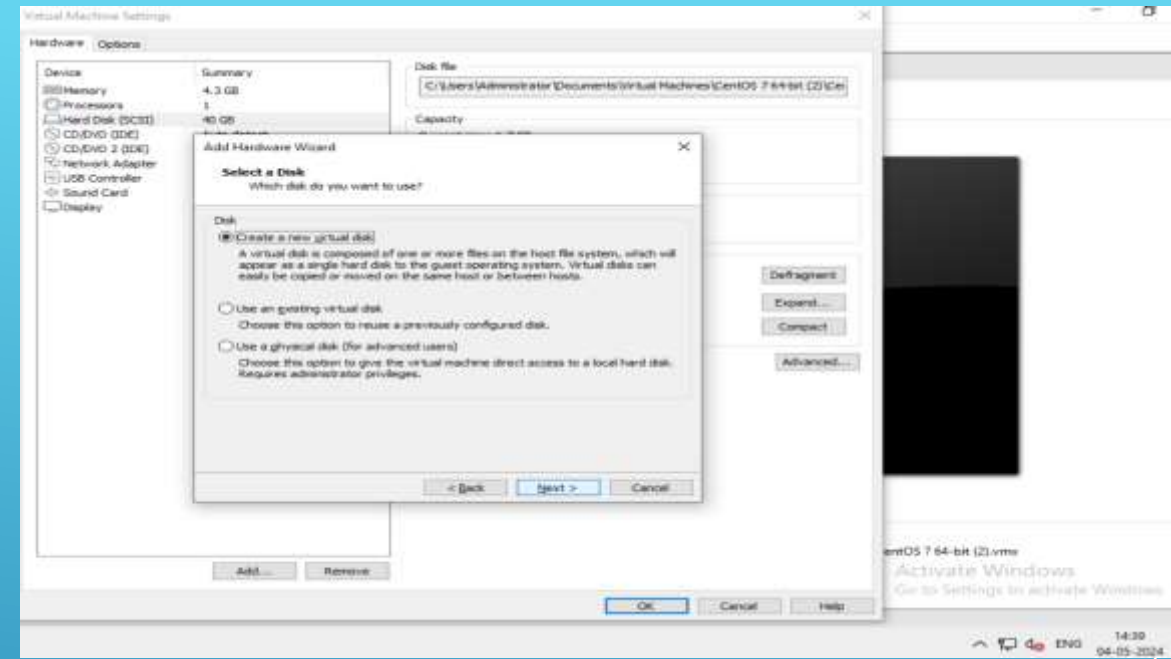
- ❑ This is 3 hard disk partition , so we add 3 hard disk.
- ❑ Here is the first look of the hard disk add.



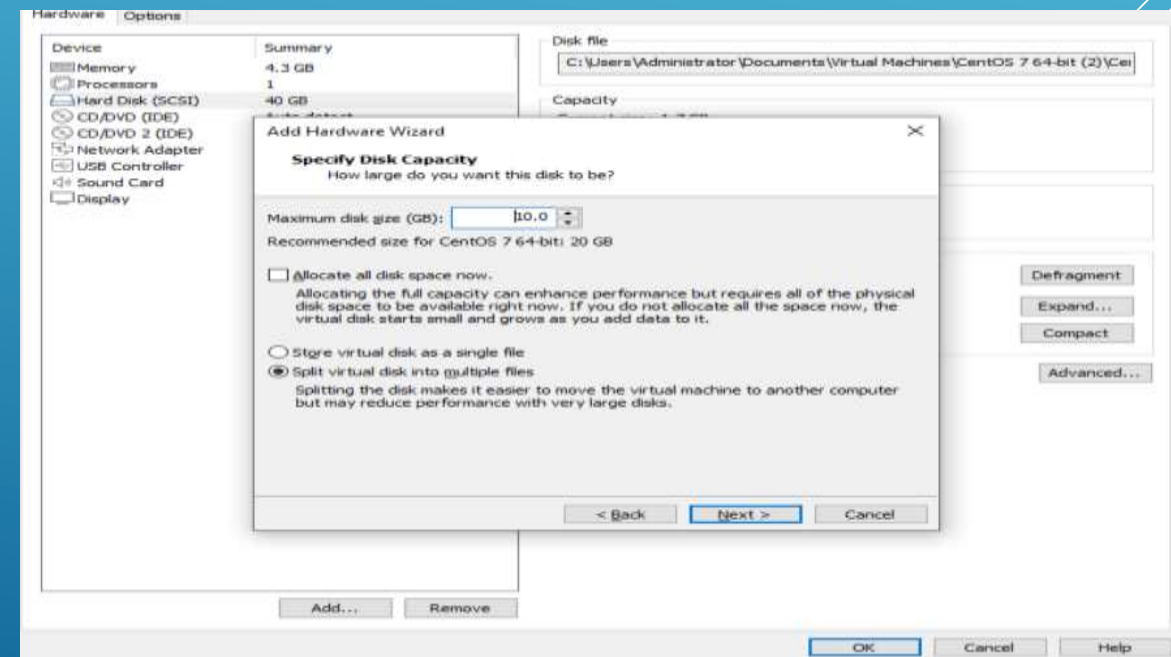
- ❑ Now I choose default disk type that is SCSI.
- ❑ Click next



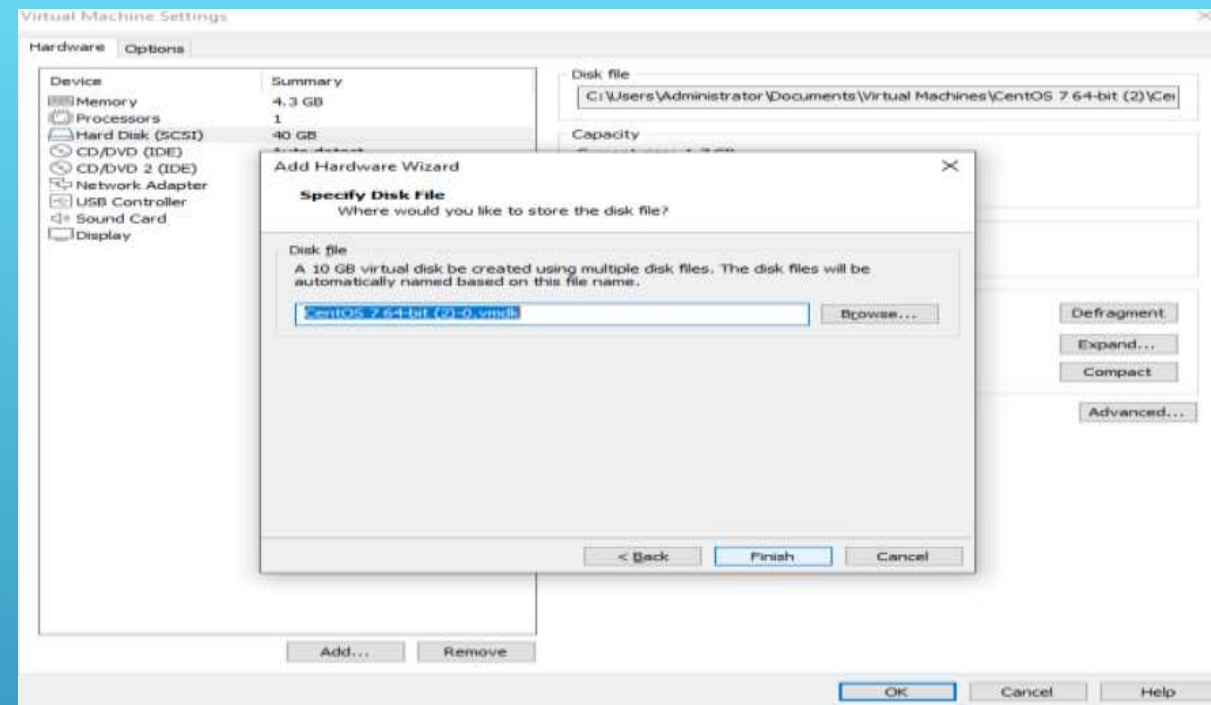
- ❑ Here we add Disk type ,choose default disk.
- ❑ Click next.



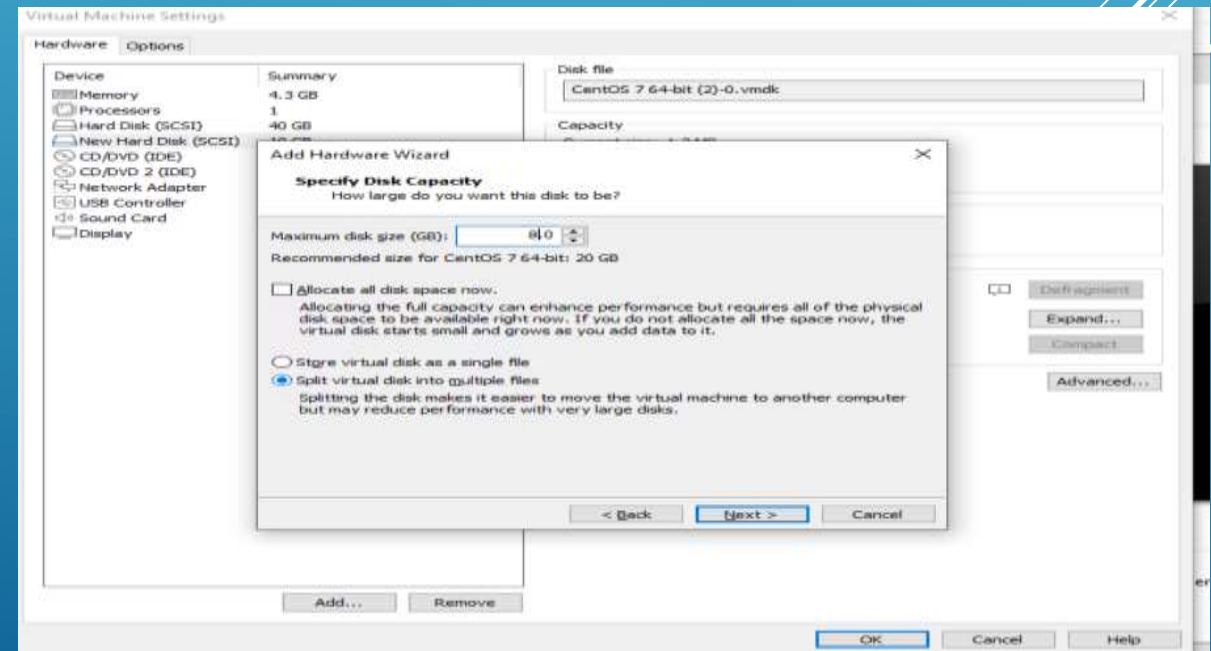
- ❑ Here we give the capacity of the disk .
- ❑ Then Click next.



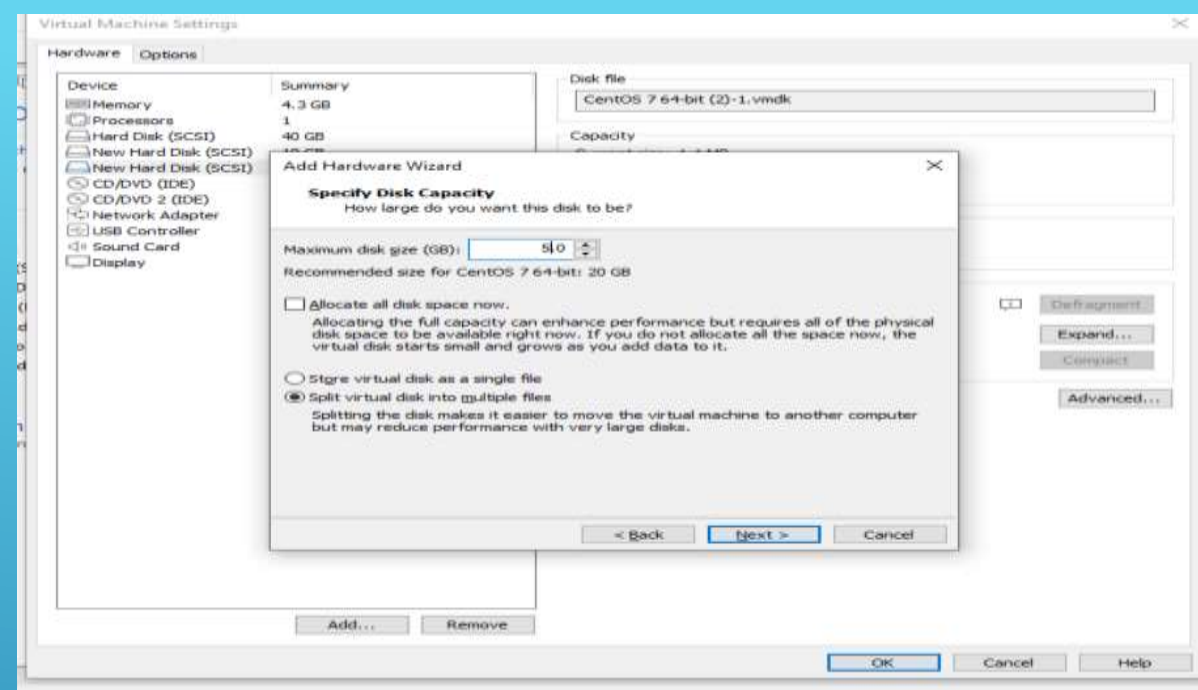
- ❑ Here we specify the disk file.
- ❑ Then click on finished.



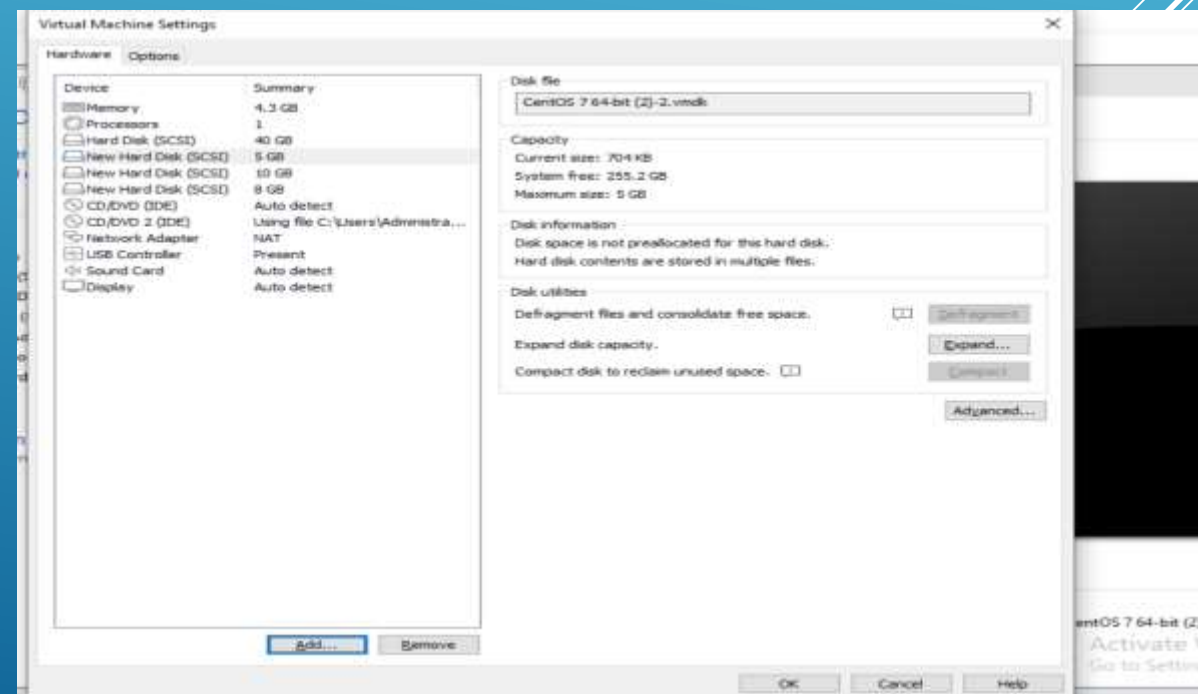
- ❑ Now, create another 2 disk ,This is the 2nd disk of size 8GB.
- ❑ Here we specify disk capacity.



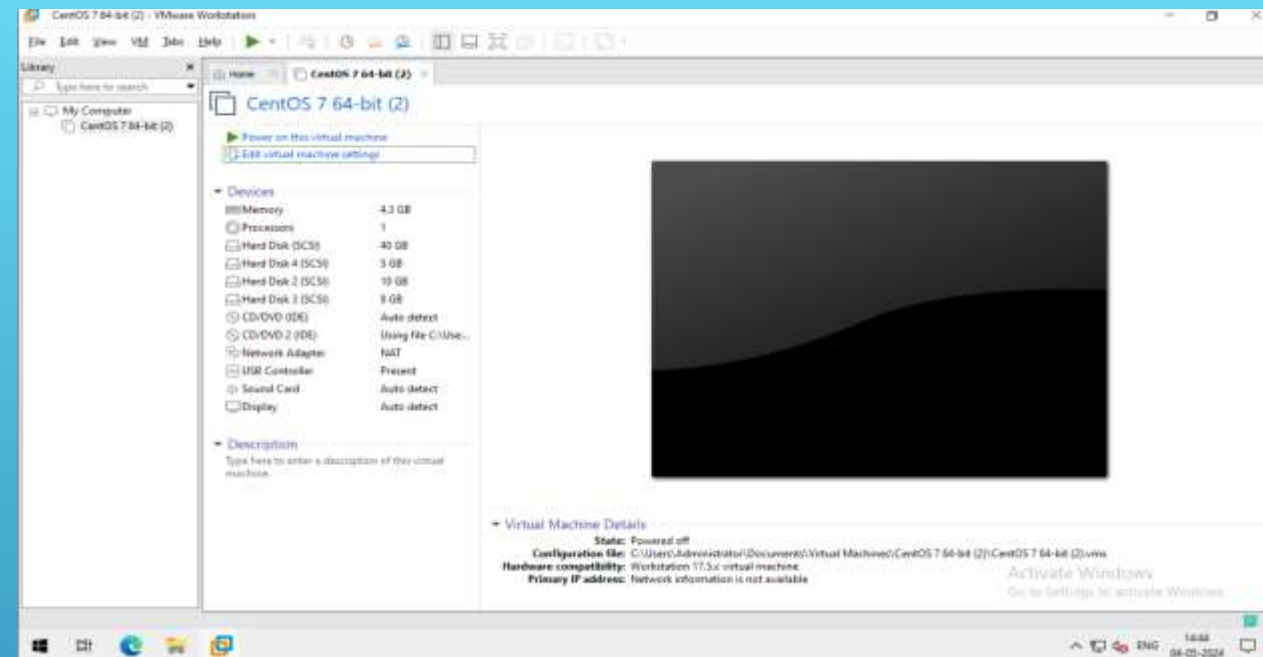
□ Here we another disk of size 5GB.



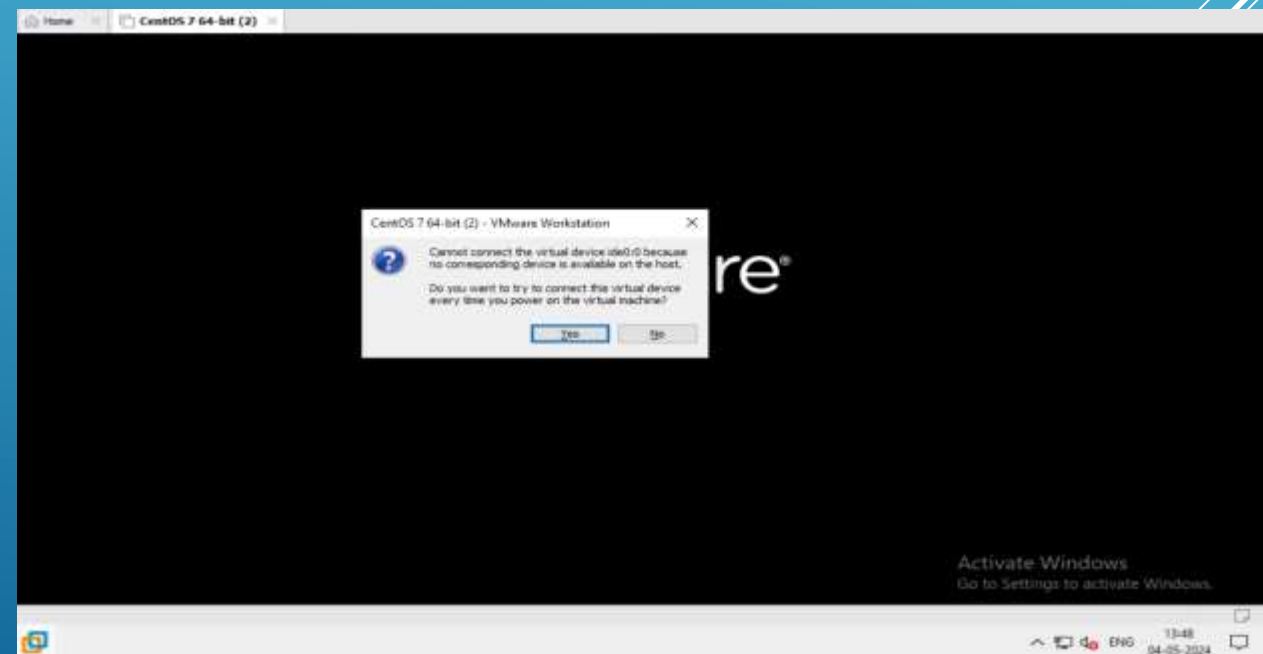
□ Here the first look after doing all edit work in setting .
□ Then click ok.



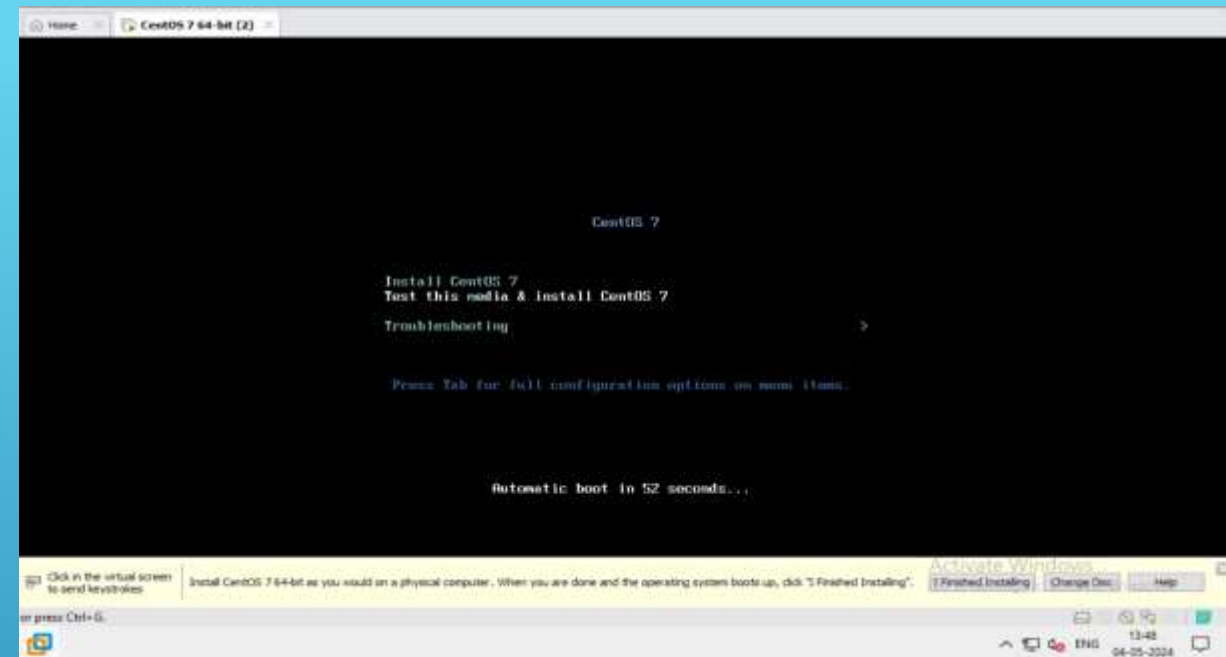
❑ Here is the first look of vm after edit setting.



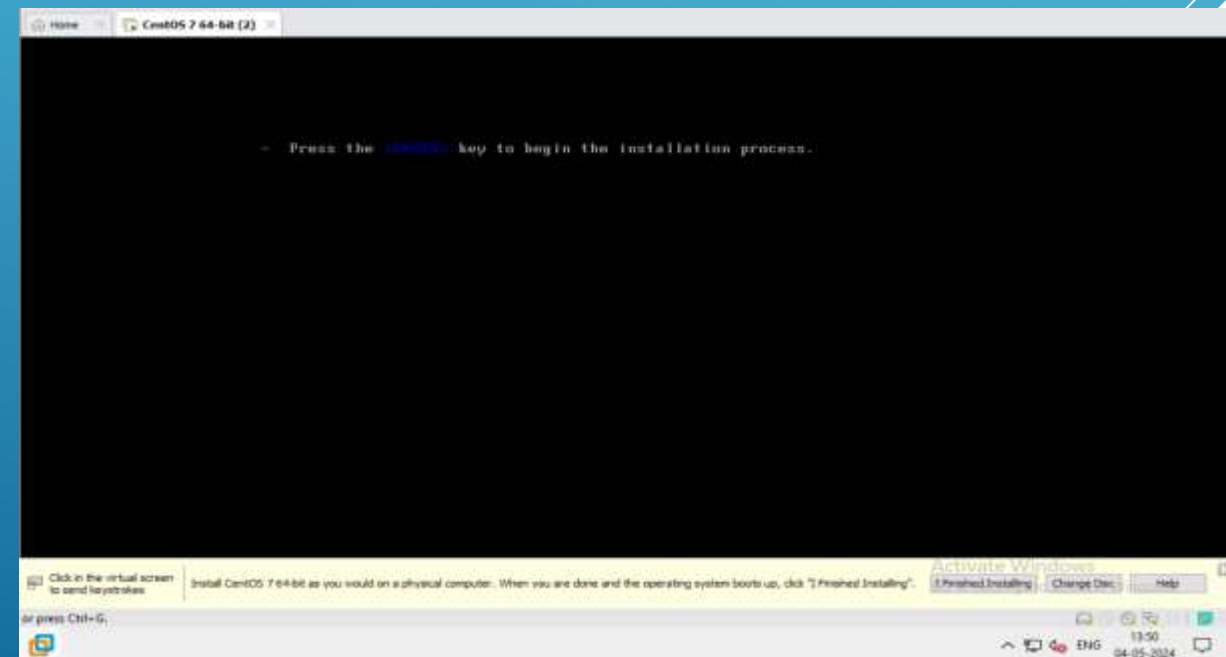
❑ Now we start the virtual machine and click on yes.



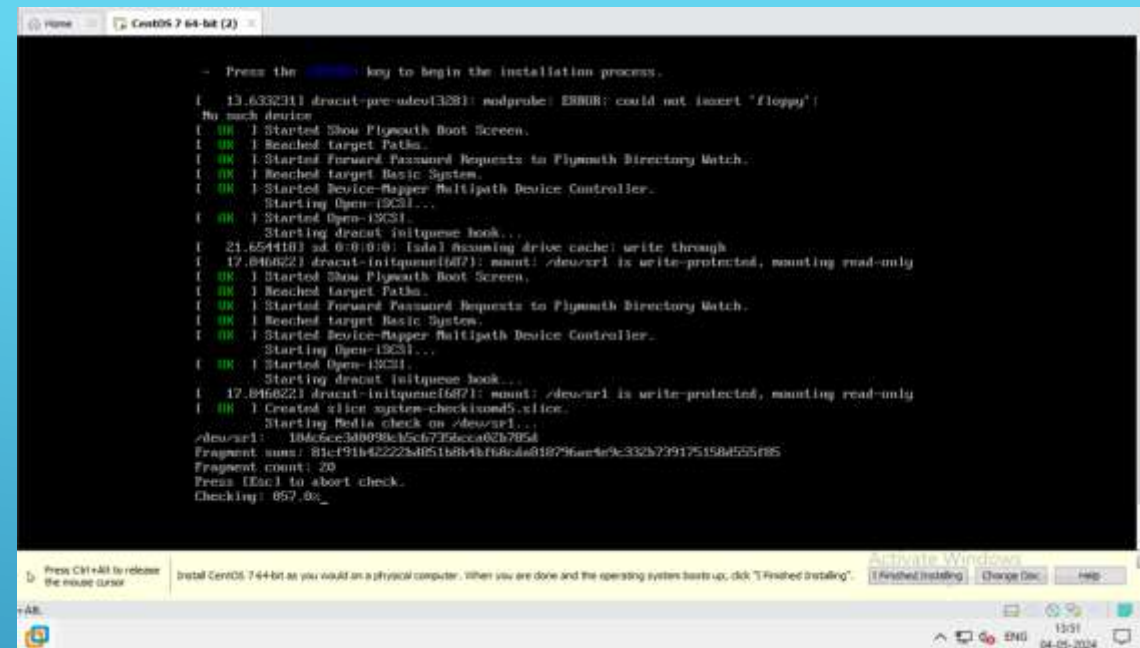
- ❑ Now I choose the first option CentOS 7.
- ❑ It take time for next step.



- ❑ Now we press on enter to start the configuration.



❑ This is the configuration page.



❑ Now we choose the language and choose English.

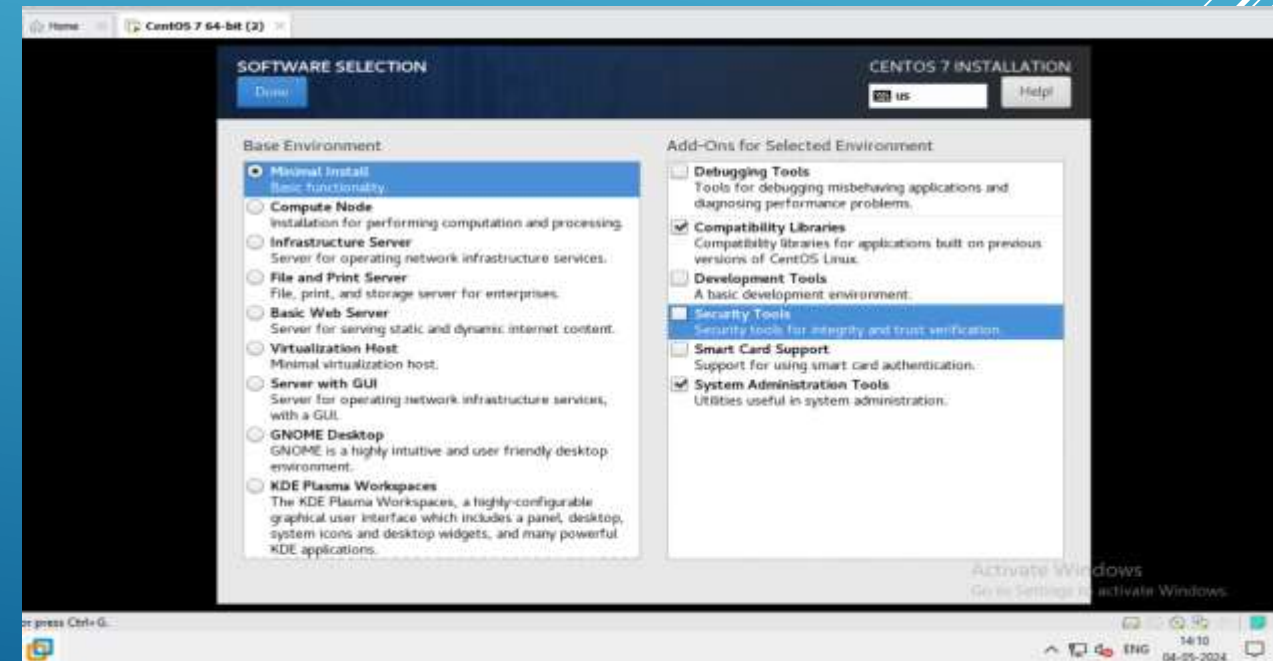
❑ Click on next



- ❑ Now Software selection of minimal install.
- ❑ Click on software selection.

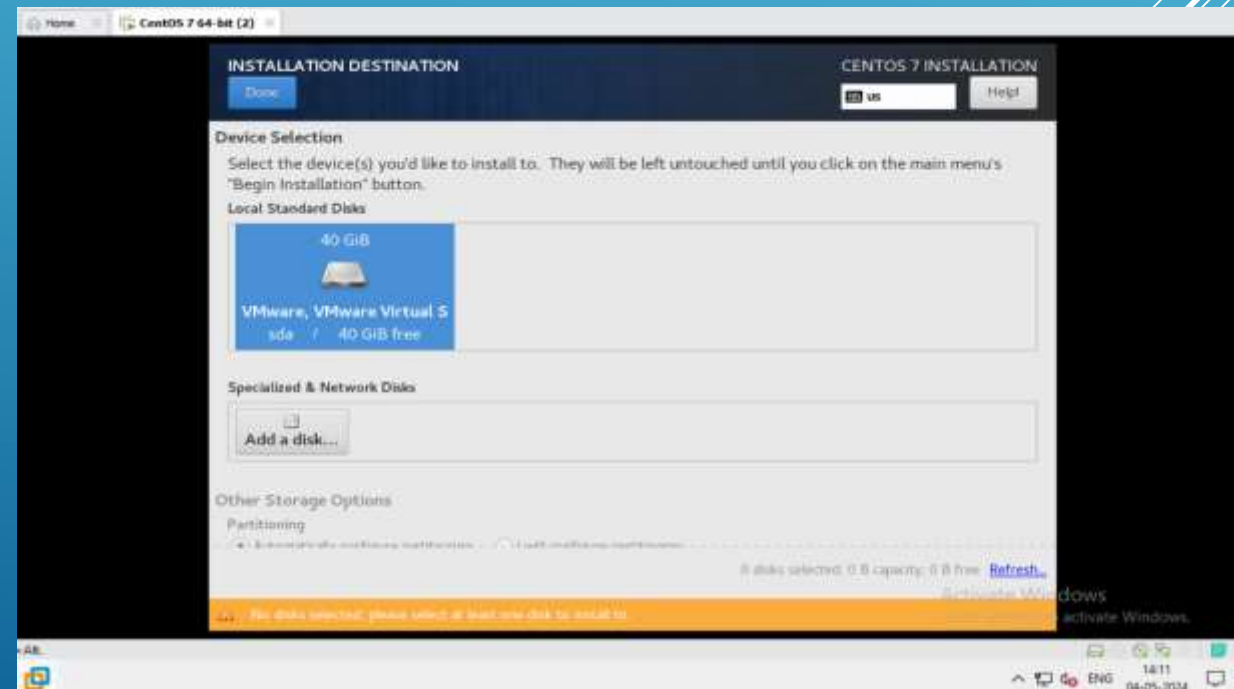


- ❑ Now choose minimal install and Right hand side choose compatibility libraries and system administration tool.
- ❑ Click on done.

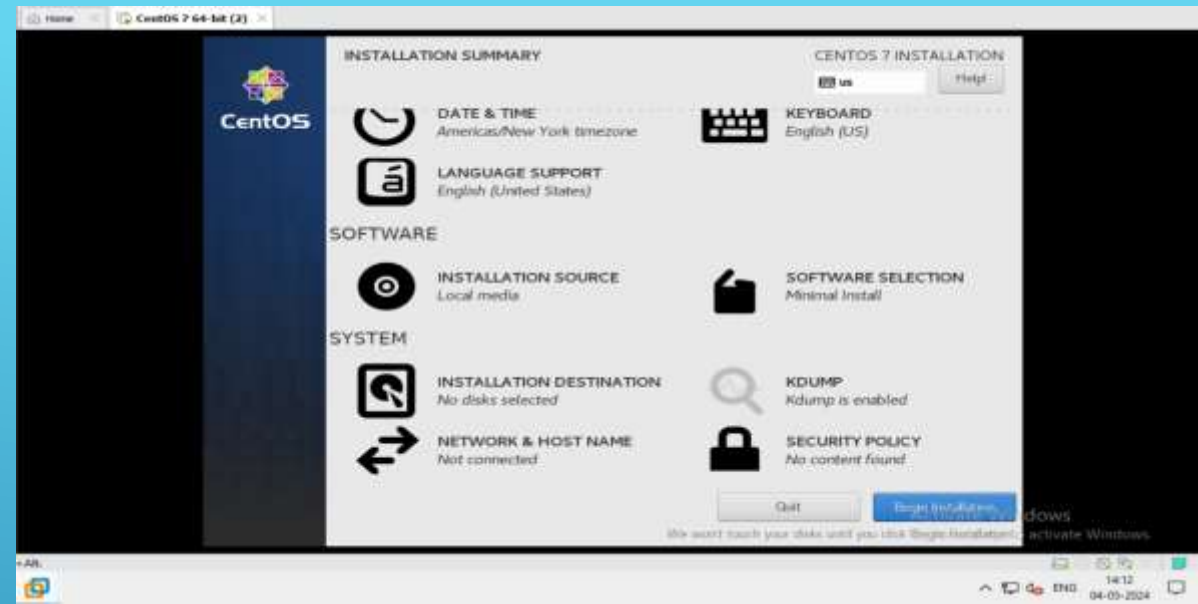


❑ Now click on
Installation Destination.

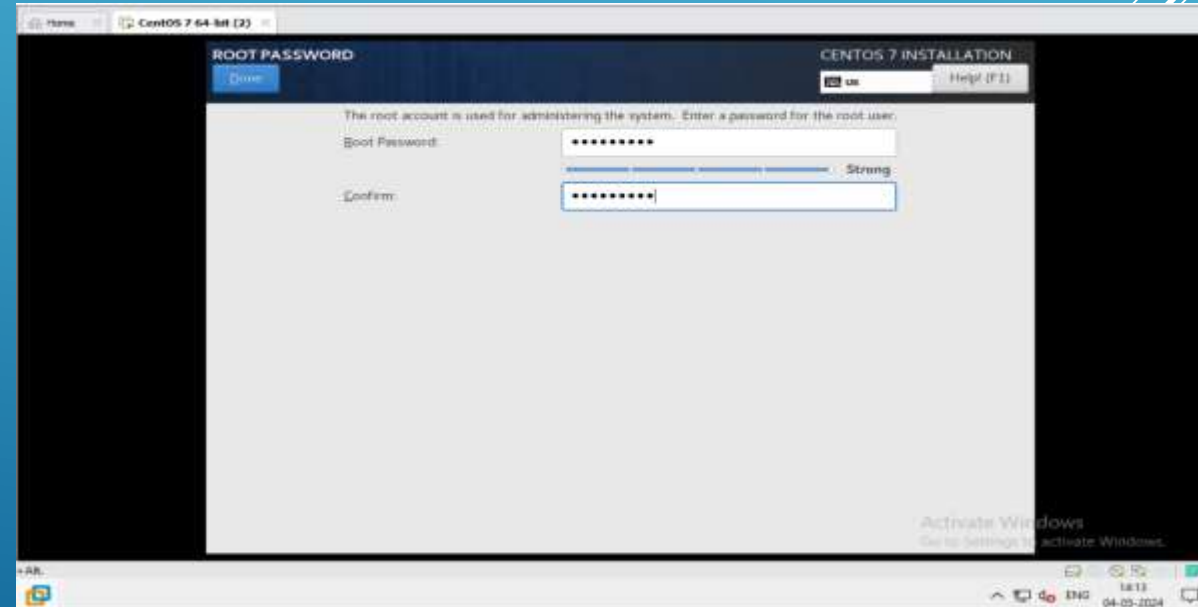
❑ Now click on local
standard disk.
❑ Click on done.



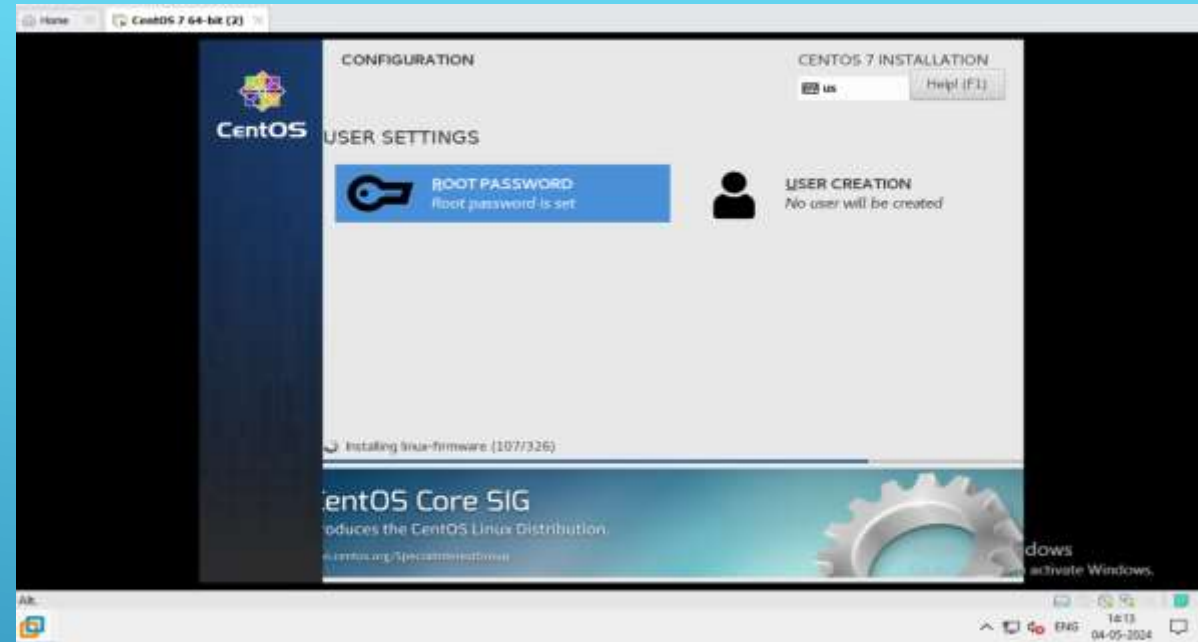
- ❑ Now system is ready to begin install.
- ❑ Click on begin install.



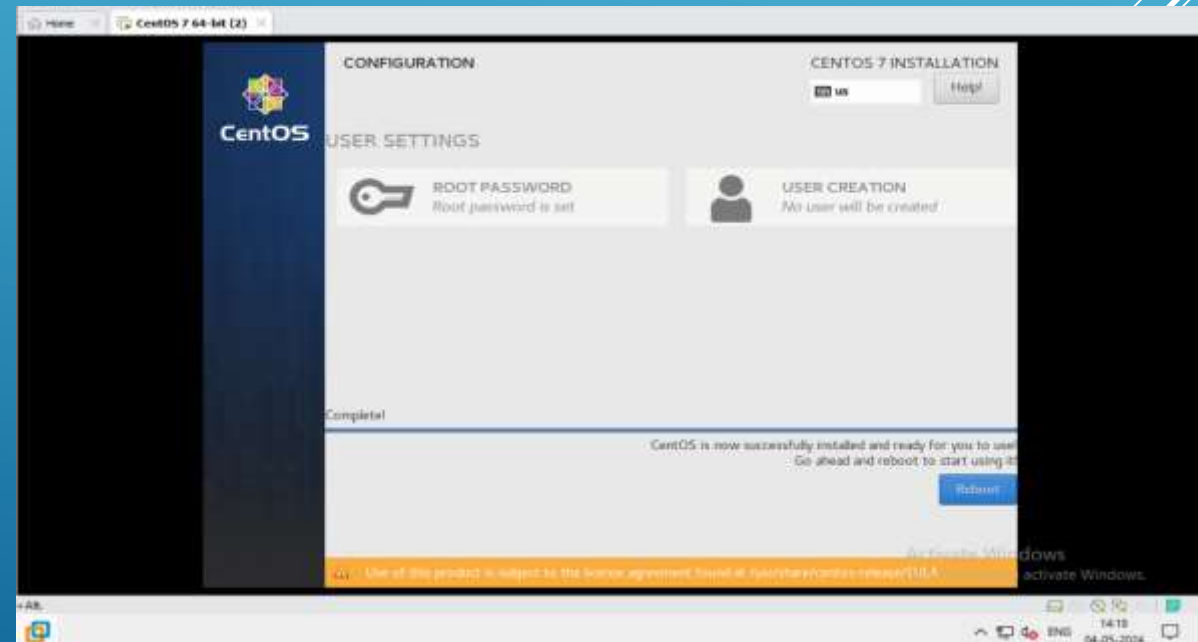
- ❑ Now set the root password.



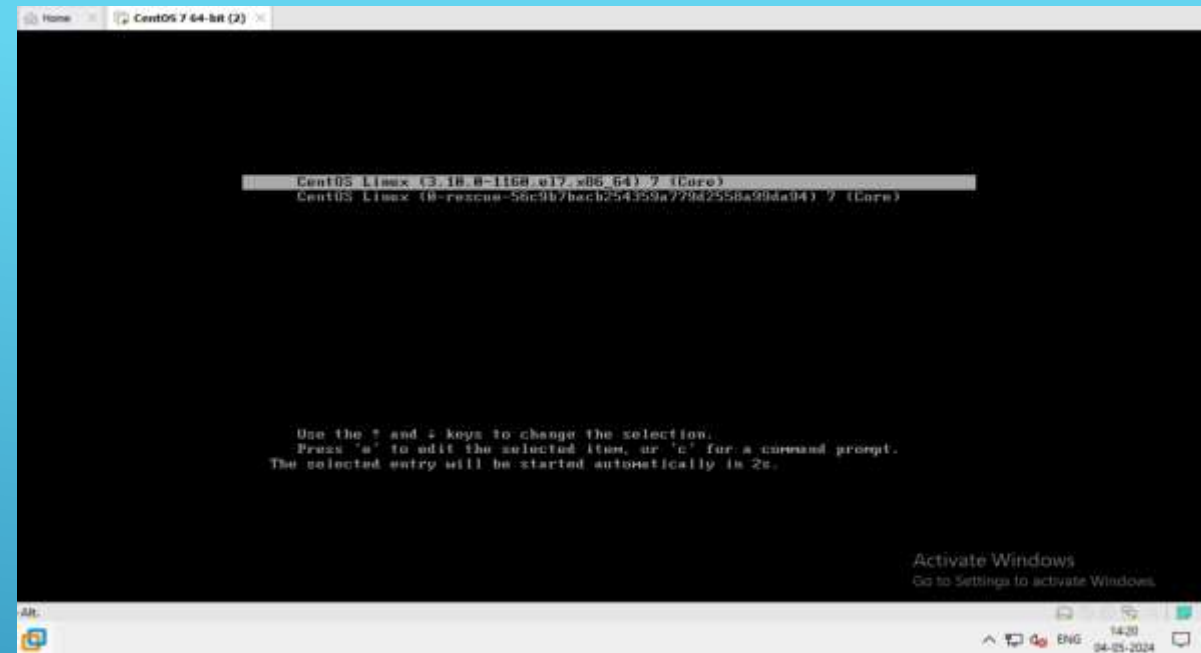
- ❑ Now installing linux-firmware.
- ❑ It's take time.



- ❑ Now we reboot the system.

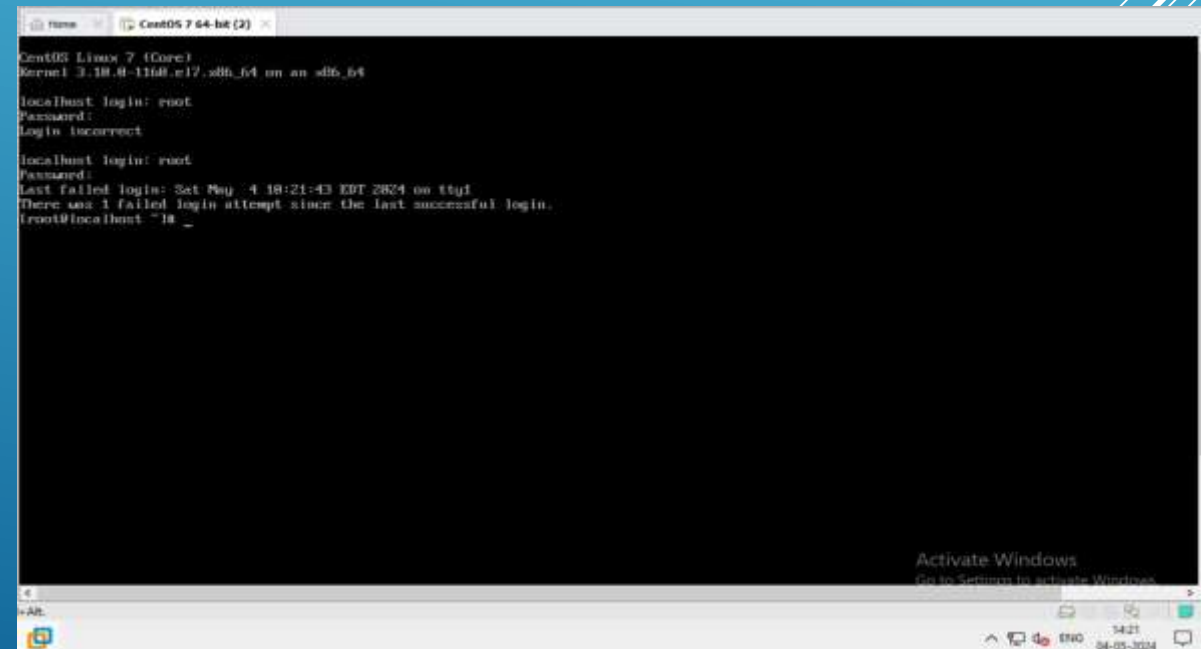


❑ First step after installation.



❑ Now we login with root.

❑ And give the root password.



❑ Here is the step of LVM configuration.

1. Partition physical storage

2. Create a physical volume(PV).

And PV are used to register underlying physical devices for use in volume groups.

3. Create a volume group(VG).

VG are storage pools made up of one or more physical volume.

One pv can only be allocated to single VG.

4. Create a logical volume(LV).

Logical volume are created from physical extents in a VG.

5. Make mount point.

6. Make file system.

7. mount.

➤ Create partition:

`fdisk /dev/sdb`

`n`

Change Linux partition to LVM. 8e HEX code (press t).

W

Partprobe /dev/sdb

Fdisk -l

2. Create a physical volume.

`pvcreate /dev/sdb1`

`pvdisplay`

3. Create a volume group.

`vgcreate name /dev/sdb1`

`vgdisplay`

4. Create logical volume.

`lvcreate -n part1 -L +500M name`

`lvcreate -n part2 -L +250M name`

`lvdisplay`

5. Make mount point.

`mkdir /forpart1 /forpart2`

6. Make file system.

```
mkfs -t /dev/name/part1
```

```
mkfs -t /dev/name/part2
```

7. Mount /dev/name/part1 /forpart1

```
mount /dev/name/part2 /forpart2
```

8. Put entries in /etc/fstab file for mounting permanently.

9. Mount -a will show all mount point.

```
df -h
```

10. Extend LVM:

```
lvextend -L +50M /dev/name/part1
```

removing LVM:

```
umount forpart1
```

Or

For remove

```
lvremove /dev/name/part1
```

```
vgremov name
```

```
pvremove /dev/sdb1
```

Now I insert my code.

❑ Here we create partition.

❑ Here command for help m is show for helping partition.

```

Disk label type: dos
Disk identifier: 0d888eb306

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048          2099199      1040576    83  Linux
/dev/sda2           2099200      83886079      40893440    8e  Linux LVM

Disk /dev/sdb: 10.7 GiB, 10737418240 bytes, 20971520 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/sdd: 5368 MiB, 5368779128 bytes, 10485760 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/sdc: 8589 MiB, 8589934592 bytes, 16777216 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/mapper/centos-root: 37.6 GiB, 37576769536 bytes, 73392128 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/mapper/centos-swap: 4294 MiB, 4294967296 bytes, 8388608 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

root@localhost ~#

```

```

Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

[root@localhost ~]# 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 0x9bb5f53f.

Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help):
Command (m for help): _

```

Activate Windows
Go to Settings to activate Windows.

❑ Here we press n for showing partition type and for assign hex code we press t.

❑ It's showing all hex code and in here we see our hex code.

```
Command (m for help):  
Command (m for help):  
Command (m for help):  
Command (m for help):  
Command (m for help):  
Command (m for help):  
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 (2048-28971519, default 2048):  
Using default value 2048  
Last sector, +sectors or +size(K,M,G) (2048-28971519, default 28971519):  
Using default value 28971519  
Partition 1 of type Linux and of size 10 GiB is set  
  
Command (m for help): p  
  
Disk /dev/sdb: 10.7 GB, 10737418240 bytes, 20971520 sectors  
Units = sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x4b5f53f  
  
   Device Boot      Start         End      Blocks   Id  System  
/dev/sdb1             2048     28971519     10484736    83  Linux  
  
Command (m for help):
```

Activate Windows
Go to Settings to activate Windows.

```
Command (m for help): n  
Command action  
  a toggle a bootable flag  
  b edit bsd disklabel  
  c toggle the dos compatibility flag  
  d delete a partition  
  g create a new empty GPT partition table  
  G create an IRIX (SGI) partition table  
  l list known partition types  
  m print this menu  
  n add a new partition  
  o create a new empty DOS partition table  
  p print the partition table  
  q quit without saving changes  
  s create a new empty Sun disklabel  
  t change a partition's system id  
  u change display/entry units  
  v verify the partition table  
  w write table to disk and exit  
  x extra functionality (experts only)  
  
Command (m for help): t  
Selected partition 1  
Hex code (type L to list all codes): L_
```

Activate Windows
Go to Settings to activate Windows.

- ❑ Here we see the all hex code and apply hex code to convert system linux to linux LVM.

```

Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): l

# Empty          24 NEC DOS          81 Minix / old Lin  bf Solaris
1 FAT12           27 Hidden NTFS Win  02 Linux swap / So  c1 BSDOS/sec (FAT-
2 XENIX root      39 Plan 9            03 Linux           c4 BSDOS/sec (FAT-
3 XENIX usr       3c PartitioMagic    04 OS/2 hidden C:  c6 BSDOS/sec (FAT-
4 FAT16 (32M)     48 Unix 0020b6      05 Linux extended  c7 Syntux
5 Extended        41 PPC PReP boot    06 NTFS volume set da Non-FS data
6 FAT16           42 SFS              07 NTFS volume set db CP/M / CTOS / .
7 HPFS/NTFS/exFAT 4d QRM4.x            08 Linux plaintext de Bell Utility
8 AIX             4e QRM4.x 2nd part 0e Linux LVM       df BootIt
9 AIX bootable    4f QRM4.x 3rd part 33 Amocha          e1 DOS access
a OS/2 Boot Manag 58 OnTrack DM       34 Amocha.BMT      e3 DOS R-0
b W95 FAT32       51 OnTrack DM6 Aux  3f BSD/OS          e4 SpeedStor
c W95 FAT32 (LBA) 52 CP/M            a0 IBM Thinkpad hi eh 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 OPM            55 EZ-Drive         a7 MeXTSTEP       f8 Linux/Pk-RISC b
11 Hidden FAT12    56 Golden Bow      a8 Darwin HFS     f1 SpeedStor
12 Compaq diagnost 5c Friam Edisk      a9 NetBSD         f4 SpeedStor
14 Hidden FAT16 C3 61 SpeedStor      ab Darwin boot    f2 DOS secondary
16 Hidden FAT16    63 GNU HURD or Sys af HFS+ / HFS+     fb VMware UFS
17 Hidden HPFS-NTF 64 Novell Netware   b7 BSDI fs         fc VMware VMPCORE
18 AST SmartSleep  65 Novell Netware   b8 BSDI swap       fd Linux raid auto
1b Hidden W95 FAT3 78 DiskSecure Mait  hh Boot Wizard hid fe LANstep
1c Hidden W95 FAT3 75 PC/IX          be Solaris boot    ff BBT
1e Hidden W95 FAT1 00 Old Minix

Hex code (type L to list all codes):

```

- ❑ Then we press w for save the partition.

```

Command (m for help): p

Disk /dev/sdb: 10.7 GB, 10737418240 bytes, 20971520 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x4bb5f53f

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1             2048     20971519     10484736   8e  Linux LVM

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

Calling ioctl() to re-read partition table.
Syncing disks.
[root@localhost ~]# _

```

❑ Here we create physical volume.

❑ Display the volume by the help of pvdisplay.

```
Home | CentOS 7 64-bit (2)

/dev/sda1 =                2048      2099199      1048576    83  Linux LVM
/dev/sda2 =      2099200      83886079      40893440    8e  Linux LVM

Disk /dev/sda1: 10.7 GB, 10737410048 bytes, 20991520 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0e6b5f53f

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1                2048       20971519       10484736    8e  Linux LVM

Disk /dev/sda4: 5368 MB, 5368769120 bytes, 10485760 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/sdc: 8569 MB, 8569334592 bytes, 16777216 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/mapper/centos-root: 37.6 GB, 37576769536 bytes, 73392128 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/mapper/centos-swap: 4294 MB, 4294672256 bytes, 8388608 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

[root@localhost ~]#
```

Activate Windows
Go to Settings to activate Windows.

```
[root@localhost ~]# pvcreate /dev/sdb1
Physical volume "/dev/sdb1" successfully created.
[root@localhost ~]# pvdisplay
--- Physical volume ---
PV Name               /dev/sda2
VG Name               centos
PV Size               <39.88 GiB / not usable 3.00 MiB
Allocatable           yes (but full)
PE Size               4.00 MiB
Total PE              9983
Free PE               0
Allocated PE          9983
PV UUID               0rr07X-5jYW-13BH-JHrU-G7ky-MBat-6pMl13

"/dev/sdb1" is a new physical volume of "<18.00 GiB"
--- NEW Physical volume ---
PV Name               /dev/sdb1
VG Name
PV Size               <18.00 GiB
Allocatable           NO
PE Size               0
Total PE              0
Free PE               0
Allocated PE          0
PV UUID               FKMA8q-Achx-24io-F5sE-JZ2j-2jEM-80ghyt

[root@localhost ~]#
```

Activate Windows
Go to Settings to activate Windows.

- ❑ Here we create logical volume by the help of lv create and assign name part1 & part2.

- ❑ The creation in 2nd slide.

```
VG Access      read/write
VG Status      resizable
MAX LV        0
Cur LV        0
Open LV        0
Max PV        0
Cur PV        1
Act PV        1
VG Size        <10.00 GiB
PE Size        4.00 MiB
Total PE       2559
Alloc PE / Size 0 / 0
Free PE / Size 2559 / <10.00 GiB
VG UUID        n2pS1H-uGRH-1C2Q-hu3g-5THu-Bu1v-4MP6hg

--- Volume group ---
VG Name        centos
System ID
Format          lvm2
Metadata Areas  1
Metadata Sequence No 3
VG Access      read/write
VG Status      resizable
MAX LV        0
Cur LV        2
Open LV        2
Max PV        0
Cur PV        1
Act PV        1
VG Size        <39.00 GiB
PE Size        4.00 MiB
Total PE       9983
Alloc PE / Size 9983 / <39.00 GiB
Free PE / Size 0 / 0
VG UUID        4e3b84-ePMK-ViDt-LaPe-ndf4-HSVJ-N0zfZZ

[root@localhost ~]#
```

```
[root@localhost ~]# lvcreate -n part1 -L +36 allspace
Logical volume "part1" created.
[root@localhost ~]# lvcreate -n part2 -L +26 allspace
Volume group "allspace" has insufficient free space (511 extents): 512 required.
[root@localhost ~]# lvcreate -n part2 -L +200 allspace
Logical volume "part2" created.
[root@localhost ~]#
```

- ❑ In first slide we see our created **logical volume named by part1 and part2.**

```
--- Logical volume ---
LV Path                /dev/allspace/part1
LV Name                 part1
VG Name                 allspace
LV UUID                 6Zndf1-pdXB-uYBq-XcBP-d1v1-lq1D-ZZMPU
LV Write Access         read/write
LV Creation host, time localhost.localdomain, 2024-05-04 20:53:00 +0530
LV Status                available
# open                  0
LV Size                 3.00 GiB
Current LE              768
Segments                1
Allocation              inherit
Read ahead sectors      auto
- currently set to     8192
Block device            253:2
```

```
--- Logical volume ---
LV Path                /dev/allspace/part2
LV Name                 part2
VG Name                 allspace
LV UUID                 WDAFvC-uZZc-TQk6-GoPt-zJ21-Vj11-MAd65
LV Write Access         read/write
LV Creation host, time localhost.localdomain, 2024-05-04 20:58:09 +0530
LV Status                available
# open                  0
LV Size                 200.00 MiB
Current LE              50
Segments                1
Allocation              inherit
Read ahead sectors      auto
- currently set to     8192
Block device            253:3
```

Activate Windows
Activate Windows

- ❑ Here we create mount point by the help of **mkdir** command and also make file system.

```
[root@localhost ~]# mkdir /softwares /document
[root@localhost ~]# mkfs.xfs /dev/allspace/part1
meta-data=/dev/allspace/part1  isize=512    agcount=4, agsize=196608 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=0, sparse=0
data     =                       bsize=4096   blocks=786432, 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@localhost ~]# mkfs.xfs /dev/allspace/part2
meta-data=/dev/allspace/part2  isize=512    agcount=4, agsize=12800 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=0, sparse=0
data     =                       bsize=4096   blocks=51200, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0 ftype=1
log      =internal log          bsize=4096   blocks=855, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                  extsz=4096   blocks=0, rtextents=0
[root@localhost ~]#
```

Activate Windows
Go to Settings to activate Windows.

Alt

15:53
04-05-2024

❑ Here we assign the mount value and Display the logical volume.

❑ 2nd slide display the volume .

```
log                =                sectsz=512   sunit=8 blks, lazy-count=1
                                extsz=4096   blocks=8, rtextents=8
[root@localhost ~]# mount /dev/allspace/part1 /softwares/
[root@localhost ~]# mount /dev/allspace/part2 /document/
mount: mount point /document/ does not exist
[root@localhost ~]# mount /dev/allspace/part2/ /document/
mount: mount point /document/ does not exist
[root@localhost ~]# mount /dev/allspace/part2 /document/
[root@localhost ~]# blkid
/dev/sda1: UUID="d3b2c647-c614-4c25-8ef4-833aa7c7bc1c" TYPE="xfs"
/dev/sda2: UUID="UrrU7X-5jW-138H-JHrU-67ky-WDat-6pUdI3" TYPE="LVM2_member"
/dev/sdb1: UUID="FXN8wg-Achx-24io-F5sE-jZZy-2j6N-8Dgbyt" TYPE="LVM2_member"
/dev/sr1: UUID="2828-11-84-11-36-43-88" LABEL="CentOS 7 x86_64" TYPE="iso9660" FTTYPE="dos"
/dev/mapper/centos-root: UUID="13c438da-6b1c-4c4a-95b8-b33a66440686" TYPE="xfs"
/dev/mapper/centos-swap: UUID="7f5ffff5-6af2-4f3d-869f-bc98db08b1d9" TYPE="swap"
/dev/mapper/allspace-part1: UUID="aae39288-cbd8-4e68-969b-3819e4a5d91b" TYPE="xfs"
/dev/mapper/allspace-part2: UUID="5899a8db-17e6-4f7d-9c2b-8f5a61479d80" TYPE="xfs"
[root@localhost ~]#
```

Activate Windows
Go to Settings to activate Windows.

```
--- Logical volume ---
LV Path                /dev/allspace/part1
LV Name                part1
VG Name                allspace
LV UUID                8Zu8d1-puKB-uY8q-XeBP-dio1-lqid-ZZMfU
LV Write Access        read/write
LV Creation host, time localhost.localdomain, 2024-05-04 20:53:00 +0530
LV Status              available
# open                 1
LV Size                3.00 GiB
Current LE             768
Segments               1
Allocation             inherit
Read ahead sectors     auto
- currently set to    8192
Block device           253:2

--- Logical volume ---
LV Path                /dev/allspace/part2
LV Name                part2
VG Name                allspace
LV UUID                MCAFvC-oZZc-TQhG-GoPt-zJZl-Yj11-MdM65
LV Write Access        read/write
LV Creation host, time localhost.localdomain, 2024-05-04 20:58:09 +0530
LV Status              available
# open                 1
LV Size                288.00 MiB
Current LE             58
Segments               1
Allocation             inherit
Read ahead sectors     auto
- currently set to    8192
Block device           253:3
```

Activate Windows
Activate Windows

- ❑ Here show the logical volume
- ❑ And extend the logical volume.

```
[root@localhost ~]# lvs
LV      VG      Attr      LSize   Pool Origin Data%  Meta%  Move Log Cpy/Sync Convert
kishor  allspace -wi-a----- 2.00g
part1   allspace -wi-ao---- 3.00g
part2   allspace -wi-ao---- 200.00m
suman   allspace -wi-a----- 3.00g
root    centos   -wi-ao---- <35.00g
swap    centos   -wi-ao---- 4.00g
[root@localhost ~]# pvs
PV      VG      Fmt Attr PSize  PFree
/dev/sda2 centos  lvm2 a--  <39.00g  0
/dev/sdb1 allspace lvm2 a--  <10.00g 1.00g
[root@localhost ~]# vgs
VG      #PV #LV #SN Attr   VSize  VFree
allspace 1  4  0 wz--n- <10.00g 1.00g
centos   1  2  0 wz--n- <39.00g  0
[root@localhost ~]#
```

```
[root@localhost ~]# lvextend -L +1G /dev/allspace/part1
Size of logical volume allspace/part1 changed from 3.00 GiB (768 extents) to 4.00 GiB (1024 extents).
Logical volume allspace/part1 successfully resized.
[root@localhost ~]# lvs
LV      VG      Attr      LSize   Pool Origin Data%  Meta%  Move Log Cpy/Sync Convert
kishor  allspace -wi-a----- 2.00g
part1   allspace -wi-ao---- 4.00g
part2   allspace -wi-ao---- 200.00m
suman   allspace -wi-a----- 3.00g
root    centos   -wi-ao---- <35.00g
swap    centos   -wi-ao---- 4.00g
[root@localhost ~]#
```


- ❑ Here we create another volume group first run fdisk
- ❑ Then for more option m is showing then we created.

```

Disk /dev/wapper/centos-root: 37.6 GB, 3757676936 bytes, 73292128 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/wapper/centos-swap: 4294 MB, 4294967296 bytes, 8388688 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/wapper/allspace-misc1: 3221 MB, 3221225472 bytes, 6291456 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/wapper/allspace-bisher: 2147 MB, 2147403548 bytes, 4194384 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/wapper/allspace-part1: 4294 MB, 4294967296 bytes, 8388688 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/wapper/allspace-part2: 209 MB, 209715200 bytes, 409600 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

root@localhost ~# _

```

```

root@localhost ~# 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 0x5c1c865.

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 (2048-16777215, default 2048):
Using default value 2048
Last sector, +sectors or +size(K,M,G) (2048-16777215, default 16777215):
Using default value 16777215
Partition 1 of type Linux and of size 8 GiB is set

Command (m for help): t
Selected partition 1
Hex code (type l to list all codes): 0e
Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): _

```

❑ Here we run `df -h` for showing all mount point.

❑ In 2nd slide display the all mount point.

```
Using default value 2048
Last sector, +sectors or +size(K,M,G) (2048-16777215, default 16777215):
Using default value 16777215:
Partition 1 of type Linux and of size 8.51B is set

Command (a for help): t
Selected partition 1
New code (type t to list all codes): 0
Changed type of partition 'Linux' to 'Linux LVM'

Command (a for help): p

Disk /dev/sda: 8589 MB, 8589344000 bytes, 16777216 sectors
Units = sectors of 1 = 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x13c0065

   Device Boot      Start         End      Blocks   Id  System
   /dev/sda1        2048     16777215     3357504    0   Linux LVM

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

Calling ioctl() to re-read partition table.
Syncing disks.
[root@localhost ~]# partprobe /dev/sda
[root@localhost ~]# pvcreate /dev/sda1
Physical volume "/dev/sda1" successfully created.
[root@localhost ~]# vgcreate allspace /dev/sda1
Volume group "allspace" successfully created
[root@localhost ~]# vgs
VG      #PV #LV #SN Attr   VSize   VFree
allspace 2   4   0 wz--n- 17.99g  <8.00g
centos   1   2   0 wz--n-  <39.00g   0
[root@localhost ~]#
```

```
Volume group "allspace" successfully extended
[root@localhost ~]# vgs
VG      #PV #LV #SN Attr   VSize   VFree
allspace 2   4   0 wz--n- 17.99g  <8.00g
centos   1   2   0 wz--n-  <39.00g   0
[root@localhost ~]# df -h
Filesystem              Size  Used Avail Use% Mounted on
devtmpfs                 2.0G   0  2.0G   0% /dev
tmpfs                    2.0G   0  2.0G   0% /dev/shm
tmpfs                    2.0G  12M  2.0G   1% /run
tmpfs                    2.0G   0  2.0G   0% /sys/fs/cgroup
/dev/mapper/centos-root   35G  1.3G   34G   4% /
/dev/sda1                1814M  151M  166M  15% /boot
tmpfs                    487M   0  487M   0% /run/user/0
/dev/mapper/allspace-part1 3.0G   33M   3.0G   2% /softwares
/dev/mapper/allspace-part2 197M  11M  187M   6% /document
[root@localhost ~]#
```


Thank you
Kishor Chandra sahuo

Several thin, parallel white lines of varying lengths and slopes are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.