



**Ganpat  
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॥ विद्यया समाजोत्कर्षः ॥

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## -----PRACTICAL 05-----

**AIM :** For this practical, you will add a physical volume, volume group, logical volume, and an XFS file system. You will persistently mount the logical volume file system.

**1. Create 4 physical volume each of 1 GB size.**

» **Create 4 partitions in disk via fdisk :**

```
Red Hat
Activities Terminal Jan 31 23:04 root@serverb:~
[root@serverb ~]# fdisk /dev/vdb

Welcome to fdisk (util-linux 2.32.1).
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.
Created a new DOS disklabel with disk identifier 0xdfc5921e.

Command (m for help): n
Partition type
  p   primary (0 primary, 0 extended, 4 free)
  e   extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (1-4, default 1):
First sector (2048-10485759, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-10485759, default 10485759): +1G

Created a new partition 1 of type 'Linux' and of size 1 GiB.

Command (m for help): n
Partition type
  p   primary (1 primary, 0 extended, 3 free)
  e   extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (2-4, default 2):
First sector (2099200-10485759, default 2099200):
Last sector, +sectors or +size{K,M,G,T,P} (2099200-10485759, default 10485759): +1G

Created a new partition 2 of type 'Linux' and of size 1 GiB.

Command (m for help):
```

```

Red Hat
Activities Terminal Jan 31 23:05 root@serverb:~

p primary (1 primary, 0 extended, 3 free)
e extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (2-4, default 2):
First sector (2099200-10485759, default 2099200):
Last sector, +sectors or +size{K,M,G,T,P} (2099200-10485759, default 10485759): +1G

Created a new partition 2 of type 'Linux' and of size 1 GiB.

Command (m for help): n
Partition type
p primary (2 primary, 0 extended, 2 free)
e extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (3,4, default 3):
First sector (4196352-10485759, default 4196352):
Last sector, +sectors or +size{K,M,G,T,P} (4196352-10485759, default 10485759): +1G

Created a new partition 3 of type 'Linux' and of size 1 GiB.

Command (m for help): n
Partition type
p primary (3 primary, 0 extended, 1 free)
e extended (container for logical partitions)
Select (default e): p

Selected partition 4
First sector (6293504-10485759, default 6293504):
Last sector, +sectors or +size{K,M,G,T,P} (6293504-10485759, default 10485759): +1G

Created a new partition 4 of type 'Linux' and of size 1 GiB.

Command (m for help):

```

Let's break down the commands we've executed :

1. **fdisk /dev/vdb**: This command opens the **fdisk** utility and specifies the target device as **/dev/vdb**. The utility starts with a message about changes being in memory until you decide to write them.
2. **n**: This command is used to create a new partition. After entering **n**, **fdisk** prompts you for the partition type.
3. When prompted for the partition type, you chose **p** for primary partition.
4. **Partition number (1-4, default 1)**: You're prompted to specify the partition number. You selected the default, which is 1.
5. **First sector (2048-10485759, default 2048)**: This is the starting sector for the new partition. The default is 2048, and you chose to use the default.
6. **Last sector, +sectors or +size{K,M,G,T,P} (2048-10485759, default 10485759)**: Here, you're asked to specify the ending

sector of the new partition. You specified **+1G**, indicating that the partition should be 1 gigabytes in size.

## 7. Created a new 4 partitions of type 'Linux' and of size 1 GiB.:

This message confirms that you've successfully created a new primary partition of type 'Linux' with a size of 1 gigabytes.

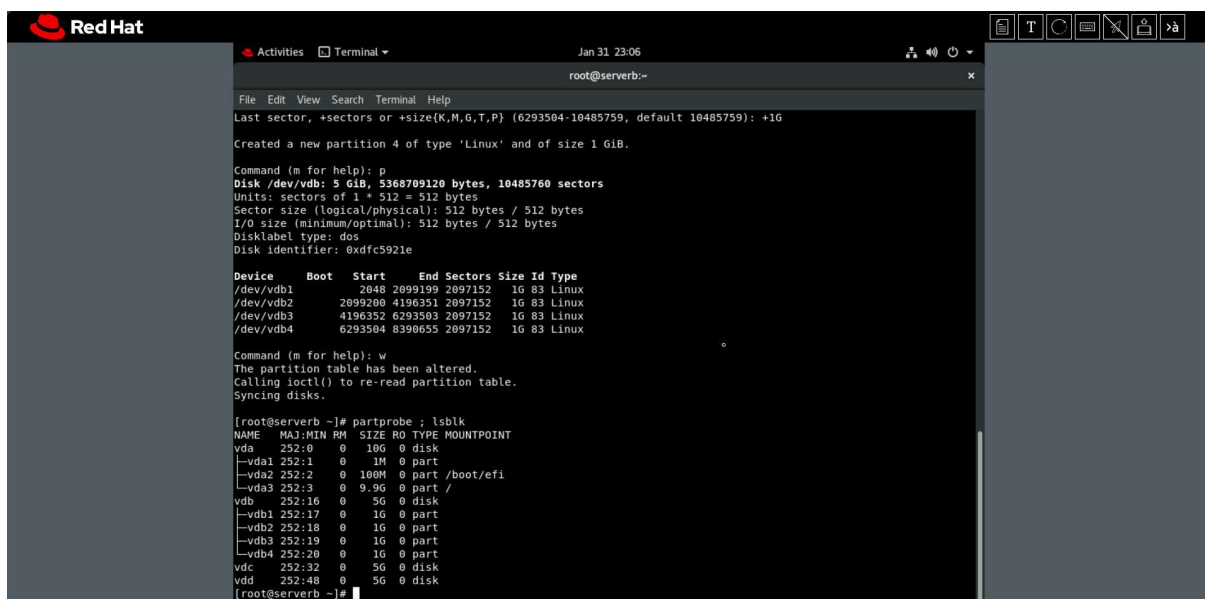
**command:** `fdisk /dev/vdb`

Then in next prompt (sub commands of fdisk) :

n (to create new partitions)

w (to write changes)

» **Check if the partitions are created successfully or not :**



```

Red Hat
Activities Terminal Jan 31 23:06 root@serverb:~

File Edit View Search Terminal Help
Last sector, +sectors or +size{K,M,G,T,P} (6293504-10485759, default 10485759): +1G
Created a new partition 4 of type 'Linux' and of size 1 GiB.

Command (m for help): p
Disk /dev/vdb: 5 GiB, 5368709120 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
Disklabel type: dos
Disk identifier: 0x4fc5921e

Device Boot Start End Sectors Size Id Type
/dev/vdb1 2048 2099199 2097152 1G 83 Linux
/dev/vdb2 2099200 4196351 2097152 1G 83 Linux
/dev/vdb3 4196352 6293503 2097152 1G 83 Linux
/dev/vdb4 6293504 8390655 2097152 1G 83 Linux

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

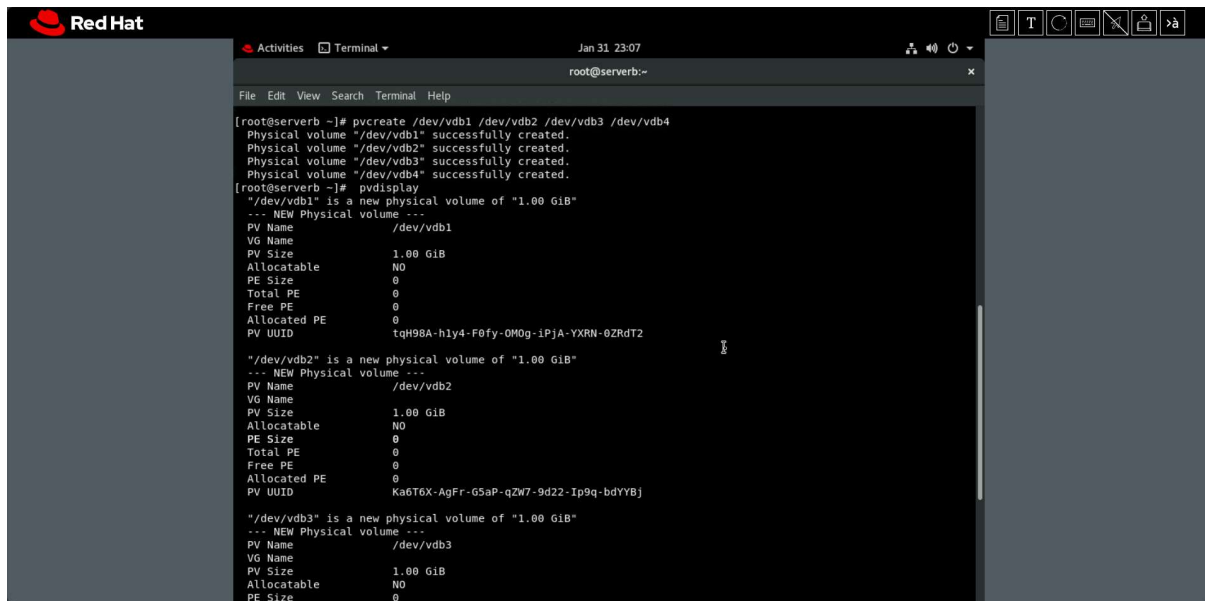
[root@serverb ~]# partprobe ; lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
vda 252:0 0 10G 0 disk
├─vda1 252:1 0 1M 0 part
├─vda2 252:2 0 180M 0 part /boot/efi
├─vda3 252:3 0 9.9G 0 part /
├─vdb 252:16 0 5G 0 disk
├─vdb1 252:17 0 1G 0 part
├─vdb2 252:18 0 1G 0 part
├─vdb3 252:19 0 1G 0 part
├─vdb4 252:20 0 1G 0 part
├─vdc 252:32 0 5G 0 disk
└─vdd 252:48 0 5G 0 disk

```

**command:** `partprobe ; lsblk`

when you run **partprobe ; lsblk**, it updates the kernel with the current partition table and then immediately displays the updated information about block devices and their partitions using **lsblk**. This can be useful for quickly checking the status of disk partitions after making changes without requiring a system reboot.

## » Create 4 physical volumes of the newly created partitions :



```

[root@serverb ~]# pvcreate /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4
Physical volume "/dev/vdb1" successfully created.
Physical volume "/dev/vdb2" successfully created.
Physical volume "/dev/vdb3" successfully created.
Physical volume "/dev/vdb4" successfully created.
[root@serverb ~]# pvdisplay
"/dev/vdb1" is a new physical volume of "1.00 GiB"
--- NEW Physical volume ---
PV Name               /dev/vdb1
VG Name
PV Size               1.00 GiB
Allocatable           NO
PE Size               0
Total PE              0
Free PE               0
Allocated PE          0
PV UUID               tqH98A-hly4-F0fy-0M0g-1PjA-YXRN-0ZrdT2

"/dev/vdb2" is a new physical volume of "1.00 GiB"
--- NEW Physical volume ---
PV Name               /dev/vdb2
VG Name
PV Size               1.00 GiB
Allocatable           NO
PE Size               0
Total PE              0
Free PE               0
Allocated PE          0
PV UUID               Ka6T6X-AgFr-G5aP-qZW7-9d22-1p9q-bdYyBj

"/dev/vdb3" is a new physical volume of "1.00 GiB"
--- NEW Physical volume ---
PV Name               /dev/vdb3
VG Name
PV Size               1.00 GiB
Allocatable           NO
PE Size               0

```

**command:** `pvcreate /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4`

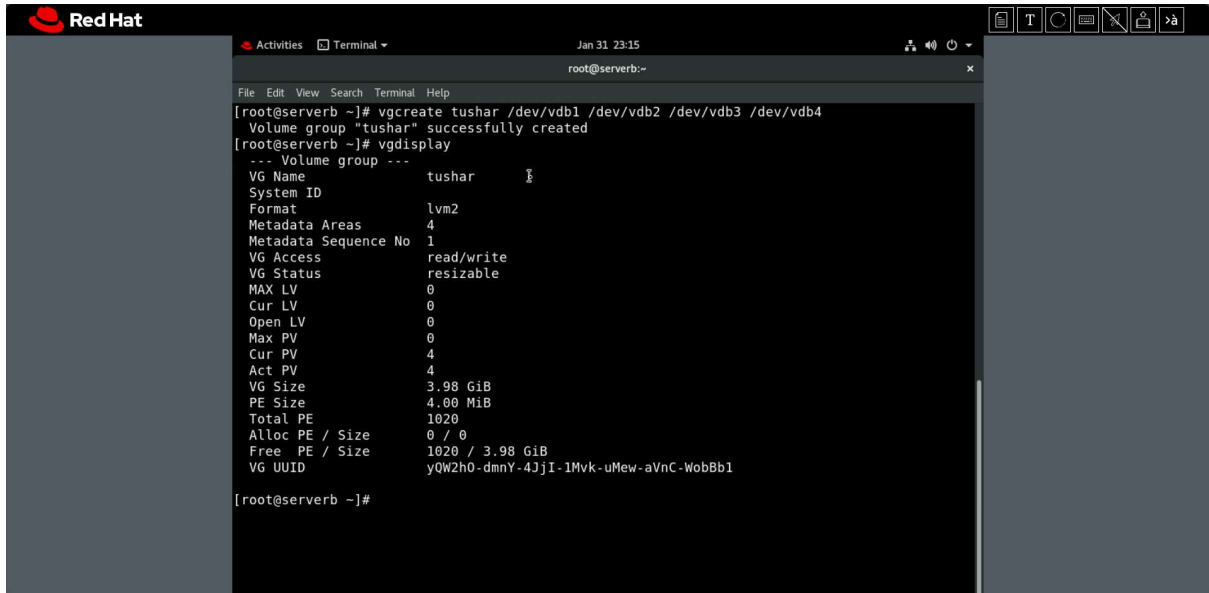
- This command is used to initialize physical volumes on the specified devices (**/dev/vdb1**, **/dev/vdb2**, **/dev/vdb3**, and **/dev/vdb4**).
- A physical volume is a disk or partition that LVM uses as a building block for creating volume groups.
- This command prepares the specified devices to be used within the LVM framework by adding metadata to them.

**command:** `pvdiskplay`

- This command is used to display information about physical volumes that have been initialized using **pvcreate**.
- Running **pvdiskplay** without specifying a particular device shows information about all physical volumes currently available on the system.
- The displayed information includes the physical volume name, size, allocation, free space, and other relevant details.

2. Add all physical volume into the volume group pool, the pool name must be Yourname.

» Create volume group named tushar using vgcreate command and check its details :



```

Red Hat
Activities Terminal
Jan 31 23:15
root@serverb:~

File Edit View Search Terminal Help
[root@serverb ~]# vgcreate tushar /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4
Volume group "tushar" successfully created
[root@serverb ~]# vgdisplay
--- Volume group ---
VG Name                tushar
System ID
Format                 lvm2
Metadata Areas         4
Metadata Sequence No   1
VG Access               read/write
VG Status               resizable
MAX LV                 0
Cur LV                 0
Open LV                 0
Max PV                 0
Cur PV                 4
Act PV                 4
VG Size                 3.98 GiB
PE Size                 4.00 MiB
Total PE                1020
Alloc PE / Size         0 / 0
Free PE / Size          1020 / 3.98 GiB
VG UUID                 yQW2h0-dmny-4JjI-1Mvk-uMew-aVnC-WobBb1

[root@serverb ~]#
  
```

**command:** `vgcreate tushar /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4`

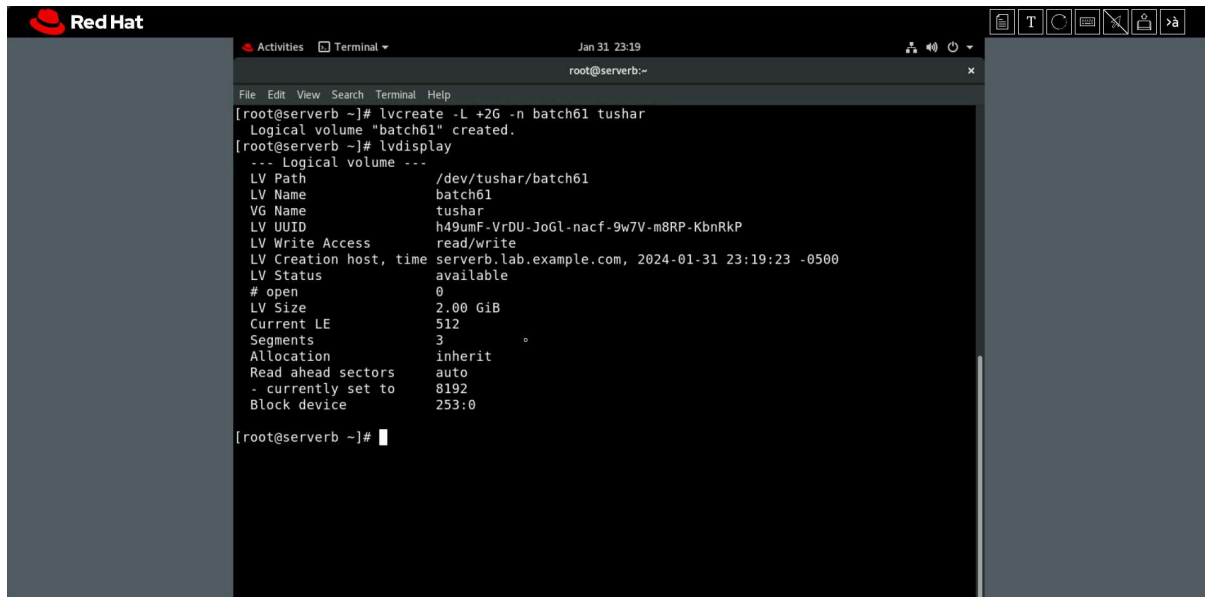
- **vgcreate:** This command is used to create a new volume group (VG) in LVM.
- **tushar:** This is the name of the volume group you are creating. In this case, it's named "tushar."
- **/dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4:** These are the physical volumes (PVs) that you are adding to the volume group. Volume groups are composed of one or more physical volumes. In this command, you are adding four physical volumes (**/dev/vdb1**, **/dev/vdb2**, **/dev/vdb3**, and **/dev/vdb4**) to the "tushar" volume group.

**command:** `vgdisplay`

- This command is used to display information about volume groups.

### 3. Logical volume size must be greater than 2 GB, name of the logical volume must be batch61.

» Create the logical volume of size 2 GB and name batch61:



```

[root@serverb ~]# lvcreate -L +2G -n batch61 tushar
Logical volume "batch61" created.
[root@serverb ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/tushar/batch61
LV Name                 batch61
VG Name                 tushar
LV UUID                 h49umF-VrDU-JoG1-nacf-9w7V-m8RP-KbnRkP
LV Write Access         read/write
LV Creation host, time  serverb.lab.example.com, 2024-01-31 23:19:23 -0500
LV Status                available
# open                  0
LV Size                 2.00 GiB
Current LE              512
Segments                3
Allocation               inherit
Read ahead sectors      auto
 - currently set to    8192
Block device            253:0

[root@serverb ~]#

```

**command:** `lvcreate -L +2G -n batch61 tushar`

- **lvcreate:** This command is used to create a new logical volume (LV) within a specified volume group.
- **-L +2G:** This option specifies the size of the logical volume. In this case, it's set to 2 gigabytes. The **+** sign indicates an increment from the current size if the logical volume already exists.
- **-n batch61:** This option sets the name of the logical volume to "batch61."
- **tushar:** This is the name of the volume group in which the logical volume is being created.

**command:** `lvdisplay`

This command is used to display information about logical volumes.

#### 4. Mount the logical volume on the following location - /mnt/cba/testlvm.

- » Create the directory /mnt/cba/testlvm for mounting the logical volume and assign filesystem to the logical volume :

```

[root@serverb ~]# lvcreate -L +2G -n batch61 tushar
Logical volume "batch61" created.
[root@serverb ~]# lvsdisplay
--- Logical volume ---
LV Path                /dev/tushar/batch61
LV Name                 batch61
VG Name                 tushar
LV UUID                 h49umF-VrDU-JoGl-nacf-9w7V-m8RP-KbnRKP
LV Write Access         read/write
LV Creation host, time serverb.lab.example.com, 2024-01-31 23:19:23 -0500
LV Status                available
# open                  0
LV Size                 2.00 GiB
Current LE              512
Segments                3
Allocation               inherit
Read ahead sectors      auto
- currently set to     8192
Block device            253:0

[root@serverb ~]# mkdir -p /mnt/cba/testlvm
[root@serverb ~]# mkfs -t xfs /dev/tushar/batch61
meta-data=/dev/tushar/batch61  isize=512    agcount=4, agsize=131072 blks
       =                       =      sectsz=512   attr=2, projid32bit=1
       =                       =      crc=1        finobt=1, sparse=1, rmapbt=0
       =                       =      reflink=1
data      =                       bsize=4096   blocks=524288, 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@serverb ~]#

```

**command:** `mkdir -p /mnt/cba/testlvm`

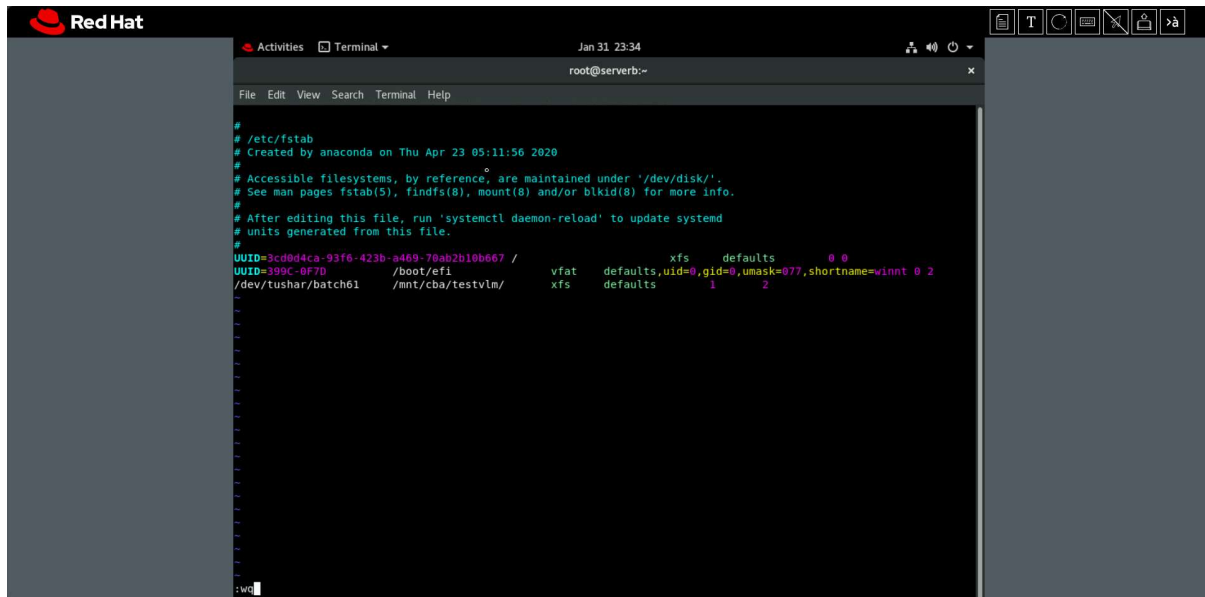
- The **mkdir** command is used to create directories in Unix-like operating systems.
- **-p** flag is used to create parent directories as needed. If the parent directories don't exist, they will be created.
- **/mnt/cba/testlvm** is the path where you want to create the directory. This command creates a directory named **testlvm** inside the **cba** directory, which is inside the **mnt** directory.

**command:** `mkfs -t xfs /dev/tushar/batch61`

- **mkfs** is a command used to create a filesystem on a disk partition.
- **-t xfs** specifies the filesystem type to be created. In this case, it's XFS, a high-performance filesystem.

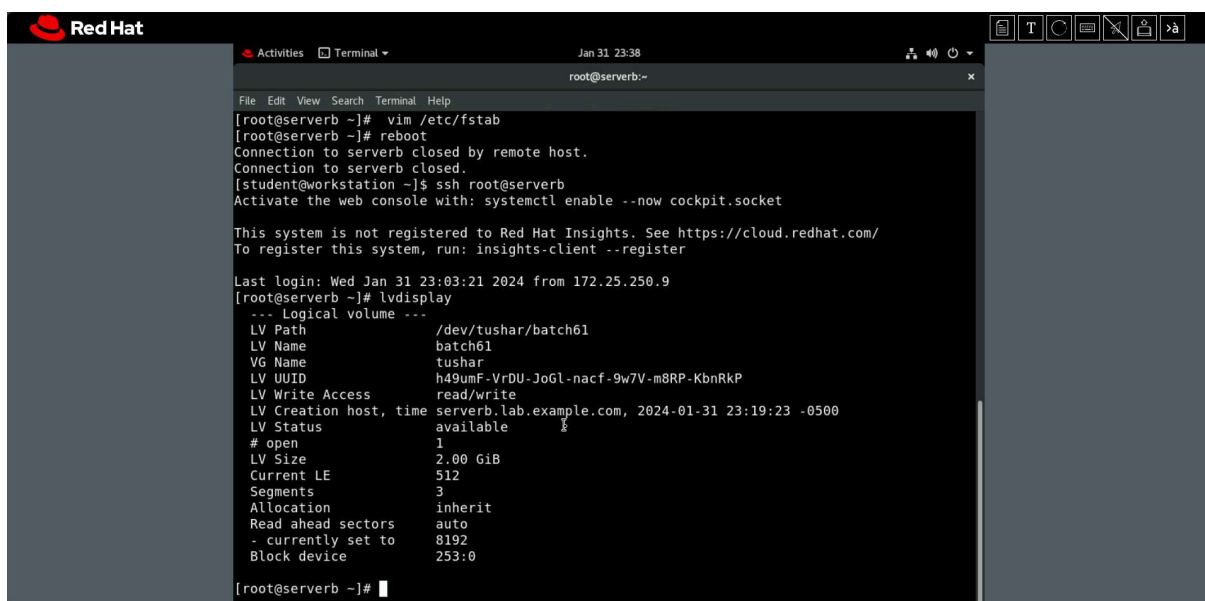
- **/dev/tushar/batch61** specifies the device or partition on which the filesystem will be created. It appears that **tushar** is a volume group name, and **batch61** is a logical volume within that volume group.

» **Create the entry in /etc/fstab to start using the logical volume after reboot :**



```
# /etc/fstab
# Created by anaconda on Thu Apr 23 05:11:56 2020
#
# 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.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=3cd8d4ca-93f6-423b-a469-70ab2b10b667 / xfs defaults 0 0
UUID=399C-0F7D /boot/efi vfat defaults,uid=0,gid=0,umask=077,shortname=winnt 0 2
/dev/tushar/batch61 /mnt/cba/testvm/ xfs defaults 1 2
```

» **Check after reboot if the changes are successful :**



```
[root@serverb ~]# vim /etc/fstab
[root@serverb ~]# reboot
Connection to serverb closed by remote host.
Connection to serverb closed.
[student@workstation ~]$ ssh root@serverb
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Wed Jan 31 23:03:21 2024 from 172.25.250.9
[root@serverb ~]# lvs
--- Logical volume ---
LV Path                /dev/tushar/batch61
LV Name                 batch61
VG Name                 tushar
LV UUID                 h49umF-VrDU-JoGl-nacf-9w7V-m8RP-KbnRkP
LV Write Access         read/write
LV Creation host, time  serverb.lab.example.com, 2024-01-31 23:19:23 -0500
LV Status                available
# open                  1
LV Size                 2.00 GiB
Current LE              512
Segments                3
Allocation               inherit
Read ahead sectors      auto
- currently set to     8192
Block device            253:0

[root@serverb ~]#
```

**command:** **reboot**

**command:** **lvs**



## 5. Demonstrate how to view the details about the physical volume, physical extents, volume group and logical volume.

» The commands used to get above details are shown below :

**command:** `pvdisk`

- This command is used to display information about physical volumes.

```

[root@serverb ~]# pvdisk
--- Physical volume ---
PV Name      /dev/vdb1
VG Name      tushar
PV Size      1.00 GiB / not usable 4.00 MiB
Allocatable  yes (but full)
PE Size      4.00 MiB
Total PE     255
Free PE      0
Allocated PE 255
PV UUID      tqH98A-hly4-F0fy-0M0g-iPjA-YXRN-0ZRdT2

--- Physical volume ---
PV Name      /dev/vdb2
VG Name      tushar
PV Size      1.00 GiB / not usable 4.00 MiB
Allocatable  yes (but full)
PE Size      4.00 MiB
Total PE     255
Free PE      0
Allocated PE 255
PV UUID      Ka6T6X-AgFr-G5aP-qZW7-9d22-Ip9q-bdYYBj

--- Physical volume ---
PV Name      /dev/vdb3
VG Name      tushar
PV Size      1.00 GiB / not usable 4.00 MiB
Allocatable  yes
PE Size      4.00 MiB
Total PE     255
Free PE      253
  
```

**command:** `vgdisplay`

- This command is used to display information about volume groups.

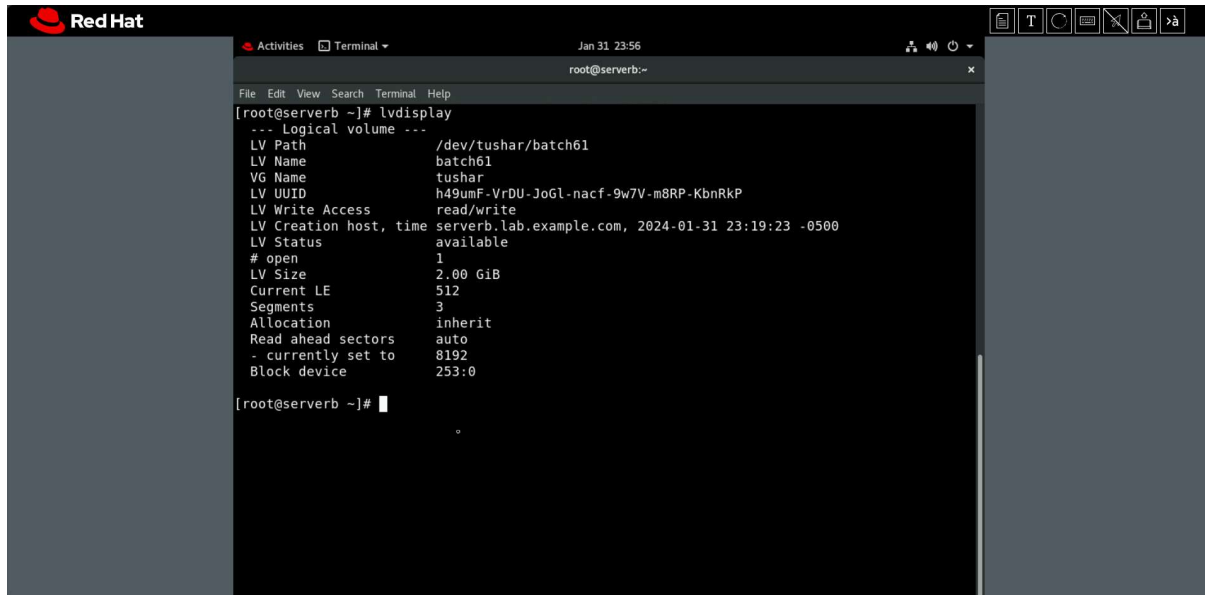
```

[root@serverb ~]# vgdisplay
--- Volume group ---
VG Name      tushar
System ID
Format       lvm2
Metadata Areas 4
Metadata Sequence No 2
VG Access    read/write
VG Status    resizable
MAX LV       0
Cur LV      1
Open LV      1
Max PV       0
Cur PV      4
Act PV       4
VG Size      3.98 GiB
PE Size      4.00 MiB
Total PE     1020
Alloc PE / Size 512 / 2.00 GiB
Free PE / Size 508 / 1.98 GiB
VG UUID      yQW2h0-dmnY-4JjI-1Mvk-uMew-aVnC-WobBb1

[root@serverb ~]#
  
```

**command: `lvdisplay`**

- This command is used to display information about Logical Volumes.



The screenshot shows a terminal window titled "Red Hat" with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Activities, Terminal, Jan 31 23:56, root@serverb:~). The terminal content shows the command `lvdisplay` being executed, resulting in the following output:

```
[root@serverb ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/tushar/batch61
LV Name                batch61
VG Name                tushar
LV UUID                h49umF-VrDU-JoG1-nacf-9w7V-m8RP-KbnRkP
LV Write Access        read/write
LV Creation host, time serverb.lab.example.com, 2024-01-31 23:19:23 -0500
LV Status              available
# open                 1
LV Size                2.00 GiB
Current LE             512
Segments               3
Allocation              inherit
Read ahead sectors     auto
 - currently set to    8192
Block device           253:0

[root@serverb ~]#
```

## 6. Demonstrate how you can remove all logical volume.

**Before removing the volumes perform question 7 so we can easily extend the volume but if we remove then we have to make new logical volume again.**

### » Unmount the logical volume and remove it :

```
[root@serverb ~]# umount /mnt/cba/testvlm
[root@serverb ~]# lvremove /dev/tushar/batch61
Do you really want to remove active logical volume tushar/batch61? [y/n]: y
Logical volume "batch61" successfully removed
[root@serverb ~]# █
```

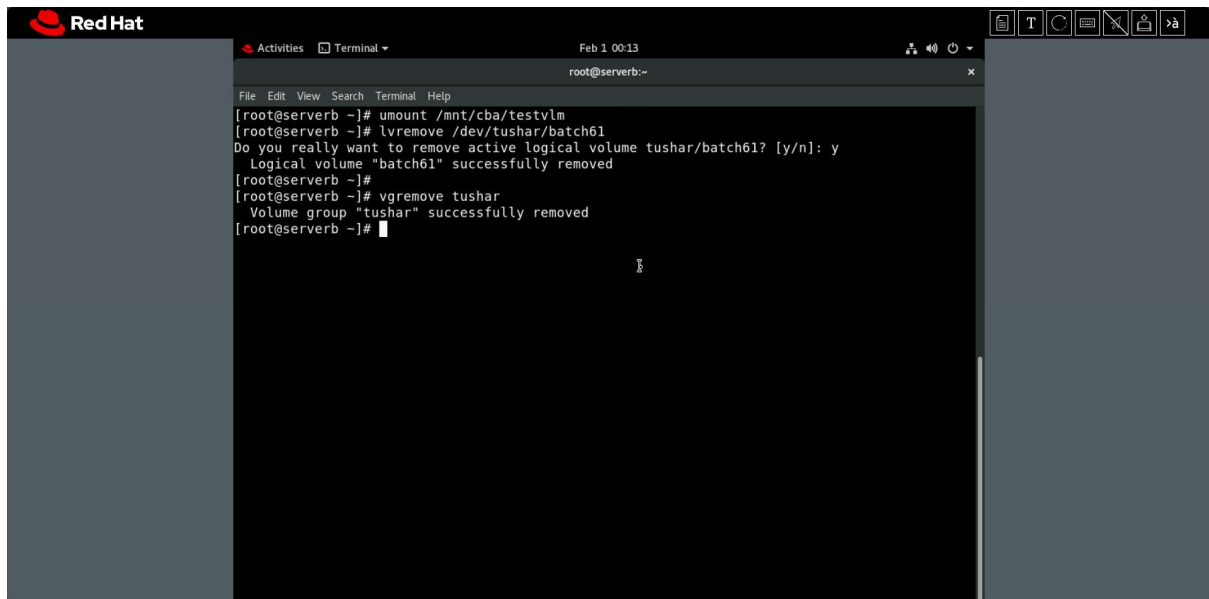
**command:** `umount /mnt/cba/testvlm`

- The **umount** command is used to unmount (detach) a mounted filesystem in Unix-like operating systems.
- **/mnt/cba/testvlm** is the path to the directory where the filesystem is mounted. This command unmounts the filesystem located at **/mnt/cba/testvlm**.

**command:** `lvremove /dev/tushar/batch61`

- The **lvremove** command is used to remove (delete) a logical volume in LVM (Logical Volume Manager).
- **/dev/tushar/batch61** is the full path to the logical volume you want to remove. It specifies the logical volume named "batch61" within the volume group named "tushar."

## » Remove the volume group also :

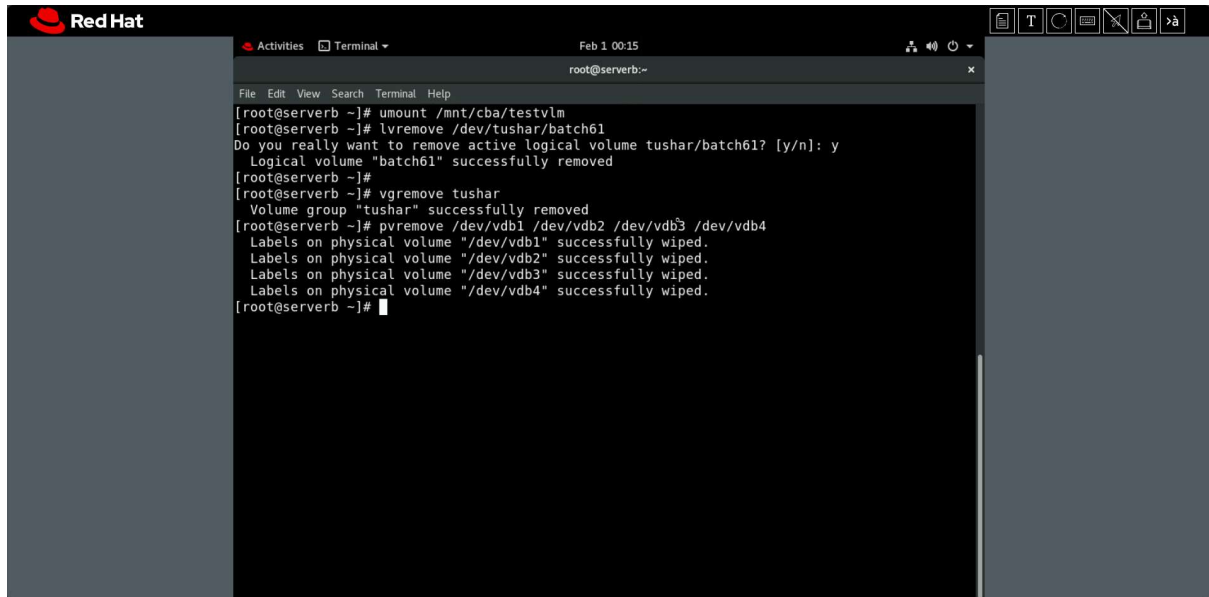


```
Red Hat
Activities Terminal Feb 1 00:13 root@serverb:~
File Edit View Search Terminal Help
[root@serverb ~]# umount /mnt/cba/testvln
[root@serverb ~]# lvremove /dev/tushar/batch61
Do you really want to remove active logical volume tushar/batch61? [y/n]: y
Logical volume "batch61" successfully removed
[root@serverb ~]#
[root@serverb ~]# vgremove tushar
Volume group "tushar" successfully removed
[root@serverb ~]#
```

**command:** `vgremove tushar`

- **vgremove:** This is the command used to remove an existing volume group.
- **tushar:** This is the name of the volume group you want to remove.

» **Afterwards, remove the physical volumes :**

A terminal window from a Red Hat system showing the removal of LVM components. The commands executed are: `umount /mnt/cba/testvln`, `lvremove /dev/tushar/batch61` (prompting for confirmation), `vgremove tushar`, and `pvremove /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4`. The output shows the logical volume and volume group being removed, and the physical volume labels being wiped.

```
Red Hat
Activities Terminal Feb 1 00:15
root@serverb:~
File Edit View Search Terminal Help
[root@serverb ~]# umount /mnt/cba/testvln
[root@serverb ~]# lvremove /dev/tushar/batch61
Do you really want to remove active logical volume tushar/batch61? [y/n]: y
Logical volume "batch61" successfully removed
[root@serverb ~]#
[root@serverb ~]# vgremove tushar
Volume group "tushar" successfully removed
[root@serverb ~]# pvremove /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4
Labels on physical volume "/dev/vdb1" successfully wiped.
Labels on physical volume "/dev/vdb2" successfully wiped.
Labels on physical volume "/dev/vdb3" successfully wiped.
Labels on physical volume "/dev/vdb4" successfully wiped.
[root@serverb ~]#
```

**command:** `pvremove /dev/vdb1 /dev/vdb2 /dev/vdb3 /dev/vdb4`

The **pvremove** command is used to remove LVM (Logical Volume Manager) label or metadata from physical volumes. It detaches the specified physical volumes from the LVM setup

## » Remove the entry from /etc/fstab:

```
# /etc/fstab
# Created by anaconda on Thu Apr 23 05:11:56 2020
#
# 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.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=3cd8d4ca-93f6-423b-a469-70ab2b10b667 / xfs defaults 0 0
UUID=399C-0F7D /boot/efi vfat defaults,uid=0,gid=0,umask=077,shortname=winnt 0 2
```

**command:** `vim /etc/fstab`

The command **vim /etc/fstab** is used to open and edit the **/etc/fstab** file using the Vim text editor

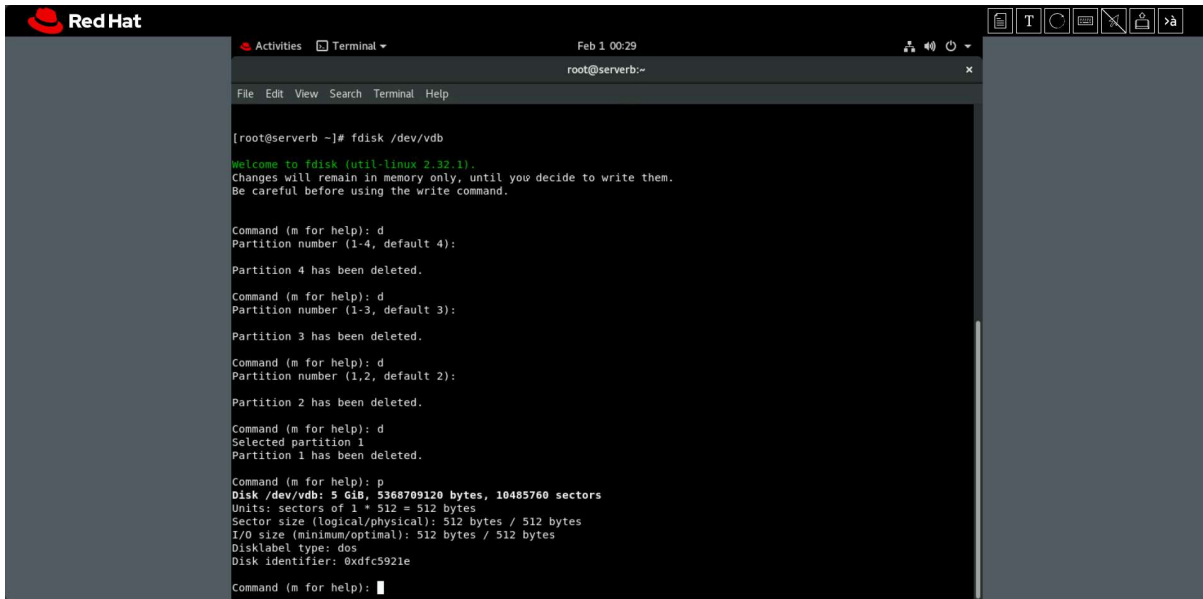
## » Remove the entry from /etc/fstab:

```
# /etc/fstab
# Created by anaconda on Thu Apr 23 05:11:56 2020
#
# 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.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=3cd8d4ca-93f6-423b-a469-70ab2b10b667 / xfs defaults 0 0
UUID=399C-0F7D /boot/efi vfat defaults,uid=0,gid=0,umask=077,shortname=winnt 0 2
```

**command:** `vim /etc/fstab`

The command **vim /etc/fstab** is used to open and edit the **/etc/fstab** file using the Vim text editor

## » Delete the partitions from disk :



```

[root@serverb ~]# fdisk /dev/vdb
Welcome to fdisk (util-linux 2.32.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): d
Partition number (1-4, default 4):
Partition 4 has been deleted.

Command (m for help): d
Partition number (1-3, default 3):
Partition 3 has been deleted.

Command (m for help): d
Partition number (1,2, default 2):
Partition 2 has been deleted.

Command (m for help): d
Selected partition 1
Partition 1 has been deleted.

Command (m for help): p
Disk /dev/vdb: 5 GiB, 5368709120 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
Disklabel type: dos
Disk identifier: 0xdfc5921e

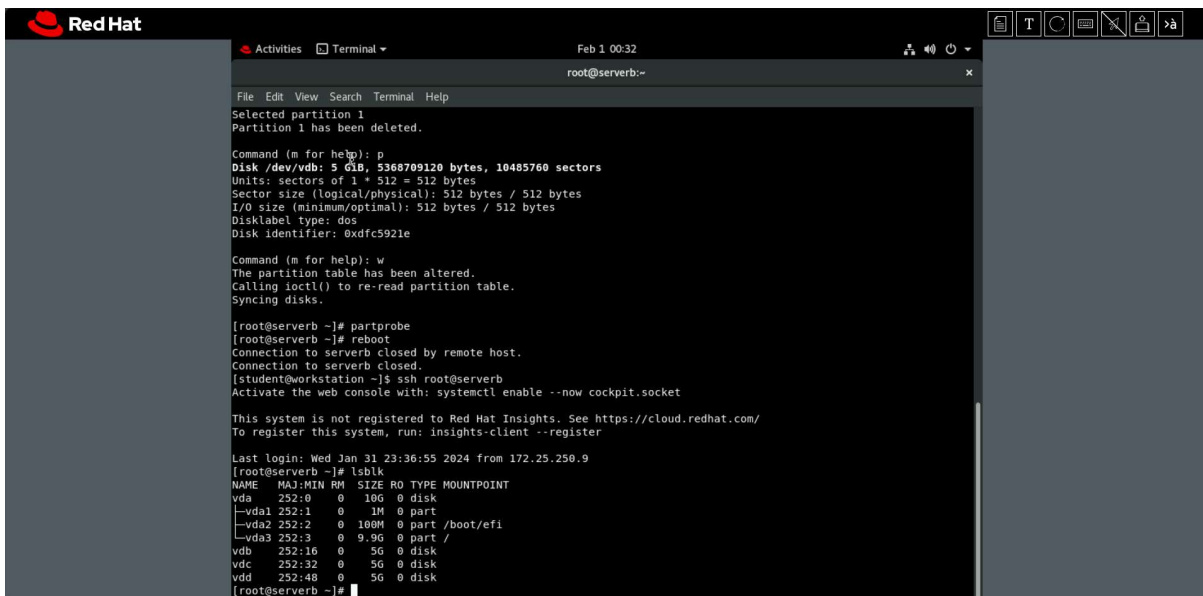
Command (m for help):

```

**command:** `fdisk /dev/vdb`

Then in next prompt (sub commands of fdisk) :  
d (to delete partition)

## » Reboot and check with lsblk if the changes are successful :



```

[root@serverb ~]# partprobe
[root@serverb ~]# reboot
Connection to serverb closed by remote host.
Connection to serverb closed.
[student@workstation ~]$ ssh root@serverb
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Wed Jan 31 23:36:55 2024 from 172.25.250.9
[root@serverb ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
vda         252:0    0   10G  0 disk
├─vda1      252:1    0    1M  0 part
├─vda2      252:2    0  100M  0 part /boot/efi
├─vda3      252:3    0   9.9G  0 part /
vdb          252:16   0    5G  0 disk
vdc          252:32   0    5G  0 disk
vdd          252:48   0    5G  0 disk

```

**command:** `lsblk`

The **lsblk** command is used to list information about block devices on a Linux system

**7. Extend the logical volume that you have previously created by 300 MB. Resizing should be done while the file system is still mounted and in use.**

```
[root@serverb ~]# lvextend -L +300M -r /dev/tushar/batch61
Size of logical volume tushar/batch61 changed from 2.00 GiB (512 extents) to 2.29 GiB (587 extents).
Logical volume tushar/batch61 successfully resized.
meta-data=/dev/mapper/tushar-batch61 isize=512    agcount=4, agsize=131072 blks
       =                               sectsz=512   attr=2, projid32bit=1
       =                               crc=1        finobt=1, sparse=1, rmapbt=0
       =                               reflink=1
data    =                               bsize=4096   blocks=524288, 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
data blocks changed from 524288 to 601088
[root@serverb ~]#
```

**command:** `lvextend -L +300M -r /dev/tushar/batch61`

- **lvextend:** This is the command used to extend a logical volume.
- **-L +300M:** This option specifies the size by which you want to extend the logical volume. In this case, it's extending by 300 megabytes. The **+** sign indicates an increase by the specified amount.
- **-r:** This option is used to resize the filesystem on the logical volume after extending it. The **-r** flag is a convenience option that automatically resizes the filesystem to occupy the entire logical volume.
- **/dev/tushar/batch61:** This is the full path to the logical volume you want to extend. It specifies the logical volume named "batch61" within the volume group named "tushar."



» **To check if the logical volume has been successfully extended:**

```
[root@serverb ~]# lvdisplay
--- Logical volume ---
LV Path                /dev/tushar/batch61
LV Name                 batch61
VG Name                 tushar
LV UUID                 h49umF-VrDU-JoGl-nacf-9w7V-m8RP-KbnRkP
LV Write Access         read/write
LV Creation host, time  serverb.lab.example.com, 2024-01-31 23:19:23 -0500
LV Status                available
# open                  1
LV Size                 2.29 GiB
Current LE              587
Segments                3
Allocation               inherit
Read ahead sectors      auto
  - currently set to    8192
Block device            253:0
```

**command:** `lvdisplay`

- This command is used to display information about Logical Volumes.