

How to mount an LVM partition on Linux

Author : Dan Nanni

Categories : [Filesystem](#)

Tagged as : [disk partition](#), [lvmmount](#)

Question: I have an external USB drive which contains several LVM partitions on it. I want to access some of those LVM partitions on my Linux. How can I mount an LVM partition on Linux?

[LVM](#) is a logical volume management tool which allows you to manage disk space using the notion of logical volumes and volume groups. The biggest benefit of using LVM over classic partitions is the flexibility in allocating storage for users and applications without being constrained by the size of individual physical disks.

In LVM, the physical storage, on which logical volumes are created, is traditional partitions (e.g., /dev/sda2, /dev/sdb1). These partitions must be initialized as "physical volumes" and labeled so (e.g., "Linux LVM") in order for them to be used in LVM. Once the partitions are labeled as LVM volumes, you cannot mount them directly with `mount` command.

If you attempt to mount an LVM partition (e.g., /dev/sdb2), you will get the following error.

```
$ mount /dev/sdb2 /mnt
```

```
mount: unknown filesystem type 'LVM2_member'
```

Ask Xmodulo

Find answers to commonly asked Linux questions

<http://ask.xmodulo.com>

```
$ sudo fdisk -l /dev/sdb

Disk /dev/sdb: 238.1 GiB, 255651102720 bytes, 499318560 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 262144 bytes / 786432 bytes
Disklabel type: dos
Disk identifier: 0x0007cd49

Device      Boot  Start      End  Sectors  Size Id Type
/dev/sdb1   *      1536    1026047  1024512  500.3M 83 Linux
/dev/sdb2           1026048 499318271 498292224 237.6G 8e Linux LVM

$ sudo mount /dev/sdb2 /mnt/centos
mount: unknown filesystem type 'LVM2_member'
$
```


If you want to mount an LVM partition properly, you must instead mount "logical volumes" created inside the partition. Here is how to do it.

First, examine a list of available volume groups by running:

```
$ sudo pvs
```

```
    PV          VG          Fmt  Attr  PSize   PFree   /dev/sdb
  2  vg_etzsetupsystem40a8f02fadd0  lvm2  a--   237.60g    0
```

```
$ sudo pvs
PV          VG          Fmt  Attr  PSize   PFree
/dev/sdb2  vg_etzsetupsystem40a8f02fadd0  lvm2  a--   237.60g    0
$
$
$
$
```



The names of available physical volumes and volume groups are listed under `PV` and `VG` columns, respectively. In this example, there is a single volume group named "vg_etzsetupsystem40a8f02fadd0" created on `/dev/sdb2`.

Next, let's check what logical volumes exist inside this volume group. For that, use `lvdisplay` command:

Ask Xmodulo

Find answers to commonly asked Linux questions

<http://ask.xmodulo.com>

```
$ sudo lvsdisplay
```

Running `lvsdisplay` shows information about available logical volumes (e.g., device name, volume name, volume size, etc) as shown below.

```
$ sudo lvsdisplay /dev/vg_ezsetupsystem40a8f02fadd0
```

```
--- Logical volume --- LV Path          /dev/vg_ezsetupsystem40a8f
02fadd0/lv_root      LV Name          lv_root          VG Name          vg_
ezsetupsystem40a8f02fadd0  LV UUID          imygta-P2rv-2SMU-5ugQ-g99D-
A0Cb-m3leet        LV Write Access  read/write      LV Creation host, time live
cd.centos, 2015-03-16 18:38:18 -0400  LV Status          available      # o
pen                0          LV Size          50.00 GiB     Current LE
12800             Segments        1          Allocation          inherit      Rea
d ahead sectors   auto          - currently set to 256     Block device
252:0
```

Ask Xmodulo

Find answers to commonly asked Linux questions

<http://ask.xmodulo.com>

```
$ sudo lvdisplay /dev/vg_ezsetupsystem40a8f02fadd0
--- Logical volume ---
LV Path                /dev/vg_ezsetupsystem40a8f02fadd0/lv_root
LV Name                lv_root
VG Name                vg_ezsetupsystem40a8f02fadd0
LV UUID                imygtA-P2rv-2SMU-5ugQ-g99D-A0Cb-m3leet
LV Write Access        read/write
LV Creation host, time livecd.centos, 2015-03-16 18:38:18 -0400
LV Status               available
# open                 0
LV Size                50.00 GiB
Current LE             12800
Segments               1
Allocation              inherit
Read ahead sectors     auto
 - currently set to    256
Block device           252:0

--- Logical volume ---
LV Path                /dev/vg_ezsetupsystem40a8f02fadd0/lv_home
LV Name                lv_home
VG Name                vg_ezsetupsystem40a8f02fadd0
LV UUID                8sX0xW-6CPn-QPrR-KH3W-lsX-7r18-NSkUd2
LV Write Access        read/write
LV Creation host, time livecd.centos, 2015-03-16 18:38:27 -0400
```

Logical volumes

If you want to mount a particular logical volume, use its device name shown in "LV Path" (e.g., `/dev/vg_ezsetupsystem40a8f02fadd0/lv_home`) as follows.

```
$ sudo mount /dev/vg_ezsetupsystem40a8f02fadd0/lv_home /mnt
```

You can check the mount status by running `mount` command without any argument, which will show you a list of all mounted filesystems.

```
$ mount
```

Ask Xmodulo

Find answers to commonly asked Linux questions

<http://ask.xmodulo.com>

```
$ mount
/dev/sda1 on / type ext4 (rw,errors=remount-ro)
proc on /proc type proc (rw,nodev,noexec,nosuid)
sysfs on /sys type sysfs (rw,nodev,noexec,nosuid)
none on /sys/fs/cgroup type tmpfs (rw,uid=0,gid=0,mode=0755,size=1024)
none on /sys/fs/fuse/connections type fusectl (rw)
none on /sys/kernel/debug type debugfs (rw)
none on /sys/kernel/security type securityfs (rw)
udev on /dev type devtmpfs (rw,mode=0755)
devpts on /dev/pts type devpts (rw,noexec,nosuid,gid=5,mode=0620)
tmpfs on /run type tmpfs (rw,noexec,nosuid,size=10%,mode=0755)
none on /run/lock type tmpfs (rw,nodev,noexec,nosuid,size=5242880)
none on /run/shm type tmpfs (rw,nosuid,nodev)
none on /run/user type tmpfs (rw,nodev,noexec,nosuid,size=104857600,mode=0755)
none on /sys/fs/pstore type pstore (rw)
huge on /mnt/huge type hugetlbfs (rw)
systemd on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,noexec,nodev,none,name=systemd)
/dev/mapper/vg_ezsetupsystem40a8f02fadd0-lv_home on /centos type ext4 (rw)
$
```

If you want to have a logical volume to be mounted automatically on boot, add the following line in `/etc/fstab`. You need to specify the file system type (e.g., EXT4) of the volume, which you can find out from the output of `mount` command above.

```
/dev/vg_ezsetupsystem40a8f02fadd0/lv_home /mnt ext4 defaults 0 0
```

Now the logical volume will be automatically mounted at `/mnt` upon boot.