

LVM - Creation of first physical volume, volume group and logical group.

Author does not take any responsibilities on the guide below.

Create new physical volume, volume group and logical group.

Mount it to freshly created directory.

Add to fstab for automatic mount during boot process.

```
apt install \
  lvm2

dnf install
  lvm2
```

Define variable

```
hostname
export host="$(hostname)"

lsblk

export dev="/dev/sdc"
export size="9.9G"
```

Understand which is filesystem type mainly used on the system

```
df -hT
```

```
[13:12:26 Sun Mar 15] @gcp1mx1 ~# df -hT
Filesystem      Type      Size  Used Avail Use% Mounted on
udev            devtmpfs  977M   0  977M   0% /dev
tmpfs           tmpfs     198M  680K  197M   1% /run
/dev/sda1       ext4      99G   63G   32G  67% /
tmpfs           tmpfs     989M   2.3M  986M   1% /dev/shm
tmpfs           tmpfs     5.0M   0    5.0M   0% /run/lock
/dev/sda15      vfat      124M   12M  113M  10% /boot/efi
tmpfs           tmpfs     198M   0    198M   0% /run/user/1002
```

In my case it is 'ext4', I shall continue in similarity to this. Redhat family distros might want to use 'xfs'

```
export fs="ext4"
# export fs="xfs"

pvcreate ${dev}

vgcreate vg-${host}-data ${dev}

lvcreate -L ${size} -n lv-${host}-data vg-${host}-data

lvscan
```

```
[13:15:11 Sun Mar 15] @gcp1mx1 ~#
[13:15:59 Sun Mar 15] @gcp1mx1 ~# export fs="ext4"
[13:15:59 Sun Mar 15] @gcp1mx1 ~# pvcreate ${dev}
Physical volume "/dev/sdc" successfully created.
[13:16:04 Sun Mar 15] @gcp1mx1 ~# vgcreate vg-${host}-data ${dev}
Volume group "vg-gcp1mx1-data" successfully created
[13:16:11 Sun Mar 15] @gcp1mx1 ~# lvcreate -L ${size} -n lv-${host}-data vg-${host}-data
Rounding up size to full physical extent 9.90 GiB
Logical volume "lv-gcp1mx1-data" created.
[13:16:17 Sun Mar 15] @gcp1mx1 ~# lvscan
ACTIVE                '/dev/vg-gcp1mx1-data/lv-gcp1mx1-data' [9.90 GiB] inherit
[13:16:22 Sun Mar 15] @gcp1mx1 ~#
```

```
mkfs.${fs} /dev/vg-${host}-data/lv-${host}-data
mkdir -p /mnt/${host}-data
mount /dev/vg-${host}-data/lv-${host}-data /mnt/${host}-data
df -h
```

```
[13:16:48 Sun Mar 15] @gcp1mx1 ~# mkfs.${fs} /dev/vg-{host}-data/lv-{host}-data
mke2fs 1.47.0 (5-Feb-2023)
Discarding device blocks: done
Creating filesystem with 2595840 4k blocks and 648960 inodes
Filesystem UUID: c450ff0f-f073-4faa-8e56-cce7195f0514
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[13:16:48 Sun Mar 15] @gcp1mx1 ~# mkdir -p /mnt/{host}-data
[13:16:54 Sun Mar 15] @gcp1mx1 ~# mount /dev/vg-{host}-data/lv-{host}-data /mnt/{host}-data
[13:16:59 Sun Mar 15] @gcp1mx1 ~# df -h
Filesystem                                Size  Used Avail Use% Mounted on
udev                                       977M     0  977M   0% /dev
tmpfs                                       198M   684K   197M   1% /run
/dev/sda1                                  99G    63G   32G   67% /
tmpfs                                       989M   2.3M   986M   1% /dev/shm
tmpfs                                       5.0M     0   5.0M   0% /run/lock
/dev/sda15                                  124M   12M   113M  10% /boot/efi
tmpfs                                       198M     0   198M   0% /run/user/1002
/dev/mapper/vg--gcp1mx1--data-lv--gcp1mx1--data 9.7G    24K   9.2G   1% /mnt/gcp1mx1-data
```

```
#TODO: add into /fstab with oneliner
echo "add me to fstab"
mount | grep {host}
nano /etc/fstab
```

```
/dev/mapper/vg--host--data-lv--host--data /mnt/host-data ext4 defaults 0 1
```

```
GNU nano 7.2 /etc/fstab *
# /etc/fstab: static file system information
UUID= / ext4 rw,discard,errors=remount-ro,x-systemd.growfs 0 1
UUID= /boot/efi vfat defaults 0 0
/dev/mapper/vg--gcp1mx1--data-lv--gcp1mx1--data /mnt/gcp1mx1-data ext4 defaults 0 1
```

Reload fstab and remount all drives. New drive must be mounted.

```
systemctl daemon-reload
mount -a
```

```
[13:19:18 Sun Mar 15] @gcp1mx1 ~# nano /etc/fstab
[13:20:05 Sun Mar 15] @gcp1mx1 ~# systemctl daemon-reload
[13:20:10 Sun Mar 15] @gcp1mx1 ~# mount -a
[13:20:12 Sun Mar 15] @gcp1mx1 ~# df -h
Filesystem                                Size  Used Avail Use% Mounted on
udev                                       977M   0 977M   0% /dev
tmpfs                                       198M 688K 197M   1% /run
/dev/sda1                                   99G   63G  32G  67% /
tmpfs                                       989M 2.3M 986M   1% /dev/shm
tmpfs                                       5.0M   0  5.0M   0% /run/lock
/dev/sda15                                  124M  12M 113M  10% /boot/efi
tmpfs                                       198M   0 198M   0% /run/user/1002
/dev/mapper/vg--gcp1mx1--data-lv--gcp1mx1--data 9.7G  24K  9.2G   1% /mnt/gcp1mx1-data
[13:20:40 Sun Mar 15] @gcp1mx1 ~#
```

When possible, test VM restart to ensure disk will be mounted

```
shutdown -r now
```

Revision #7

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