

Creating a LVM

Source: [doc Ubuntu-fr - LVM](#)

In this example we will create a LVM placed on 2 partitions: sda10 and sdb1
All the command are done with root permissions ⇒ su or sudo

1. if not present, create (with fdisk od parted or...) the both partitions.
Be careful:all the data stored on these partition will be lost!
2. create the both physical volumes:

```
pvcreate /dev/sda10
pvcreate /dev/sdb1
```

pvdisplay or pvscan to get info.

3. create the volume group "vgBackupPC":

```
vgcreate vgBackupPC /dev/sda10 /dev/sdb1
```

vgdisplay to get info.

4. create the logical volume "lvBackupPC" on the entire space of the volume group:

```
lvcreate -n lvBackupPC -l 100%FREE vgBackupPC
```

lvdisplay to get info.

-n is to give the name and -l to deal with the storage space ⇒ see the man for more details.

5. create an ext4 file system on the logical volum:

```
mkfs -t ext4 /dev/vgBackupPC/lvBackupPC
```

6. mounting the LVM

- with the name of the LVM

```
mount -t ext4 /dev/vgBackupPC/lvBackupPC /mount/point
```

- with the UUID

This is a little bit tricky: the UUID to be used is **NOT** the UUID of the LV given by lvdisplay!

For the mounting, we have to use the UUID of the file system:

- getting the UUID of the file system:

```
$ blkid
/dev/sda1: UUID=....
/dev/sda2: UUID=....
/dev/sda3: UUID=....
....
/dev/mapper/vgBackupPC-lvBackupPC: UUID="521489ca-ba67-49e9-
```

```
a3c6-fa62b0eeeb2f" TYPE="ext4"
```

- mounting:

```
mount -t ext4 UUID=521489ca-ba67-49e9-a3c6-fa62b0eeeb2f  
/mount/point
```

Removing a disk from a LVM

In this example we want to remove the disk (= the physical volume more exactly) `dev/sdb1` from the LVM.

- Have a look at the general situation:

```
# pvs -o+pv_used  
PV          VG          Fmt Attr PSize  PFree Used  
/dev/sda8   vgBackupPC  lvm2 a--  363,51g  0  363,51g  
/dev/sdb1   vgBackupPC  lvm2 a--  931,51g  0  931,51g
```

- Check if there is enough place on the other physical volume to get `sdb1` out of the LVM:

```
# df -h /mnt/dd_affa/  
Sys. de fichiers          Taille Utilisé Dispo Uti% Monté sur  
/dev/mapper/vgBackupPC-lvBackupPC  1,3T   287M  1,2T   1%  
/mnt/dd_affa
```

So only 287MB are used, so the volume `/dev/sda8` can contain all the data.

- Unmount the LVM

```
# umount /mnt/dd_affa
```

- Reduce the size of the file system, a bit more that would be necessary the remove `sdb1` ⇒ 1,1TB

```
# lvresize --resizefs --size -1,1T /dev/mapper/vgBackupPC-lvBackupPC
```

- Empty `sdb1` of the LVM (=transfer the data to the remaining volumes)

```
# pvmove /dev/sdb1
```

- Remove `sdb1` from the LVM:

```
# vgreduce vgBackupPC /dev/sdb1
```

- Delete the physical volume:

```
# pvremove /dev/sdb1
```

- Grow the remaining file system of the LVM to the maximal size again:

```
# resize2fs /dev/mapper/vgBackupPC-lvBackupPC
```

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Last update: **2017/02/25 20:42**

