

13.2. Setting up LVM on three SCSI disks with striping

For this recipe, the setup has three SCSI disks that will be put into a logical volume using LVM. The disks are at /dev/sda, /dev/sdb, and /dev/sdc.



Note

It is not currently possible to add a disk to a striped logical volume in LVM 1. Use LVM 2 with the lvm 2 format metadata if you wish to be able to do so.

13.2.1. Preparing the disk partitions

Before you can use a disk in a volume group you will have to prepare it:



Warning!

The following will destroy any data on /dev/sda, /dev/sdb, and /dev/sdc

Run pvcreate on the disks:

```
# pvcreate /dev/sda
# pvcreate /dev/sdb
# pvcreate /dev/sdc
```

This creates a volume group descriptor area (VGDA) at the start of the disks.

13.2.2. Setup a Volume Group

1. Create a volume group

```
# vgcreate my_volume_group /dev/sda /dev/sdb /dev/sdc
```

2. Run vgdisplay to verify volume group

```
# vgdisplay
--- Volume Group ---
VG Name                my_volume_group
VG Access               read/write
VG Status               available/resizable
VG #                    1
MAX LV                  256
Cur LV                 0
Open LV                 0
MAX LV Size             255.99 GB
Max PV                  256
Cur PV                  3
Act PV                  3
VG Size                 1.45 GB
PE Size                 4 MB
Total PE                372
Alloc PE / Size         0 / 0
Free PE / Size          372/ 1.45 GB
VG UUID                 nP2PY5-5TOS-hLx0-FDu0-2a6N-f37x-0BME0Y
```

The most important things to verify are that the first three items are correct and that the VG Size item is the proper size for the amount of space in all four of your disks.

13.2.3. Creating the Logical Volume

If the volume group looks correct, it is time to create a logical volume on top of the volume group.

You can make the logical volume any size you like (up to the size of the VG you are creating it on; it is similar to a partition on a non LVM setup). For this example we will create just a single logical volume of size 1GB on the volume group. The logical volume will be a striped set using for the 4k stripe size. This should increase the performance of the logical volume.

```
# lvcreate -i3 -l1G -nmy_logical_volume my_volume_group
lvcreate -- rounding 1048576 KB to stripe boundary size 1056768 KB / 258 PE
lvcreate -- doing automatic backup of "my_volume_group"
lvcreate -- logical volume "/dev/my_volume_group/my_logical_volume" successfully created
```



Note

If you create the logical volume with a '-i2' you will only use two of the disks in your volume group. This is useful if you want to create two logical volumes out of the same physical volume, but we will not touch that in this recipe.

13.2.4. Create the File System

Create an ext2 file system on the logical volume

```
# mke2fs /dev/my_volume_group/my_logical_volume
mke2fs 1.19, 13-Jul-2000 for EXT2 FS 0.5b, 95/08/09
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
132192 inodes, 264192 blocks
13209 blocks (5.00%) reserved for the super user
First data block=0
9 block groups
32768 blocks per group, 32768 fragments per group
14688 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376

Writing inode tables: done
Writing superblocks and filesystem accounting information: done
```

13.2.5. Test the File System

Mount the file system on the logical volume

```
# mount /dev/my_volume_group/my_logical_volume /mnt
```

and check to make sure everything looks correct

```
# df
Filesystem                1k-blocks      Used Available Use% Mounted on
/dev/hda1                  1311552    628824   616104   51% /
/dev/my_volume_group/my_logical_volume
                           1040132         20   987276    0% /mnt
```

If everything worked properly, you should now have a logical volume mounted at /mnt.

[Prev](#)

Setting up LVM on three SCSI
disks

[Home](#)

[Up](#)

[Next](#)

Add a new disk to a multi-disk
SCSI system