



How-To Guide: Using Logical Volume Management (LVM) in Linux

Logical Volume Management (LVM)

Logical Volume Management allows an administrator to create logical views of storage by combining various aspects of physical storage. The most likely use of LVM would be to extend an existing volume as additional physical drives are added to a system or to create a RAID (Redundant Array of Independent Disks) array, although RAID is most often implemented through the use of a dedicated RAID controller.

Terminology

PV—Physical Volume

PE—Physical Extent

VG—Volume Group

LV—Logical Volume

LE—Logical Extent

As you work with logical volumes, you'll notice that the various commands start with the initials of the logical volume component they affect. For example, to create a volume group, the command **vgcreate** is used and to remove a logical volume, the command **lvremove** is used.

Assume that there are three empty disks on a system (/dev/sde, /dev/sdf, and /dev/sdg) and you wish to combine them into a single RAID0 array of one gigabyte in size.

1. Use the **pvcreeate** command as follows to create physical volumes:
#pvcreeate /dev/sde /dev/sdf /dev/sdg
2. Use the **vgcreate** command to create the volume group "my_vg":
#vgcreate my_vg /dev/sde /dev/sdf /dev/sdg
3. Use the following command to create the 1024 MB RAID0 (striped) array containing three physical disks named "my_lv":
#lvcreate -L 1024 -n my_lv -i 3 my_vg
4. Now, prepare it for use. Create a file system:
#mkfs -t ext3 /dev/my_vg/my_lv
(We chose ext3 for its journaling capabilities.)
5. Finally, mount it:
#mkdir /mnt/lvplace
#mount /dev/my_vg/my_lv /mnt/lvplace
6. Use the following commands to see the results of your work:
#lvmddisksan scans for all disks, multiple devices, and partitions available.
#lvscan scans all disks for logical volumes.
7. Remove logical volumes with the **lvremove** command, including a full path:
#lvremove /dev/my_vg/my_lv

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