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# Logical Volume Manager

## VM

- physical Volume(PV)
- Volume Group(VG)
- Logical Volume(LV)

## Phsyscal Volume

\* Size 10G

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```
[root@localhost ~]# fdisk -l
Disk /dev/sdb: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x522ca171
```

| Device    | Boot | Start | End      | Blocks   | Id | System    |
|-----------|------|-------|----------|----------|----|-----------|
| /dev/sdb1 |      | 2048  | 20973567 | 10485760 | 8e | Linux LVM |

•

```
[root@localhost ~]# pvcreate -h
pvcreate: Initialize physical volume(s) for use by LVM
```

pvcreate

```
  [--norestorefile]
  [--restorefile file]
  [-d|--debug]
  [-f[f]|--force [--force]]
  [-h|-?|--help]
  [--labelsector sector]
  [-M|--metadatatype 1|2]
  [--pvmetadatacopies #copies]
  [--bootloaderareasize BootLoaderAreaSize[bBsSkKmMgGtTpPeE]]
  [--metadatasize MetadataSize[bBsSkKmMgGtTpPeE]]
  [--dataalignment Alignment[bBsSkKmMgGtTpPeE]]
  [--dataalignmentoffset AlignmentOffset[bBsSkKmMgGtTpPeE]]
  [--setphysicalvolumesize PhysicalVolumeSize[bBsSkKmMgGtTpPeE]]
  [-t|--test]
```

```
[-u|--uuid uuid]
[-v|--verbose]
[-y|--yes]
[-Z|--zero {y|n}]
[--version]
PhysicalVolume [PhysicalVolume...]
```

```
[root@localhost ~]# pvcreate /dev/sdb1
Physical volume "/dev/sdb1" successfully created
```

- 

```
[root@localhost ~]# pvs
PV          VG   Fmt  Attr PSize  PFree
/dev/sda2   rhel lvm2 a--  29.51g    0
/dev/sdb1           lvm2 a--  10.00g 10.00g
[root@localhost ~]# pvdisplay
--- Physical volume ---
PV Name                /dev/sda2
VG Name                rhel
PV Size                29.51 GiB / not usable 3.00 MiB
Allocatable            yes (but full)
PE Size                4.00 MiB
Total PE               7554
Free PE                0
Allocated PE           7554
PV UUID                Ub2hjb-BUuv-ffkk-ytkD-0p9D-3coH-GfcyLu
"/dev/sdb1" is a new physical volume of "10.00 GiB"
--- NEW Physical volume ---
PV Name                /dev/sdb1
VG Name
PV Size                10.00 GiB
Allocatable            NO
PE Size                0
Total PE               0
Free PE                0
Allocated PE           0
PV UUID                7WPUaF-0t00-KCfn-oHkB-vL7d-qMTE-2itl4i
```

## Volume Group

- Volume Group

```
[root@localhost ~]# vgcreate -h
vgcreate: Create a volume group
```

```
vgcreate
```

```

[-A|--autobackup {y|n}]
[--addtag Tag]
[--alloc AllocationPolicy]
[-c|--clustered {y|n}]
[-d|--debug]
[-h|--help]
[-l|--maxlogicalvolumes MaxLogicalVolumes]
[-M|--metadatatype 1|2]
[--[vg]metadatacopies #copies]
[-p|--maxphysicalvolumes MaxPhysicalVolumes]
[-s|--physicalextentsize PhysicalExtentSize[bBsSkKmMgGtTpPeE]]
[-t|--test]
[-v|--verbose]
[--version]
[-y|--yes]
[ PHYSICAL DEVICE OPTIONS ]
VolumeGroupName PhysicalDevicePath [PhysicalDevicePath...]

```

### \* Volume Group

```

[root@localhost ~]# vgs
VG   #PV #LV #SN Attr   VSize  VFree
rhel   1   2   0 wz--n- 29.51g    0
vg01   1   0   0 wz--n- 10.00g 10.00g
[root@localhost ~]# vgdisplay
--- Volume group ---
VG Name                vg01
System ID
Format                 lvm2
Metadata Areas         1
Metadata Sequence No   1
VG Access              read/write
VG Status              resizable
MAX LV                 0
Cur LV                0
Open LV                0
Max PV                 0
Cur PV                1
Act PV                 1
VG Size                10.00 GiB
PE Size                4.00 MiB
Total PE               2559
Alloc PE / Size        0 / 0
Free PE / Size         2559 / 10.00 GiB
VG UUID                o5TZxH-7BYe-dzpM-cZaZ-obwu-X2W5-lkgt7r

```

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