

01、centos服务器逻辑卷

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一、逻辑卷创建

1.1、查询新增磁盘

lsblk

```
NAME      MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
vda        253:0    0   160G  0 disk
├─vda1     253:1    0     1G  0 part /boot
└─vda2     253:2    0 155.3G  0 part /
vdb        253:16   0 1000G  0 disk
├─vdb1     253:17   0   750G  0 part /home/es/data
└─vdb2     253:18   0   250G  0 part /home/es/logs
vdc        253:32   0 1000G  0 disk
```

1.2、创建磁盘分区，设置成逻辑卷格式

fdisk /dev/vdc

```

Command (m for help): n
Partition type:
  p   primary (0 primary, 0 extended, 4 free)
  e   extended
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-2097151999, default 2048):
Using default value 2048
Last sector, +sectors or +size[K,M,G] (2048-2097151999, default 2097151999):
Using default value 2097151999
Partition 1 of type Linux and of size 1000 GiB is set

Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): p

Disk /dev/vdc: 1073.7 GB, 1073741824000 bytes, 2097152000 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: 0x1c0724f8

   Device Boot      Start          End      Blocks      Id  System
/dev/vdc1             2048      2097151999     1048574976     8e  Linux LVM

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.

```

1.3、创建物理卷，并查看逻辑卷信息

```
# pvcreate /dev/vdc1
```

```
[root@gajfrh01 ~]# pvcreate /dev/vdc1
Physical volume "/dev/vdc1" successfully created.
```

```
# pvs
```

```
Physical volume "/dev/vdc1" successfully created
[root@gajfrh01 ~]# pvs
PV          VG Fmt  Attr PSize    PFree
/dev/vdc1   lvm2 ---  <1000.00g <1000.00g
```

1.4、创建、扩展卷组

```
# vgcreate centos /dev/vdc1
```

```
/dev/vdc1   lvm2 ---  <1000.00g <1000.00g
[root@gajfrh01 ~]# vgcreate centos /dev/vdc1
Volume group "centos" successfully created
```

将新增逻辑据卷/dev/vdb1 添加到已有逻辑卷组centos

```
# vgextend centos /dev/vdb1
```

1.5、查看卷组信息 (vgs、vgdisplay)

```
[root@gajfrh01 ~]# vgs
VG      #PV #LV #SN Attr   VSize   VFree
centos   1   0   0 wz--n- <1000.00g <1000.00g
[root@gajfrh01 ~]# vgdisplay
--- Volume group ---
VG Name          centos
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          <1000.00 GiB
PE Size          4.00 MiB
Total PE         255999
```

1.6、基于卷组 (VG) 创建逻辑卷 (LV)

```
# lvcreate -n jfru -L 2G centos
```

```
[root@gajfrh01 ~]# lvcreate -n jfru -L 2G centos
Logical volume "jfru" created.
```

```
# lvdisplay
```

```
centos jfru 202.0 0 0 25 0 lvm
[root@gajfrh01 ~]# lvdisplay
--- Logical volume ---
LV Path          /dev/centos/jfru
LV Name          jfru
VG Name          centos
LV UUID          o75fXj-xz6D-D0nc-eRM5-b2iY-kMAx-wmi5HZ
LV Write Access   read/write
LV Creation host, time gajfrh01, 2020-06-08 11:05:14 +0800
LV Status         available
# open           0
LV Size           2.00 GiB
Current LE        512
Segments          1
Allocation        inherit
Read ahead sectors auto
- currently set to 8192
Block device      252:0
```

```
# lsblk
```

```
[root@gajfrh01 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
vda         253:0    0   160G  0 disk
├─vda1      253:1    0     1G  0 part /boot
├─vda2      253:2    0  155.3G  0 part /
vdb         253:16   0  1000G  0 disk
├─vdb1      253:17   0   750G  0 part /home/es/data
└─vdb2      253:18   0   250G  0 part /home/es/logs
vdc         253:32   0  1000G  0 disk
├─vdc1      253:33   0  1000G  0 part
└─centos-jfru 252:0    0     2G  0 lvm
```

1.7、格式化并使用逻辑卷

```
# mkfs.ext4 /dev/centos/jfru
# mount /dev/centos/jfru /u01
# df -h
```

```
[root@gajfrh01 centos]# mount /dev/centos/jfru /u01
[root@gajfrh01 centos]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/vda2        153G   19G  127G   13% /
devtmpfs         16G     0   16G    0% /dev
tmpfs            16G     0   16G    0% /dev/shm
tmpfs            16G  1.2G   15G    8% /run
tmpfs            16G     0   16G    0% /sys/fs/cgroup
/dev/vda1        976M  151M  759M   17% /boot
tmpfs            3.2G     0   3.2G    0% /run/user/0
/dev/vdb1        739G  598G  104G   86% /home/es/data
/dev/vdb2        246G  848M  233G    1% /home/es/logs
tmpfs            3.2G     0   3.2G    0% /run/user/1000
/dev/mapper/centos-jfru 2.0G  6.0M  1.8G    1% /u01
[root@gajfrh01 centos]#
```

1.8、设置开机启动自动挂载

```
# vim /etc/fstab
/dev/centos/jfru          /u01          ext4    defaults    0 1
```

二、删除逻辑卷

我们在创建好逻辑卷后可以通过创建文件系统，挂载逻辑卷来使用它，如果说我们不想用了也可以将其删除掉。

【注意：】对于创建物理卷、创建卷组以及创建逻辑卷我们是有严格顺序的，同样，对于删除逻辑卷、删除卷组以及删除物理卷也是有严格顺序要求的

①首先将正在使用的逻辑卷卸载掉 通过 **umount** 命令

```
# umount /u01/
```

②将逻辑卷先删除 通过 **lvremove** 命令

```
# lvremove /dev/centos/jfru
```

```
Do you really want to remove active logical volume mylv? [y/n]: y
```

```
Logical volume "jfru" successfully removed
```

③删除卷组 通过 `vgremove` 命令

```
[root@xiaoluo /]# vgremove centos  
Volume group "centos" successfully removed
```

④最后再来删除我们的物理卷 通过 `pvremove` 命令

```
[root@xiaoluo /]# pvremove /dev/vdc1  
Labels on physical volume "/dev/vdc1" successfully wiped
```

三、逻辑卷扩容

1.lv扩容5G

```
lvresize -L +5G /dev/mapper/vg01-lv_u01
```

2.文件系统大小变更

```
resize2fs /dev/mapper/vg01-lv_u01
```

xfs格式

```
xfs_growfs /dev/mapper/rhel-root
```