Linux中将两块新硬盘合并成一个，挂载到/data目录下

需求：
将两块空硬盘合并为“一块”，挂载到指定目录（/data）下，达到在一个目录使用2块硬盘所有空间的效果。

使用 **fdisk -l** 命令查看当前系统中的硬盘，如下图：

```
[root@centos ~]#fdisk -l

Disk /dev/sda: 32.2 GB, 32212254720 bytes, 62914560 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: 0x0002dfef

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048     2099199     1048576   83  Linux
/dev/sda2         2099200    62914559    30407680   8e  Linux LVM

Disk /dev/sdb: 5368 MB, 5368709120 bytes, 10485760 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 /dev/sdc: 8589 MB, 8589934592 bytes, 16777216 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 /dev/mapper/centos-root: 29.0 GB, 28982640640 bytes, 56606720 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 /dev/mapper/centos-swap: 2147 MB, 2147483648 bytes, 4194304 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
                                                https://blog.csdn.net/d1240673769
```

系统中存在两块未分配的硬盘：**/dev/sdb** 和 **/dev/sdc**，共13G

现将两块硬盘合并成一块，挂载到/data目录下，具体方法如下：

1.创建pv

```
pvcreate /dev/sdb  # 硬盘1
pvcreate /dev/sdc  # 硬盘2
```

```
[root@centos ~]#pvcreate /dev/sdb
  Physical volume "/dev/sdb" successfully created.
[root@centos ~]#pvcreate /dev/sdc
  Physical volume "/dev/sdc" successfully created.
[root@centos ~]#
```

2.创建vg

```
# vgcreate [自定义LVM名称] [硬盘]
# 先使用硬盘1创建vg:lvm_data

vgcreate lvm_data /dev/sdb
```

```
[root@centos ~]#vgcreate lvm_data /dev/sdb
  Volume group "lvm_data" successfully created
[root@centos ~]#
```

3.扩展vg

```
# vgextend [自定义vg名称] [硬盘]
# 使用硬盘2扩展vg

vgextend lvm_data /dev/sdc
```

```
[root@centos ~]#vgextend lvm_data /dev/sdc
  Volume group "lvm_data" successfully extended
[root@centos ~]#
```

4.创建lv

```
# lvcreate -l[自定义分区大小] -n[自定义分区名称] [vg名称]
# 分区大小不能超过硬盘容量总和
如创建一个10G的分区：
lvcreate -l10.0G -n vg_data lvm_data

如果将两个盘全部空间分区，可以使用以下方式：
lvcreate -l 100%VG -n vg_data lvm_data
```

```
[root@centos ~]#lvcreate -l 100%VG -n vg_data lvm_data
  Logical volume "vg_data" created.
[root@centos ~]#
```

5.格式化分区

```
# mkfs -t [文件系统] [分区位置]

mkfs -t ext4 /dev/lvm_data/vg_data
```

```
[root@centos ~]#mkfs -t ext4 /dev/lvm_data/vg_data
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
851968 inodes, 3405824 blocks
170291 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2151677952
104 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

[root@centos ~]#
```


6.挂载分区

mount [分区位置] [目录地址]

mount /dev/lvm_data/vg_data /data

```
[root@centos ~]#mount /dev/lvm_data/vg_data /data
[root@centos ~]#df -h
Filesystem                  Size  Used Avail Use% Mounted on
devtmpfs                    1.9G     0  1.9G   0% /dev
tmpfs                       1.9G     0  1.9G   0% /dev/shm
tmpfs                       1.9G   12M  1.9G   1% /run
tmpfs                       1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/mapper/centos-root      27G  2.2G   25G   8% /
/dev/sda1                  1014M  150M  865M  15% /boot
tmpfs                       378M     0  378M   0% /run/user/0
/dev/mapper/lvm_data-vg_data   13G   41M   12G   1% /data
[root@centos ~]#
```


7.设置开机加载

在/etc/fstab文件末尾添加如下行：

/dev/lvm_data/vg_data   /data   ext4   defaults   0 0