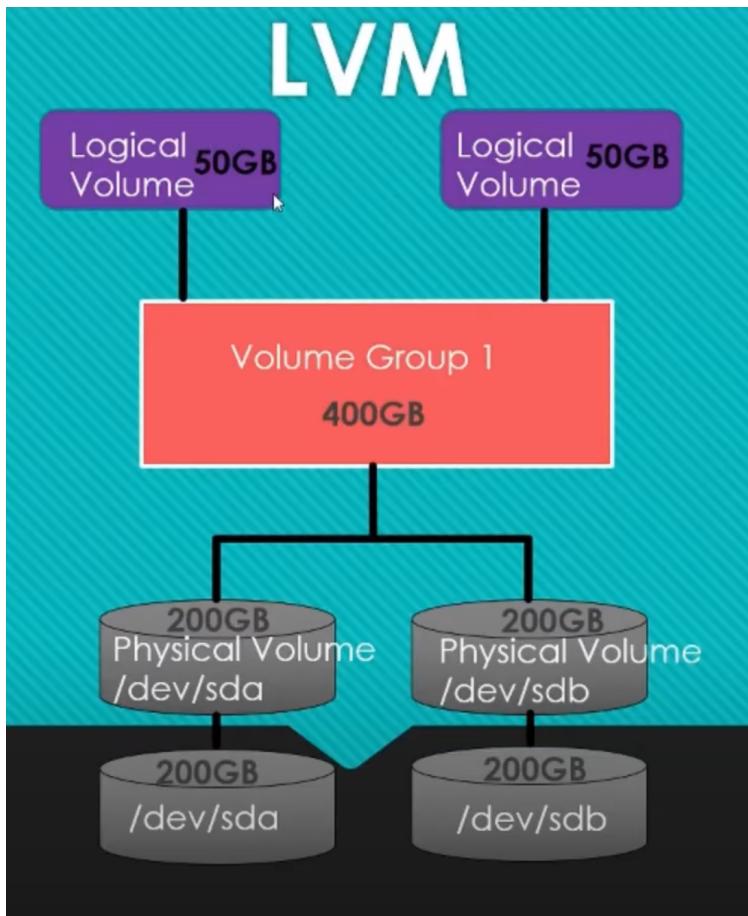


In linux we have physical volumes, they add up to become a volume group and then we can divide the volume group into **logical volumes** (LVM)



```
[root@ip-172-31-76-160 ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda    202:0    0  10G  0 disk
└─xvda1 202:1    0   1M  0 part
  └─xvda2 202:2    0  10G  0 part /
xvdb    202:16   0  20G  0 disk
└─xvdb1 202:17   0 548M  0 part
  └─xvdb2 202:18   0 399M  0 part
xvdf    202:80   0  30G  0 disk
└─xvdf1 202:81   0 500M  0 part
  └─xvdf2 202:82   0 501M  0 part
```

```
<!-- create physical volume -->
pvcreate /dev/xvdf1 /dev/xvdf2
```

A physical volume is a collection of disk partitions used to store all server data. Physical volumes have a maximum size of 16 TB. Because a physical volume can contain any portion of one or more disks, you must specify several characteristics of a physical volume when creating it.

```
[root@ip-172-31-76-160 ~]# pvdisplay
"/dev/xvdf1" is a new physical volume of "500.00 MiB"
--- NEW Physical volume ---
PV Name           /dev/xvdf1
VG Name
PV Size          500.00 MiB
Allocatable      NO
PE Size          0
Total PE         0
Free PE          0
Allocated PE     0
PV UUID          6Vz5eH-uIEv-hwuo-0y0N-ojZq-ny36-nnibXv

"/dev/xvdf2" is a new physical volume of "501.00 MiB"
--- NEW Physical volume ---
PV Name           /dev/xvdf2
VG Name
PV Size          501.00 MiB
Allocatable      NO
PE Size          0
Total PE         0
Free PE          0
Allocated PE     0
PV UUID          6xe0GI-zrSA-C9xW-3XDw-KISs-VKLo-EoeP1c
```

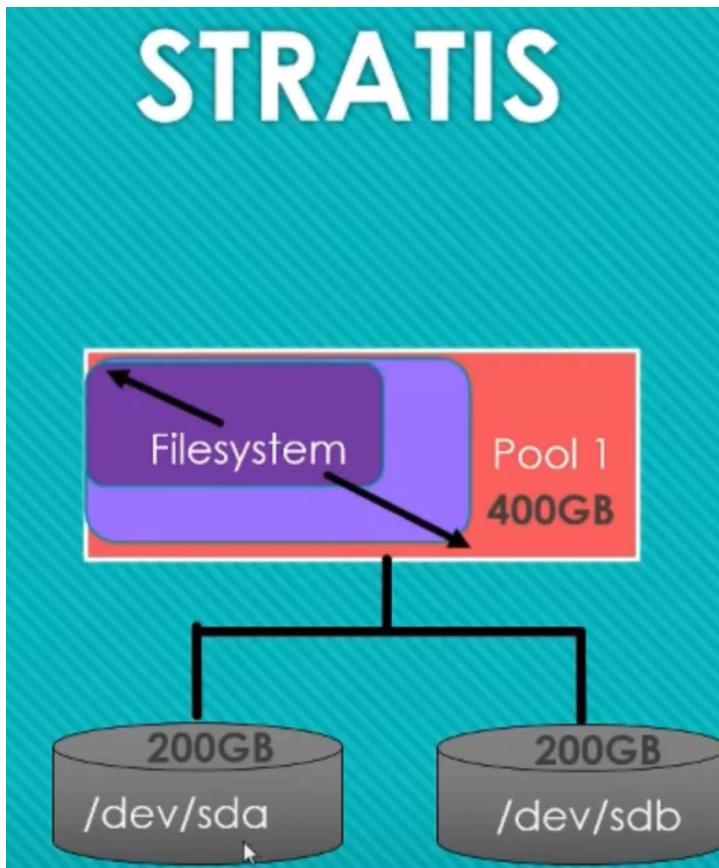
```
<!-- create a volume group from physical volume -->
vgcreate vol_group1 /dev/xvdf1 /dev/xvdf2
<!-- shows the details of volume group -->
vgdisplay
```

```
<!-- create a logical volume LVM, should be smaller size than volume group -->
lvcreate -n lv01 -L 500MB vol_group1
```

```
Logical volume lv01 created.
[root@ip-172-31-76-160 ~]# lvdisplay
--- Logical volume ---
LV Path          /dev/vol_group1/lv01
LV Name          lv01
VG Name          vol_group1
LV UUID          Nl2LsK-7yMy-cJeh-yOVd-BfMz-yTaK-07ZLiY
LV Write Access  read/write
LV Creation host, time ip-172-31-76-160.ec2.internal, 2020-07-16 15:03:25 +0000
LV Status         available
# open            0
LV Size          500.00 MiB
Current LE       125
Segments          1
Allocation        inherit
Read ahead sectors auto
- currently set to 8192
Block device     253:0
```

In **Stratis** we have physical volumes, but instead of Volume groups we use volume Pools, and then use FileSystem on top of it.

While LVM has defined size that needs to be changed, FileSystem's min size is its current size and its max size is the size of Volume Pool.



```
<!-- to install Stratis -->
yum install stratis-cli stratisd -y
<!-- start stratis -->
systemctl enable stratis
```

```
[root@ip-172-31-74-9 ~]# stratis pool list
Name          Total Physical
pool1  20 GiB / 37.64 MiB / 19.96 GiB
```

```
<!-- add more physical drives (/dev/xvdc) to stratis pool -->
stratis pool add-data pool1 /dev/xvdc

<!-- create filesystem on pool -->
stratis filesystem create pool1 filesystem1
```

```
[root@ip-172-31-74-9 ~]# stratis filesystem list
Pool Name    Name      Used      Created        Device          UUID
pool1        filesystem1 545 MiB Jul 22 2020 13:08  /stratis/pool1/filesystem1  bc52ef7061814997a83e6fc51c0fcc8e
[root@ip-172-31-74-9 ~]#
```

```
<!-- mount the filesystem to a folder -->
mount /stratis/pool1/filesystem1 /test

<!-- get an snapshot of the filesystem drive -->
stratis filesystem snapshot pool1 filesystem1 filesystem1-copy
```