

LAB 1 Admin 2

- Using Loop devices, create 4 PVs

```
sudo dd if=/dev/zero of=/pv1.img bs=512M count=1
sudo dd if=/dev/zero of=/pv2.img bs=512M count=1
sudo dd if=/dev/zero of=/pv3.img bs=512M count=1
sudo dd if=/dev/zero of=/pv4.img bs=512M count=1
sudo losetup -f /pv1.img
sudo losetup -f /pv2.img
sudo losetup -f /pv3.img
sudo losetup -f /pv4.img
```

- create VG and add 3 on PVs to it
- create LV which has size of 250M

```
hager@ubuntu22:~$ sudo vgcreate vg1 /dev/loop19 /dev/loop18 /dev/loop17
Physical volume "/dev/loop19" successfully created.
Physical volume "/dev/loop18" successfully created.
Physical volume "/dev/loop17" successfully created.
Volume group "vg1" successfully created
hager@ubuntu22:~$ sudo lvcreate -L 250M -n lv1 vg1
Rounding up size to full physical extent 252.00 MiB
Logical volume "lv1" created.
hager@ubuntu22:~$
```

- format LV using ext4

```
hager@ubuntu22:~$ sudo mkfs.ext4 /dev/vg1/lv1
mke2fs 1.46.5 (30-Dec-2021)
Discarding device blocks: done
Creating filesystem with 64512 4k blocks and 64512 inodes
Filesystem UUID: 798c26b3-9c1c-4605-82e1-58db84667503
Superblock backups stored on blocks:
    32768

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

hager@ubuntu22:~$
```

- mount LV into /mnt directory

```
hager@ubuntu22:~$ sudo mkdir /mnt/lv1
hager@ubuntu22:~$ sudo mount /dev/vg1/lv1 /mnt/lv1
hager@ubuntu22:~$
```

- extend VG with the remaining PV

```
hager@ubuntu22:~$ sudo vgextend vg1 /dev/loop16
Physical volume "/dev/loop16" successfully created.
Volume group "vg1" successfully extended
hager@ubuntu22:~$
```

- extend LV with +50M

```
hager@ubuntu22:~$ sudo lvextend /dev/vg1/lv1 -L +50M
Rounding size to boundary between physical extents: 52.00 MiB.
Size of logical volume vg1/lv1 changed from 252.00 MiB (63 extents) to 304.00 MiB (76 extents).
Logical volume vg1/lv1 successfully resized.
hager@ubuntu22:~$
```

- resize2fs LV with the 50M extra

```
hager@ubuntu22:~$ sudo e2fsck -f /dev/vg1/lv1
e2fsck 1.46.5 (30-Dec-2021)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
/dev/vg1/lv1: 11/64512 files (0.0% non-contiguous), 8204/64512 blocks
hager@ubuntu22:~$ sudo resize2fs /dev/vg1/lv1 +50M
resize2fs 1.46.5 (30-Dec-2021)
Resizing the filesystem on /dev/vg1/lv1 to 12800 (4k) blocks.
The filesystem on /dev/vg1/lv1 is now 12800 (4k) blocks long.
```

- Display the network interface

```
hager@hager-Lenovo-Ideapad-520-15IKB: ~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp2s0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default qlen 1000
    link/ether 8c:16:45:3b:48:4a brd ff:ff:ff:ff:ff:ff
3: wlp3s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether d4:6d:6d:24:d0:9c brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.10/24 brd 192.168.1.255 scope global dynamic noprefixroute wlp3s0
        valid_lft 86235sec preferred_lft 86235sec
    inet6 fdc8:cc8:5534:ec00:795e:a2b8:3284:f9c0/64 scope global temporary dynamic
        valid_lft 7041sec preferred_lft 3441sec
    inet6 fdc8:cc8:5534:ec00:fa45:ca28:a0d7:2daa/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 7041sec preferred_lft 3441sec
    inet6 fe80::1c23:b80a:b57:bf21/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
hager@hager-Lenovo-Ideapad-520-15IKB: ~$
```

- Display currently active TCP connections on your OS using netstat command

```
hager@hager-Lenovo-Ideapad-520-15IK8: $ netstat -t
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 hager-Lenovo-Idea:37632 201.181.244.35.bc:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:42602 server-54-230-112:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:36330 ec2-52-40-122-251:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:41854 233.96.160.34.bc.:https TIME_WAIT
tcp        0      0 hager-Lenovo-Idea:41816 whatsapp-cdn-shv.:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:55256 150.9.241.35.bc.g:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:41502 carpaccio.canonic:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:42608 server-54-230-112:https TIME_WAIT
tcp        0      0 hager-Lenovo-Idea:41056 233.96.160.34.bc.:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:47474 191.144.160.34.bc:https ESTABLISHED
tcp        0      0 hager-Lenovo-Idea:58178 server-18-161-111:https ESTABLISHED
hager@hager-Lenovo-Ideapad-520-15IK8: $
```

- Display currently open ports on your system

```
hager@hager-Lenovo-Ideapad-520-15IK8: $ netstat -a -n|grep ESTABLISHED
tcp        0      0 192.168.1.10:42602     54.230.112.33:443     ESTABLISHED
tcp        0      0 192.168.1.10:36330     52.40.122.251:443     ESTABLISHED
tcp        0      0 192.168.1.10:41704     34.120.208.123:443    ESTABLISHED
tcp        0      0 192.168.1.10:58180     18.161.111.125:443    ESTABLISHED
tcp        0      0 192.168.1.10:41816     102.132.97.54:443     ESTABLISHED
tcp        0      0 192.168.1.10:55258     35.241.9.150:443      ESTABLISHED
udp        0      0 192.168.1.10:68       192.168.1.1:67        ESTABLISHED
hager@hager-Lenovo-Ideapad-520-15IK8: $
```