```
asmaa@asmaa-VirtualBox:~$ dd if=/dev/zero of=/tmp/disk1.img bs=1024 count=100000
100000+0 records in
100000+0 records out
102400000 bytes (102 MB, 98 MiB) copied, 0.291199 s, 352 MB/s
  Rhythmbox  -VirtualBox:~$ dd if=/dev/zero of=/tmp/disk2.img bs=1024 count=100000
100000+0 records in
100000+0 records out
102400000 bytes (102 MB, 98 MiB) copied, 0.355022 s, 288 MB/s
asmaa@asmaa-VirtualBox:~$ dd if=/dev/zero of=/tmp/disk3.img bs=1024 count=100000
100000+0 records in
100000+0 records out
102400000 bytes (102 MB, 98 MiB) copied, 0.360186 s, 284 MB/s
asmaa@asmaa-VirtualBox:~$ dd if=/dev/zero of=/tmp/disk4.img bs=1024 count=100000
100000+0 records in
100000+0 records out
102400000 bytes (102 MB, 98 MiB) copied, 0.347372 s, 295 MB/s
asmaa@asmaa-VirtualBox:~$
```

```
asmaa@asmaa-VirtualBox:~$ sudo losetup -f /tmp/disk1.img
asmaa@asmaa-VirtualBox:~$ sudo losetup -f /tmp/disk2.img
asmaa@asmaa-VirtualBox:~$ sudo losetup -f /tmp/disk3.img
asmaa@asmaa-VirtualBox:~$ sudo losetup -f /tmp/disk4.img
asmaa@asmaa-VirtualBox:~$
```

```
asmaa@asmaa-VirtualBox:~$ sudo pvcreate /dev/loop20
  Physical volume "/dev/loop20" successfully created.
asmaa@asmaa-VirtualBox:~$ sudo pvcreate /dev/loop21
  Physical volume "/dev/loop21" successfully created.
asmaa@asmaa-VirtualBox:~$ sudo pvcreate /dev/loop18
  Physical volume "/dev/loop18" successfully created.
asmaa@asmaa-VirtualBox:~$ sudo pvcreate /dev/loop19
  Physical volume "/dev/loop19" successfully created.
asmaa@asmaa-VirtualBox:~$
```

```
  Physical volume "/dev/loop21" successfully created.
asmaa@asmaa-VirtualBox:~$ sudo vgcreate vg0 /dev/loop18 /dev/loop19 /dev/loop20
  Volume group "vg0" successfully created
```

```
  Volume group "vg0" successfully created
asmaa@asmaa-VirtualBox:~$ sudo lvcreate -n lv0 -L 250 vg0
  Rounding up size to full physical extent 252.00 MiB
  Logical volume "lv0" created.
asmaa@asmaa-VirtualBox:~$
```

```
asmaa@asmaa-VirtualBox:~$ sudo mkfs.ext4 /dev/vg0/lv0
mke2fs 1.46.5 (30-Dec-2021)
Discarding device blocks: done
Creating filesystem with 64512 4k blocks and 64512 inodes
Filesystem UUID: 77d2a364-e8a5-4748-8ea1-ac0af78b3235
Superblock backups stored on blocks:

  Ubuntu Software

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

```
asmaa@asmaa-VirtualBox:~$ sudo mkdir -vp /mnt
asmaa@asmaa-VirtualBox:~$ sudo mount /dev/vg0/lv0 /mnt
asmaa@asmaa-VirtualBox:~$ sudo vgextend vg0 /dev/loop21
  Volume group "vg0" successfully extended
asmaa@asmaa-VirtualBox:~$
```

```
asmaa@asmaa-VirtualBox:~$ sudo lvextend -L +50M /dev/vg0/lv0
  Rounding size to boundary between physical extents: 52.00 MiB.
  Size of logical volume vg0/lv0 changed from 252.00 MiB (63 extents) to 304.00
MiB (76 extents).
  Logical volume vg0/lv0 successfully resized.
asmaa@asmaa-VirtualBox:~$
```

```
asmaa@asmaa-VirtualBox:~$ sudo resize2fs /dev/vg0/lv0
resize2fs 1.46.5 (30-Dec-2021)
Filesystem at /dev/vg0/lv0 is mounted on /mnt; on-line resizing required
old_desc_blocks = 1, new_desc_blocks = 1
The filesystem on /dev/vg0/lv0 is now 77824 (4k) blocks long.
```

# Network

```
asmaa@asmaa-VirtualBox:~$
asmaa@asmaa-VirtualBox:~$ ip link show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT
 group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mo
de DEFAULT group default qlen 1000
    link/ether 08:00:27:cf:02:82 brd ff:ff:ff:ff:ff:ff
```

```
    link/ether 08:00:27:cf:02:82 brd ff:ff:ff:ff:ff:ff
asmaa@asmaa-VirtualBox:~$ sudo apt update
Hit:1 http://eg.archive.ubuntu.com/ubuntu jammy InRelease
```

```
asmaa@asmaa-VirtualBox:~$ sudo apt install net-tools
Reading package lists... Done
```

```
asmaa@asmaa-VirtualBox:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address          Foreign Address          State
udp        0      0 asmaa-VirtualBox:bootpc _gateway:bootps          ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  2      [ ]         DGRAM                    20673    /run/user/1000/system
d/notify
unix  3      [ ]         DGRAM      CONNECTED     16575    /run/systemd/notify
unix  2      [ ]         DGRAM                    16591    /run/systemd/journal/
syslog
unix  17     [ ]         DGRAM      CONNECTED     16600    /run/systemd/journal/
dev-log
unix  9      [ ]         DGRAM      CONNECTED     16602    /run/systemd/journal/
socket
unix  3      [ ]         STREAM     CONNECTED     22657    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     21863    /run/user/1000/gvfsd/
socket-qCpSXg1W
unix  3      [ ]         STREAM     CONNECTED     20678
unix  3      [ ]         STREAM     CONNECTED     23277    /run/user/1000/waylan
d-0
unix  3      [ ]         STREAM     CONNECTED     20253
unix  3      [ ]         STREAM     CONNECTED     22202    /run/dbus/system_bus
```