Question 13



```
Command (m for help): n
All unwritten changes will be lost, do you really want to quit?
Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-41943039, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-41943039, default 41943039):
 +300M

Created a new partition 1 of type 'Linux' and of size 300 MiB.

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

Command (m for help): p
Disk /dev/sdb: 20 GiB, 21474836480 bytes, 41943040 sectors
Disk model: VMware Virtual S
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x0fe652d0

Device     Boot Start    End Sectors  Size Id Type
/dev/sdb1        2048 616447  614400  300M 8e Linux LVM

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

[root@localhost ~]# partprobe /dev/sdb
[root@localhost ~]#
```

```
[root@localhost ~]# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.37.4).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.


Command (m for help): n
Partition type
   p   primary (1 primary, 0 extended, 3 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (2-4, default 2): 2
First sector (616448-41943039, default 616448):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (616448-41943039, default 41943039
): +300M

Created a new partition 2 of type 'Linux' and of size 300 MiB.

Command (m for help): t
Partition number (1,2, default 2): 2
Hex code or alias (type L to list all): 8e

Changed type of partition 'Linux' to 'Linux LVM'.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

[root@localhost ~]# partprobe /dev/sdb
[root@localhost ~]# lsblk
NAME   MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
sda      8:0    0    20G  0 disk
├─sda1   8:1    0     1G  0 part /boot
├─sda2   8:2    0     2G  0 part [SWAP]
└─sda3   8:3    0    17G  0 part /
sdb      8:16   0    20G  0 disk
```

```
Command (m for help): p
Disk /dev/sdb: 20 GiB, 21474836480 bytes, 41943040 sectors
Disk model: VMware Virtual S
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x0fe652d0

Device     Boot   Start      End Sectors  Size Id Type
/dev/sdb1           2048   616447  614400  300M 8e Linux LVM
/dev/sdb2         616448  1230847  614400  300M 8e Linux LVM
```

Question 14

```
[root@localhost ~]# pvcreate /dev/sdb2
  Physical volume "/dev/sdb2" successfully created.
  Creating devices file /etc/lvm/devices/system.devices
[root@localhost ~]# pvdisplay
  "/dev/sdb2" is a new physical volume of "300.00 MiB"
  --- NEW Physical volume ---
  PV Name                /dev/sdb2
  VG Name
  PV Size                300.00 MiB
  Allocatable            NO
  PE Size                0
  Total PE               0
  Free PE                0
  Allocated PE           0
  PV UUID                Gd8jnu-hmuV-y1kg-ovO4-AMlm-KzYH-UXEze4

[root@localhost ~]# ▮
```

Question 15

```
[root@localhost ~]# vgcreate test0 /dev/sdb2
  Volume group "test0" successfully created
[root@localhost ~]# vgs
  VG     #PV #LV #SN Attr   VSize   VFree
  test0   1   0   0 wz--n- 296.00m 296.00m
[root@localhost ~]#
```

Question 16

```
[root@localhost ~]# lvcreate -n lvl -L 88M test0
  Logical volume "lvl" created.
[root@localhost ~]#
```

Question 17:

```
[root@localhost ~]# mkfs.xfs /dev/test0/lvl
meta-data=/dev/test0/lvl              isize=512     agcount=4, agsize=5632 blks
         =                            sectsz=512    attr=2, projid32bit=1
         =                            crc=1         finobt=1, sparse=1, rmapbt=0
         =                            reflink=1     bigtime=1 inobtcount=1
data     =                            bsize=4096    blocks=22528, imaxpct=25
         =                            sunit=0       swidth=0 blks
naming   =version 2                   bsize=4096    ascii-ci=0, ftype=1
log      =internal log                bsize=4096    blocks=1368, version=2
         =                            sectsz=512    sunit=0 blks, lazy-count=1
realtime =none                        extsz=4096    blocks=0, rtextents=0
[root@localhost ~]#
```

Question 18:

```
[root@localhost ~]# mkdir /data
[root@localhost ~]# mount /dev/test0/lvl /data
[root@localhost ~]# dd if=/dev/zero of=/data/largefile bs=1M count=1000
```

Question 19:

```
SF1            11.1      1    0.70    0 1.0H   /run/media/nada/centos stream 9 base05 x80_04
[root@localhost ~]# lvextend -L +50M /dev/test0/lvl
  Rounding size to boundary between physical extents: 52.00 MiB.
  Size of logical volume test0/lvl changed from 88.00 MiB (22 extents) to 140.00
 MiB (35 extents).
  Logical volume test0/lvl successfully resized.
[root@localhost ~]# lvdisplay /dev/test0/lvl
  --- Logical volume ---
  LV Path                /dev/test0/lvl
  LV Name                lvl
  VG Name                test0
  LV UUID                uqC3UN-bfki-x2c4-8hXz-fI0D-XTTp-PkYriM
  LV Write Access        read/write
  LV Creation host, time localhost.localdomain, 2023-08-08 14:39:29 +0200
  LV Status              available
  # open                 1
  LV Size                140.00 MiB
  Current LE             35
  Segments               1
  Allocation             inherit
  Read ahead sectors     auto
  - currently set to     256
  Block device           253:0
```

```
[root@localhost ~]# xfs_growfs /data
meta-data=/dev/mapper/test0-lvl   isize=512      agcount=4, agsize=5632 blks
         =                        sectsz=512     attr=2, projid32bit=1
         =                        crc=1          finobt=1, sparse=1, rmapbt=0
         =                        reflink=1      bigtime=1 inobtcount=1
data     =                        bsize=4096     blocks=22528, imaxpct=25
         =                        sunit=0        swidth=0 blks
naming   =version 2               bsize=4096     ascii-ci=0, ftype=1
log      =internal log            bsize=4096     blocks=1368, version=2
         =                        sectsz=512     sunit=0 blks, lazy-count=1
realtime =none                    extsz=4096     blocks=0, rtextents=0
data blocks changed from 22528 to 35840
[root@localhost ~]#
```

Question 20:

```
[root@localhost ~]# cd /data/
[root@localhost data]# ls -l largefile
-rw-r--r--. 1 root root 80936960 Aug  8 15:03 largefile
[root@localhost data]# cd
[root@localhost ~]# df -h /data/
Filesystem            Size  Used Avail Use% Mounted on
/dev/mapper/test0-lvl  135M   83M   52M  62% /data
[root@localhost ~]#
```

Question 21:

```
[root@localhost ~]# lvcreate -n docs -L 20M test0
  Logical volume "docs" created.
[root@localhost ~]# 
```

Question 22:

```
[root@localhost ~]# vgdisplay test0
  --- Volume group ---
  VG Name               test0
  System ID
  Format                lvm2
  Metadata Areas        1
  Metadata Sequence No  4
  VG Access             read/write
  VG Status             resizable
  MAX LV                0
  Cur LV                2
  Open LV               1
  Max PV                0
  Cur PV                1
  Act PV                1
  VG Size               296.00 MiB
  PE Size               4.00 MiB
  Total PE              74
  Alloc PE / Size       40 / 160.00 MiB
  Free  PE / Size       34 / 136.00 MiB
  VG UUID               v92v1p-YpPD-dtKW-eKrf-s031-1ZQ5-NmCftL

[root@localhost ~]#
```

Question 23:

```
[root@localhost ~]# mkdir /docs/
[root@localhost ~]# mount /dev/test0/docs /docs/
[root@localhost ~]# df -h
Filesystem              Size  Used Avail Use% Mounted on
devtmpfs                4.0M     0  4.0M   0% /dev
tmpfs                   373M     0  373M   0% /dev/shm
tmpfs                   149M  7.0M  142M   5% /run
/dev/sda3                17G  6.5G   11G  38% /
/dev/sda1              1014M  279M  736M  28% /boot
tmpfs                    75M  104K   75M   1% /run/user/1000
/dev/sr0                103M  103M     0 100% /run/media/nada/CDROM
/dev/sr1                8.7G  8.7G     0 100% /run/media/nada/CentOS-Stream-9-Ba
seOS-x86_64
/dev/mapper/test0-lvl   135M   83M   52M  62% /data
/dev/mapper/test0-docs   15M  1.2M   14M   9% /docs
```

Question 24:

```
[root@localhost ~]# vgextend test0 /dev/sdb1
  Physical volume "/dev/sdb1" successfully created.
  Volume group "test0" successfully extended
[root@localhost ~]# vgdisplay test0
  --- Volume group ---
  VG Name               test0
  System ID
  Format                lvm2
  Metadata Areas        2
  Metadata Sequence No  5
  VG Access             read/write
  VG Status             resizable
  MAX LV                0
  Cur LV                2
  Open LV               2
  Max PV                0
  Cur PV                2
  Act PV                2
  VG Size               592.00 MiB
  PE Size               4.00 MiB
  Total PE              148
  Alloc PE / Size       40 / 160.00 MiB
  Free  PE / Size       108 / 432.00 MiB
  VG UUID               v92v1p-YpPD-dtKW-eKrf-s031-1ZQ5-NmCftL
```

Question 25:

```
[root@localhost ~]# lvextend -L +50M /dev/test0/docs
  Rounding size to boundary between physical extents: 52.00 MiB.
  Size of logical volume test0/docs changed from 20.00 MiB (5 extents) to 72.00
MiB (18 extents).
  Logical volume test0/docs successfully resized.
[root@localhost ~]# xfs_growfs /docs
meta-data=/dev/mapper/test0-docs isize=512    agcount=1, agsize=5120 blks
         =                       sectsz=512    attr=2, projid32bit=1
         =                       crc=1         finobt=1, sparse=1, rmapbt=0
         =                       reflink=1     bigtime=1 inobtcount=1
data     =                       bsize=4096    blocks=5120, imaxpct=25
         =                       sunit=0       swidth=0 blks
naming   =version 2              bsize=4096    ascii-ci=0, ftype=1
log      =internal log           bsize=4096    blocks=1368, version=2
         =                       sectsz=512    sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096    blocks=0, rtextents=0
data blocks changed from 5120 to 18432
```