Assignment 4 – Disk Partitioning, File System
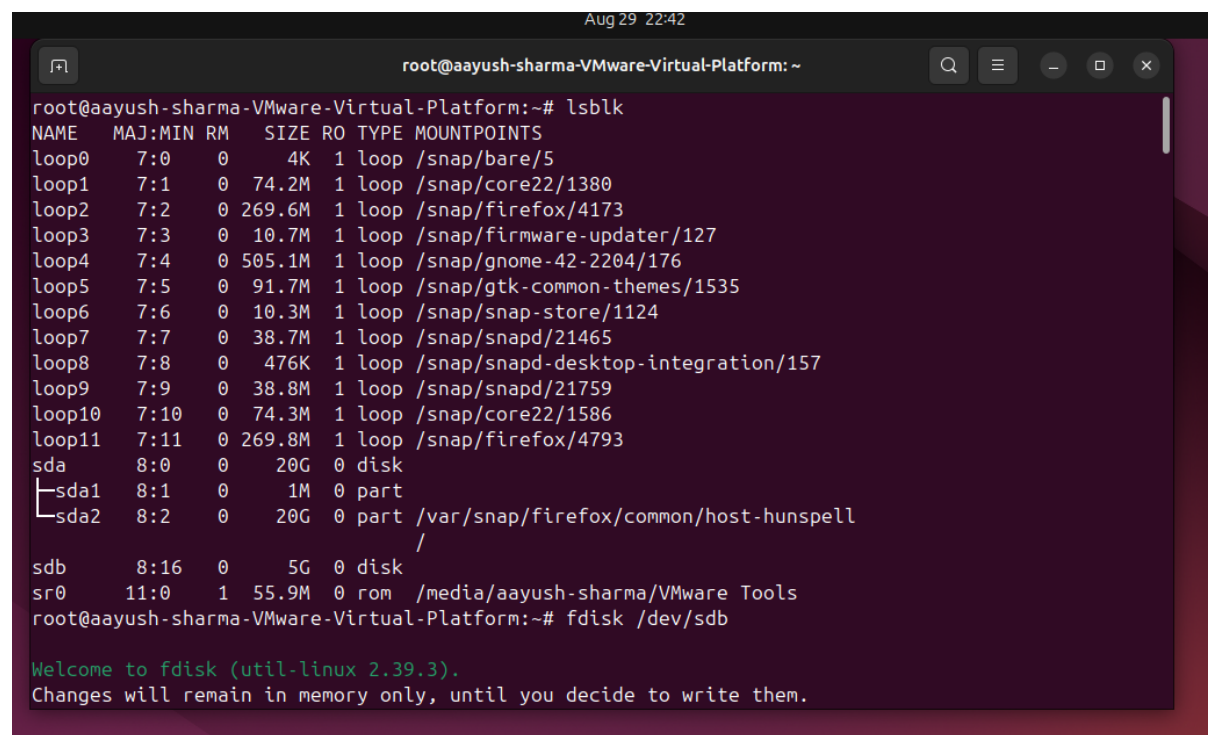
Creation, Management and Mounting

Launch virtual machine in the cloud, attach 20 GB EBS volume

Important Note:- Do not try partition, filesystem creation on your local desktop or

laptop instead use virtual machine to do practice. These operations are destructive,

chances of system crash. Work carefully.

Create partition on newly attached disk as per below instructions -

a) Create 2 primary partitions of 3 GB each

b) Create 2 logical partitions of 6 GB each

c) Format all 4 partitions and create ext4 filesystem on that

d) Create 4 folders inside root (/) folder name it as Data1, Data2, Data3, Data4

e) Mount all formated partitions on the respective folders

f) Create empty file inside each folders of size 2 GB, 2GB, 4 GB and 4 GB

respectively using command - dd - "convert and copy a file"

g) Go inside /Data1 and run command - while(true); do sleep 5s; done , do ctrl-z

h) Check disk utilization of each mount point

i) Unmount all partitions /Data1, /Data2, /Data3 and /Data4

Note:- All partitions should be automatically mounted post reboot

```
root@aayush-sharma-VMware-Virtual-Platform: ~
```

```
Device does not contain a recognized partition table.
Created a new DOS (MBR) disklabel with disk identifier 0xb2d81584.

Command (m for help): p
Disk /dev/sdb: 5 GiB, 5368709120 bytes, 10485760 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: 0xb2d81584

Command (m for help):
All unwritten changes will be lost, do you really want to quit? (y/n)
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):
First sector (2048-10485759, default 2048): +500MB
Value out of range.
First sector (2048-10485759, default 2048): 500M
Value out of range.
```

```
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```

```
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 (2048-10485759, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-10485759, default 10485759): +500M

Created a new partition 1 of type 'Linux' and of size 500 MiB.

Command (m for help): p
Disk /dev/sdb: 5 GiB, 5368709120 bytes, 10485760 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: 0xb2d81584

Device     Boot Start     End Sectors  Size Id Type
/dev/sdb1        2048 1026047 1024000  500M 83 Linux

Command (m for help): w
The partition table has been altered.
Syncing disks.
```

```
Unpacking liburcu8t64:amd64 (0.14.0-3.1build1) ...
Selecting previously unselected package xfsprogs.
Preparing to unpack .../xfsprogs_6.6.0-1ubuntu2_amd64.deb ...
Unpacking xfsprogs (6.6.0-1ubuntu2) ...
Setting up liburcu8t64:amd64 (0.14.0-3.1build1) ...
Setting up xfsprogs (6.6.0-1ubuntu2) ...
update-initramfs: deferring update (trigger activated)
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for initramfs-tools (0.142ubuntu25) ...
update-initramfs: Generating /boot/initrd.img-6.8.0-41-generic
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma# mkfs.xfs /dev/sd
b1
meta-data=/dev/sdb1              isize=512    agcount=4, agsize=32000 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=1, rmapbt=1
         =                       reflink=1    bigtime=1 inobtcount=1 nrext64=0
data     =                       bsize=4096   blocks=128000, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0, ftype=1
log      =internal log           bsize=4096   blocks=16384, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma#
```

```
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma# visudo
visudo: /etc/sudoers.tmp unchanged
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma# lsblk
NAME    MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
loop0     7:0    0  74.2M  1 loop /snap/core22/1380
loop1     7:1    0     4K  1 loop /snap/bare/5
loop2     7:2    0  74.3M  1 loop /snap/core22/1586
loop3     7:3    0  10.7M  1 loop /snap/firmware-updater/127
loop4     7:4    0 269.6M  1 loop /snap/firefox/4173
loop5     7:5    0 269.8M  1 loop /snap/firefox/4793
loop6     7:6    0 505.1M  1 loop /snap/gnome-42-2204/176
loop7     7:7    0  10.3M  1 loop /snap/snap-store/1124
loop8     7:8    0  38.7M  1 loop /snap/snapd/21465
loop9     7:9    0  91.7M  1 loop /snap/gtk-common-themes/1535
loop10    7:10   0  38.8M  1 loop /snap/snapd/21759
loop11    7:11   0   476K  1 loop /snap/snapd-desktop-integration/157
sda       8:0    0    20G  0 disk
├─sda1    8:1    0     1M  0 part
└─sda2    8:2    0    20G  0 part /var/snap/firefox/common/host-hunspell
                                  /
sdb       8:16   0     5G  0 disk
└─sdb1    8:17   0   500M  0 part /data
sr0      11:0    1  55.9M  0 rom  /media/aayush-sharma/VMware Tools
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma#
```

```
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma# mount /dev/sdb1 /
mount: /data: /dev/sdb1 already mounted on /data.
       dmesg(1) may have more information after failed mount system call.
```

```
25  mkfs.ext2 /dev/sdb1
26  lsof /dev/sdb1
27  lsnlk
28  lsblk
29  unmount /dev/sdb1
30  umount /dev/sdb1
31  mkfs.ext2 /dev/sdb1
32  mkfs.vfat /dev/sdb1
33  clear
34  mkfs.xfs /dev/sdb1
35  apt install xfsprogs
36  mkfs.xfs /dev/sdb1
37  mount /dev/sdb1 /data
38  lsblk
39  blkid
40  blkid dev/sdb1
41  blkid /dev/sdb1
42  vi /etc/fstab
43  clear
44  visudo
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma# mount /dev/sdb1 /da
mount: /data: /dev/sdb1 already mounted on /data.
       dmesg(1) may have more information after failed mount system call.
root@aayush-sharma-VMware-Virtual-Platform:/home/aayush-sharma#
```

```
avvynik@savvynik:/$ sudo rm swapfile
avvynik@savvynik:/$ ls
in    cdrom  etc   lib    lib64   lost+found  mnt  proc  run   snap  sys  usr
oot   dev    home  lib32  libx32  media       opt  root  sbin  srv   tmp  var
avvynik@savvynik:/$ sudo dd if=/dev/zero of=/swapfile bs=1M count=4096 status=progress
254072832 bytes (4.3 GB, 4.0 GiB) copied, 14 s, 304 MB/s
096+0 records in
096+0 records out
294967296 bytes (4.3 GB, 4.0 GiB) copied, 14.2119 s, 302 MB/s
avvynik@savvynik:/$ ls
in    cdrom  etc   lib    lib64   lost+found  mnt  proc  run   snap  swapfile  tmp  var
oot   dev    home  lib32  libx32  media       opt  root  sbin  srv   sys       usr
avvynik@savvynik:/$ sudo chmod 600 /swapfile
avvynik@savvynik:/$ sudo mkswap /swapfile
etting up swapspace version 1, size = 4 GiB (4294963200 bytes)
o label, UUID=e015ac86-8ca7-4fda-a72b-c149b17fba24
avvynik@savvynik:/$
```