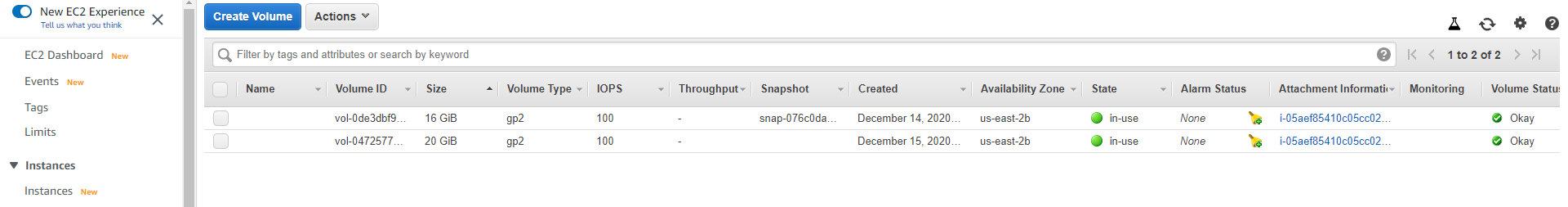
Disk partitioning , file system creation, management and mounting

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



Create partition on newly attached disk as per below instructions -  
     a) Create 2 primary partitions of 3 GB each

root@ip-172-31-26-56:/home/ubuntu# sudo fdisk /dev/xvdf

Welcome to fdisk (util-linux 2.34).

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Device does not contain a recognized partition table.

Created a new DOS disklabel with disk identifier 0xfefd4821.

Command (m for help): n

Partition type

p primary (0 primary, 1 extended, 3 free)

e extended (container for logical partitions)

Select (default p): p

Partition number (2-4, default 2):

First sector (25167872-41943039, default 25167872):

Last sector, +/-sectors or +/-size{K,M,G,T,P} (25167872-41943039, default 41943039): +3G

Created a new partition 1 of type 'Linux' and of size 3 GiB.

Command (m for help): n

Partition type

p primary (1 primary, 1 extended, 2 free)

e extended (container for logical partitions)

Select (default p): p

Partition number (3,4, default 3):

First sector (31461376-41943039, default 31461376):

Last sector, +/-sectors or +/-size{K,M,G,T,P} (31461376-41943039, default 41943039): +3G

Created a new partition 1 of type 'Linux' and of size 3 GiB.

     b) Create 2 logical partitions of 6 GB each

Command (m for help): n

Partition type

p primary (0 primary, 0 extended, 4 free)

e extended (container for logical partitions)

Select (default p): e

Partition number (1-4, default 1):

First sector (2048-41943039, default 2048):

Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-41943039, default 41943039): +12G

Created a new partition 3 of type 'Extended' and of size 12 GiB.

Command (m for help): n

Partition type

p primary (0 primary, 1 extended, 3 free)

l logical (numbered from 5)

Select (default p): l

Adding logical partition 5

First sector (4096-25165824, default 12587008):

Last sector, +/-sectors or +/-size{K,M,G,T,P} (4096-25165824, default 25165824): +6G

Created a new partition 5 of type 'Linux' and of size 6 GiB.

Command (m for help): n

Partition type

p primary (0 primary, 1 extended, 3 free)

l logical (numbered from 5)

Select (default p): l

Adding logical partition 6

First sector (12591104-25165824, default 25171968):

Last sector, +/-sectors or +/-size{K,M,G,T,P} (12591104-25165824, default 25165824):

Created a new partition 6 of type 'Linux' and of size 6 GiB.

root@ip-172-31-26-56:/home/ubuntu# lsblk

NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT

loop0 7:0 0 28.1M 1 loop /snap/amazon-ssm-agent/2012

loop1 7:1 0 32.3M 1 loop /snap/amazon-ssm-agent/2996

loop3 7:3 0 97.9M 1 loop /snap/core/10444

loop4 7:4 0 97.9M 1 loop /snap/core/10577

loop5 7:5 0 55.4M 1 loop /snap/core18/1932

loop6 7:6 0 70.6M 1 loop /snap/lxd/16922

loop7 7:7 0 67.8M 1 loop /snap/lxd/18150

loop8 7:8 0 55.4M 1 loop /snap/core18/1944

xvda 202:0 0 16G 0 disk

└─xvda1 202:1 0 16G 0 part /

xvdf 202:80 0 20G 0 disk

├─xvdf1 202:81 0 1K 0 part

├─xvdf2 202:82 0 3G 0 part

├─xvdf3 202:83 0 3G 0 part

├─xvdf5 202:85 0 6G 0 part

└─xvdf6 202:86 0 6G 0 part

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

root@ip-172-31-26-56:/home/ubuntu# sudo mkfs.ext4 /dev/xvdf2

root@ip-172-31-26-56:/home/ubuntu# sudo mkfs.ext4 /dev/xvdf3

root@ip-172-31-26-56:/home/ubuntu# sudo mkfs.ext4 /dev/xvdf5

root@ip-172-31-26-56:/home/ubuntu# sudo mkfs.ext4 /dev/xvdf6

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

root@ip-172-31-26-56:/# mkdir Data1

root@ip-172-31-26-56:/# mkdir Data2

root@ip-172-31-26-56:/# mkdir Data3

root@ip-172-31-26-56:/# mkdir Data4

     e) Mount all formated partitions on the respective folders

root@ip-172-31-26-56:/# mkdir Data1

root@ip-172-31-26-56:/# mkdir Data2

root@ip-172-31-26-56:/# mkdir Data3

root@ip-172-31-26-56:/# mkdir Data4

root@ip-172-31-26-56:/# mount -t ext4 /dev/xvdf2 /Data1

root@ip-172-31-26-56:/# mount -t ext4 /dev/xvdf3 /Data2

root@ip-172-31-26-56:/# mount -t ext4 /dev/xvdf5 /Data3

root@ip-172-31-26-56:/# mount -t ext4 /dev/xvdf6 /Data4

root@ip-172-31-26-56:/# lsblk

NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT

loop0 7:0 0 28.1M 1 loop /snap/amazon-ssm-agent/2012

loop1 7:1 0 32.3M 1 loop /snap/amazon-ssm-agent/2996

loop3 7:3 0 97.9M 1 loop /snap/core/10444

loop4 7:4 0 97.9M 1 loop /snap/core/10577

loop5 7:5 0 55.4M 1 loop /snap/core18/1932

loop6 7:6 0 70.6M 1 loop /snap/lxd/16922

loop7 7:7 0 67.8M 1 loop /snap/lxd/18150

loop8 7:8 0 55.4M 1 loop /snap/core18/1944

xvda 202:0 0 16G 0 disk

└─xvda1 202:1 0 16G 0 part /

xvdf 202:80 0 20G 0 disk

├─xvdf1 202:81 0 1K 0 part

├─xvdf2 202:82 0 3G 0 part /Data1

├─xvdf3 202:83 0 3G 0 part /Data2

├─xvdf4 202:84 0 1G 0 part [SWAP]

├─xvdf5 202:85 0 6G 0 part /Data3

└─xvdf6 202:86 0 6G 0 part /Data4

     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"

root@ip-172-31-26-56:/# cd Data1

root@ip-172-31-26-56:/Data1# dd if=/dev/zero of=emptyFile bs=536870912 count=4

4+0 records in

4+0 records out

2147483648 bytes (2.1 GB, 2.0 GiB) copied, 31.7808 s, 67.6 MB/s

root@ip-172-31-26-56:/# cd Data2

root@ip-172-31-26-56:/Data2# dd if=/dev/zero of=emptyFile bs=536870912 count=4

4+0 records in

4+0 records out

2147483648 bytes (2.1 GB, 2.0 GiB) copied, 32.1729 s, 66.7 MB/s

root@ip-172-31-26-56:/# cd Data3

root@ip-172-31-26-56:/Data3# dd if=/dev/zero of=emptyFile bs=536870912 count=8

8+0 records in

8+0 records out

4294967296 bytes (4.3 GB, 4.0 GiB) copied, 65.7939 s, 65.3 MB/s

root@ip-172-31-26-56:/# cd Data2

root@ip-172-31-26-56:/Data2# dd if=/dev/zero of=emptyFile bs=536870912 count=8

8+0 records in

8+0 records out

4294967296 bytes (4.3 GB, 4.0 GiB) copied, 65.7592 s, 65.3 MB/s

root@ip-172-31-26-56:/Data2# df -h

Filesystem Size Used Avail Use% Mounted on

/dev/root 16G 1.9G 14G 13% /

devtmpfs 486M 0 486M 0% /dev

tmpfs 490M 0 490M 0% /dev/shm

tmpfs 98M 816K 98M 1% /run

tmpfs 5.0M 0 5.0M 0% /run/lock

tmpfs 490M 0 490M 0% /sys/fs/cgroup

/dev/loop0 29M 29M 0 100% /snap/amazon-ssm-agent/2012

/dev/loop1 33M 33M 0 100% /snap/amazon-ssm-agent/2996

/dev/loop3 98M 98M 0 100% /snap/core/10444

/dev/loop5 56M 56M 0 100% /snap/core18/1932

/dev/loop6 71M 71M 0 100% /snap/lxd/16922

/dev/loop7 68M 68M 0 100% /snap/lxd/18150

/dev/loop8 56M 56M 0 100% /snap/core18/1944

/dev/loop4 98M 98M 0 100% /snap/core/10577

tmpfs 98M 0 98M 0% /run/user/1000

/dev/xvdf2 2.9G 2.1G 734M 74% /Data1

/dev/xvdf3 2.9G 2.1G 734M 74% /Data2

/dev/xvdf5 5.9G 4.1G 1.6G 73% /Data3

/dev/xvdf6 5.9G 4.1G 1.6G 73% /Data4

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

root@ip-172-31-26-56:/# cd Data1

root@ip-172-31-26-56:/Data1# ps

PID TTY TIME CMD

12578 pts/0 00:00:00 sudo

12579 pts/0 00:00:00 su

12580 pts/0 00:00:00 bash

12666 pts/0 00:00:00 ps

root@ip-172-31-26-56:/Data1# while(true); do sleep 5s; done

^Z

[1]+ Stopped sleep 5s

root@ip-172-31-26-56:/Data1# ps

PID TTY TIME CMD

12578 pts/0 00:00:00 sudo

12579 pts/0 00:00:00 su

12580 pts/0 00:00:00 bash

12668 pts/0 00:00:00 sleep

12669 pts/0 00:00:00 ps

     h) Check disk utilization of each mount point

root@ip-172-31-26-56:/Data2# df -h

Filesystem Size Used Avail Use% Mounted on

/dev/root 16G 1.9G 14G 13% /

devtmpfs 486M 0 486M 0% /dev

tmpfs 490M 0 490M 0% /dev/shm

tmpfs 98M 816K 98M 1% /run

tmpfs 5.0M 0 5.0M 0% /run/lock

tmpfs 490M 0 490M 0% /sys/fs/cgroup

/dev/loop0 29M 29M 0 100% /snap/amazon-ssm-agent/2012

/dev/loop1 33M 33M 0 100% /snap/amazon-ssm-agent/2996

/dev/loop3 98M 98M 0 100% /snap/core/10444

/dev/loop5 56M 56M 0 100% /snap/core18/1932

/dev/loop6 71M 71M 0 100% /snap/lxd/16922

/dev/loop7 68M 68M 0 100% /snap/lxd/18150

/dev/loop8 56M 56M 0 100% /snap/core18/1944

/dev/loop4 98M 98M 0 100% /snap/core/10577

tmpfs 98M 0 98M 0% /run/user/1000

/dev/xvdf2 2.9G 2.1G 734M 74% /Data1

/dev/xvdf3 2.9G 2.1G 734M 74% /Data2

/dev/xvdf5 5.9G 4.1G 1.6G 73% /Data3

/dev/xvdf6 5.9G 4.1G 1.6G 73% /Data4

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

root@ip-172-31-26-56:/Data1# umount -l /dev/xvdf2

root@ip-172-31-26-56:/Data2# umount -l /dev/xvdf3

root@ip-172-31-26-56:/Data3# umount –l /dev/xvdf5

root@ip-172-31-26-56:/Data4# umount -l /dev/xvdf6

root@ip-172-31-26-56:/home/ubuntu# lsblk

NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT

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├─xvdf3 202:83 0 3G 0 part

├─xvdf5 202:85 0 6G 0 part

└─xvdf6 202:86 0 6G 0 part