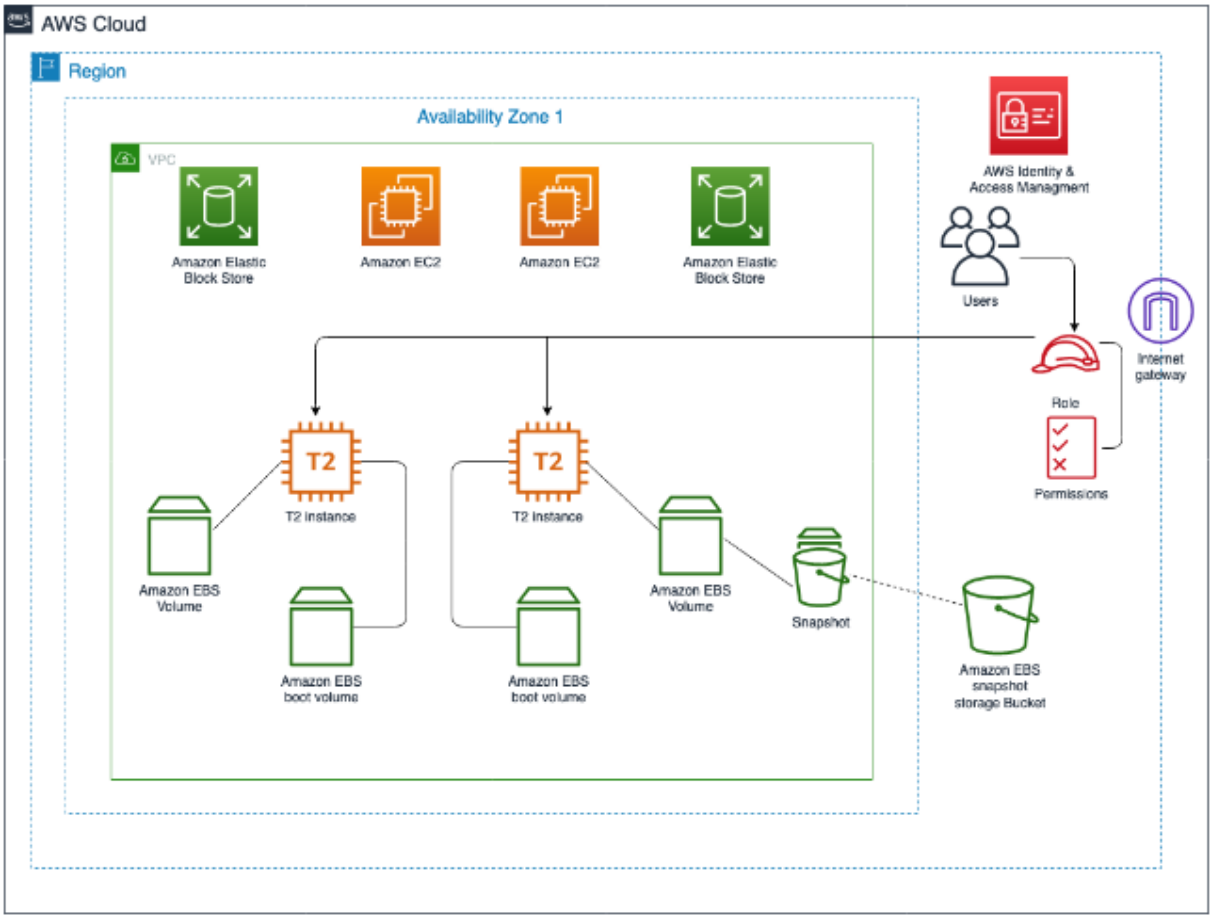
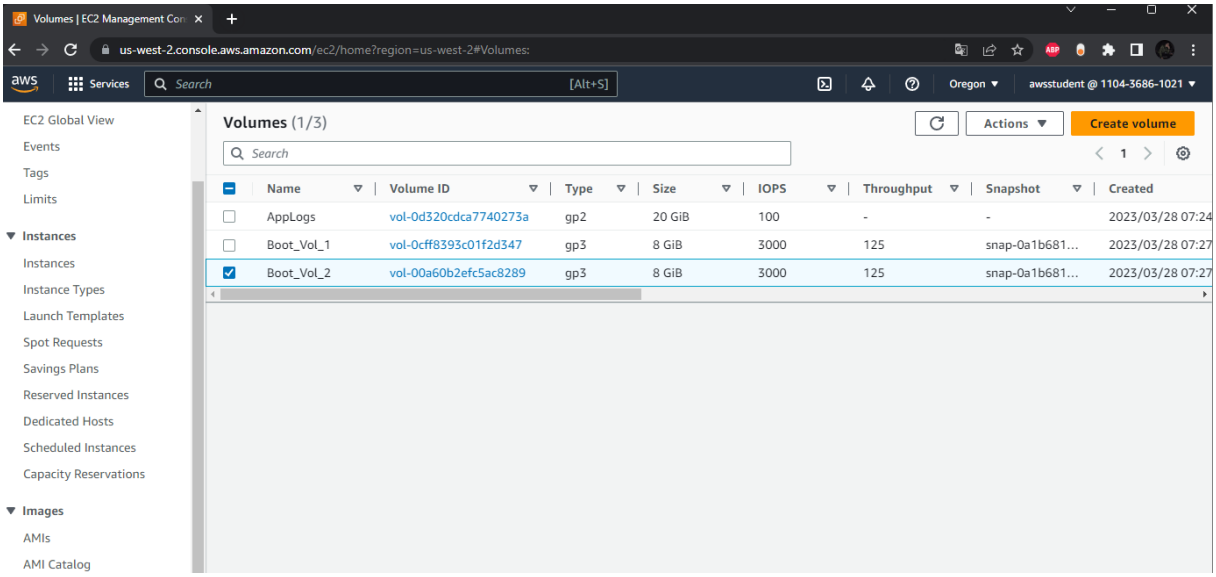
Introduction to Amazon Elastic Block Store (Amazon EBS).



Task 1: Create and attach an EBS volume to an EC2 instance.

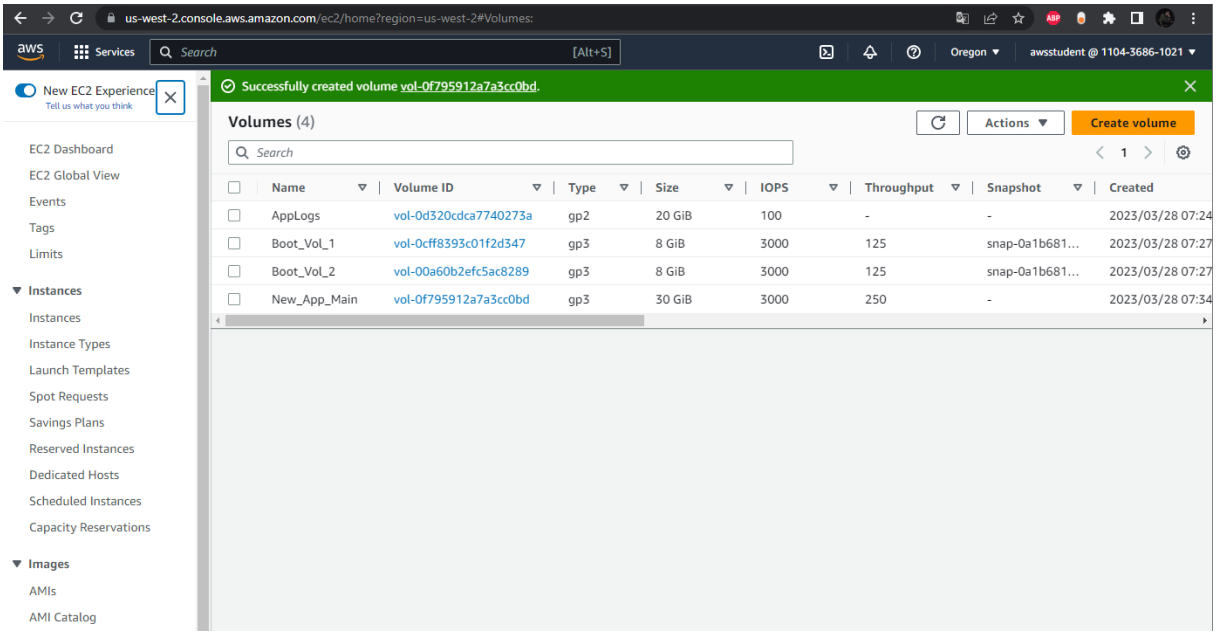
- Task 1.1: Name existing EBS volumes.



- Renaming the volumes.

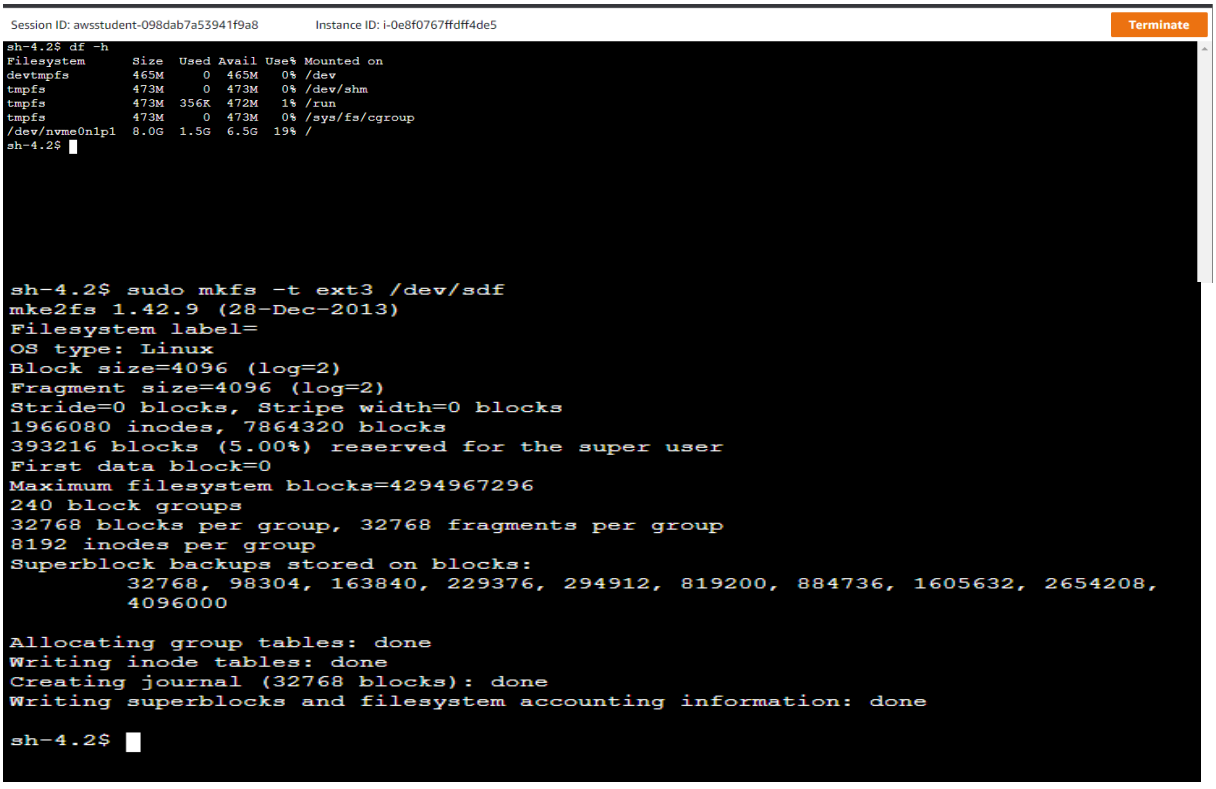
Introduction to Amazon Elastic Block Store (Amazon EBS).

- Task 1.2: Create an EBS volume and Task 1.3: Attach EBS volume to an EC2 instance.



- Creating a new volume.

Task 2: Create and configure a file system on an attached EBS volume.



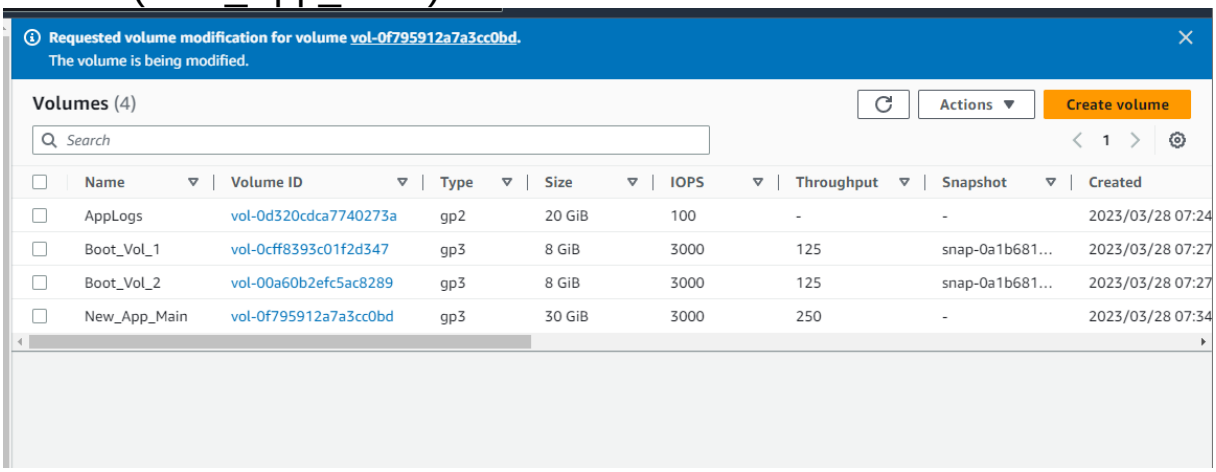
- df –h for checking the free disk space available, and creating a file system.

```
sh-4.2$ sudo mkdir /mnt/data-store
sh-4.2$ sudo mount /dev/sdf /mnt/data-store
sh-4.2$ echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
sh-4.2$ cat /etc/fstab
#
UUID=9da90cbe-ac2c-449c-ba5c-c06e3466d676     /           xfs    defaults,noatime  1   1
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  356K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     30G  156K   28G   1% /mnt/data-store
sh-4.2$
```

- Creating directory, attaching file system to the storage device.

Task 3: Modify the EBS volume size and expand the file system on the volume.

- 3.1: Modify the size of an existing EBS volume(New_App_Main).



- 3.2: Expand the volume of your file system.

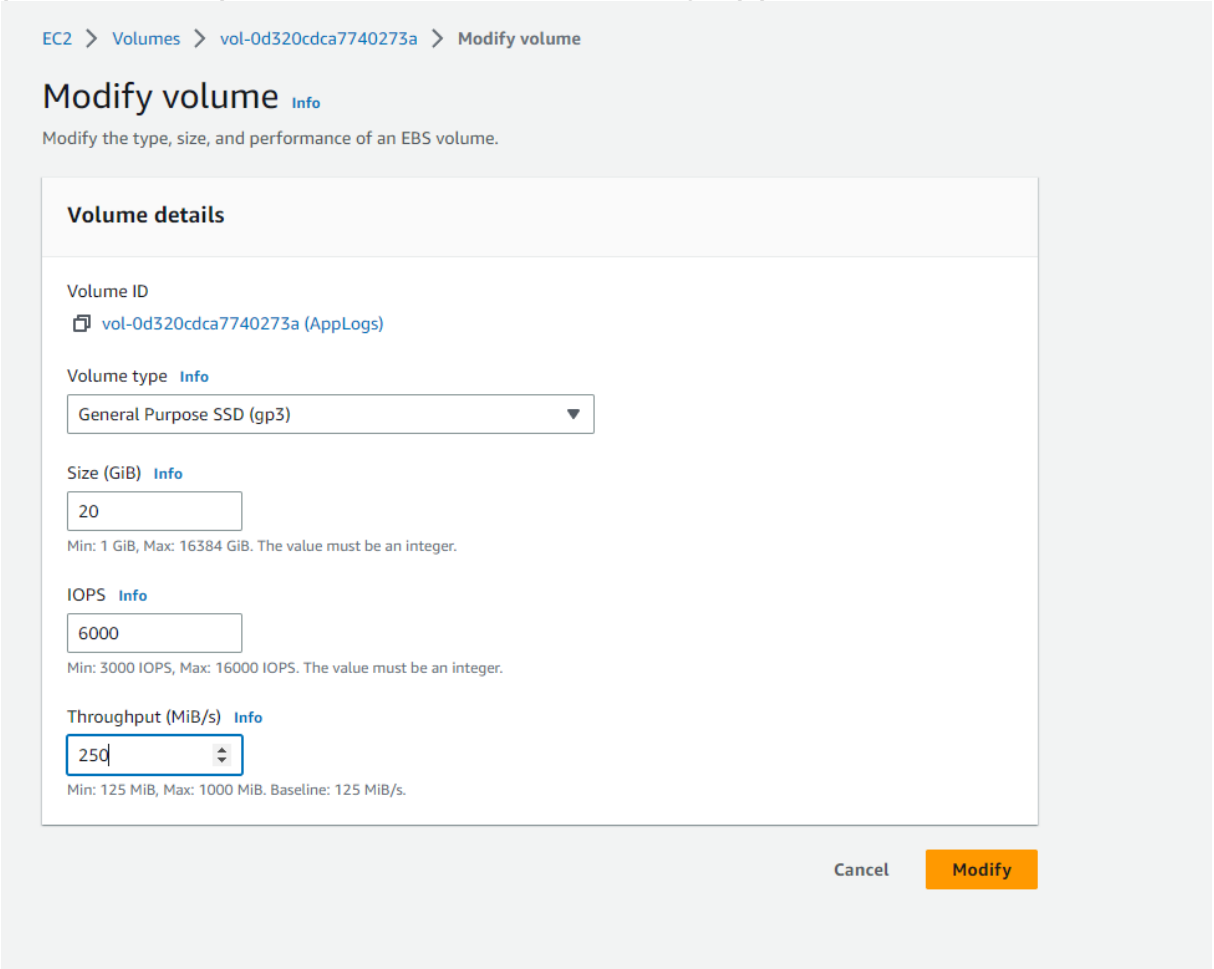
```
sh-4.2$ lsblk
NAME          MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
nvme0n1       259:0    0   8G  0 disk
├─nvme0n1p1   259:1    0   8G  0 part /
└─nvme0n1p128 259:2    0   1M  0 part
nvme1n1       259:3    0  50G  0 disk /mnt/data-store
sh-4.2$
```

- Listing all available block devices.

```
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  356K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
```

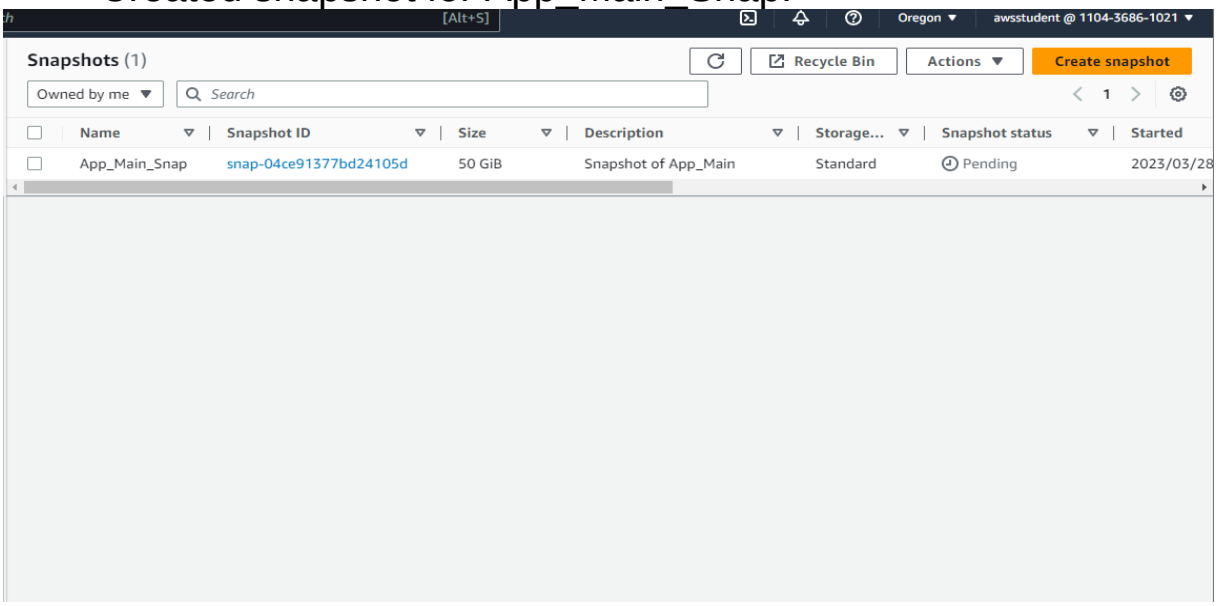
- Resized file system from 30 to 50 GB.

Task 4: Modify the EBS volume type (attached to EC2 instance) and provisioned performance for an existing application.

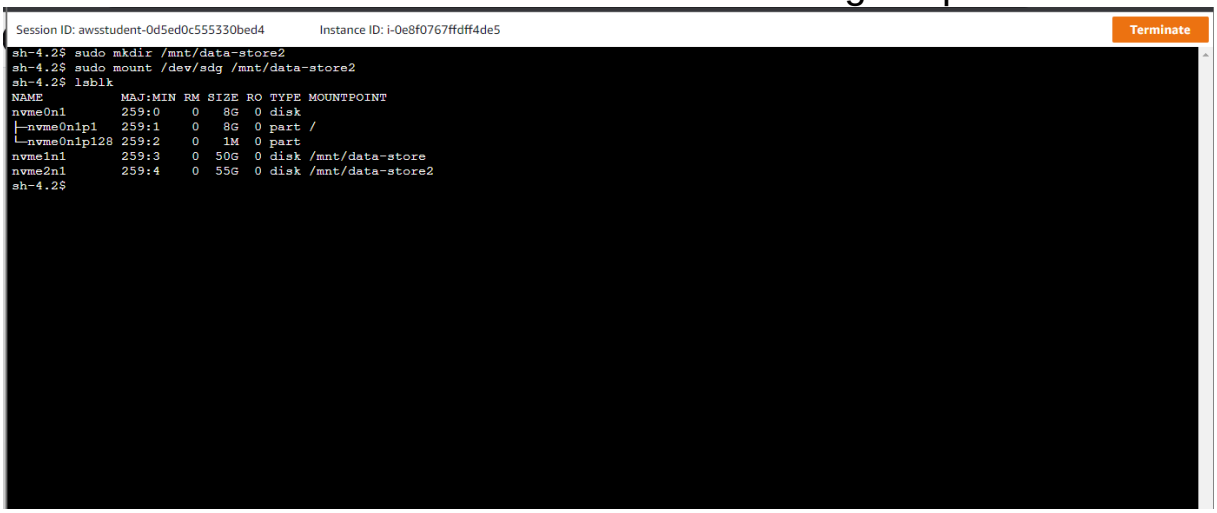


Task 5: Configure a snapshot for an existing EBS volume.

- Created snapshot for App_Main_Snap.



Task 6: Restore an EBS volume from an existing snapshot.



- Session manager on the replica EC2 instance.

```
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  420K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
tmpfs            95M     0   95M   0% /run/user/0
/dev/nvme2n1     50G  160K   47G   1% /mnt/data-store2
sh-4.2$ sudo resize2fs /dev/nvme2n1
resize2fs 1.42.9 (28-Dec-2013)
Filesystem at /dev/nvme2n1 is mounted on /mnt/data-store2; on-line resizing required
old_desc_blocks = 4, new_desc_blocks = 4
The filesystem on /dev/nvme2n1 is now 14417920 blocks long.

sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  420K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
tmpfs            95M     0   95M   0% /run/user/0
/dev/nvme2n1     54G  160K   52G   1% /mnt/data-store2
sh-4.2$ ls /mnt/data-store2/
file.txt  lost+found
sh-4.2$ cat /mnt/data-store2/file.txt
some text has been written
sh-4.2$
```

- Resizing the file system(the first and second sizes didn't match):
  -/dev/nvm2n1 -> 50G and -/dev/nvm2n1 ->54G.

(Challenge) Task 7:

```
Session ID: awsstudent-05ad98c23a6e7ecdb          Instance ID: i-0e8f0767ffdff4de5
sh-4.2$ sudo mkfs -t ext3 /dev/sdh
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
3276800 inodes, 13107200 blocks
655360 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=4294967296
400 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

sh-4.2$
```

- The output from the challenge task: Creating ext3 Linux file system.

```
sh-4.2$ sudo mkdir /mnt/performance-store
sh-4.2$ sudo mount /dev/sdh /mnt/performance-store
sh-4.2$ echo "/dev/sdh /mnt/performance-store ext3 defaults, noatime 1 2" | sudo tee -a /etc/fstab
/dev/sdh /mnt/performance-store ext3 defaults, noatime 1 2
sh-4.2$ cat /etc/fstab
#
UUID=9da90cbe-ac2c-449c-ba5c-c06e3466d676     /           xfs    defaults,noatime  1   1
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
/dev/sdh /mnt/performance-store ext3 defaults, noatime 1 2
sh-4.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        465M     0  465M   0% /dev
tmpfs           473M     0  473M   0% /dev/shm
tmpfs           473M  428K  472M   1% /run
tmpfs           473M     0  473M   0% /sys/fs/cgroup
/dev/nvme0n1p1  8.0G  1.5G  6.5G  19% /
/dev/nvme1n1     50G  160K   47G   1% /mnt/data-store
tmpfs            95M     0   95M   0% /run/user/0
/dev/nvme2n1     54G  160K   52G   1% /mnt/data-store2
/dev/nvme3n1     50G  156K   47G   1% /mnt/performance-store
sh-4.2$ sudo sh -c "echo some text has been written > /mnt/performance-store/file.txt"
sh-4.2$ cat /mnt/performance-store/file.txt
some text has been written
sh-4.2$
```

- From the challenge: Creating directory, mount a new storage volume, mount this volume.