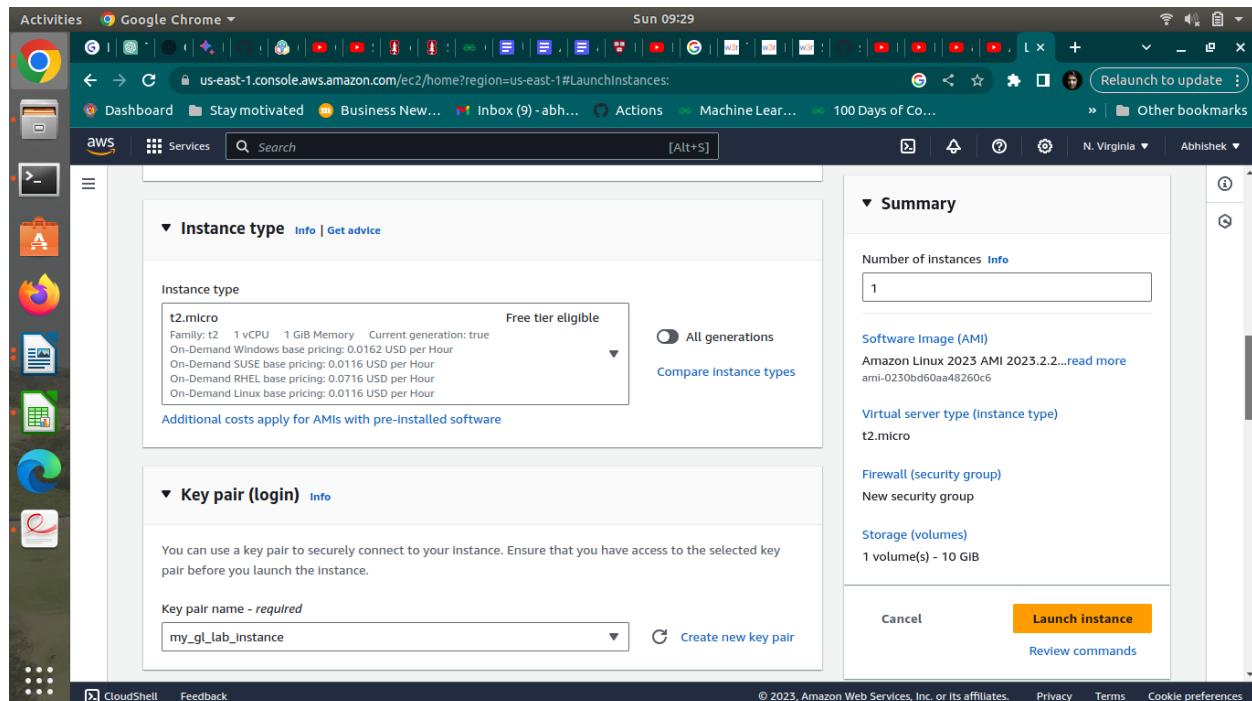
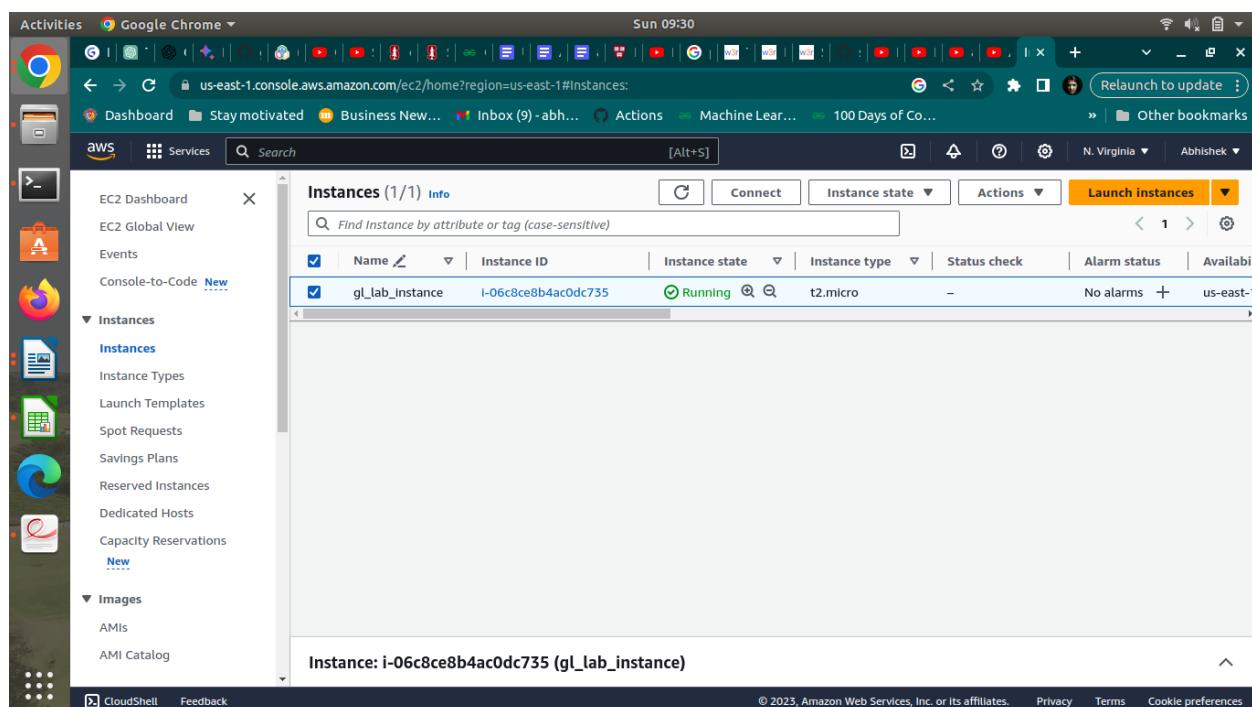


1. Ensure Your region is set to “N Virginia”
2. Create 1 EC2 Instance using the 7 step workflow
  - a. Use the usual Amazon Linux AMI in AZ1
  - b. Download a new PEM file and ssh to the instance



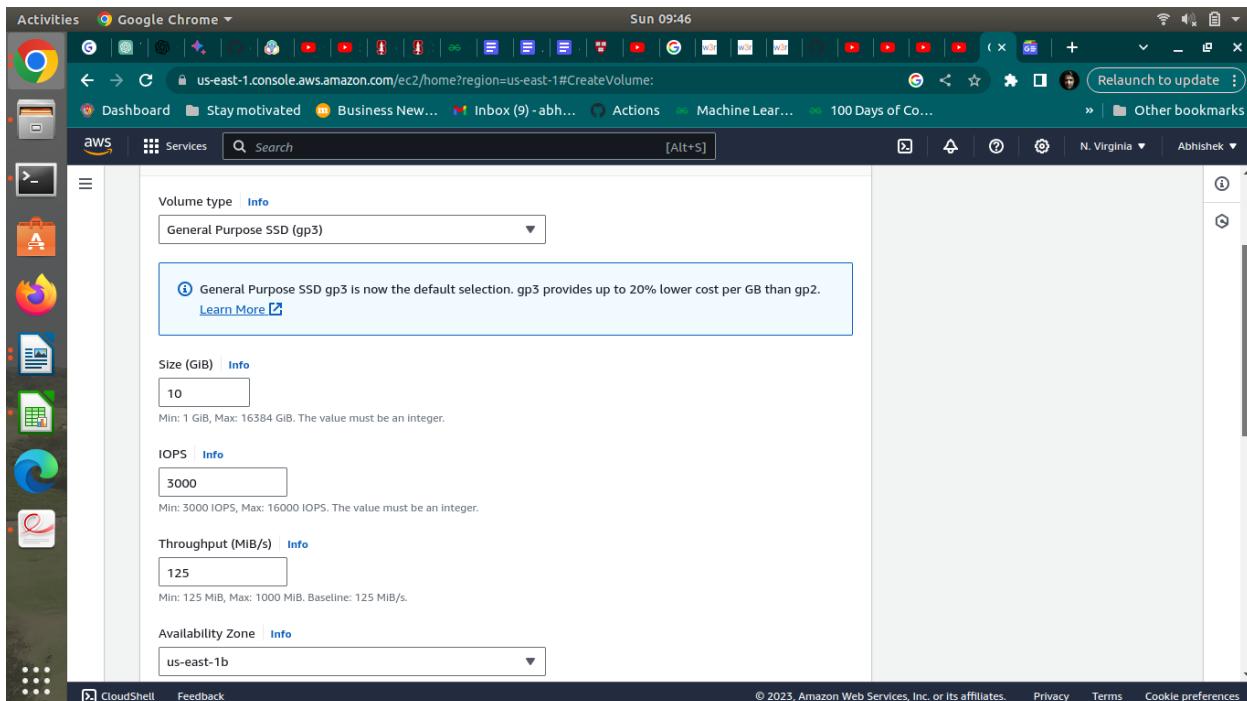
The screenshot shows the AWS Cloud9 IDE interface. On the left, there's a sidebar with various icons for different services like Lambda, CloudWatch, and CloudFront. The main area is titled "Instance type" and shows a dropdown menu for selecting an instance type. The selected option is "t2.micro", which is described as having 1 vCPU and 1 GB Memory, with a note that it's "Free tier eligible". Below this, there's a section for "Key pair (login)" where the key pair "my\_gl\_lab\_instance" is selected. To the right, there's a "Summary" panel that provides details about the instance: it's a "t2.micro" instance with an "Amazon Linux 2023 AMI 2023.2.2" software image, running on a "New security group", and using a "1 volume(s) - 10 GiB" storage volume. At the bottom right of the summary panel is a prominent yellow "Launch instance" button.

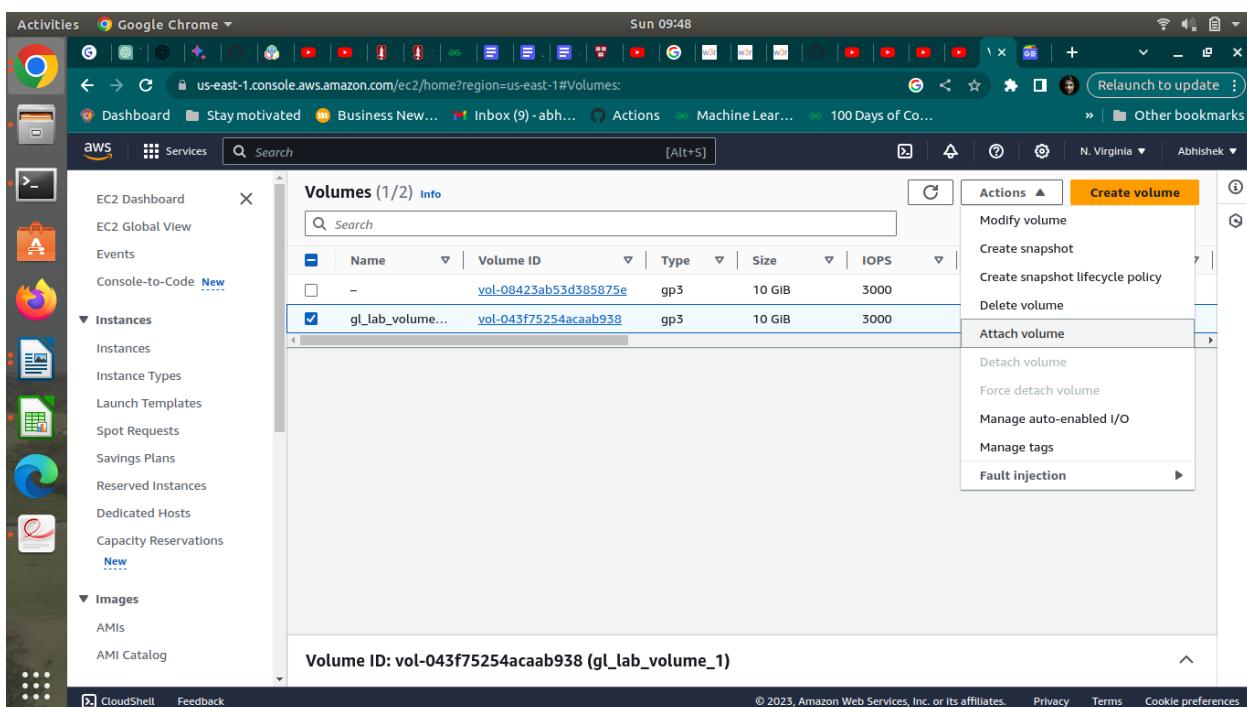
The screenshot shows the AWS EC2 Instances page. The sidebar on the left has sections for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances (which is currently selected), Instances Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and AMI Catalog. The main content area displays a table titled "Instances (1/1) info". It shows one instance named "gl\_lab\_instance" with the ID "i-06c8ce8b4ac0dc735". The instance is listed as "Running" and is of type "t2.micro". At the top of the instances table, there are buttons for "Launch instances" and other actions. Below the table, there's a detailed view for the instance "gl\_lab\_instance" with its specific configuration and status.

### 3. Volumes

- a. Use the console to get a 10G magnetic volume in the same AZ1
- b. Attach the volume to the instance
- c. Format the volume and mount it
- d. Create a sample text file in the volume to simulate data creation
- e. Unmount, detach the volume



The screenshot shows the AWS Cloud9 IDE interface. A modal window titled "Create Volume" is open, allowing configuration of a new volume. The "Volume type" is set to "General Purpose SSD (gp3)". The "Size (GiB)" is set to 10. The "IOPS" value is 3000. The "Throughput (MiB/s)" value is 125. The "Availability Zone" is set to "us-east-1b". The URL in the browser is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateVolume".



The screenshot shows the AWS EC2 Volumes page. It displays a table of volumes, with one row selected. The selected volume has a Name of "gl\_lab\_volume\_1", a Volume ID of "vol-043f75254acaab938", a Type of "gp3", a Size of "10 GiB", and IOPS of "3000". The "Actions" menu for this volume includes options like "Modify volume", "Create snapshot", "Delete volume", "Attach volume", "Detach volume", "Force detach volume", "Manage auto-enabled I/O", "Manage tags", and "Fault injection". The URL in the browser is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes".

Activities Google Chrome ▾ Sun 09:49

Relaunch to update ↗

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aws Services Search [Alt+S]

Basic details

Volume ID vol-043f75254acaab938 (gl\_lab\_volume\_1)

Availability Zone us-east-1b

Instance: Info I-06c8ce8b4ac0dc735

Only instances in the same Availability Zone as the selected volume are displayed.

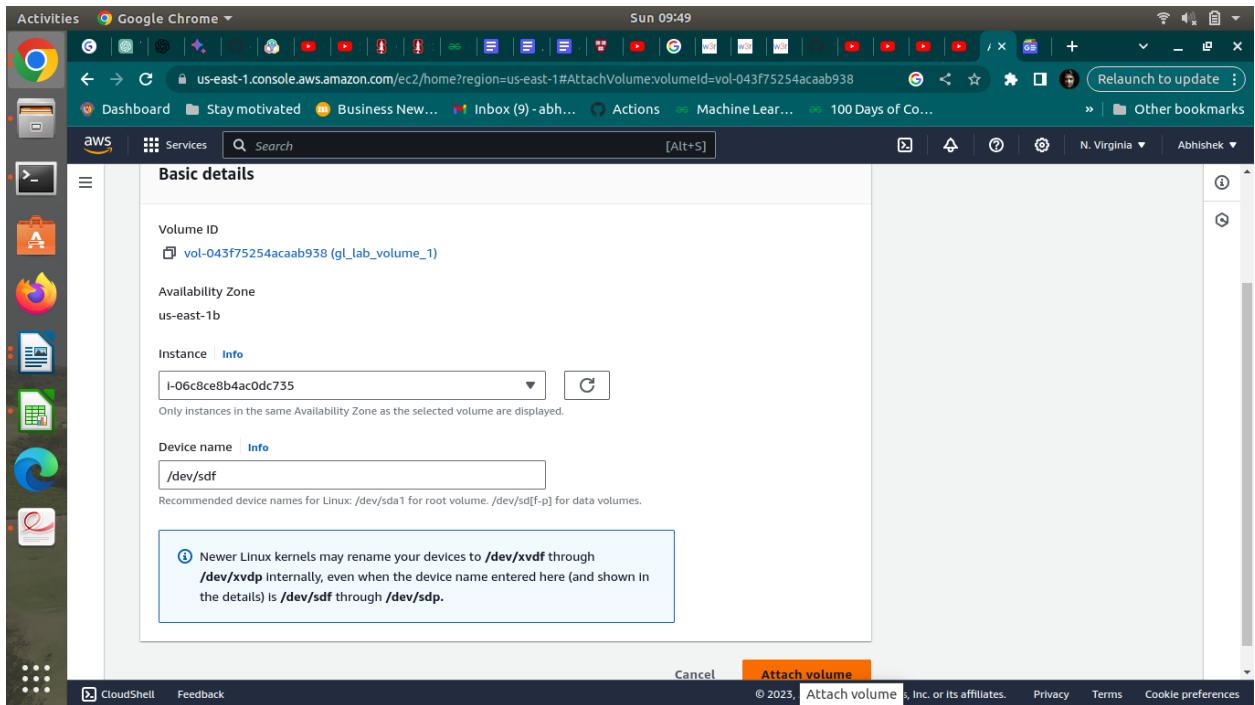
Device name: Info /dev/sdf

Recommended device names for Linux: /dev/sda1 for root volume. /dev/sdf[f-p] for data volumes.

ⓘ Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

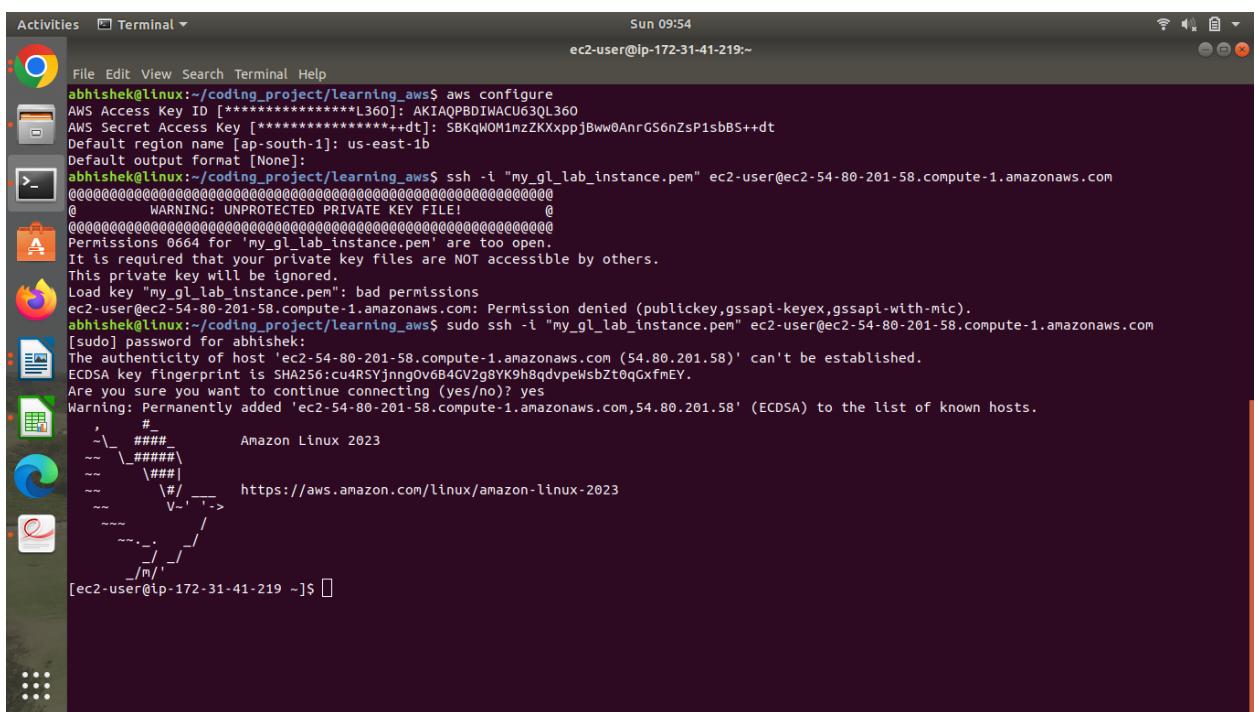
Cancel Attach volume

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Activities Terminal ▾ Sun 09:54 ec2-user@ip-172-31-41-219:~

```
File Edit View Search Terminal Help
abhishhek@linux:~/coding_project/learning_aws$ aws configure
AWS Access Key ID [*****L360]: AKIAQPBDIWACU63QL360
AWS Secret Access Key [*****dt]: SBKqWOMinzZXxppjBww0AnrGS6nZsP1sbBS5++dt
Default region name [ap-south-1]: us-east-1b
Default output format [None]:
abhishhek@linux:~/coding_project/learning_aws$ ssh -i "my_gl_lab_instance.pem" ec2-user@ec2-54-80-201-58.compute-1.amazonaws.com
@WARNING: UNPROTECTED PRIVATE KEY FILE!
Permissions 0664 for 'my_gl_lab_instance.pem' are too open.
It is required that your private key files are NOT accessible by others.
This private key will be ignored.
Load key "my_gl_lab_instance.pem": bad permissions
ec2-user@ec2-54-80-201-58.compute-1.amazonaws.com: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
abhishhek@linux:~/coding_project/learning_aws$ sudo ssh -i "my_gl_lab_instance.pem" ec2-user@ec2-54-80-201-58.compute-1.amazonaws.com
[sudo] password for abhishhek:
The authenticity of host 'ec2-54-80-201-58.compute-1.amazonaws.com (54.80.201.58)' can't be established.
ECDSA key fingerprint is SHA256:cu4R5YjnngOv6B4GV2g8YK9h8qdpeWsbt0qGxfmEY.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-54-80-201-58.compute-1.amazonaws.com,54.80.201.58' (ECDSA) to the list of known hosts.
,
  _#
  ~\_ ####_
  ~~ \####\
  ~~  \##|
  ~~   \#/ __ https://aws.amazon.com/linux/amazon-linux-2023
  ~~   V~`-> /
  ~~   .-. _/
  ~~   /_/
  ~~   /_/
[ec2-user@ip-172-31-41-219 ~]$
```



Activities Terminal Sun 09:58 ec2-user@ip-172-31-41-219:~

```
[ec2-user@ip-172-31-41-219 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0  4.0M  0% /dev
tmpfs          475M   0  475M  0% /dev/shm
tmpfs          190M  2.9M 188M  2% /run
/dev/xvda       10G  1.5G  8.5G 16% /
tmpfs          475M   0  475M  0% /tmp
/dev/xvda128     10M  1.3M  8.7M 13% /boot/efi
tmpfs          95M   0  95M  0% /run/user/1000
[ec2-user@ip-172-31-41-219 ~]$ lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda   202:0    0   10G  0 disk
└─xvda1  202:1    0   10G  0 part /
xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0   10M  0 part /boot/efi
xvdf   202:80   0   10G  0 disk
[ec2-user@ip-172-31-41-219 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: Linux rev 1.0 ext4 filesystem data, UUID=8c88b83d-cba7-4e50-a3af-b4d955e0f0b3 (extents) (64bit) (large files) (huge files)
[ec2-user@ip-172-31-41-219 ~]$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.46.5 (30-Dec-2021)
/dev/xvdf contains an ext4 file system
        created on Sun Dec  3 04:26:52 2023
Proceed anyway? (y,N) y
Creating filesystem with 2621440 4k blocks and 655360 inodes
Filesystem UUID: 1c2a0452-49f4-42f5-afff-867442131166
Superblock backups stored on blocks:
            32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632
Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done
[ec2-user@ip-172-31-41-219 ~]$ 
```

Activities Terminal Sun 10:02 ec2-user@ip-172-31-41-219:/appdata

```
[ec2-user@ip-172-31-41-219 ~]$ lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda   202:0    0   10G  0 disk
└─xvda1  202:1    0   10G  0 part /
xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0   10M  0 part /boot/efi
xvdf   202:80   0   10G  0 disk
[ec2-user@ip-172-31-41-219 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: Linux rev 1.0 ext4 filesystem data, UUID=8c88b83d-cba7-4e50-a3af-b4d955e0f0b3 (extents) (64bit) (large files) (huge files)
[ec2-user@ip-172-31-41-219 ~]$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.46.5 (30-Dec-2021)
/dev/xvdf contains an ext4 file system
        created on Sun Dec  3 04:26:52 2023
Proceed anyway? (y,N) y
Creating filesystem with 2621440 4k blocks and 655360 inodes
Filesystem UUID: 1c2a0452-49f4-42f5-afff-867442131166
Superblock backups stored on blocks:
            32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632
Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done
[ec2-user@ip-172-31-41-219 ~]$ sudo mkdir /appdata
[ec2-user@ip-172-31-41-219 ~]$ cd appdata
-bash: cd: appdata: No such file or directory
[ec2-user@ip-172-31-41-219 ~]$ cd /appdata
[ec2-user@ip-172-31-41-219 appdata]$ sudo mount /dev/xvdf /appdata
[ec2-user@ip-172-31-41-219 appdata]$ ls
[ec2-user@ip-172-31-41-219 appdata]$ lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda   202:0    0   10G  0 disk
└─xvda1  202:1    0   10G  0 part /
xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0   10M  0 part /boot/efi
xvdf   202:80   0   10G  0 disk /appdata
[ec2-user@ip-172-31-41-219 appdata]$ 
```

Activities Terminal ▾ Sun 10:05  
ec2-user@ip-172-31-41-219:/appdata

```
Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-41-219 ~]$ sudo mkdir /appdata
[ec2-user@ip-172-31-41-219 ~]$ cd appdata
-bash: cd: appdata: No such file or directory
[ec2-user@ip-172-31-41-219 appdata]$ sudo mount /dev/xvdf /appdata
[ec2-user@ip-172-31-41-219 appdata]$ ls
[ec2-user@ip-172-31-41-219 appdata]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk 
└─xvda1  202:1    0 10G  0 part /
xvda127 259:0    0   1M  0 part 
└─xvda128 259:1   0 10M  0 part /boot/efi
xvdf    202:80   0 10G  0 disk /appdata
[ec2-user@ip-172-31-41-219 appdata]$ sudo echo 11 This is a sample file 11 > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ sudo echo "This is a sample fil" > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ echo "This is a sample fil" > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ pwd
/appdata
[ec2-user@ip-172-31-41-219 appdata]$ touch sample{1..5}.txt
touch: cannot touch 'sample1.txt': Permission denied
touch: cannot touch 'sample2.txt': Permission denied
touch: cannot touch 'sample3.txt': Permission denied
touch: cannot touch 'sample4.txt': Permission denied
touch: cannot touch 'sample5.txt': Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ ls
sample1.txt sample2.txt sample3.txt sample4.txt sample5.txt
[ec2-user@ip-172-31-41-219 appdata]$
```

Activities Terminal ▾ Sun 10:09  
ec2-user@ip-172-31-41-219:/

```
File Edit View Search Terminal Help
└─xvda128 259:1   0 10M  0 part /boot/efi
xvdf     202:80   0 10G  0 disk /appdata
[ec2-user@ip-172-31-41-219 appdata]$ sudo echo 11 This is a sample file 11 > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ sudo echo "This is a sample fil" > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ echo "This is a sample fil" > /appdata/sample.txt
-bash: /appdata/sample.txt: Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ pwd
/appdata
[ec2-user@ip-172-31-41-219 appdata]$ touch sample{1..5}.txt
touch: cannot touch 'sample1.txt': Permission denied
touch: cannot touch 'sample2.txt': Permission denied
touch: cannot touch 'sample3.txt': Permission denied
touch: cannot touch 'sample4.txt': Permission denied
touch: cannot touch 'sample5.txt': Permission denied
[ec2-user@ip-172-31-41-219 appdata]$ sudo touch sample{1..5}.txt
[ec2-user@ip-172-31-41-219 appdata]$ ls
sample1.txt sample2.txt sample3.txt sample4.txt sample5.txt
[ec2-user@ip-172-31-41-219 appdata]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk 
└─xvda1  202:1    0 10G  0 part /
xvda127 259:0    0   1M  0 part 
└─xvda128 259:1   0 10M  0 part /boot/efi
xvdf    202:80   0 10G  0 disk /appdata
[ec2-user@ip-172-31-41-219 appdata]$ cd ..
[ec2-user@ip-172-31-41-219 ~]$ sudo umount /dev/xvdf
sudo: umount: command not found
[ec2-user@ip-172-31-41-219 ~]$ sudo umount /dev/xvdf
[ec2-user@ip-172-31-41-219 ~]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk 
└─xvda1  202:1    0 10G  0 part /
xvda127 259:0    0   1M  0 part 
└─xvda128 259:1   0 10M  0 part /boot/efi
xvdf    202:80   0 10G  0 disk
[ec2-user@ip-172-31-41-219 ~]$
```

Activities Google Chrome ▾ Sun 10:13

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Volumes (1/2) Info

Name	Volume ID	Type	Size	IOPS
-	vol-08423ab53d385875e	gp3	10 GiB	3000
<input checked="" type="checkbox"/> gl_lab_volume...	vol-043f75254acaab938	gp3	10 GiB	3000

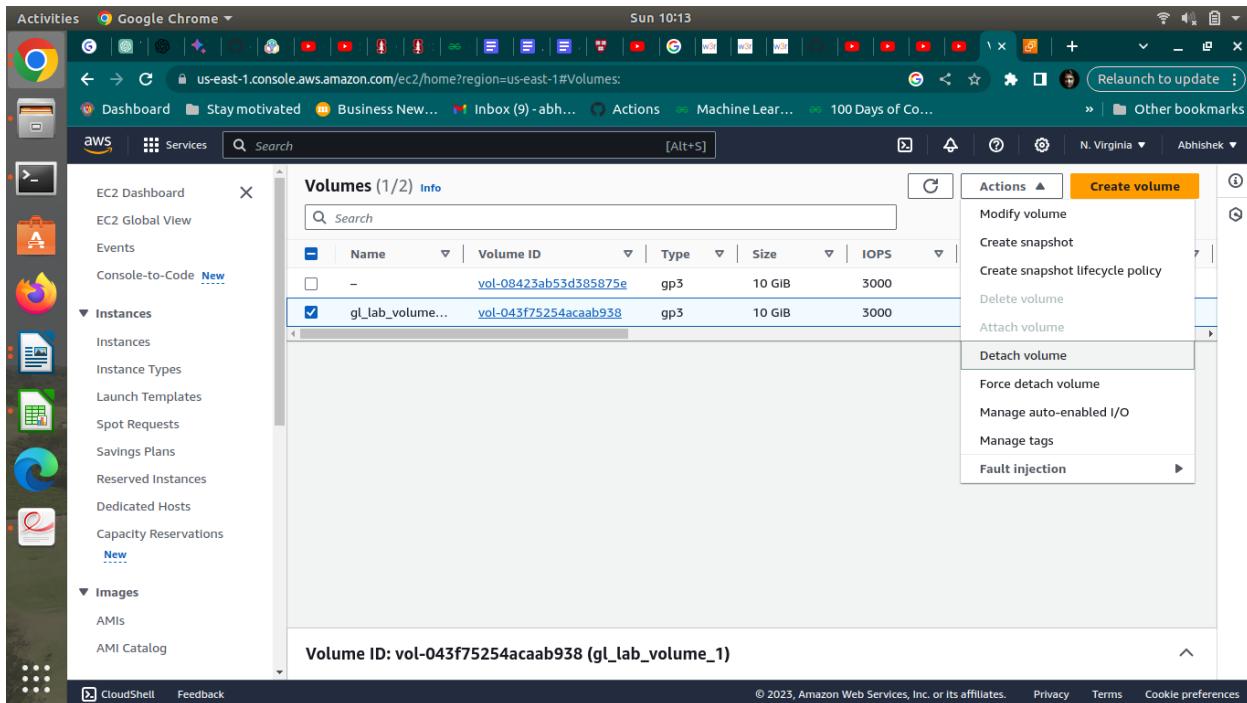
Actions ▾ Create volume

- Modify volume
- Create snapshot
- Create snapshot lifecycle policy
- Delete volume
- Attach volume
- Detach volume
- Force detach volume
- Manage auto-enabled I/O
- Manage tags
- Fault injection

Volume ID: vol-043f75254acaab938 (gl\_lab\_volume\_1)

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Activities Google Chrome ▾ Sun 10:13

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Volumes (1/2) Info

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
-	vol-08423ab53d385875e	gp3	10 GiB	3000	125	snap-015ca71...
<input checked="" type="checkbox"/> gl_lab_volume...	vol-043f75254acaab938	gp3	10 GiB	3000	125	-

Actions ▾ Create volume

Detach vol-043f75254acaab938?

After you detach a volume, you might still be charged for volume storage. If you no longer need the volume, delete it to stop incurring charges.

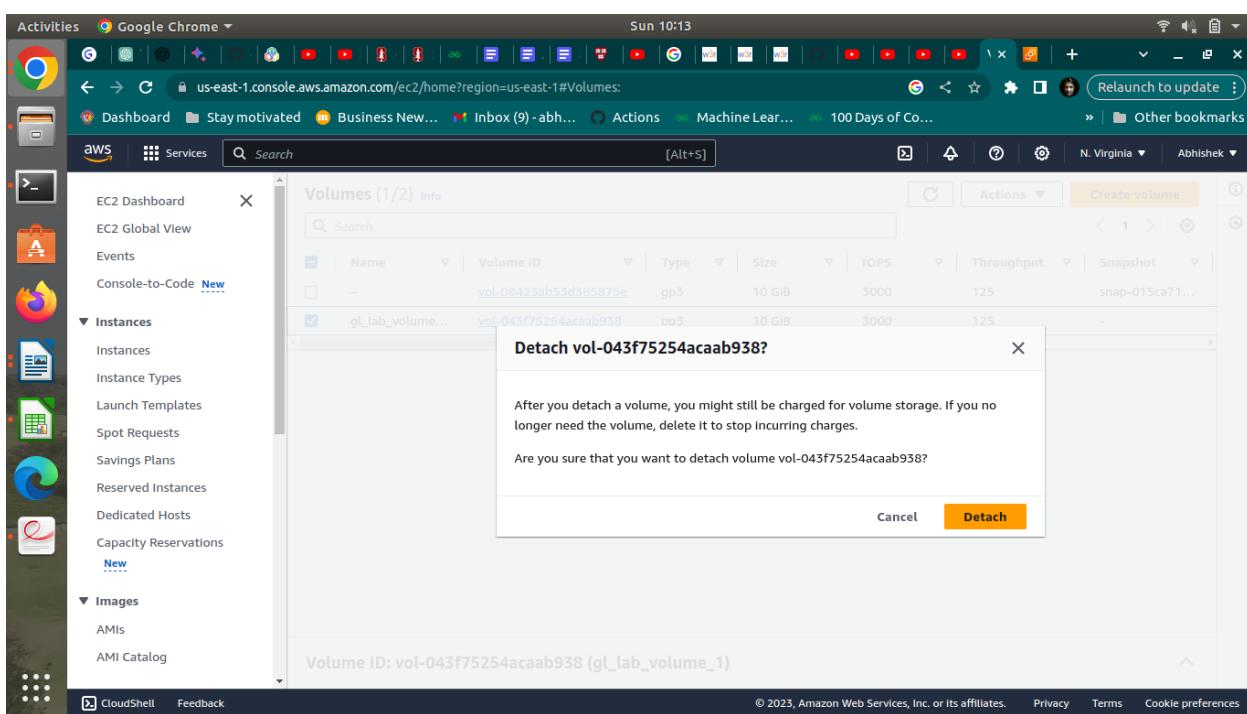
Are you sure that you want to detach volume vol-043f75254acaab938?

Cancel Detach

Volume ID: vol-043f75254acaab938 (gl\_lab\_volume\_1)

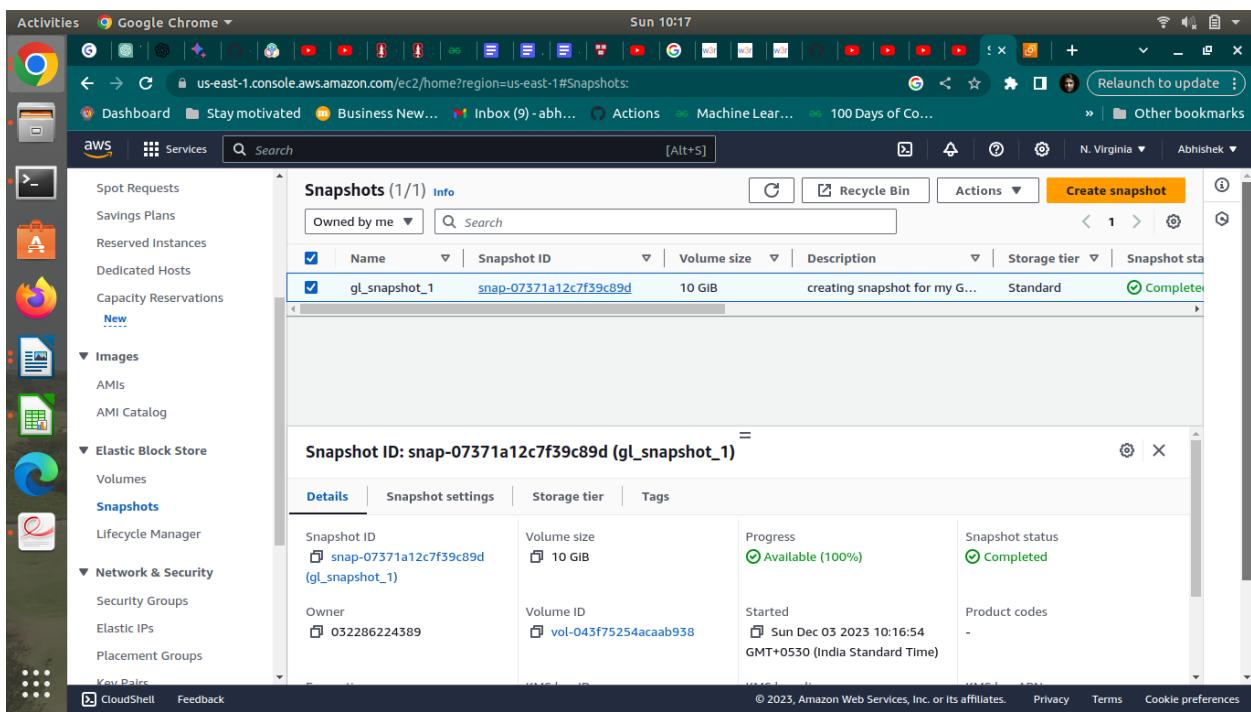
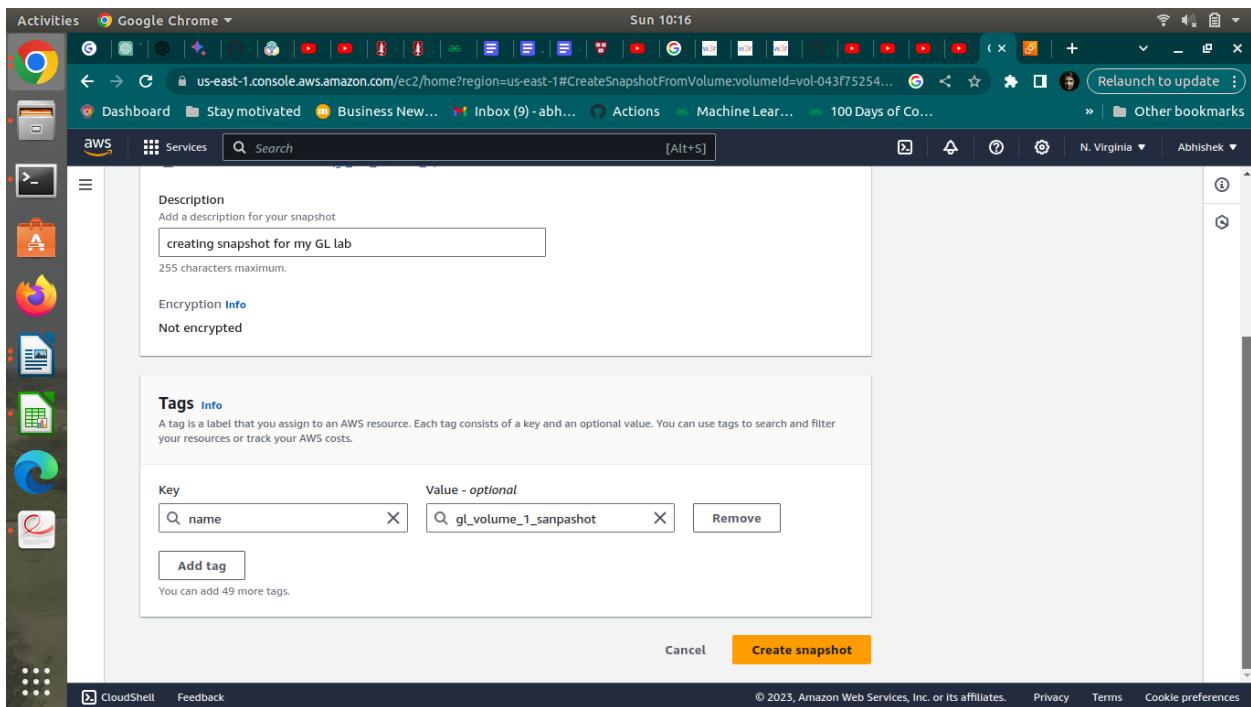
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#### 4. Snapshot

- Create a snapshot of the detached Volume
- Create a new SSD volume of 15G and apply the snapshot to it
- Attach, mount and check if the data is there



Activities Google Chrome ▾ Sun 10:54 Relaunch to update

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

EC2 > Snapshots > snap-07371a12c7f39c89d > Create volume

### Create volume info

Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.

**Volume settings**

Snapshot ID: snap-07371a12c7f39c89d (gl\_snapshot\_1)

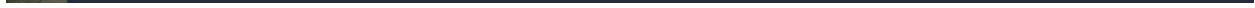
Volume type: General Purpose SSD (gp3)

General Purpose SSD gp3 is now the default selection. gp3 provides up to 20% lower cost per GB than gp2. [Learn More](#)

Size (GiB): 15

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

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Activities Google Chrome ▾ Sun 10:55 Relaunch to update

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aws Services Search [Alt+S]

Tags - optional info

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - optional
snapshot_volume_1	Enter value

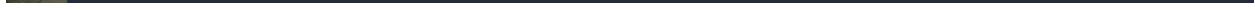
Add tag You can add 49 more tags.

**Snapshot summary**

Click refresh to view backup information  
The volume type that you select and the tags that you assign determine whether the volume will be backed up by any Data Lifecycle Manager policies.

Cancel **Create volume**

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Activities Google Chrome ▾ Sun 10:56

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

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aws Services Search [Alt+S]

Volumes (1/3) Info

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
-	vol-08423ab53d385875e	gp3	10 GiB	3000	125	snap-015ca71...
gl_lab_volume...	vol-043f75254acab938	gp3	10 GiB	3000	125	-
<input checked="" type="checkbox"/> snapshot_volum...	vol-0a01eb1bc987314f1	gp3	15 GiB	3000	125	snap-07371a1...

Actions Create volume

Volume ID: vol-0a01eb1bc987314f1 (snapshot\_volume\_1)

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Activities Google Chrome ▾ Sun 10:57

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Successfully attached volume vol-0a01eb1bc987314f1 to Instance i-06c8ce8b4ac0dc735.

Volumes (3) Info

Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state
10 GiB	3000	125	snap-015ca71...	2023/12/03 09:29 GMT+5:...	us-east-1b	<span>In-use</span>
10 GiB	3000	125	-	2023/12/03 09:47 GMT+5:...	us-east-1b	<span>Available</span>
15 GiB	3000	125	snap-07371a1...	2023/12/03 10:55 GMT+5:...	us-east-1b	<span>In-use</span>

Actions Create volume

Summary for all volumes in this Region

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Activities Terminal ▾ Sun 11:02  
ec2-user@ip-172-31-41-219:~

```
[ec2-user@ip-172-31-41-219 ~]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk
└─xvda1  202:1    0 10G  0 part /
  ├─xvda127 259:0  0  1M  0 part
  └─xvda128 259:1  0 10M  0 part /boot/efi
xvdf    202:80   0 15G  0 disk

[ec2-user@ip-172-31-41-219 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: linux rev 1.0 ext4 filesystem data, UUID=1c2a0452-49f4-42f5-af7f-867442131166 (extents) (large files) (huge files)

[ec2-user@ip-172-31-41-219 ~]$ sudo mkfs -t ext4 /dev/xvdf
mkfs: no device specified
Try 'mkfs --help' for more information.

[ec2-user@ip-172-31-41-219 ~]$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.46.5 (30-Dec-2021)
/dev/xvdf contains a ext4 file system
      last mounted on Sun Dec  3 04:32:09 2023
Proceed anyway? (y,N) y
Creating filesystem with 3932160 4k blocks and 983040 inodes
Filesystem UUID: 826fa604-1c7f-438d-961b-717b8714fa50
Superblock backups stored on blocks:
      32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-41-219 ~]$ cd/appdata
-bash: cd/appdata: No such file or directory
[ec2-user@ip-172-31-41-219 ~]$ sudo mkdir appdata
```

Activities Terminal ▾ Sun 11:04  
ec2-user@ip-172-31-41-219:/appdata

```
/dev/xvdf contains a ext4 file system
      last mounted on Sun Dec  3 04:32:09 2023
Proceed anyway? (y,N) y
Creating filesystem with 3932160 4k blocks and 983040 inodes
Filesystem UUID: 826fa604-1c7f-438d-961b-717b8714fa50
Superblock backups stored on blocks:
      32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-41-219 ~]$ cd/appdata
-bash: cd/appdata: No such file or directory
[ec2-user@ip-172-31-41-219 ~]$ sudo mkdir appdata
[ec2-user@ip-172-31-41-219 ~]$ cd /appdata
[ec2-user@ip-172-31-41-219 appdata]$ sudo mount /dev/xvdf/appdata
mount: /dev/xvdf/appdata: can't find in /etc/fstab.
[ec2-user@ip-172-31-41-219 appdata]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk
└─xvda1  202:1    0 10G  0 part /
  ├─xvda127 259:0  0  1M  0 part
  └─xvda128 259:1  0 10M  0 part /boot/efi
xvdf    202:80   0 15G  0 disk

[ec2-user@ip-172-31-41-219 appdata]$ sudo mount /dev/xvdf /appdata
[ec2-user@ip-172-31-41-219 appdata]$ lsblk
NAME   MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0 10G  0 disk
└─xvda1  202:1    0 10G  0 part /
  ├─xvda127 259:0  0  1M  0 part
  └─xvda128 259:1  0 10M  0 part /boot/efi
xvdf    202:80   0 15G  0 disk /appdata

[ec2-user@ip-172-31-41-219 appdata]$ ls
sample1.txt sample2.txt sample3.txt sample4.txt sample5.txt
[ec2-user@ip-172-31-41-219 appdata]$ sudo umount /dev/xvdf
[ec2-user@ip-172-31-41-219 appdata]$ 
```

1. Use the S3 browser console to create a bucket that is unique to the region
2. Use the CLI to
  - a. upload a few (non-sensitive) files from your local machine to S3 bucket
  - b. List the buckets
  - c. List the contents of buckets

Activities Google Chrome ▾ Sun 13:28

s3.console.aws.amazon.com/s3/buckets?region=us-west-2&bucketType=general

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aws Services Search [Alt+S]

Amazon S3 > Buckets

Account snapshot

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

View Storage Lens dashboard

General purpose buckets Directory buckets

General purpose buckets (2) [Info](#)

Buckets are containers for data stored in S3. [Learn more](#)

Find buckets by name

Name	AWS Region	Access	Creation date
gl-lab-bucket1	US East (N. Virginia) us-east-1	Objects can be public	December 3, 2023, 13:25:18 (UTC+05:30)
gl-lab-bucket2	US West (Oregon) us-west-2	Objects can be public	December 3, 2023, 13:27:04 (UTC+05:30)

Create bucket

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Activities Terminal ▾ Sun 13:53

abhishek@linux:~/coding\_project/learning\_aws\$ aws configure

AWS Access Key ID [\*\*\*\*\*L360]: AKIAQPBDIWACU63QL360

AWS Secret Access Key [\*\*\*\*\*dt]: SBKqWOMimzZKXppjBww0AnrGS6nZsP1sbBS++dt

Default region name [us-west-2]:

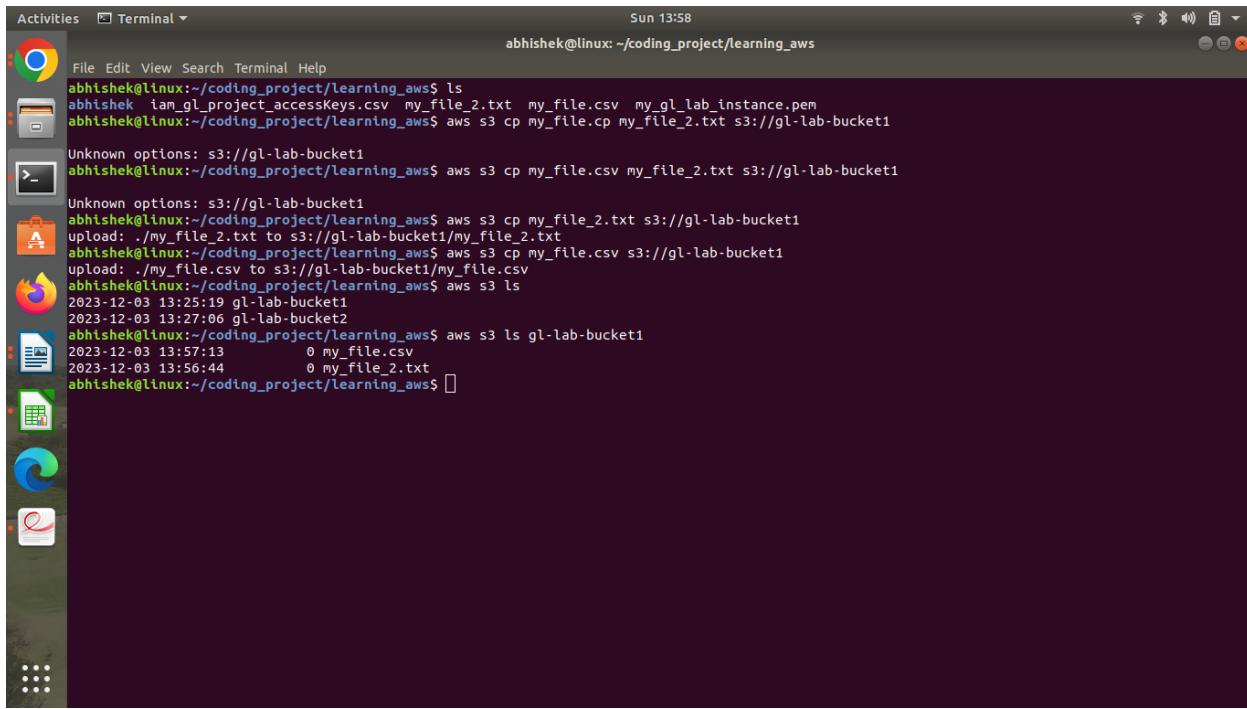
Default output format [None]:

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls

2023-12-03 13:25:19 gl-lab-bucket1

2023-12-03 13:27:06 gl-lab-bucket2

abhishek@linux:~/coding\_project/learning\_aws\$



A screenshot of an Ubuntu desktop environment. On the left is a dock with various icons: a browser, file manager, terminal, dash, system settings, calendar, and others. The main area shows a terminal window titled "Terminal". The terminal output is as follows:

```
Sun 13:58
abhishek@linux: ~/coding_project/learning_aws
File Edit View Search Terminal Help
abhishek@linux:~/coding_project/learning_aws$ ls
abhishek iam_gl_project_accessKeys.csv my_file_2.txt my_file.csv my_gl_lab_instance.pem
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file.csv my_file_2.txt s3://gl-lab-bucket1
Unknown options: s3://gl-lab-bucket1
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file.csv my_file_2.txt s3://gl-lab-bucket1
Unknown options: s3://gl-lab-bucket1
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file_2.txt s3://gl-lab-bucket1
upload: ./my_file_2.txt to s3://gl-lab-bucket1/my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file.csv s3://gl-lab-bucket1
upload: ./my_file.csv to s3://gl-lab-bucket1/my_file.csv
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls
2023-12-03 13:25:19 gl-lab-bucket1
2023-12-03 13:27:06 gl-lab-bucket2
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket1
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 13:56:44      0 my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$
```

### 3. Enable Versioning of the bucket

### 4. Enable cross region replication

Activities Google Chrome ▾ Sun 14:02

s3.console.aws.amazon.com/s3/bucket/gl-lab-bucket1/property/versioning/edit?region=us-east-1

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aws Services Search [Alt+S]

Amazon S3

- Buckets
- Access Grants New
- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- IAM Access Analyzer for S3

Block Public Access settings for this account

▼ Storage Lens

- Dashboards
- Storage Lens groups New
- AWS Organizations settings

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Suspend  
This suspends the creation of object versions for all operations but preserves any existing object versions.

Enable

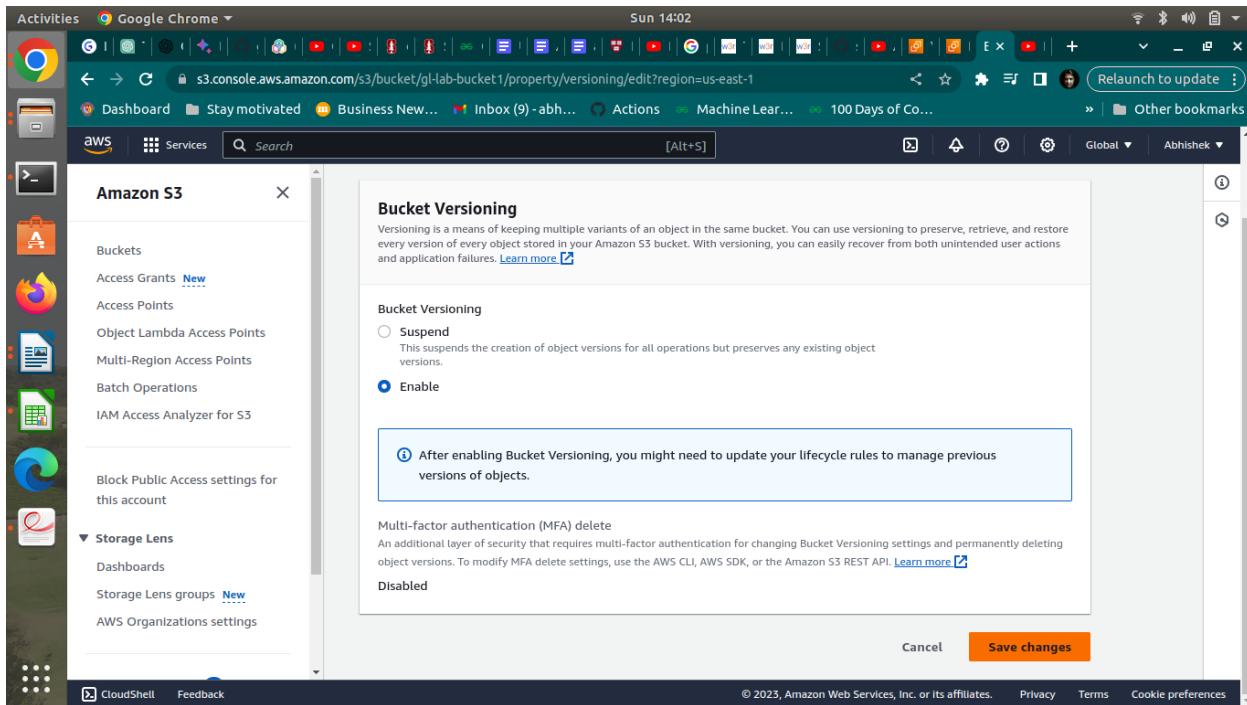
After enabling Bucket Versioning, you might need to update your lifecycle rules to manage previous versions of objects.

Multi-factor authentication (MFA) delete  
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. [Learn more](#)

Disabled

Cancel Save changes

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Activities Google Chrome ▾ Sun 14:18

s3.console.aws.amazon.com/s3/buckets/gl-lab-bucket2?region=us-west-2&tab=properties

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aws Services Search [Alt+S]

Amazon S3

- Buckets
- Access Grants New
- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- IAM Access Analyzer for S3

Block Public Access settings for this account

▼ Storage Lens

- Dashboards
- Storage Lens groups New
- AWS Organizations settings

Successfully edited Bucket Versioning  
To transition, archive, or delete older object versions, [configure lifecycle rules](#) for this bucket.

gl-lab-bucket2 info

Objects Properties Permissions Metrics Management Access Points

Bucket overview

AWS Region US West (Oregon) us-west-2	Amazon Resource Name (ARN) <a href="#">arn:aws:s3:::gl-lab-bucket2</a>	Creation date December 3, 2023, 13:27:04 (UTC+05:30)
--	---	---

Bucket Versioning

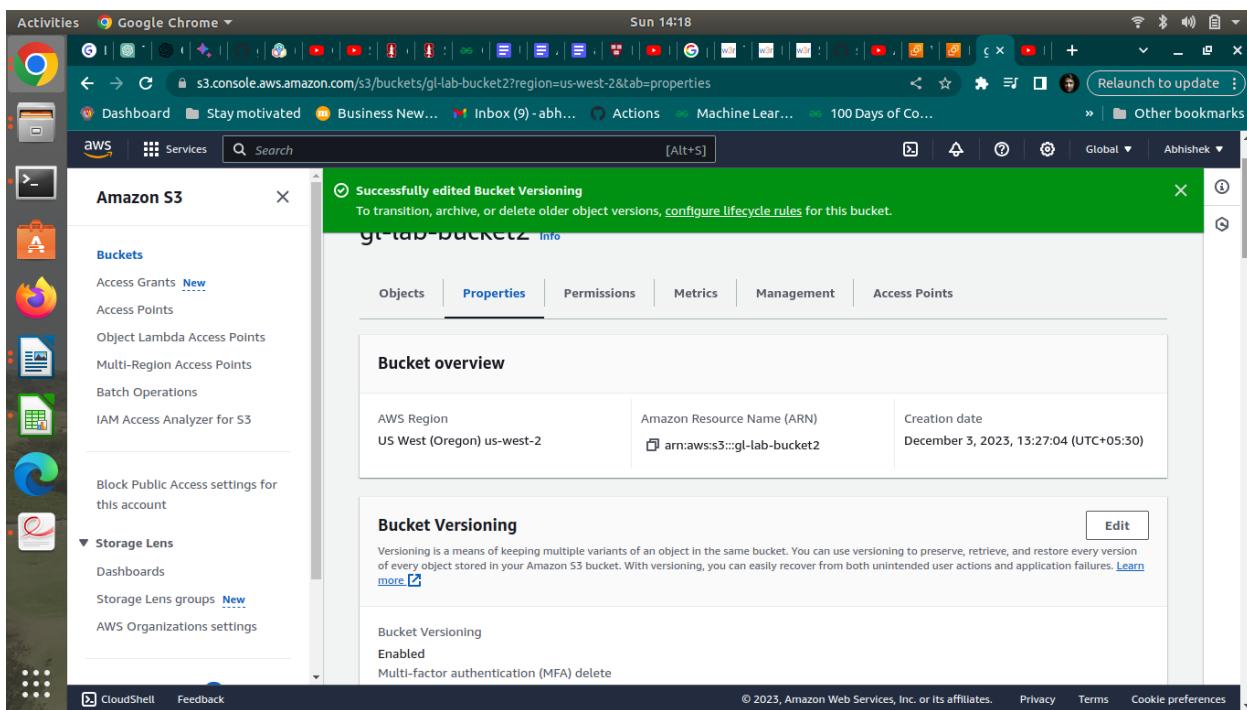
Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Enabled

Multi-factor authentication (MFA) delete

Edit

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Activities Google Chrome ▾ Sun 14:19

s3.console.aws.amazon.com/s3/buckets/gl-lab-bucket1?region=us-east-1&tab-management

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aws Services Search [Alt+S]

Amazon S3

Buckets Access Grants New Access Points Object Lambda Access Points Multi-Region Access Points Batch Operations IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens Dashboards Storage Lens groups New AWS Organizations settings

Create lifecycle rule

Replication rules (0)

Use replication rules to define options you want Amazon S3 to apply during replication such as server-side encryption, replica ownership, transitioning replicas to another storage class, and more. [Learn more](#)

View details Edit rule Delete Actions Create replication rule

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class	Replica owner
No replication rules							

You don't have any rules in the replication configuration.

Create replication rule

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This screenshot shows the 'Replication rules' section of the AWS S3 console. It includes a table header for replication rules and a message indicating 'No replication rules'. A 'Create replication rule' button is visible at the bottom right of the table area.

Activities Google Chrome ▾ Sun 14:20

s3.console.aws.amazon.com/s3/management/gl-lab-bucket1/replication/create?region=us-east-1

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aws Services Search [Alt+S]

Create replication rule [Info](#)

Replication rule configuration

Replication rule name  Up to 255 characters. In order to be able to use CloudWatch metrics to monitor the progress of your replication rule, the replication rule name must only contain English characters.

Status Choose whether the rule will be enabled or disabled when created.

Enabled

Disabled

Priority The priority value resolves conflicts that occur when an object is eligible for replication under multiple rules to the same destination. The rule is added to the configuration at the highest priority and the priority can be changed on the replication rules table.

0

Source bucket

Source bucket name

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This screenshot shows the 'Create replication rule' configuration page. It includes fields for 'Replication rule name' (set to 'bucketReplication'), 'Status' (set to 'Enabled'), and 'Priority' (set to 0). Below these are sections for 'Source bucket' and 'Destination bucket'.

Activities Google Chrome ▾ Sun 14:20

s3.console.aws.amazon.com/s3/management/gl-lab-bucket1/replication/create?region=us-east-1 Relaunch to update

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AWS Services Search [Alt+S]

**Destination**

**Destination**  
You can replicate objects across buckets in different AWS Regions (Cross-Region Replication) or you can replicate objects across buckets in the same AWS Region (Same-Region Replication). You can also specify a different bucket for each rule in the configuration. [Learn more](#) or see [Amazon S3 pricing](#).

Choose a bucket in this account  
 Specify a bucket in another account

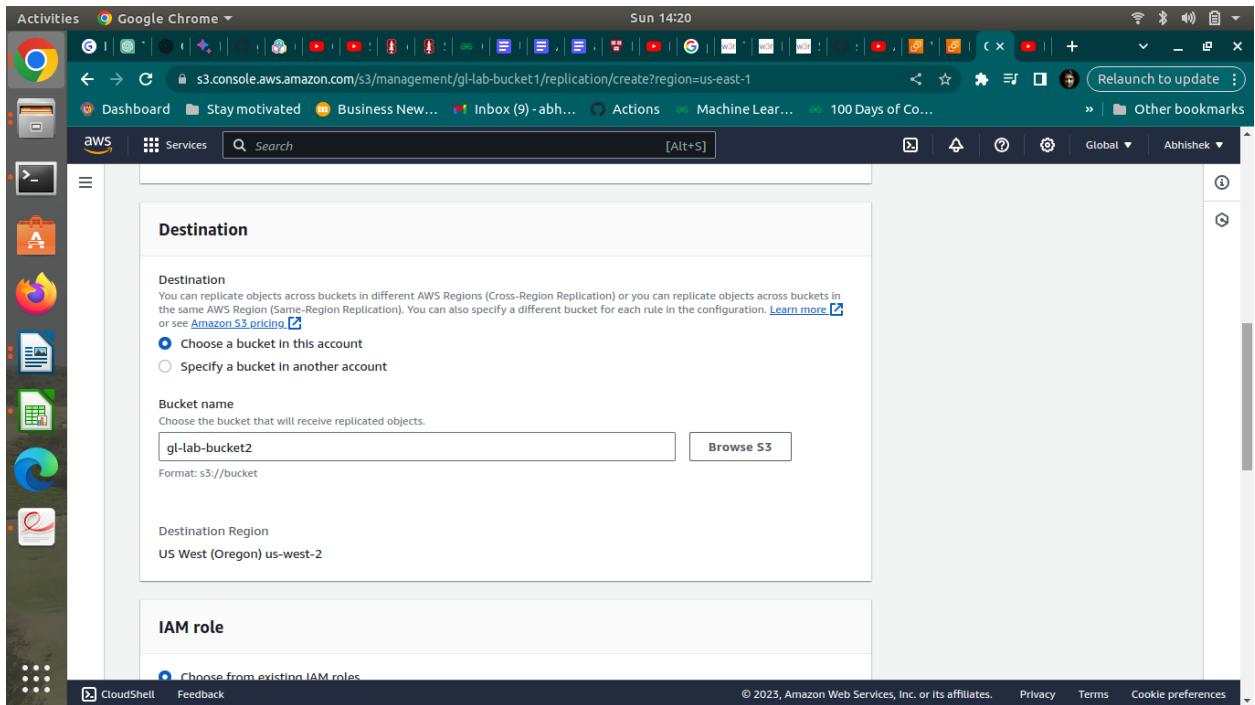
**Bucket name**  
Choose the bucket that will receive replicated objects.  
gl-lab-bucket2 [Browse S3](#)  
Format: s3://bucket

**Destination Region**  
US West (Oregon) us-west-2

**IAM role**

Choose from existing IAM roles

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Activities Google Chrome Sun 14:24

s3.console.aws.amazon.com/s3/jobs?region=us-east-1

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aws Services Search [Alt+S]

Successfully created job ID eaf01f97-17be-412a-b752-b69710b1d1cf

The time it takes to prepare a job is based on the size of the job's manifest and the time required to complete higher-priority jobs.

A Job is used to execute batch operations on a list of S3 objects. The list of S3 objects is contained in a manifest object, which can be an S3 inventory report or a list of objects that you generate. After the total number of objects listed in the manifest has been confirmed, the job status will update to *Awaiting your confirmation to run*, and you must Run job within 30 days. Job events are published to [CloudWatch Events](#). Jobs are deleted 90 days after they finish or fail. [Learn more](#)

Jobs (1)

Search by job ID or description All status types US East (N. Virginia) us-east-1

Job ID	Status	Description	Operation	Date created	Total objects	% Complete	Total failed (rate)	Priority
eaf01f97-17be-412a-b752-b69710b1d1cf	Preparing	2023-12-03 - Replicate	Replicate	December 3, 2023, 14:23:56 (UTC+05:30)	0	0%	0 (0%)	1

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Activities Terminal Sun 14:32

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls gl-lab-bucket1

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 13:56:44 0 my\_file\_2.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls gl-lab-bucket2

PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 13:56:44 0 my\_file\_2.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls s3://gl-lab-bucket2

PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 13:56:44 0 my\_file\_2.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls

2023-12-03 14:22:42 gl-lab-bucket1

2023-12-03 14:18:24 gl-lab-bucket2

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls gl-lab-bucket2

PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 13:56:44 0 my\_file\_2.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 cp my\_file3.txt s3://gl-lab-bucket1

upload: ./my\_file3.txt to s3://gl-lab-bucket1/my\_file3.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 cp my\_file\_4.txt s3://gl-lab-bucket1

upload: ./my\_file\_4.txt to s3://gl-lab-bucket1/my\_file\_4.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls gl-lab-bucket1

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 14:30:15 0 my\_file3.txt

2023-12-03 13:56:44 0 my\_file\_2.txt

2023-12-03 14:30:28 0 my\_file\_4.txt

abhishek@linux:~/coding\_project/learning\_aws\$ aws s3 ls gl-lab-bucket2

PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/

2023-12-03 13:57:13 0 my\_file.csv

2023-12-03 14:30:15 0 my\_file3.txt

2023-12-03 13:56:44 0 my\_file\_2.txt

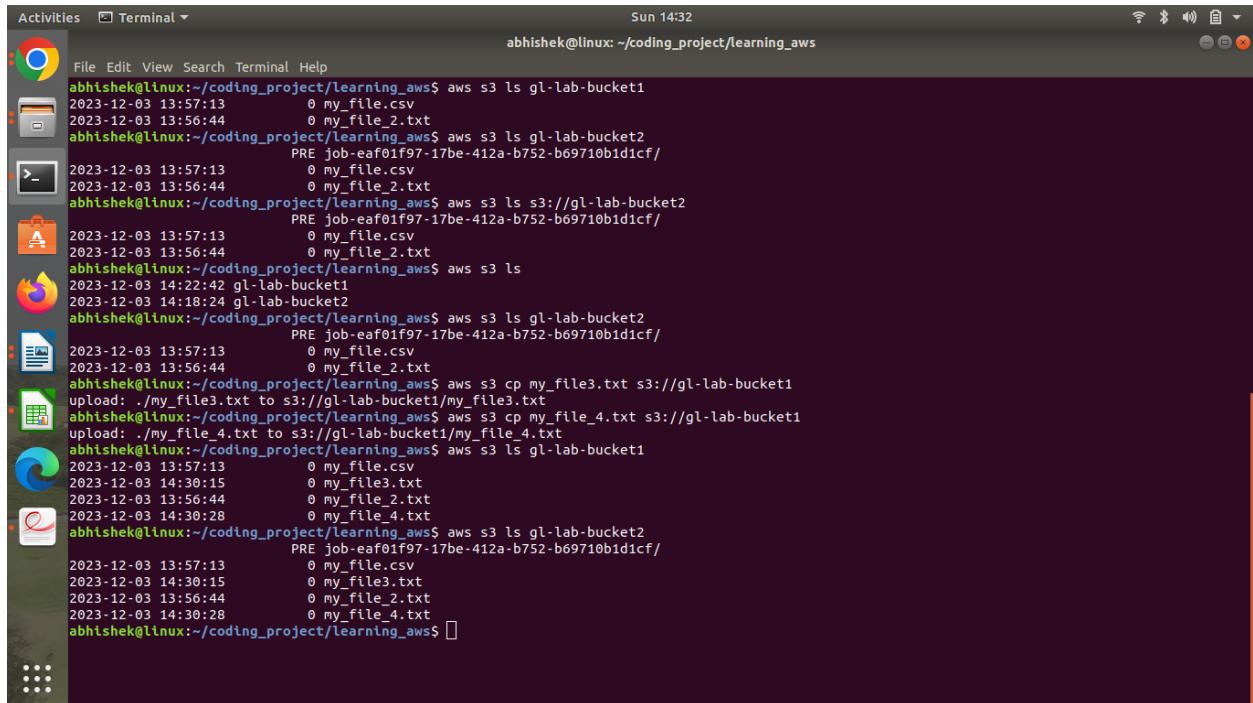
2023-12-03 14:30:28 0 my\_file\_4.txt

abhishek@linux:~/coding\_project/learning\_aws\$

## 5. Q: State your observations of the existing objects (are they replicated? )

My Observations: When we enable cross-region replication (CRR) in Amazon S3, the existing objects in the source buckets are not automatically replicated to the destination bucket. Replication applies to new objects that are added to the source bucket after CRR is enabled.

## 6. Using the CLI, upload a few new files to the same bucket.



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "Terminal" and the command prompt is "abhishek@linux: ~/coding\_project/learning\_aws\$". The window displays a log of AWS S3 commands and their execution times. The commands show the listing of objects in two buckets, copying files between them, and listing objects in both buckets again. The log includes timestamps for each command and its output.

```
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket1
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 13:56:44      0 my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket2
PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 13:56:44      0 my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls s3://gl-lab-bucket2
PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 13:56:44      0 my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls
2023-12-03 14:22:42 gl-lab-bucket1
2023-12-03 14:18:24 gl-lab-bucket2
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket1
PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 13:56:44      0 my_file_2.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file3.txt s3://gl-lab-bucket1
upload: ./my_file3.txt to s3://gl-lab-bucket1/my_file3.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 cp my_file_4.txt s3://gl-lab-bucket1
upload: ./my_file_4.txt to s3://gl-lab-bucket1/my_file_4.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket1
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 14:30:15      0 my_file3.txt
2023-12-03 13:56:44      0 my_file_2.txt
2023-12-03 14:30:28      0 my_file_4.txt
abhishek@linux:~/coding_project/learning_aws$ aws s3 ls gl-lab-bucket2
PRE job-eaf01f97-17be-412a-b752-b69710b1d1cf/
2023-12-03 13:57:13      0 my_file.csv
2023-12-03 14:30:15      0 my_file3.txt
2023-12-03 13:56:44      0 my_file_2.txt
2023-12-03 14:30:28      0 my_file_4.txt
abhishek@linux:~/coding_project/learning_aws$
```

## 7. Q: State your observation of the new objects.

After enabling cross-region replication, any new objects added to the source buckets are automatically replicated to the destination bucket. This includes both the objects that existed before replication was enabled (if they are modified or overwritten) and any entirely new objects.