

## Experiment 4

### Part-2: Inserting a Files in EBS, Taking a Snapshot & Attaching to another Region EBS

Step1 : Create two files **sample1.py** and **sample2.java**

```
ubuntu@ip-172-31-93-166:/myebsvol$ pwd
/myebsvol
ubuntu@ip-172-31-93-166:/myebsvol$
```

```
ubuntu@ip-172-31-93-166:/myebsvol$ sudo nano sample1.py
ubuntu@ip-172-31-93-166:/myebsvol$ sudo nano sample2.java
ubuntu@ip-172-31-93-166:/myebsvol$ ls -lart
total 8
drwxr-xr-x 24 root root 4096 Mar 14 14:19 ..
-rw-r--r-- 1 root root 15 Mar 14 15:58 sample1.py
-rw-r--r-- 1 root root 0 Mar 14 15:58 sample2.java
drwxr-xr-x 2 root root 44 Mar 14 15:58 .
```

Step 2 : Launch an new instance in an new region

- In this case :region United States (Oregon) us-west-2
- Select the OS as ubuntu , type as t2.micro and allow all Network permissions

#### Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

##### Name and tags Info

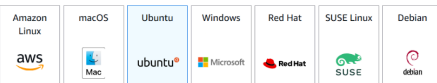
Name  
22bd1a05dr\_ebs2 [Add additional tags](#)

##### Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

##### Quick Start



[Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

##### Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type  
ami-00c257e12d6828491 (64-bit (x86)) / ami-0acefc55c3a331fa8 (64-bit (Arm))  
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

##### Description

Ubuntu Server 24.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

##### Summary

Number of instances Info

1

##### Software Image (AMI)

Canonical, Ubuntu, 24.04, amd64...  
ami-00c257e12d6828491

##### Virtual server type (instance type)

t2.micro

##### Firewall (security group)

New security group

##### Storage (volumes)

1 volume(s) - 8 GiB

**Free tier:** In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GiB of bandwidth to the internet.

Cancel

Launch instance

[Preview code](#)

Additional costs apply for AMIs with pre-installed software

### ▼ Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - **required**

22bd1a05drebs2

Create new key pair

### ▼ Network settings Info

Network

vpc-0f3aff3d1f709db2e

Subnet

No preference (Default subnet in any availability zone)

Auto-assign public IP

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

We'll create a new security group called 'launch-wizard-1' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere

0.0.0.0/0

☒ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

### ▼ Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 24.04, amd64...read more

ami-00c257e12d6828491

Virtual server type (instance type)

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Cancel

Launch instance

Preview code

The screenshot shows the AWS Management Console for the 'us-west-2' region. The 'Instances' page displays a single instance with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
22bd1a05dr...	i-07766b41fc2e28365	Running	t2.micro	Initializing	View alarms	us-west-2b	ec2-34-216-71-68.us-w...	34.216.71.68	-

## Step 3 : Create Snapshot of the EBS volume

- Select the EBS Volume which was created in region us-east-1a

The screenshot shows the AWS Management Console for the 'us-east-1' region. The 'Volumes' page displays two volumes:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID
ebs_v1	vol-0c234973379217fcb	gp2	10 GiB	100	-	-
-	vol-0a00e756f26ae600a	gp3	8 GiB	3000	125	snap-00cdccb...

The 'Actions' menu for the selected volume 'ebs\_v1' is open, showing the following options:

- Modify volume
- Create snapshot
- Create snapshot lifecycle policy
- Delete volume
- Attach volume
- Detach volume
- Force detach volume

## Step 4

- Click on create snapshot
- Enter snapshot details and click on create snapshot

**Create snapshot** [Info](#)

Create a point-in-time snapshot to back up the data on an Amazon EBS volume to Amazon S3.

**Source volume**

Volume ID  
vol-0c234973379217fcb (ebs\_v1)

Availability Zone  
us-east-1b

**Snapshot details**

Description  
Add a description for your snapshot  
InstanceSnapshotFromEBSv1Virginia  
255 characters maximum.

Encryption [Info](#)  
Not encrypted

**Tags** [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.  
No tags associated with the resource.  
[Add tag](#)  
You can add 50 more tags.

[Cancel](#) [Create snapshot](#)

## Step 5 : Now click on Copy Snapshot

**Snapshots (1/1)** [Info](#)

Owned by me

<input checked="" type="checkbox"/>	Name	Snapshot ID	Full snapshot size	Volume size	Description	Storage
<input checked="" type="checkbox"/>	snap-SDR	snap-039946415991c0b9b	66.5 MiB	10 GiB	InstanceSnapshotFromEBS...	Standard

Last updated 3 minutes ago

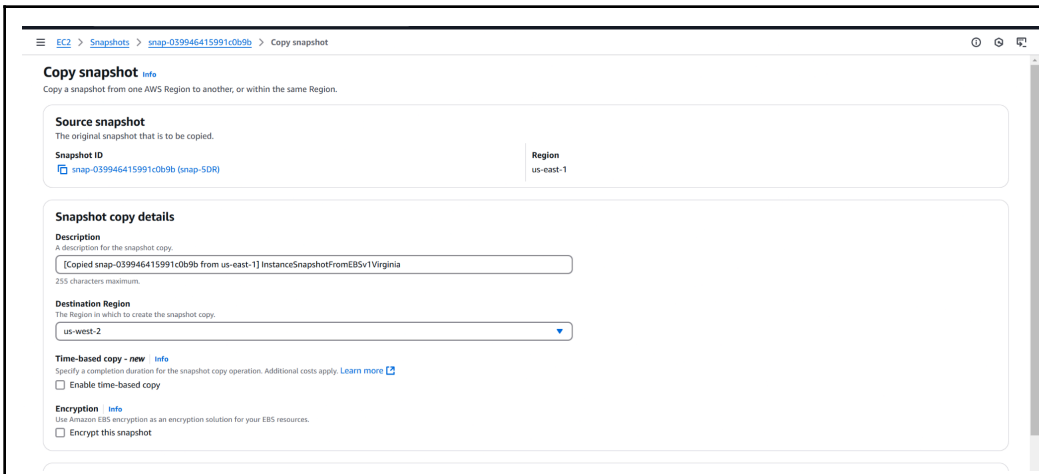
[Recycle Bin](#) [Actions](#) [Create snapshot](#)

- Create volume from snapshot
- Create image from snapshot
- Copy snapshot
- Launch copy duration calculator
- Delete snapshot
- Manage tags
- Snapshot settings
- Archiving

Started 2025/03/14 21:45 GI

## Step 6 : Enter the configuration details to copy the snapshot

- Make sure to mention the destination region of the snapshot (us-west-2)
- Then click on copy snapshot



**Copy snapshot** [info](#)

Copy a snapshot from one AWS Region to another, or within the same Region.

**Source snapshot**  
The original snapshot that is to be copied.

Snapshot ID: [snap-039946415991c0b9b](#) (snap-5DR) Region: us-east-1

**Snapshot copy details**

**Description**  
A description for the snapshot copy.  
[Copied snap-039946415991c0b9b from us-east-1] InstanceSnapshotFromEBSv1Virginia  
255 characters maximum.

**Destination Region**  
The Region in which to create the snapshot copy.  
us-west-2

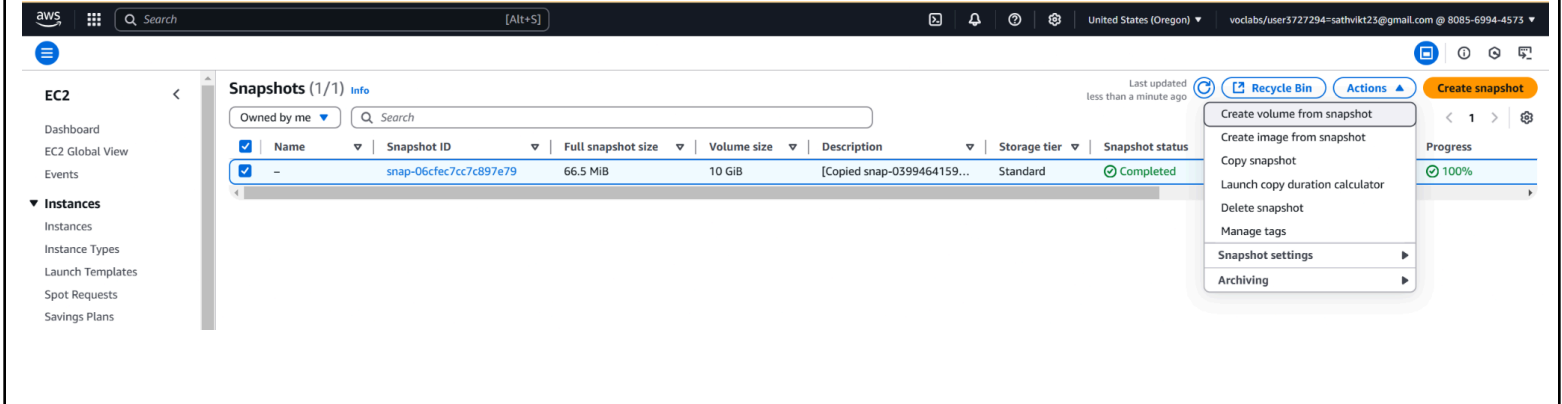
**Time-based copy - new** [info](#)  
Specify a completion duration for the snapshot copy operation. Additional costs apply. [Learn more](#)

☐ Enable time-based copy

**Encryption** [info](#)  
Use Amazon EBS encryption as an encryption solution for your EBS resources.  
☐ Encrypt this snapshot

**Step 7: Now switch to the region **United States (Oregon) us-west-2****

- Click on Create volume from snapshot
- Select volume type as gp-3 or gp-2 based on requirement
- Select the availability zone where us-west-2b is for US(Oregon)
- Then click on create volume



**Snapshots (1/1)** [info](#)

Owned by me [Search](#)

<input checked="" type="checkbox"/>	Name	Snapshot ID	Full snapshot size	Volume size	Description	Storage tier	Snapshot status
<input checked="" type="checkbox"/>	-	snap-06cfe7cc7c897e79	66.5 MiB	10 GiB	[Copied snap-0399464159...	Standard	Completed

Actions: Create volume from snapshot, Create image from snapshot, Copy snapshot, Launch copy duration calculator, Delete snapshot, Manage tags, Snapshot settings, Archiving

**Create volume** Info

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

**Volume settings**

Snapshot ID  
 snap-06cfec7cc7c897e79

Volume type Info  
 General Purpose SSD (gp3)

Size (GiB) Info  
 10  
Min: 1 GiB, Max: 16384 GiB.

IOPS Info  
 3000  
Min: 3000 IOPS, Max: 16000 IOPS.

Throughput (MiB/s) Info  
 125  
Min: 125 MiB, Max: 1000 MiB, Baseline: 125 MiB/s.

Availability Zone Info  
 us-west-2b  
 us-west-2a  
 us-west-2b ✓  
 us-west-2c  
 us-west-2d

**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.

## Step 8 : Click On Attach volume in the volumes section

- Select the instance type and device name
- Then click on Attach volume

**Volumes (1/2)** Info

Saved filter sets  
 Choose filter set

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
<input checked="" type="checkbox"/>	-	vol-0a33e9a908b2b46c1	gp3	10 GiB	3000	125	snap-06cfec7cc7c897e79	2025/03/14 22:01 GMT+5:30
<input type="checkbox"/>	-	vol-05fe1990c89b50f22	gp3	8 GiB	3000	125	snap-0080b76...	2025/03/14 21:40 GMT+5:30

**Actions**

- 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

**Attach volume** [Info](#)

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

**Basic details**

**Volume ID**  
vol-0a33e9a908b2b46c1

**Availability Zone**  
us-west-2b

**Instance** [Info](#)  
i-07766b41fc2e28365  
(22bd1a05dr\_ebs2) (running)

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/sd[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](#)

Step 9 Redirect to the Instance section(Region of new instance ( us-west -2 ))

- Connect to the instance through ssh client

**Instances (1/1)** [Info](#)

Find Instance by attribute or tag (case-sensitive) [All states](#)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
<input checked="" type="checkbox"/>	22bd1a05dr_e...	i-07766b41fc2e28365	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	us-west-2b	ec2-34-216-71-68.us-w...	34.216.71.68	-

**Connect to instance** [Info](#)

Connect to your instance i-07766b41fc2e28365 (22bd1a05dr\_ebs2) using any of these options

[EC2 Instance Connect](#) [Session Manager](#) [SSH client](#) [EC2 serial console](#)

**Instance ID**  
i-07766b41fc2e28365 (22bd1a05dr\_ebs2)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is 22bd1a05dreb2.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
chmod 400 "22bd1a05dreb2.pem"
4. Connect to your instance using its Public DNS:  
ec2-34-216-71-68.us-west-2.compute.amazonaws.com

Example:  
ssh -i "22bd1a05dreb2.pem" ubuntu@ec2-34-216-71-68.us-west-2.compute.amazonaws.com

*ⓘ Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.*

[Cancel](#)

Step 10 Connect to instance from your terminal by ssh client

- Run command **\$lsblk** to verify the attached snapshot
- Run command **\$fdisk -l** to see the file system allocation

```
PS C:\languages\aws> ssh -i "22bd1a05drebs2.pem" ubuntu@ec2-34-216-71-68.us-west-2.compute.amazonaws.com
The authenticity of host 'ec2-34-216-71-68.us-west-2.compute.amazonaws.com (34.216.71.68)' can't be established.
ED25519 key fingerprint is SHA256:fYVsi3D4g+qoLaeiMR16QdZwpGJwttfIXugGCiuq4VY.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-34-216-71-68.us-west-2.compute.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1021-aws x86_64)
```

```
* Documentation: https://help.ubuntu.com
* Management:   https://landscape.canonical.com
* Support:      https://ubuntu.com/pro
```

System information as of Fri Mar 14 16:35:52 UTC 2025

```
System load: 0.0      Processes:      103
Usage of /:  24.9% of 6.71GB  Users logged in: 0
Memory usage: 20%      IPv4 address for enx0: 172.31.19.142
Swap usage: 0%
```

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.  
See <https://ubuntu.com/esm> or run: `sudo pro status`

The list of available updates is more than a week old.  
To check for new updates run: `sudo apt update`

The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in `/usr/share/doc/*/copyright`.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo\_root" for details.

```
ubuntu@ip-172-31-19-142:~$
```

```
ubuntu@ip-172-31-19-142:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0    0 26.3M  1 loop /snap/amazon-ssm-agent/9881
loop1        7:1    0 73.9M  1 loop /snap/core22/1722
loop2        7:2    0 44.4M  1 loop /snap/snapd/23545
xvda        202:0    0    8G  0 disk
├─xvda1      202:1    0    7G  0 part /
├─xvda14     202:14   0    4M  0 part
├─xvda15     202:15   0 106M  0 part /boot/efi
└─xvda16     259:0    0 913M  0 part /boot
xvdf        202:80   0  10G  0 disk
```

```

ubuntu@ip-172-31-19-142:~$ sudo fdisk -l
Disk /dev/loop0: 26.32 MiB, 27602944 bytes, 53912 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop1: 73.87 MiB, 77459456 bytes, 151288 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop2: 44.44 MiB, 46596096 bytes, 91008 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/xvda: 8 GiB, 8589934592 bytes, 16777216 sectors
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: gpt
Disk identifier: D7B2CFD6-F96A-42FB-B8E1-13FF6555EB07

Device        Start      End  Sectors  Size Type
/dev/xvda1    2099200 16777182 14677983    7G Linux filesystem
/dev/xvda14     2048    10239    8192    4M BIOS boot
/dev/xvda15    10240   227327   217088  106M EFI System
/dev/xvda16   227328  2097152  1869825  913M Linux extended boot

Partition table entries are not in disk order.

Disk /dev/xvdf: 10 GiB, 10737418240 bytes, 20971520 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

```

Step 11 : Run the command **\$sudo file -d /dev/xvdf** to verify the attach and allotted device name and create a directory to mount the volume by using the command **\$sudo mkdir dir\_name**

```

ubuntu@ip-172-31-19-142:~$ sudo file -s /dev/xvdf
/dev/xvdf: SGI XFS filesystem data (blksize 4096, inosize 512, v2 dirs)

```

```

ubuntu@ip-172-31-19-142:~$ sudo mkdir /myebsvol2

```

Step 12 : Run the command **\$sudo mount /dev/allocated\_deviceName dir\_name**



```

ubuntu@ip-172-31-19-142:~$ sudo mount /dev/xvdf /myebsvol2
ubuntu@ip-172-31-19-142:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        6.8G  1.7G  5.1G  26% /
tmpfs            479M   0  479M   0% /dev/shm
tmpfs            192M  888K  191M   1% /run
tmpfs            5.0M   0   5.0M   0% /run/lock
/dev/xvda16      881M   76M  744M  10% /boot
/dev/xvda15      105M   6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
/dev/xvdf        10G  228M   9.8G   3% /myebsvol2
ubuntu@ip-172-31-19-142:~$

```

Step 13 : Verify the old files

- Run the commands
- \$cd dir\_name
- \$ ls
- \$ls -lart

```

ubuntu@ip-172-31-19-142:/$ cd /myebsvol2
ubuntu@ip-172-31-19-142:/myebsvol2$ ls
sample1.py  sample2.java
ubuntu@ip-172-31-19-142:/myebsvol2$ ls -lart
total 8
-rw-r--r--  1 root root   15 Mar 14 15:58 sample1.py
-rw-r--r--  1 root root    0 Mar 14 15:58 sample2.java
drwxr-xr-x  2 root root   44 Mar 14 15:58 .
drwxr-xr-x 23 root root 4096 Mar 14 16:51 ..
ubuntu@ip-172-31-19-142:/myebsvol2$

```