

Task - 13

Creating a EC2 in zone 1a:

Services [Alt+5]

[EC2 >](#) [Instances >](#) Launch an instance

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
 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.

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

SUSE LI

Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Free tier eligible

▼ Summary

Number of instances Info

Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-04b70f974e45c3917

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 includes ✕

750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance Review commands

Key pair name - required

ebsserver

Create new key pair

▼ Network settings Info

VPC - required Info

vpc-02f9a8b0b0ba8b381
172.31.0.0/16 (default)

Subnet Info

subnet-010b9006d45c5149c
VPC: vpc-02f9a8b0b0ba8b381 Owner: 533267400284
Availability Zone: us-east-1a IP addresses available: 4091 CIDR: 172.31.80.0/20

Auto-assign public IP Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) Info

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

Security group name - required

launch-wizard-12

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-/[]@!+=&(){}\$*

Description - required Info

1

Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-04b70fa74e45c3917

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Free tier:

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Cancel Launch instance Review commands

The screenshot shows the AWS Management Console interface for the EC2 service. The top navigation bar includes the AWS logo, 'Services' link, a search bar, and the user's name 'N. Virginia' and 'Cyril'. The left sidebar contains navigation links for 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Console to-Code', and 'Instances'. The main content area is titled 'Instances (1) Info' and includes a search bar with the text 'Find Instance by attribute or tag (case-sensitive)', a 'All states' dropdown, and buttons for 'running', 'Clear filters', 'Connect', 'Instance state', 'Actions', and 'Launch instances'. Below this is a table of instances with the following columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4..., Elastic IP, and Instance profile. The table contains one instance named 'ebserver' with ID 'i-005bcb0b638781c5', state 'Running', type 't2.micro', status 'Initializing', and other details.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4...	Elastic IP	Instance profile
ebserver	i-005bcb0b638781c5	Running	t2.micro	Initializing	—	us-east-1a	ec2-34-226-141-1.com...	34.226.141.1	—	—

Creating a EBS volume:

Services

Search

[Alt+S]

EC2 > Volumes > Create volume

Create volume [Info](#)

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

Volume settings

Volume type [Info](#)

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) [Info](#)

5

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

IOPS [Info](#)

3000

Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s) [Info](#)

125

Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.

Availability Zone [Info](#)

us-east-1a ▼

Snapshot ID - optional [Info](#)

Don't create volume from a snapshot ▼

↺

EC2 Dashboard

EC2 Global View

Events

Console-to-Code [Preview](#)

Instances

Instances

Instance Types

Launch Templates

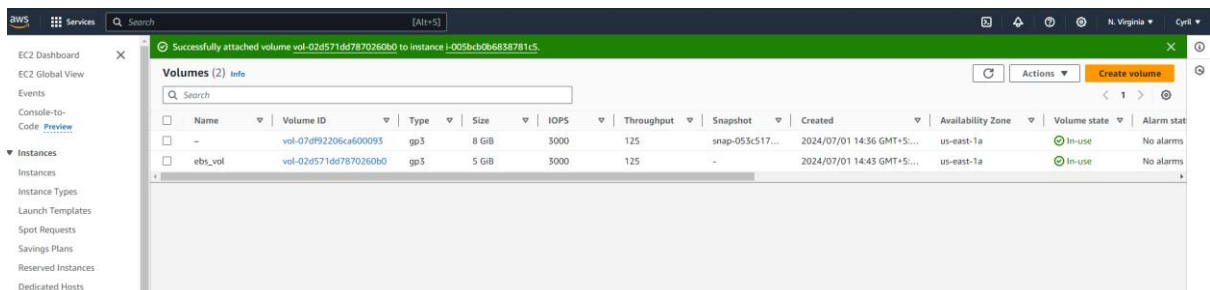
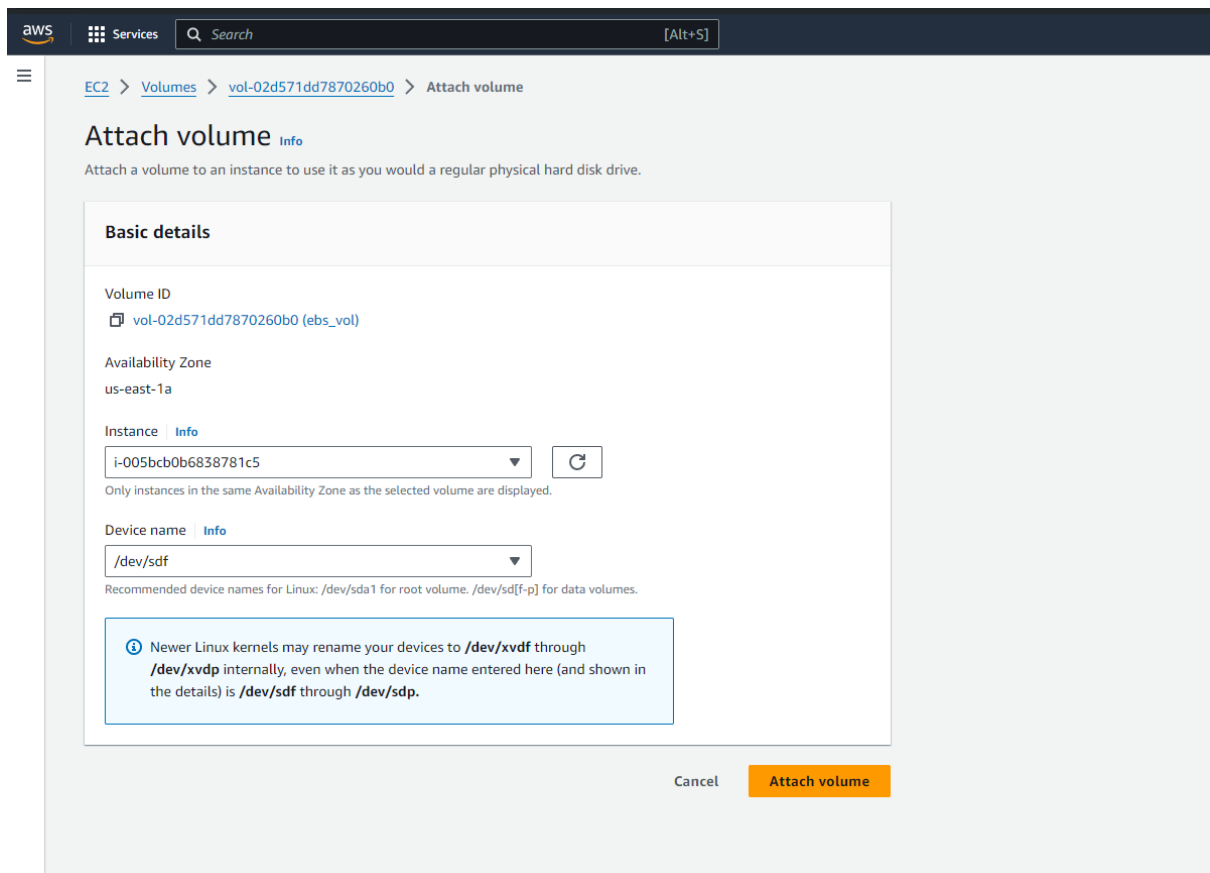
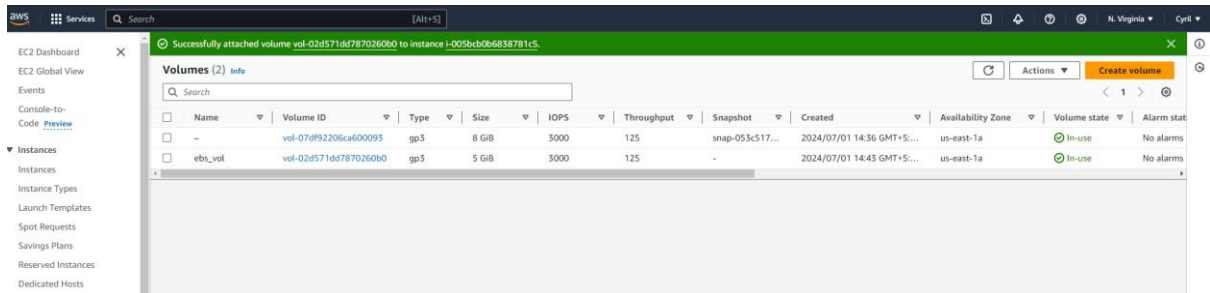
Spot Requests

Volumes (2) [Info](#)

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm stat
<input type="checkbox"/>	-	vol-07df92206ca600093	gp3	8 GiB	3000	125	snap-053c517...	2024/07/01 14:36 GMT+5...	us-east-1a	In-use	No alarms
<input type="checkbox"/>	ebs_vol	vol-01fbaa434026bf52	gp3	5 GiB	3000	125	-	2024/07/01 14:38 GMT+5...	us-east-1a	Available	No alarms

Attaching the EBS to EC2 machine:



Installing a webserver in EC2:

```
ubuntu@ip-172-31-84-112:~$ sudo apt install apache2
Reading package lists... Done
Building dependency trees... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 84 not upgraded.
Need to get 2080 kB of archives.
After this operation, 8091 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

```
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /usr/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-84-112:~$
```

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-84-112:~$ sudo systemctl start apache2
ubuntu@ip-172-31-84-112:~$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
ubuntu@ip-172-31-84-112:~$
```

Formatting the EBS volume in EC2 machine:

```
aws Services Search [Alt]
ubuntu@ip-172-31-84-112:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  25.2M  1 loop /snap/amazon-ssm-agent/7983
loop1        7:1      0  55.7M  1 loop /snap/core18/2812
loop2        7:2      0  38.7M  1 loop /snap/snapd/21465
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     202:16    0   913M  0 part /boot
xvdf         202:80    0    5G  0 disk
ubuntu@ip-172-31-84-112:~$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.47.0 (5-Feb-2023)
Creating filesystem with 1310720 4k blocks and 327680 inodes
Filesystem UUID: bc90f6cd-8afa-4c5a-966c-d0a25d202def
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

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

ubuntu@ip-172-31-84-112:~$
```

Mounting the EBS volume to the EC2 machine:

```
Writing superblocks and filesystem accounting information: done

ubuntu@ip-172-31-84-112:~$ sudo mkdir /mnt/my_vol
ubuntu@ip-172-31-84-112:~$ sudo mount /dev/xvdf /mnt/my_vol
ubuntu@ip-172-31-84-112:~$

ubuntu@ip-172-31-84-112:~$ sudo mkdir /mnt/my_vol
ubuntu@ip-172-31-84-112:~$ sudo mount /dev/xvdf /mnt/my_vol
```

```
ubuntu@ip-172-31-84-112:~$ sudo vi /etc/fstab
```

```
aws Services Search [Alt+S]
LABEL=cloudimg-rootfs / ext4 discard,commit=30,errors=remount-ro 0 1
LABEL=BOOT /boot ext4 defaults 0 2
LABEL=UEFI /boot/efi vfat umask=0077 0 1

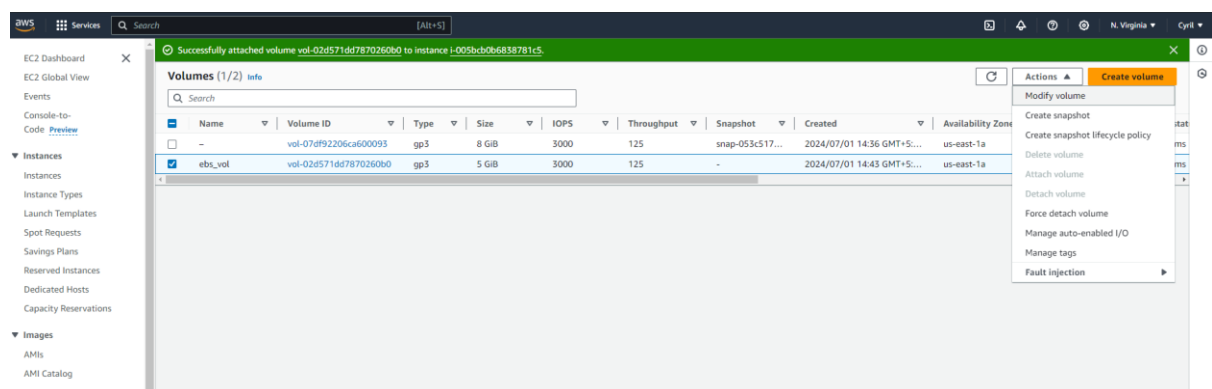
/dev/xvdf /mnt/my_vol ext4 defaults 0 2
~
~
~
~
~
```

```
ubuntu@ip-172-31-84-112:~$ sudo vi /etc/fstab
```

```
ubuntu@ip-172-31-84-112:~$ lsblk
```

```
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0    0 25.2M  1 loop /snap/amazon-ssm-agent/7983
loop1        7:1    0 55.7M  1 loop /snap/core18/2812
loop2        7:2    0 38.7M  1 loop /snap/snapd/21465
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   5G  0 disk /mnt/my_vol
ubuntu@ip-172-31-84-112:~$
```

Taking snapshot of the created EBS volume:



aws

Services

Search

[Alt+S]

EC2 > Volumes > vol-02d571dd7870260b0 > Create snapshot

Create snapshot [Info](#)

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

Details

Volume ID

vol-02d571dd7870260b0 (ebs_vol)

Description

Add a description for your snapshot

ebs_vol_snapshot

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

RMS

Services

Search

[Alt+S]

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Instances

Instances

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Savings Plans

Snapshots (1) [Info](#)

Owned by me

Search

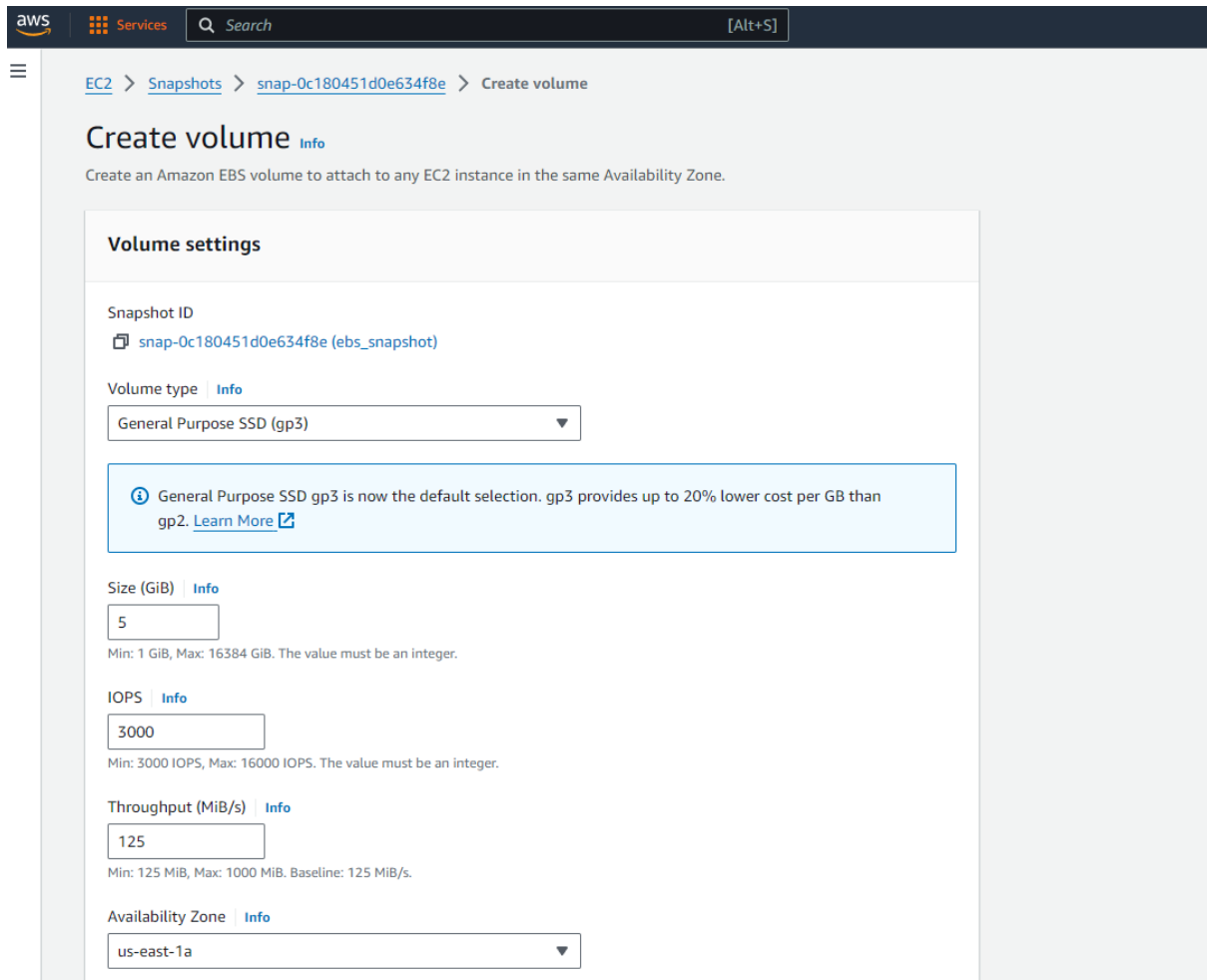
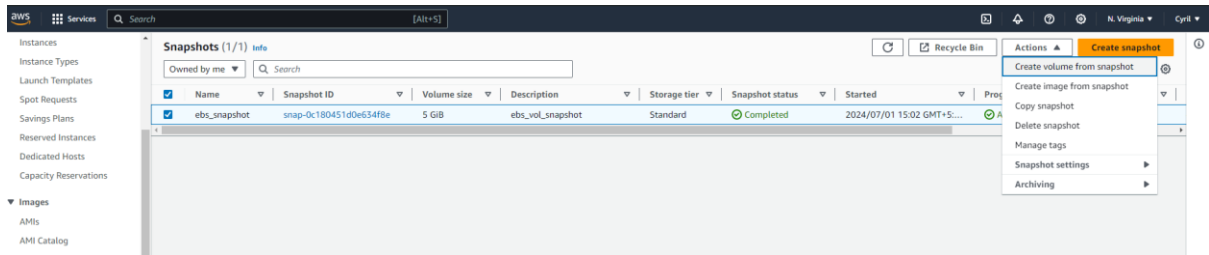
Recycle Bin

Actions

Create snapshot

	Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started	Progress	Encryption
<input type="checkbox"/>	ebs_snapshot	snap-0c180451d0e634f8e	5 GiB	ebs_vol_snapshot	Standard	Completed	2024/07/01 15:02 GMT+5...	Available (100%)	Not encrypted

Creating a EBS volume using the snapshot:



Encryption

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

☐ Encrypt this volume

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

Remove

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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Volumes (1/3) [Info](#)

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm state
<input type="checkbox"/>	-	vol-07df92206ca600095	gp3	8 GiB	3000	125	snap-053c517...	2024/07/01 14:36 GMT+5...	us-east-1a	In-use	No alarms
<input checked="" type="checkbox"/>	vol_using_sna...	vol-05b00f04bf1862cd6	gp3	5 GiB	3000	125	snap-0c18045...	2024/07/01 15:06 GMT+5...	us-east-1a	Available	No alarms
<input type="checkbox"/>	ebs_vol	vol-02d571dd7870260b0	gp3	5 GiB	3000	125	-	2024/07/01 14:43 GMT+5...	us-east-1a	In-use	No alarms