

Amazon Web Services



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Launching EC2 and replication of AMI in other region.

INTRODUCTION

AWS provides cloud computing platforms and API's to individuals and companies on pay-as-you-go basis.

It offers reliable, scalable and inexpensive cloud services.

INSTANCES

An instance is a virtual server in AWS cloud. Through EC2, we can set up and configure the OS & applications that run on your instance.

AMAZON EBS

It is an Amazon Elastic Block Store (Amazon EBS) is an easy-to-use, scalable, high-performance block-storage service designed for Amazon Elastic Compute Cloud (Amazon EC2).

AMAZON EFS

Amazon Elastic File System (Amazon EFS) provides serverless, fully elastic file storage so that you can share file data without provisioning or managing storage capacity and performance.

TASK GIVEN

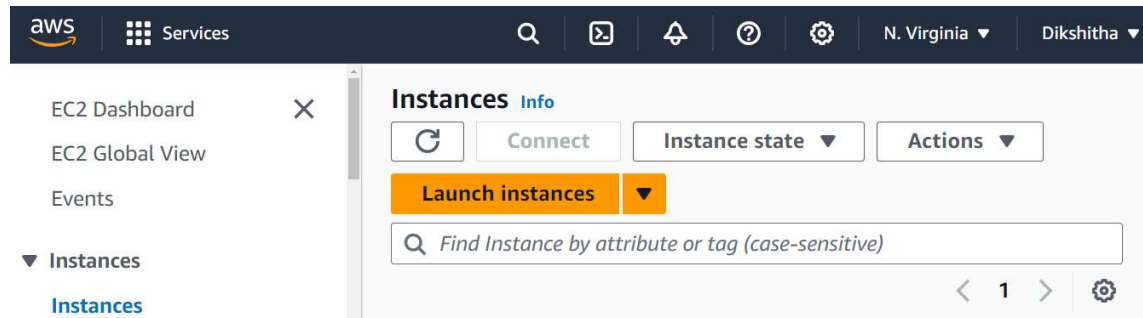
You work for XYZ Corporation. Your corporation is working on an application and they require secured web servers on Linux to launch the application.

Tasks To Be Performed:

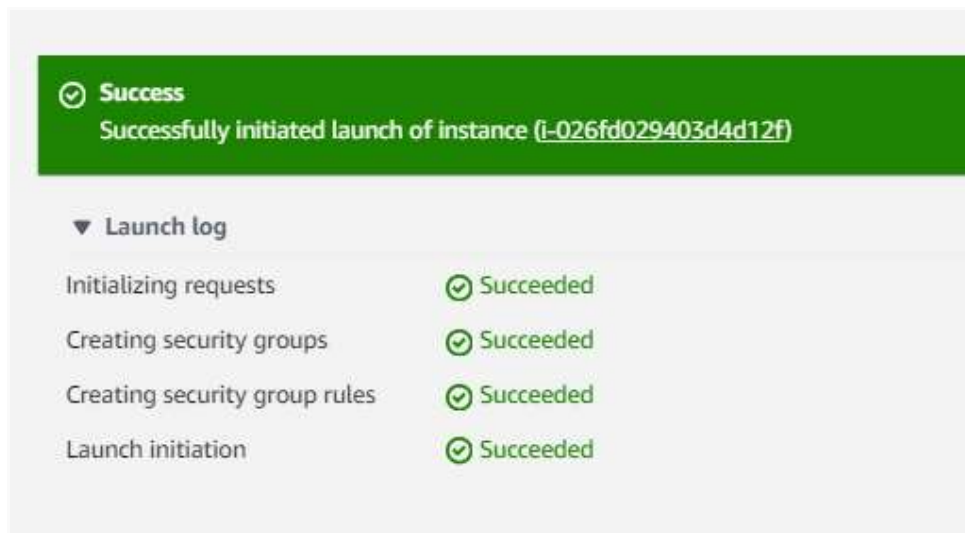
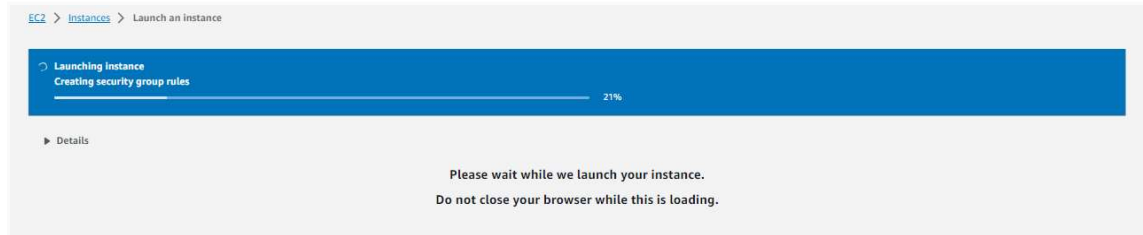
1. Create an instance in the US-East-1 (N. Virginia) region with Linux OS and manage the requirement of web servers of your company using AMI.
2. Replicate the instance in the US-West-2 (Oregon) region.
3. Build two EBS volumes and attach them to the instance in the US-East-1 (N. Virginia) region.
4. Delete one volume after detaching it and extend the size of the other volume.
5. Take backup of this EBS volume

1. Create an instance in the US-East-1 (N. Virginia) region with Linux OS and manage the requirement of web servers of your company using AMI.

- Navigate to EC2 service and select launch instances.

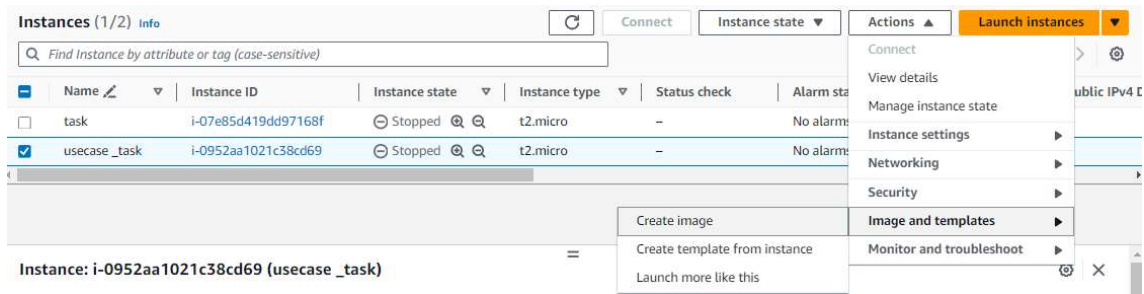


- Give a name to your instance then select the AMI as Linux and configure the details like instance type, key pair, network settings, storage, security groups.
- Review and launch the instance.

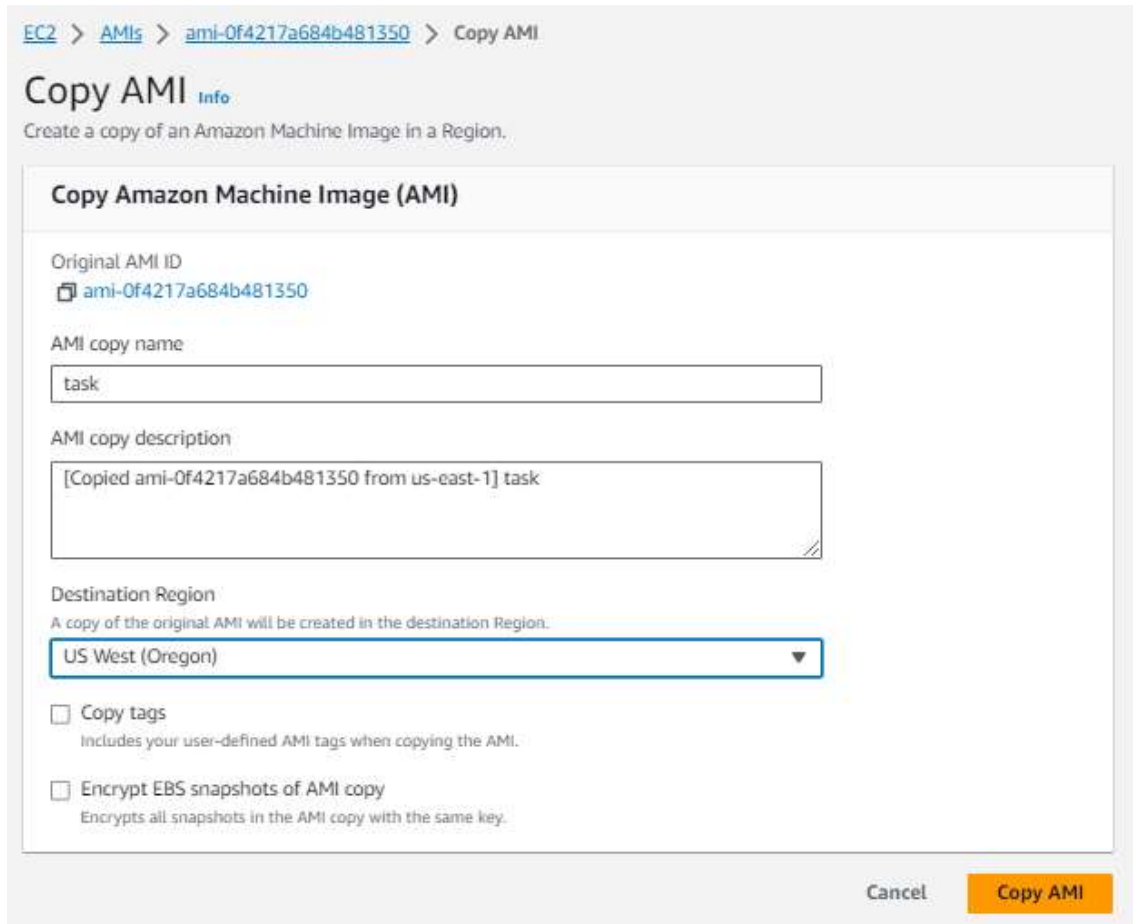


2. Replicate the instance in the US-West-2 (Oregon) region.

- Stop the instance to ensure data consistency
- In the EC2 dashboard, select your instance and choose "Actions" > "Image" > "Create Image." This will create an AMI of the instance.



- Then redirect to AMI's section and Choose "Actions" > "Copy AMI" to copy the AMI to the US-West-2 (Oregon) region.



- After the AMI is copied, we can launch a new instance in the US-West-2 (oregon)region using this copied AMI.

3. Build two EBS volumes and attach them to the instance in the US-East-1 (N. Virginia) region.

- In the EC2 dashboard, go to "Elastic Block Store" > "Volumes."
- Click "Create Volume" to create the first EBS volume. Specify the size and other options as needed.
- We can follow the same process for the second EBS too.

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 (gp2)

Size (GiB) Info

100

Min: 1 GiB, Max: 16,384 GiB. The value must be an integer.

IOPS Info

300 / 3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Throughput (MiB/s) Info

Not applicable

Availability Zone Info

us-east-1a

Snapshot ID - optional Info

Don't create volume from a snapshot

Encryption Info

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.

No tags associated with the resource...

Add tag

You can add 50 more tags.

Cancel Create volume

- I have created two volumes.

Volumes (4) Info

Search

<input type="checkbox"/>	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input type="checkbox"/>	-	vol-09ea8f7ff250fdfea	gp3	8 GiB	3000	125	snap-05a6245...	2023/11/13 10:18 GMT+5:...
<input type="checkbox"/>	usecase_task	vol-01e9b2a7bc73845fa	gp2	10 GiB	100	-	-	2023/11/13 10:24 GMT+5:...
<input type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	20 GiB	100	-	-	2023/11/13 10:25 GMT+5:...
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6245...	2023/11/10 18:29 GMT+5:...

- After creating the volumes, select your volume, and choose "Actions" > "Attach Volume."

Volumes (1/4) Info

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
<input type="checkbox"/>	-	vol-09ea8f7ff250fdfea	gp3	8 GiB	3000	125	snap-05a6
<input checked="" type="checkbox"/>	usecase_task	vol-01e9b2a7bc73845fa	gp2	10 GiB	100	-	-
<input type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	20 GiB	100	-	-
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6

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

- Then select the instance to which we want to attach.

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-01e9b2a7bc73845fa \(usecase_task\)](#)

Availability Zone
 us-east-1a

Instance Info



[i-0952aa1021c38cd69](#)
 (usecase_task) (stopped)

Cancel Attach volume

- In the same way attach the second volume too.
- The below are the connected volume to the created instance.

Instance: [i-0952aa1021c38cd69 \(usecase_task\)](#)

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
vol-02a449c9203712d64	/dev/sdg	20	✔ Attached	2023/11/13 10:31 GMT+5:30	No	-
vol-01e9b2a7bc73845fa	/dev/sdf	10	✔ Attached	2023/11/13 19:59 GMT+5:30	No	-

4. Delete one volume after detaching it and extend the size of the other volume.

- Select the EBS volume you want to delete and choose "Actions" > "Detach Volume."

Volumes (1/4) Info

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
<input type="checkbox"/>	-	vol-09ea8f7ff250dfea	gp3	8 GiB	3000	125	snap-05a6
<input checked="" type="checkbox"/>	usecase_task	vol-01e9b2a7bc73845fa	gp2	10 GiB	100	-	-
<input type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	20 GiB	100	-	-
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6

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

- After detaching the volume, select it again and choose "Actions" > "Delete Volume."

Volumes (1/4) Info

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
<input type="checkbox"/>	-	vol-09ea8f7ff250dfea	gp3	8 GiB	3000	125	snap-05a6
<input checked="" type="checkbox"/>	usecase_task	vol-01e9b2a7bc73845fa	gp2	10 GiB	100	-	-
<input type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	20 GiB	100	-	-
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6

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

- To extend the size of the other volume, select the volume you want to resize and choose "Actions" > "Modify Volume."

Volumes (1/3) Info

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
<input type="checkbox"/>	-	vol-09ea8f7ff250dfea	gp3	8 GiB	3000	125	snap-05a6
<input checked="" type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	20 GiB	100	-	-
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6

Actions

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

[EC2](#) > [Volumes](#) > [vol-02a449c9203712d64](#) > Modify volume

Modify volume Info

Modify the type, size, and performance of an EBS volume.

Volume details

Volume ID

vol-02a449c9203712d64 (usecase_task_vol)

Volume type Info

General Purpose SSD (gp2)

Size (GiB) Info

25

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

IOPS Info

100/3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Cancel **Modify**

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

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input type="checkbox"/>	-	vol-09ea8f7ff250fdfea	gp3	8 GiB	3000	125	snap-05a6245...	2023/11/13 10:18 GMT+5:...
<input checked="" type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	25 GiB	100	-	-	2023/11/13 10:25 GMT+5:...
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6245...	2023/11/10 18:29 GMT+5:...

Volume modified.

5. Take backup of this EBS volume

- Select the EBS volume you want to back up.
- Choose "Actions" > "Create Snapshot."

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

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
<input type="checkbox"/>	-	vol-09ea8f7ff250fdfea	gp3	8 GiB	3000	125	snap-05a6...
<input checked="" type="checkbox"/>	usecase_task_...	vol-02a449c9203712d64	gp2	25 GiB	100	-	-
<input type="checkbox"/>	-	vol-09ea24afc1713b4b6	gp3	8 GiB	3000	125	snap-05a6...


Actions

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

- Specify a description for the snapshot and create it.

Details

Volume ID

 [vol-02a449c9203712d64 \(usecase_task_vol\)](#)

Description

Add a description for your 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.

You can add 50 more tags.

CONCLUSION:

Launched an instance and created a replica of that instance in another region. Created two volumes and attached them to the instance of the first region & took a backup of a volume.