

## Module-2: EC2 and EBS Assignment - 2

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You have been asked to:

1. Launch a Linux EC2 instance
  2. Create a EBS volume with 20 GB of storage and attach it to the created EC2 instance
  3. Resize the attached volume and make sure it reflects in the connected instance
-

https://us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstances:

## 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

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

Recents Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat

aws Mac ubuntu Microsoft Red Hat

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type  
ami-099fa75af13c156d4 (64-bit / x86\_64) / ami-020ef1e2f6c2ec06d6 (64-bit / Arm)  
Virtualization: hvm EFA enabled: true Root device type: ebs

### Summary

Number of instances Info 1

Software Image (AMI) Amazon Linux 2 Kernel 5.10 AMI... read more ami-099fa75af13c156d4

Virtual server type (instance type) t2.micro

Firewall (security group) New security group

Storage (volumes) 1 volume(s) - 8 GiB

i 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, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance

WS Services https://us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstances:

**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

vv-assignment

Create new key pair

**Network settings Get guidance**

Edit

Network Info  
vpc-0b03f01cba75ff067

Subnet Info  
No preference (Default subnet in any availability zone)

Auto-assign public IP Info  
Enable

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

Common security groups Info

default sg-0eccaee16b46e70a9d

VPC: vpc-0b03f01cba75ff067

Security groups that you add or remove here will be added to or removed from all your network interfaces.

**Summary**

Number of instances Info

1

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...read more  
ami-090fa75af13c156b4

Virtual server type (instance type)

t2.micro

Firewall (security group)

default

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, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

**Launch instance**

ⓘ You've been opted into the new launch experience. [Find out more](#) about this experience or [send us feedback](#). You can still return to the previous version by opting-out.

EC2 > Instances > Launch an instance



Success

Successfully initiated launch of instance (i-072ce68f87e776aa8)

▶ [Launch log](#)

## Next Steps

### Get notified of estimated charges

[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)

### How to connect to your instance

Your instance is launching and it might be a few minutes until it is in the running state, when it will be ready for you to use

Click [View Instances](#) to monitor your instance's status. Once your instance is in the 'running' state, you can connect to it from the Instances screen. Find out [how to connect to your instance](#)

[View more resources to get you started](#)



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**Elastic Block Store**

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- Snapshots New
- Lifecycle Manager New

### Instances (1/2) Info

Search

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
Vaibhav-Ubuntu	i-0d9470b1ec1ca59b1	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-54-86-2-98.compute...	54.86.2.98
<b>Vaibhav-Linux</b>	i-072ce68f87e776aa8	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-54-163-160-113.co...	54.163.160.113

### Instance: i-072ce68f87e776aa8 (Vaibhav-Linux)

Details Security Networking Storage Status checks Monitoring Tags

**Instance summary**

Instance ID	Public IPv4 address	Private IPv4 addresses
i-072ce68f87e776aa8 (Vaibhav-Linux)	54.163.160.113   open address	172.31.89.230
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-54-163-160-113.compute-1.amazonaws.com   open address
Hostname type	Private IP DNS name (IPv4 only)	Elastic IP addresses
IP name: ip-172-31-89-230.ec2.internal	ip-172-31-89-230.ec2.internal	-
Answer private resource DNS name	Instance type	AWS Compute Optimizer finding
IPv4 (A)	t2.micro	Opt-in to AWS Compute Optimizer for recommendations.
Auto-assigned IP address	VPC ID	Learn more
54.163.160.113 [Public IP]	vpc-0b03f01cba75ff067	
IAM Role	Subnet ID	Auto Scaling Group name
-	subnet-0106a319f599ab40d	-

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## Instances (1/2) Info

 Search Name Vaibhav-Ubuntu Vaibhav-Linux

## Instance: i-072ce68f87e776aa8

[Details](#)[Security](#)

### ▼ Instance summary Info

[Instance ID](#) i-072ce68f87e776aa8[IPv6 address](#)[Hostname type](#)

IP name: ip-172-31-89-230

[Answer private resource DNS](#)

IPv4 (A)

[Auto-assigned IP address](#) 54.163.160.113 [Public][IAM Role](#)



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VAIBHAV VERMA ▾



Actions ▾

Create volume



&lt; 1 &gt;



IOPS	Throughput	Snapshot	Created	Availability Zone	Volume status
100	-	snap-02d9369...	2022/08/23 02:15 GMT+5:...	us-east-1d	<input checked="" type="checkbox"/> In-
100	-	snap-093a80c...	2022/08/23 03:34 GMT+5:...	us-east-1d	<input checked="" type="checkbox"/> In-

Type  
gp2Volume status  
 Okay

Throughput

Encryption  
Not encrypted

KMG Tech 2023

Snapshot

2022-08-23T03:34Z



Services



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

20

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.

Throughput (MiB/s) Info

Not applicable

Availability Zone Info

us-east-1d

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

AWS

Services



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.

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

Not applicable

Availability Zone [Info](#)

us-east-1d

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

https://us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#Volumes:

Successfully created volume vol-0e712e4d41248d28a.

## Volumes (1/3)

	Name	Volume ID	Type	Size	IOPS	Throughput
<input type="checkbox"/>	-	vol-02ec93a2c0e79b51b	gp2	8 GiB	100	-
<input type="checkbox"/>	-	vol-0634c537a9ea03bbf	gp2	8 GiB	100	-
<input checked="" type="checkbox"/>	Vaibhav-Volume	vol-0e712e4d41248d28a	gp2	20 GiB	100	-

Volume ID: vol-0e712e4d41248d28a (Vaibhav-Volume)

Details    Status checks    Monitoring    Tags

### Details

Volume ID	Size	Type
<a href="#">vol-0e712e4d41248d28a (Vaibhav-Volume)</a>	20 GiB	gp2
Volume state	IOPS	Throughput
<a href="#">Available</a>	100	-
KMS key ID	KMS key alias	KMS key ARN



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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](#)

Throughput	Snapshot	Created
-	snap-02d9369...	2022/08/23 02:15 GMT
-	snap-093a80c...	2022/08/23 03:34 GMT
-	-	2022/08/23 03:47 GMT

Type  
gp2Volume status  
 Okay

Throughput

Encryption  
Not encrypted

## 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-0e712e4d41248d28a (Vaibhav-Volume)

#### Availability Zone

us-east-1d

#### Instance Info

i-072ce68f87e776aa8



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/xvd<sup>p</sup> 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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Successfully attached volume [vol-0e712e4d41248d28a](#) to instance [i-072ce68f87e776aa8](#).

## Volumes (1/3)

Search

Name	Volume ID	Type	Size	IOPS	Throughput
-	vol-02ec93a2c0e79b51b	gp2	8 GiB	100	-
-	vol-0634c537a9ea03bbf	gp2	8 GiB	100	-
<input checked="" type="checkbox"/> Vaibhav-Volume	<a href="#">vol-0e712e4d41248d28a</a>	gp2	20 GiB	100	-

Volume ID: [vol-0e712e4d41248d28a](#) (Vaibhav-Volume)

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### Details

Volume ID	<input type="button" value="Copy"/> <a href="#">vol-0e712e4d41248d28a</a> (Vaibhav-Volume)	Size	Type
		<input type="button" value="Copy"/> 20 GiB	gp2
Volume state	<input checked="" type="checkbox"/> In-use	IOPS	Throughput
KMS key ID	-	-	-
Availability Zone	us-east-1d	KMS key alias	KMS key ARN
Created	<input type="button" value="Copy"/> Tue Aug 23 2022 03:47:08 GMT+0530 (India Standard Time)	Multi-Attach	No
Outposts ARN	-	-	-

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## Instances (1/2) Info

 Search

Name	Instance ID	Instance state	Instance type	Status check	Alarm sta...
Vaibhav-Ubuntu	i-0d9470b1ec1ca59b1	Running	t2.micro	2/2 checks passed	No alarms
<input checked="" type="checkbox"/> Vaibhav-Linux	i-072ce68f87e776aa8	Running	t2.micro	2/2 checks passed	No alarms

### Instance: i-072ce68f87e776aa8 (Vaibhav-Linux)

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#### Root device details

Root device name

/dev/xvda

Root device type

EBS

#### Block devices

 Filter block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time
vol-0634c537a9ea03bbf	/dev/xvda	8	Attached	Tue Aug 23 2022 03:34:19 G...
vol-0e712e4d41248d28a	/dev/sdf	20	Attached	Tue Aug 23 2022 03:51:18 G...

#### Recent root volume replacement tasks

Task ID	Task state	Start time	Completion time



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## ▼ Auto Scaling

Launch Configuration

✓ Successfully attached volume vol-0e712e4d41248d28a

## Volumes (1/3)

Search

	Name	Volume ID
<input type="checkbox"/>	-	vol-02ec93a
<input type="checkbox"/>	-	vol-0634c53

<input checked="" type="checkbox"/>	Vaibhav-Volume	vol-0e712e4d41248d28a
-------------------------------------	----------------	-----------------------

Volume ID: vol-0e712e4d41248d28a (Vaibhav-Volume)

Details

Status checks

Monitor

## Details

Volume ID

 vol-0e712e4d41248d28a (Vaibhav-Volume)

Volume state

✓ In use

Attached to:

Amazon Lambda



C

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

Created
2022/08/23 02:15 GMT
2022/08/23 03:34 GMT
2022/08/23 03:47 GMT

## Volume status

 Okay

## Encryption

Not encrypted

## Snapshot

+

## Attached instances

072ce68187e776a43 (vaibhav-lingo) /dev/sdf  
(attaching)

https://us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#ModifyVolume:volum

Services

EC2 > Volumes > vol-0e712e4d41248d28a > Modify volume

## Modify volume Info

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

### Volume details

Volume ID

vol-0e712e4d41248d28a (Vaibhav-Volume)

Volume type Info

General Purpose SSD (gp2)

Size (GiB) Info

30

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

## Modify vol-0e712e4d41248d28a?



If you are increasing the size of the volume, you must extend the file system to the new size of the volume. You can only do this when the volume enters the optimizing state. For more information see extending the file system for Linux [\[?\]](#) and Windows [\[?\]](#).

The modification might take a few minutes to complete.

You are charged for the new volume configuration after volume modification starts. For pricing information, see Amazon EBS Pricing [\[?\]](#).

Are you sure that you want to modify vol-0e712e4d41248d28a?

Cancel

Modify



	Name	Volume ID	Type	Size	IOPS	Throughput
<input type="checkbox"/>	-	vol-02ec93a2c0e79b51b	gp2	8 GiB	100	-
<input type="checkbox"/>	-	vol-0634c537a9ea03bbf	gp2	8 GiB	100	-
<input checked="" type="checkbox"/>	Vaibhav-Volume	vol-0e712e4d41248d28a	gp2	30 GiB	100	-

Volume ID: vol-0e712e4d41248d28a (Vaibhav-Volume)

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## Details

Volume ID

[vol-0e712e4d41248d28a \(Vaibhav-Volume\)](#)

Size

[30 GiB](#)

Type

gp2

Volume state

[In-use - optimizing \(99%\)](#)

IOPS

100

Throughput

KMS key ID

[KMS key alias](#)

KMS key

Availability Zone

Created

Multi-AZ



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Services



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## Instances (1/2) Info

Search

Name	Instance ID	Instance state	Instance type	Status checks
Vaibhav-Ubuntu	i-0d9470b1ec1ca59b1	Running	t2.micro	2/2 checks
<input checked="" type="checkbox"/> Vaibhav-Linux	i-072ce68f87e776aa8	Running	t2.micro	2/2 checks

## Instance: i-072ce68f87e776aa8 (Vaibhav-Linux)

Details | Security | Networking | Storage **Storage** | Status checks | Monitoring | Tags

## ▼ Root device details

Root device name

 /dev/xvda

Root device type

EBS

## ▼ Block devices

Filter block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment t
vol-0634c537a9ea03bbf	/dev/xvda	8	<input checked="" type="checkbox"/> Attached	Tue Aug 23 2023
vol-0e712e4d41248d28a	/dev/sdf	30	<input checked="" type="checkbox"/> Attached	Tue Aug 23 2023

## ▼ Recent root volume replacement tasks

## Session settings



SSH



### Basic SSH settings

Remote host \* 54.163.160.113

 Specify username

ec2-user



Port 22



### Advanced SSH settings

#### Terminal settings

#### Network settings

#### Bookmark settings

 X11-Forwarding Compression

Remote environment: Interactive shell

Execute command:

 Do not exit after command ends

SSH-browser type:

SFTP protocol

 Follow SSH path (experimental) Use private key

C:\Users\Lenovo\Downloads\vv-as

 Adapt locales on remote server

Execute macro at session start: &lt;none&gt;



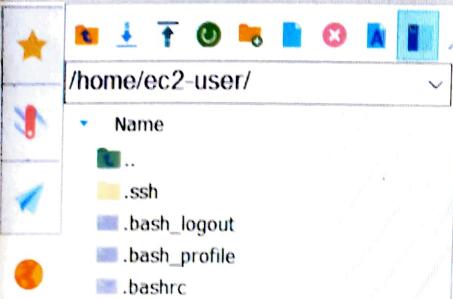
OK



Cancel



Quick connect...



2. 54.86.2.98 (ubuntu)

3. 54.163.160.113 (ec2-user)

• MobaXterm Personal Edition v22.1 •  
(SSH client, X server and network tools)

- ▶ SSH session to ec2-user@54.163.160.113
  - Direct SSH : ✓
  - SSH compression : ✓
  - SSH-browser : ✓
  - X11-forwarding : ✘ (disabled or not supported by server)
- ▶ For more info, ctrl+click on [help](#) or visit our [website](#).

\_ | ( \_ | \_ )  
\_ | / \ \_ | \_ |  
Amazon Linux 2 AMI

<https://aws.amazon.com/amazon-linux-2/>

5 package(s) needed for security, out of 17 available

Run "sudo yum update" to apply all updates.

[ec2-user@ip-172-31-89-230 ~]\$ sudo su

[root@ip-172-31-89-230 ec2-user]# lsblk

NAME	MAJ:MIN	RM	SIZE	R0	TYPE	MOUNTPOINT
------	---------	----	------	----	------	------------

xvda	202:0	0	8G	0	disk	
------	-------	---	----	---	------	--

	└─xvda1	202:1	0	8G	0	part /
--	---------	-------	---	----	---	--------

xvdf	202:80	0	30G	0	disk	
------	--------	---	-----	---	------	--

[root@ip-172-31-89-230 ec2-user]#	█
-----------------------------------	---

Quick connect...



2. 54.86.2.98 (ubuntu)

3. 54.163.160.113 (ec2-user)



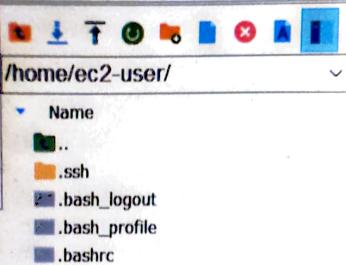
- Name
- ..
- .ssh
- .bash\_logout
- .bash\_profile
- .bashrc

```
[root@ip-172-31-89-230 ~]# mkdir vaibhav
[root@ip-172-31-89-230 ~]# ls
vaibhav
[root@ip-172-31-89-230 ~]# mkfs -t ext4 /dev/xvdf
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
1966080 inodes, 7864320 blocks
393216 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2155872256
240 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, 1685632, 2654208,
      4096000

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

[root@ip-172-31-89-230 ~]# mount /dev/xvdf vaibhav
```

Quick connect...



```
[root@ip-172-31-89-230 ~]# mkdir vaibhav
[root@ip-172-31-89-230 ~]# ls
vaibhav
[root@ip-172-31-89-230 ~]# mkfs -t ext4 /dev/xvdf
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
1966080 inodes, 7864320 blocks
393216 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2155872256
240 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

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
[root@ip-172-31-89-230 ~]# mount /dev/xvdf vaibhav
[root@ip-172-31-89-230 ~]# lsblk
NAME   MAJ:MIN RM SIZE R0 TYPE MOUNTPOINT
xvda    202:0    0  8G  0 disk 
└─xvda1 202:1    0  8G  0 part /
xvdf    202:80   0 30G  0 disk /root/vaibhav
[root@ip-172-31-89-230 ~]#
```

Remote monitoring

Follow terminal fold...