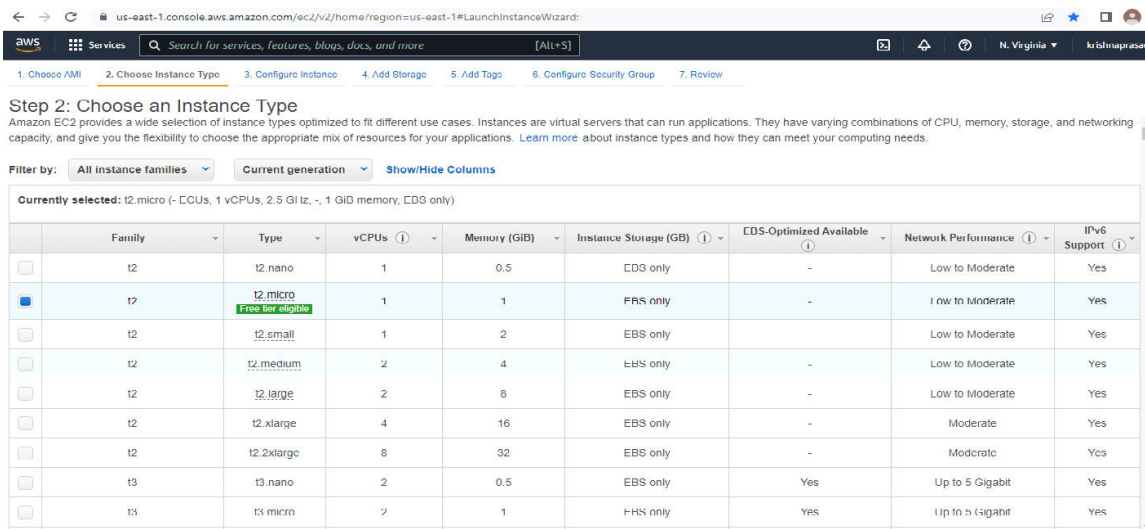


Volume- Attach And Detach

Volume: An Amazon EBS volume is a durable, block-level storage device that you can attach to your instances. After you attach a volume to an instance, you can use it as you would use a physical hard drive.

Step1: Launch an amazon Ec2 instance -> select t2micro as instance type as it is free-tier.



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

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GiB, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes

Step 2: Check the default volume of 8Gib and disable delete on termination.

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

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-093a80cf5f85fc291	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

▼ Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

Step 3: Connect to the instance and check the volume by "lsblk" command and check disc free by "df-h" command.

```

[root@ip-172-31-0-90 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk 
└─xvda1     202:1    0   8G  0 part /
xvdf        202:80   0   5G  0 disk 
[root@ip-172-31-0-90 ~]#

```

```

MIN-IO      minimum I/O size
OPT-IO      optimal I/O size
PHY-SEC     physical sector size
LOG-SEC     logical sector size
ROTA        rotational device
SCHED       I/O scheduler name
RQ-SIZE     request queue size
TYPE        device type
DISC-ALIGN  discard alignment offset
DISC-GRAN   discard granularity
DISC-MAX    discard max bytes
DISC-ZERO   discard zeroes data
WSAME       write same max bytes
WWN         unique storage identifier
RAND        adds randomness
FNAME       internal parent kernel device name
HCTL        HostChannel:Target:Lun for SCSI
TRAN        device transport type
SUBSYSTEMS  de-duplicated chain of subsystems
REV         device revision
VENDOR      device vendor
ZONED       zone model

or more details see lsblk(8)
[root@ip-172-31-0-90 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        474M   0  474M   0% /dev
tmpfs           483M   0  483M   0% /dev/shm
tmpfs           483M  408K  483M   1% /run

```

Step 4: Now create an external volume of 3Gib and attach it to the instance.

us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#AttachVolume:volumeId=vol-086a7ea1f12ef8ff7

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Attach volume

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

Basic details

Volume ID
vol-086a7ea1f12ef8ff7 (Casestudy-2)

Availability Zone
us-east-1a

Instance
i-0a5237fea00f33a02

Device name
/dev/sdf

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

us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#InstanceDetails:instanceId=i-0a5237fea00f33a02

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3.223.6.243 [Public IP]

IAM Role

Subnet ID
vpc-01e434ff7c11e0205
subnet-02b0af4c2496236ab

Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name

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

Root device details

Root device name
/dev/xvda

Root device type
EBS

EBS optimization
disabled

Block devices

Filter block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key
vol-0edf757b8f8b768da	/dev/xvda	8	Attached	Tue Aug 02 2022 11:49:55 G...	No	-
vol-086a7ea1f12ef8ff7	/dev/sdf	3	Attached	Tue Aug 02 2022 11:52:58 G...	No	-

Step 5: Modify the volume to 5Gib and attach it to the instance.

us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#ModifyVolume:volumeId=vol-086a7ea1f12ef8ff7

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Modify volume

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

Volume details

Volume ID
vol-086a7ea1f12ef8ff7 (Casestudy-2)

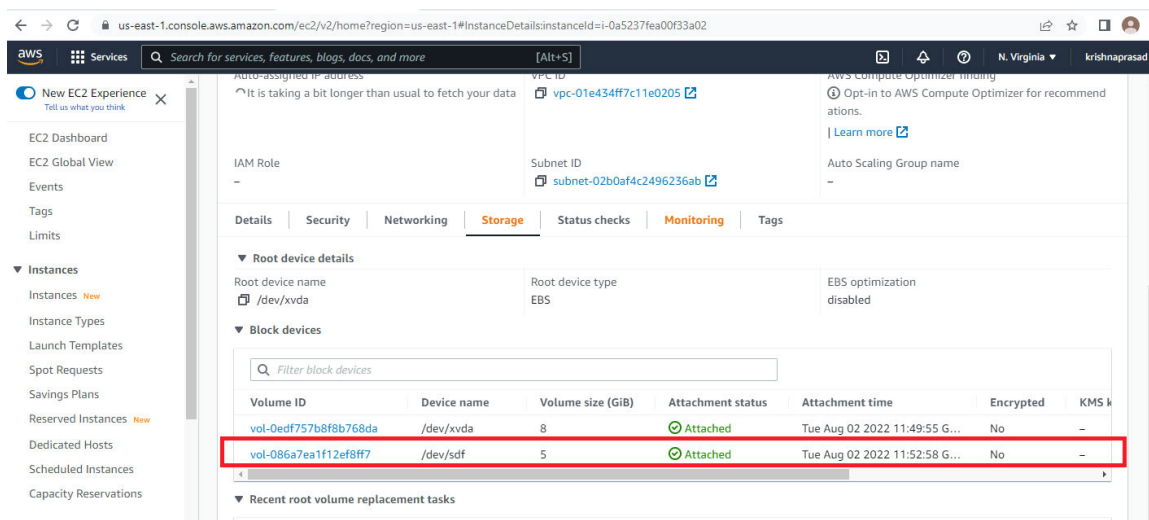
Volume type
General Purpose SSD (gp2)

Size (GiB)
5

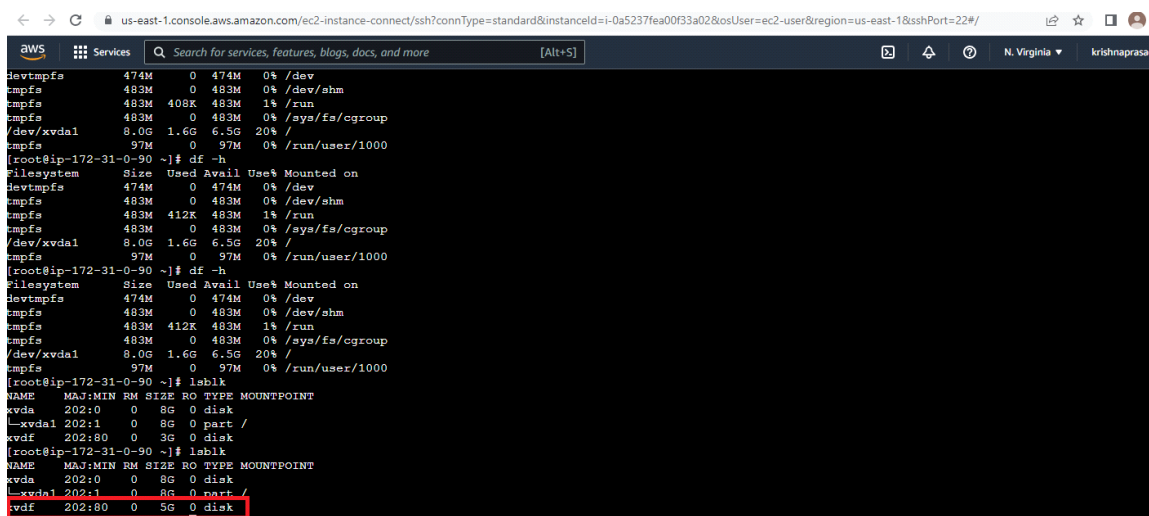
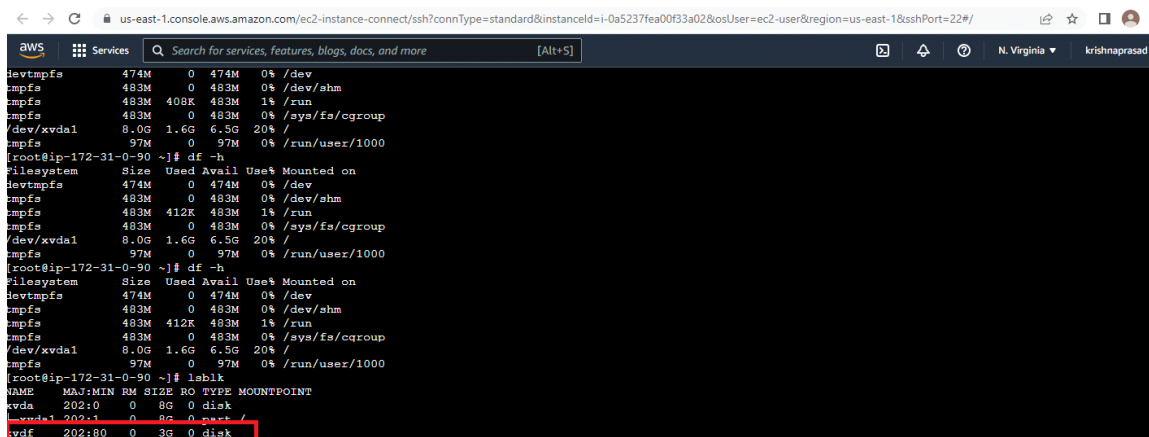
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS
100/3000

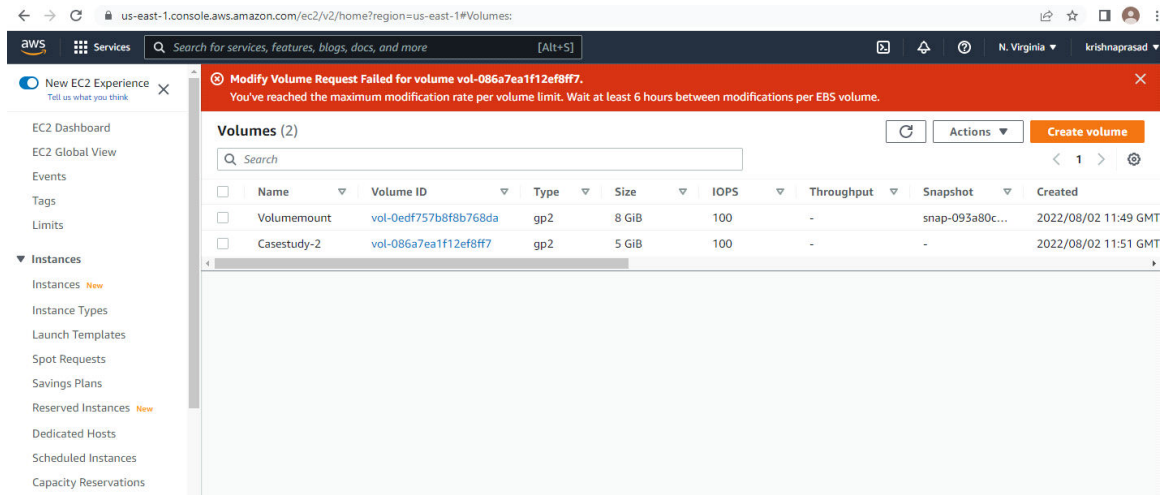
Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.



Step 6: Here you can observe the modifications done to the volume is as below.



Step 7: Modifications to the volume can be done only once after its creation and if we try it ask us to wait for six hours.



Cloud Formation:

Method of provisioning AWS infrastructure using code. It allows you to model a collection of related resources, both AWS and third party, to provision them quickly and consistently.

Procedure:

1. Launch an instance by YAML scripting.
2. Search cloud formation.
3. click on cloud formation.
4. Create stack.
5. Click on template is ready -> upload a templatefile
6. Then choose YAML or JSON file from your local machine and go to next.
7. Write the stack name -> Click on next button -> next button -> create stack.
8. Now go back and validate that ec2 instance will be launched with

yaml script.

The screenshot shows the AWS CloudFormation console for a stack named 'Ec2-instance'. The 'Events' tab is selected, displaying a list of 5 events. The first event, 'CREATE_COMPLETE', is highlighted. The left sidebar shows the 'Stacks (1)' section with a filter for 'Active' and a 'View nested' toggle.

Timestamp	Logical ID	Status	Status reason
2022-08-02 14:03:34 UTC+0530	Ec2-instance	CREATE_COMPLETE	-
2022-08-02 14:03:32 UTC+0530	MyInstance	CREATE_COMPLETE	-
2022-08-02 14:03:00 UTC+0530	MyInstance	CREATE_IN_PROGRESS	Resource creation Initiated
2022-08-02 14:02:58 UTC+0530	MyInstance	CREATE_IN_PROGRESS	-
2022-08-02 14:02:54 UTC+0530	Ec2-instance	CREATE_IN_PROGRESS	User Initiated

The screenshot shows the AWS S3 console for a bucket named 'cf-templates-im8ke20i8843-us-east-1'. The 'Objects' tab is selected, displaying a list of 2 objects. The left sidebar shows the 'Buckets' section with a list of access points and storage lens options.

Name	Type	Last modified	Size	Storage class
2022214VoW-ec2basics1 (1).yaml	yaml	August 2, 2022, 14:02:38 (UTC+05:30)	175.0 B	Standard
2022214ztE-ec2basics1 (1).yaml	yaml	August 2, 2022, 14:01:36 (UTC+05:30)	175.0 B	Standard

The screenshot shows the AWS Management Console 'Instances' page. The 'Instances (2)' tab is selected, displaying a list of 2 instances. The first instance, 'Demoec2-inst...', is highlighted. The left sidebar shows the 'Instances' section with a list of instance types and launch templates.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Demoec2-inst...	i-0249fcf9a52cbbfb	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a
Volumemount	i-0a5237fea00f33a02	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a

Conclusion: Attaching and detaching of volumes is successfully completed and it has some of the limitations along with launching an ec2 instance through YAML script.