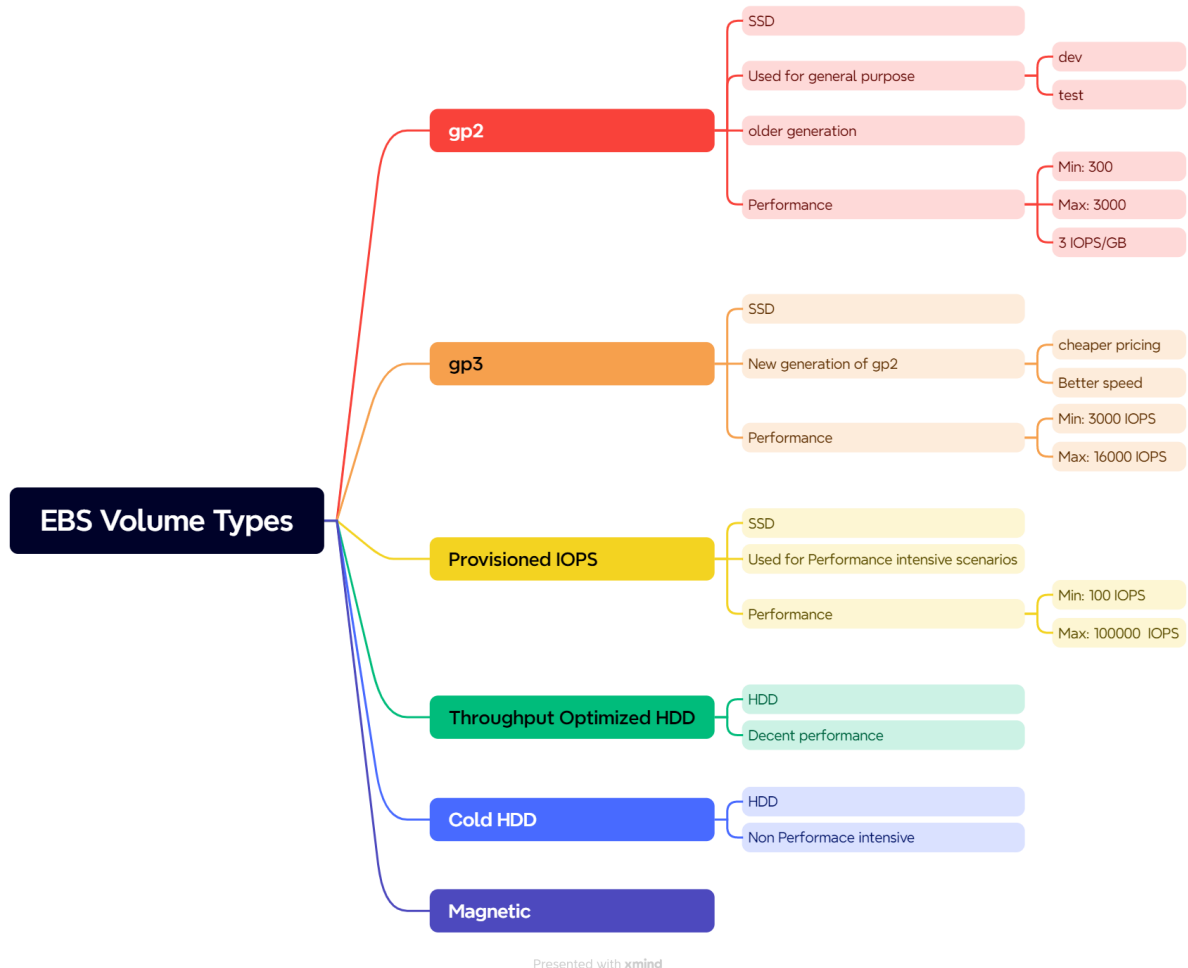


Disk Types and Pricing

AWS EBS VOLUME Types

- Types



- Lets estimate pricing using pricing calculator [Refer Here](#)

- Storage Size: 10 TB

- gp2:
 - cost: 1,167.36 \$
- gp3:
 - cost: 933.89 \$
 - iops: 3000
- provisioned iops (io2)
 - cost: 1,545.44 \$
 - iops: 3000
- cold hdd:
 - cost: 178.18 \$
- Throughput optimized HDD
 - cost: 522.24 \$

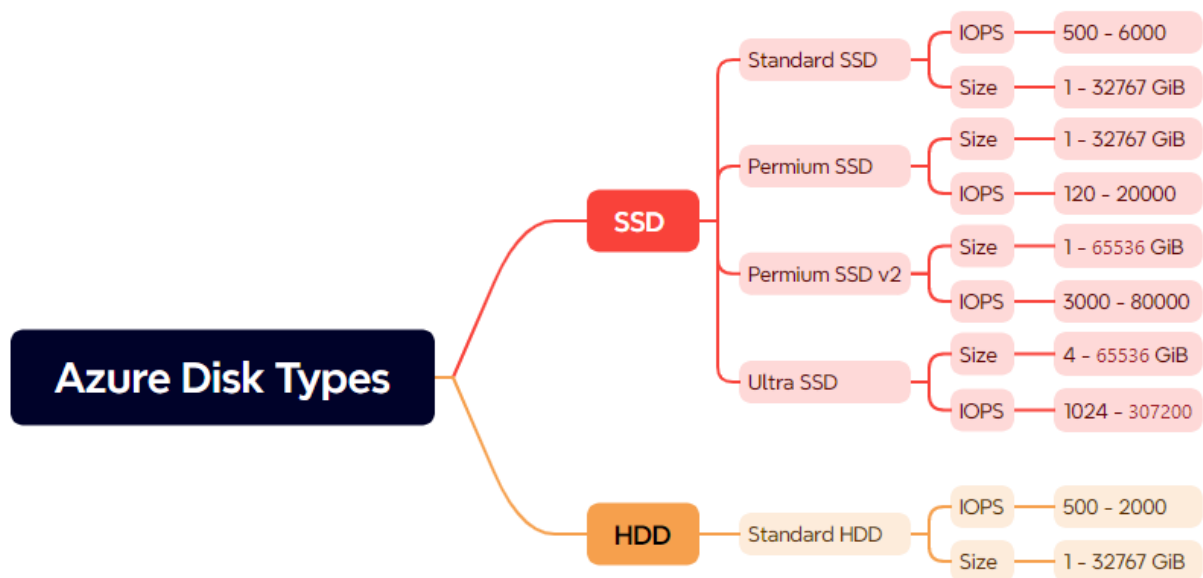
- Storage size: 10 TB (Try for max speed)

- gp2: no change
 - cold hdd: no change
 - Throughput optimized HDD: no change
 - gp3:
 - cost: 1,007.99 \$
 - iops: 16000
 - io2:
 - cost: 11,438.08 \$
 - iops: 256000
- HDD's cant be used for os i.e root volumes
 - Free tier

The screenshot shows the AWS Free Tier page. The navigation bar includes links for About AWS, Contact Us, Support, English, My Account, and a Sign In button. Below the navigation bar, the page title is "AWS Free Tier". The main content area is divided into sections: Overview, Free Tier Categories, How to Create an Account, Featured Offers for Business, FAQs, and Terms and Conditions. The "Free Tier Categories" section is expanded, showing a list of product categories with checkboxes for Analytics, Application Integration, Artificial Intelligence, Business Productivity, Compute, Containers, Customer Engagement, Database, and Developer tools. The "Featured Offers for Business" section is also visible, showing three offers: Amazon S3 (5 GB of standard storage), Amazon EFS (5 GB of storage), and Amazon Elastic Block Storage (30 GB of storage). The Amazon Elastic Block Storage offer is highlighted with a green box. A blue callout box with the text "Introducing Receive and leave capabilities" is overlaid on the Amazon Elastic Block Storage offer.

Azure

- Types







- Pricing [Refer Here](#) (region: eastus)

- Storage Size: 8 TB

- Standard HDD:
 - cost: \$262.19
- Standard SSD:
 - cost: \$614.60
- Premium SSD:
 - cost: \$946.08
- Premium SSDv2:
 - IOPS: 3000
 - cost: \$657.82
 - IOPS: 20000
 - cost: \$744.69
 - IOPS: 80000
 - cost: \$1,051.29
- Ultra SSD
 - IOPS: 8192
 - cost: \$1,431.11
 - IOPS: 400000
 - cost: \$21,382.93

- In Azure Ultra disks cannot be used as os disks.

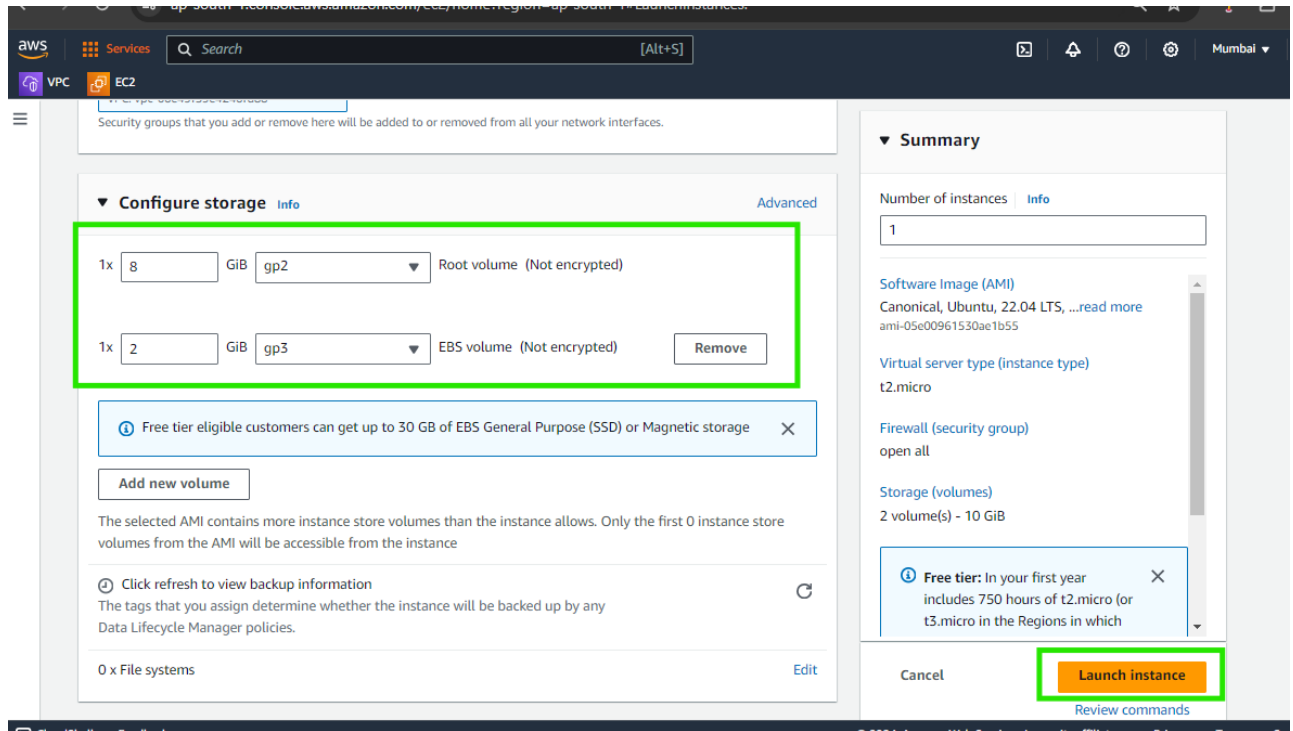
Take advantage of free products					
These products are free up to the specified monthly amounts. Some are always free to all Azure customers, and some are free for 12 months to new customers only.					
	Machine Learning	Develop and run R and Python models on your platform of choice.	AI + machine learning	Free	Always
	Managed Disks	Get high performance, durable block storage for Azure Virtual Machines with simplified management.	Storage	2 64 GB (P6) solid state drives SSD storage, plus 1 GB snapshot and 2 million I/O operations	12 months
	Microsoft Entra ID (formerly Azure AD)	Enable identity and access management in the cloud.	Identity	50,000 stored objects with single sign-on (SSO) to all cloud apps	Always
	Monitor	Gain full observability into your applications, infrastructure, and network.	Management and governance	See Azure Monitor pricing details for free amounts per feature	Always
	Network Watcher	Monitor, diagnose, and gain insights into your network performance and health.	Networking	5 GB storage with 1,000 checks, 10 tests, and 10 connection metrics	Always

Backups of EBS Volumes

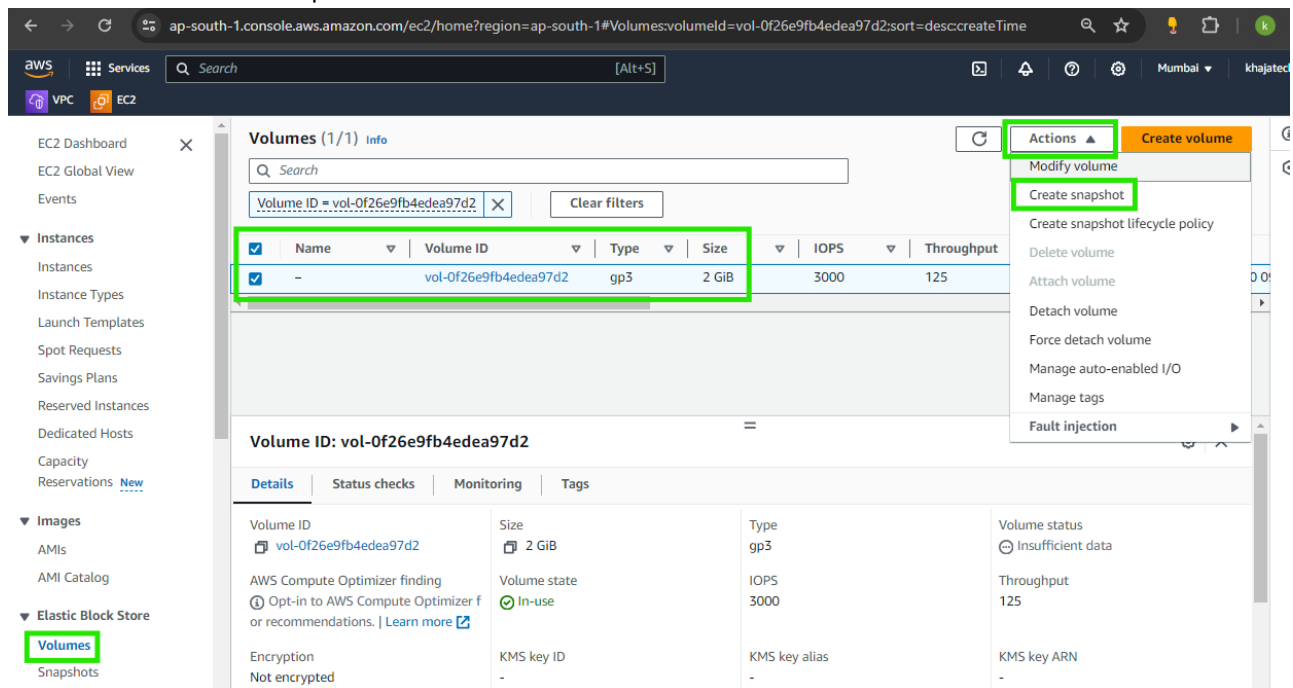
- Backup of EBS Volume is called as Snapshot
- Snapshots can be taken
 - manually
 - automated
- Using snapshots of root volumes we can create Amazon machine images and for all the other volumes types can be used to create volumes.
- IN AWS EBS belongs to an Availability Zone and snapshot belongs to a Region. If you need a disk to be create in other region copy snapshot to other region
- Snapshots can be shared with other aws accounts as well.

Experiment with manual snapshots

- Lets create an ec2 instance with two ebs volumes (root volume and other is volume)



- In the volume add some data post formatting and mounting
- Lets create a manual snapshot of this volume



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-0f26e9fb4edea97d2

Description

Add a description for your snapshot

app 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

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Snapshots:

aws

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

Owned by me

Search

Recycle Bin

Actions

Create snapshot

<

1

>

⚙

<input checked="" type="checkbox"/>	Name	Snapshot ID	Volume...	Description
<input checked="" type="checkbox"/>	-	snap-08925a26413d2bc31	2 GiB	app snapshot

Snapshot ID: snap-08925a26413d2bc31

Details

Snapshot settings

Storage tier

Tags

Snapshot ID

snap-08925a26413d2bc31

Volume size

2 GiB

Owner

381491878286

Volume ID

vol-0f26e9fb4edea97d2

Encryption

Not encrvoted

KMS key ID

-

Progress

Unavailable

1%

Snapshot status

Pending

Started

Thu May 30 2024 09:50:07 GMT+0530 (India Standard Time)

Product codes

-

KMS key alias

-

KMS key ARN

-

6 / 10

The screenshot shows the AWS Management Console interface for the Snapshots page. The console displays a list of snapshots with columns for Name, Snapshot ID, Volume, and Description. A snapshot with ID snap-08925a26413d2bc31 is selected, showing details like Volume size (2 GiB), Progress (Available (100%)), and Snapshot status (Completed). The console also shows the left-hand navigation menu with categories like Images, Elastic Block Store, and Network & Security.

- Now delete the ec2 instance and volume
- Now create a new ec2 instance with no extra volumes
- try creating a volume from snapshot in the az where the ec2 is created

The screenshot shows the AWS Management Console interface for the Snapshots page. The console displays a list of snapshots with columns for Name, Snapshot ID, Volume, and Description. A snapshot with ID snap-08925a26413d2bc31 is selected, showing details like Volume size (2 GiB), Progress (Available (100%)), and Snapshot status (Completed). The console also shows the left-hand navigation menu with categories like Images, Elastic Block Store, and Network & Security. The 'Actions' dropdown menu is open, showing options like 'Create volume from snapshot', 'Create image from snapshot', 'Copy snapshot', 'Delete snapshot', 'Manage tags', 'Snapshot settings', and 'Archiving'.

Volume settings

Snapshot ID

📄 snap-08925a26413d2bc31

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](#)

2

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](#)

ap-south-1b ▼

- Attach volume to ec2

aws

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Elastic IPs

Volumes (1/2) [Info](#)

🔄

🔍 Search

	Name	Volume ID	Type	Size	IOPS
<input type="checkbox"/>	-	vol-01b1094fc28cc9d72	gp3	8 GiB	3000
<input checked="" type="checkbox"/>	-	vol-0364bbde71053bed5	gp3	2 GiB	3000

Volume ID: vol-0364bbde71053bed5

Details

Status checks

Monitoring

Tags

Volume ID

📄 vol-0364bbde71053bed5

Size

📄 2 GiB

Type

gp3

IOPS

3000

AWS Compute Optimizer finding

📘 Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)

Volume state

☒ Available

Encryption

Not encrypted

KMS key ID

-

KMS key alias

-

KMS key ARN

-

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

Fault injection ▶

Volume status

🟢 Okay

Throughput

125

- SSH into ec2 and list block devices

```
ubuntu@ip-172-31-14-164:~$ sudo 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
xvdd         202:48    0    2G   0 disk
```

- Mount the volume to some folder and view contents

```
ubuntu@ip-172-31-14-164:~$ sudo mkdir /app
ubuntu@ip-172-31-14-164:~$ sudo mount /dev/xvdd /app
ubuntu@ip-172-31-14-164:~$ sudo ls /app
lost+found  nopCommerce_4.70.1_NoSource_linux_x64.zip
```

- This snapshot can be copied to other regions as well

The screenshot shows the AWS Management Console interface. On the left, the navigation pane is visible with categories like Images, Elastic Block Store, Network & Security, and Load Balancing. The 'Snapshots' section under 'Elastic Block Store' is selected. The main content area shows a table with one snapshot entry. The 'Actions' menu for this snapshot is open, and 'Copy snapshot' is highlighted. Below the table, the details for the selected snapshot (ID: snap-08925a26413d2bc31) are displayed, showing it is available and completed.

Name	Snapshot ID	Volume
-	snap-08925a26413d2bc31	2 GiB

Snapshot ID: snap-08925a26413d2bc31			
Details	Snapshot settings	Storage tier	Tags
Snapshot ID snap-08925a26413d2bc31	Volume size 2 GiB	Progress Available (100%)	Snapshot status Completed
Owner 381491878286	Volume ID vol-0f26e9fb4edea97d2	Started Thu May 30 2024 09:50:07 GMT+0530 (India Standard Time)	Product codes -
Encryption Not encrypted	KMS key ID -	KMS key alias -	KMS key ARN -

aws Services Search [Alt+S]

VPC EC2

Snapshot ID
The ID of the original snapshot that is to be copied.
snap-08925a26413d2bc31

New snapshot settings

Description
A description for the snapshot copy.
[Copied snap-08925a26413d2bc31 from ap-south-1] app snapshot
255 characters maximum.

Destination Region
The Region in which to create the snapshot copy.
ap-south-2

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

- From this snapshot we can create disks/volumes