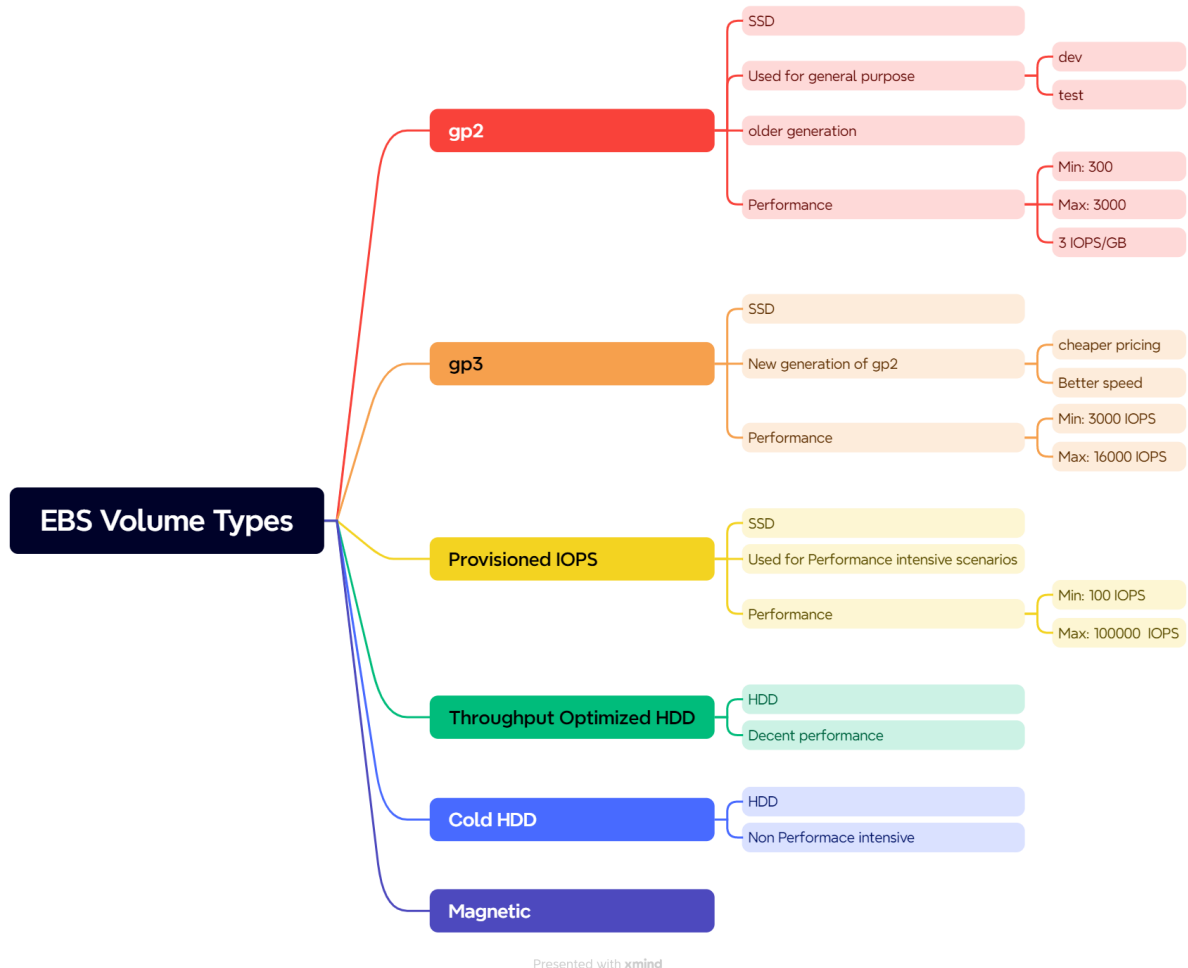# Disk Types and Pricing

AWS EBS VOLUME Types

- Types

Presented with xmind

- 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 $
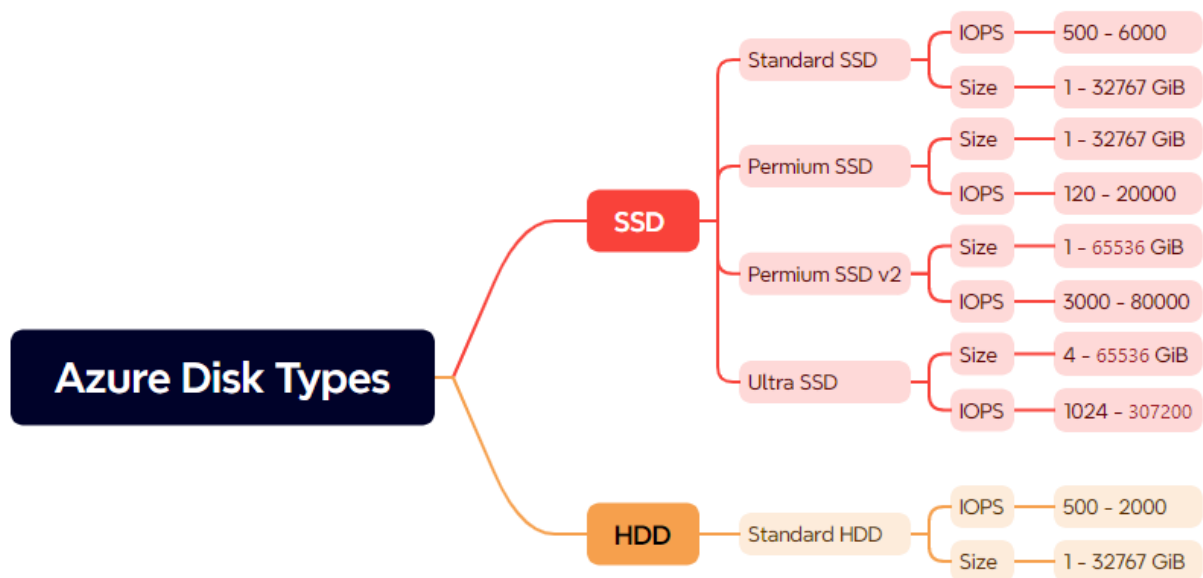   - Throughput optimized HDD
        - cost: 522.24 $

- 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

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)
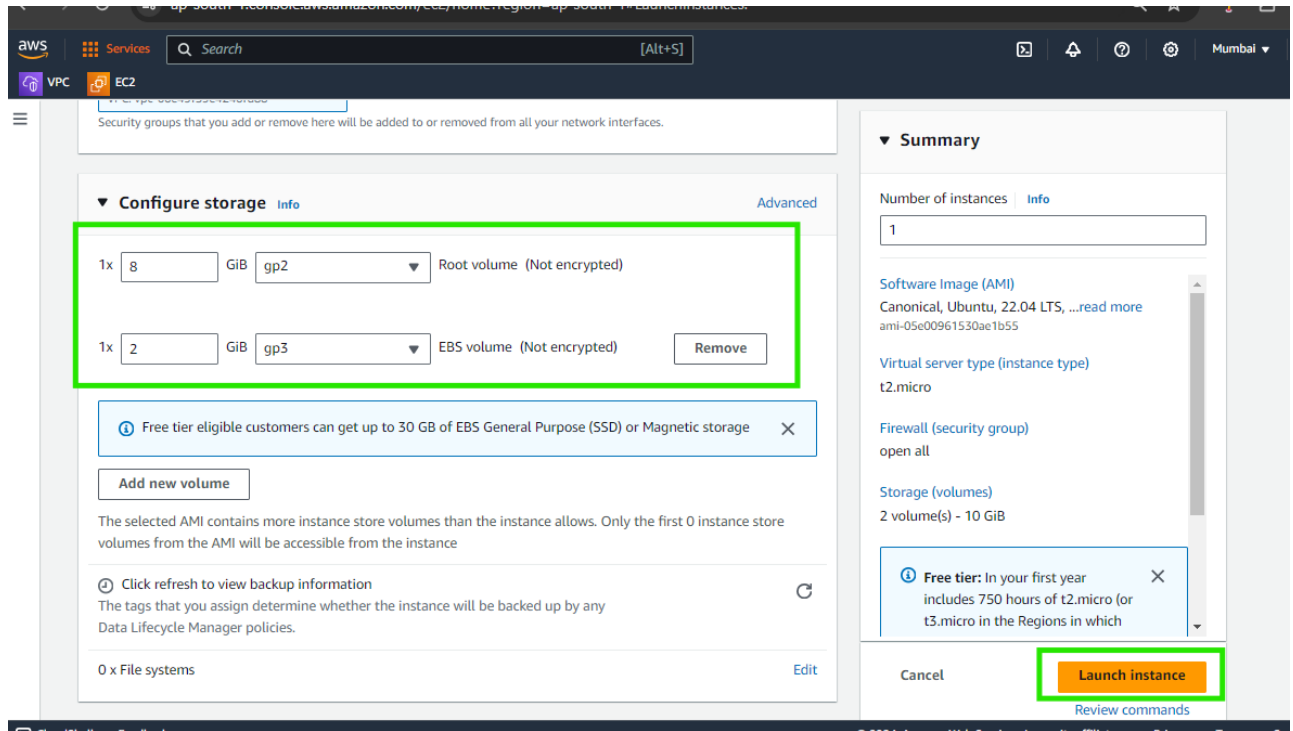
- In the volume add some data post formatting and mounting

- Lets create a manual snapshot of this volume
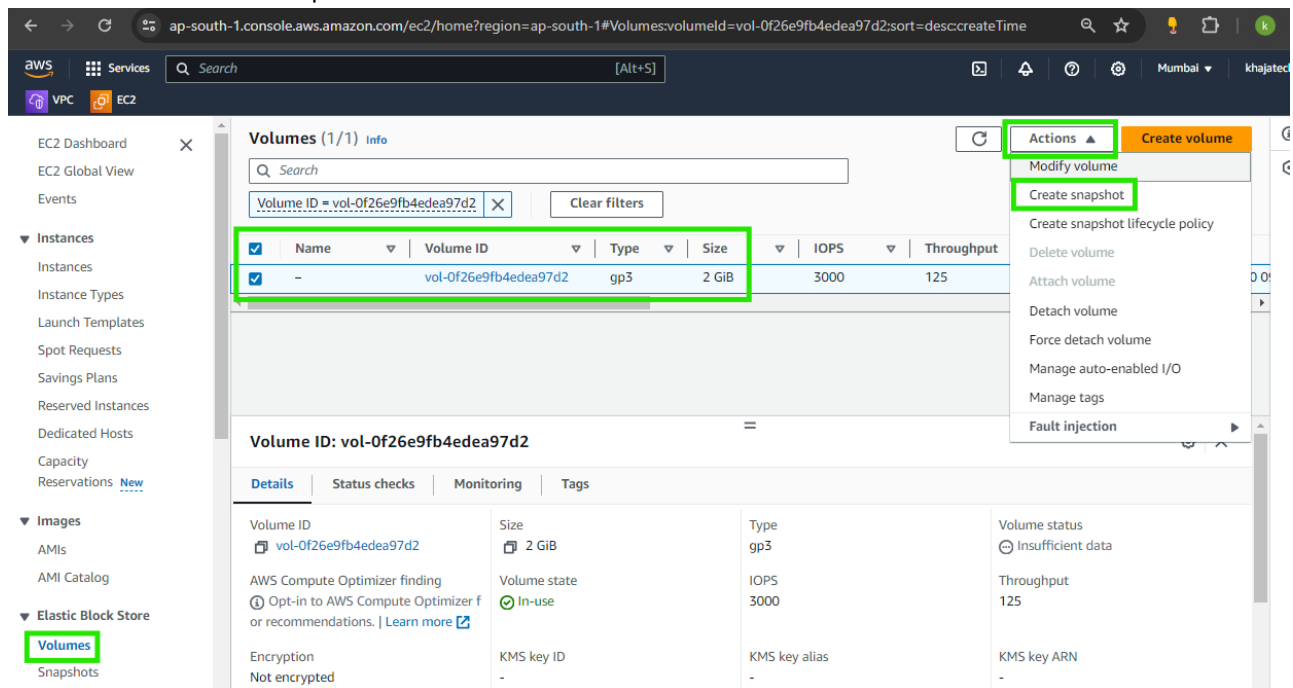
Create snapshot Info

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   Services   Q Search   [Alt+S]   Mumbai ▼   khajat

VPC   EC2

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity
Reservations New

▼ Images

AMIs

AMI Catalog

▼ Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

▼ Network & Security

Security Groups

Elastic IPs

Snapshots (1/1) Info

Recycle Bin   Actions ▼   Create snapshot

Owned by me ▼   Q Search   ‹ 1 ›

	Name	Snapshot ID	Volume...	Description
✓	–	snap-08925a26413d2bc31	2 GiB	app snapshot

Snapshot ID: snap-08925a26413d2bc31

Details   Snapshot settings   Storage tier   Tags

Snapshot ID	Volume size	Progress	Snapshot status
snap-08925a26413d2bc31	2 GiB	Unavailable 1%	Pending

Owner	Volume ID	Started	Product codes
381491878286	vol-0f26e9fb4edea97d2	Thu May 30 2024 09:50:07 GMT+0530 (India Standard Time)	-

Encryption	KMS key ID	KMS key alias	KMS key ARN
Not encrypted	-	-	-

- 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

- Attach volume to ec2

storage6.md

- SSH into ec2 and list block devices

- Mount the volume to some folder and view contents

- This snapshot can be copied to other regions as well

storage6.md

- From this snapshot we can create disks/volumes