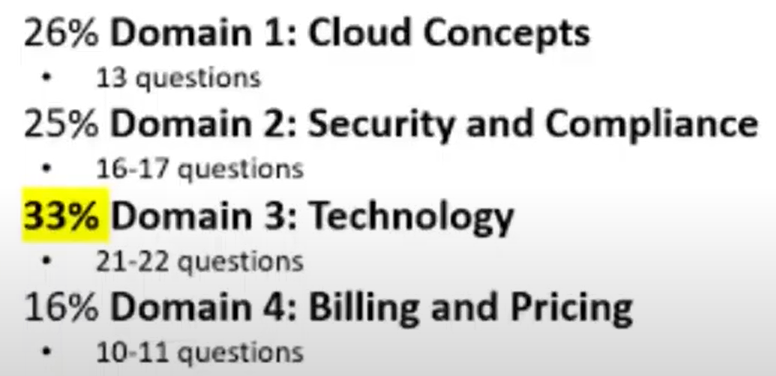
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* website: [https://learning-ocean.com/](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbE1Xdlh3N1pkQXprcVBxYkc2alllZ1padF9hQXxBQ3Jtc0tuUmFaTmJNdXFGWlFIMlFWX1I1YXJCdDAtYTRFYWhkYVRsSU5pWkRKdlFxMC1IVDdRdzVTLTJsRmxObUJlaC00MEQ2VW9iZFAyNnBKTUR2cGtxUmNXUjduLWMzR2cxSzRCODFfeENOZFlHMExTcVItOA&q=https%3A%2F%2Flearning-ocean.com%2F&v=nA96hTiakb8)
* Playlist for aws beginners: <https://youtu.be/rKNSc8RrwxA>

[jbradys@amazon.com](mailto:jbradys@amazon.com)

Aws cloud guru site: <https://acloudguru.com/course/aws-certified-cloud-practitioner>

Coursera: https://www.coursera.org/specializations/aws-fundamentals?irclickid=RjjQCCTM%3AxyNW1RzIo1lSXtrUkAUrw3cLXCb0I0&irgwc=1&utm\_medium=partners&utm\_source=impact&utm\_campaign=3552020&utm\_content=b2c

aws educate: <https://aws.amazon.com/education>

AWS skill builder: <https://explore.skillbuilder.aws/learn/course/10159/aws-partnercast-aws-certified-cloud-practitioner-your-accelerated-journey-kickoff>

AWS Tutorial W3schools - https://www.w3schools.com/aws/index.php

Plans: Basic < Developer < Business < Enterprise

**CloudFront** – CDN

Elastic Compute Cloud (EC2) – Virtual server in aws cloud (Like azure vm) IaaS

Azure Instance types:

<https://aws.amazon.com/ec2/pricing/>

On-demand instance: No commitment, pay as per usage.

Reserved Instances – when demand or load is predictable. 1 year or 3 years commitment term. Class - Standard or Convertible. (like reserved vm of azure) saves up to 72%

Savings Plan – offers more flexibility than RI by offering a consistent amount of compute usage from organisation side (irrespective of instance type). 1 or 3 year hourly spend commitment.

Compute Savings Plans: up to 66% savings.

EC2 Instance Savings Plans: up to 72% savings.

Amazon SageMaker Savings Plans: up to 64% savings.

Spot Instance – Service based upon bidding. But no commitment from service provider. Instance can be assigned to someone else anytime. Maximum discount possible in this for unpredictable time period. (up to 90%)

Dedicated Host- instances reserved for you. License issues. Compliance special demand.

Container – Elastic container service (ECS) & Elastic container service for Kubernetes (EKS)

Amazon RDS – relational database (like Azure SQL) PaaS [read & write]

Amazon DynamoDB – fully managed NoSQL database. Event-driven programming.

(like CosmosDB)

Redshift – fast, scalable data warehouse. (like Azure Synapse analytics) [data read/analysis]

AWS IAM – like Azure AD & Azure RBAC

**Edge Location** – It is the Data Center used to deliver content fast to your users. It is the site that is nearest to the users.

No charge for inbound traffic, but AWS charges for outbound traffic.

**Local Zones** – very low latency (single digit millisecond latency), but all services aren’t available in this.

* We can assign multiple security groups to an EC2. And the same security group can be assigned to multiple EC2 as well. So many to many maping can take place.
* Using security groups we can only allow traffic, can’t deny traffic using rules.
* EC2 instance types:

https://aws.amazon.com/ec2/instance-types/

**General Purpose** – balanced compute, memory & networking. (ex-t2.micro free tier)

1 cpu 2 gb ram. 2 cpu 4gb ram like that.

**Compute optimised** – High performance web server, dedicated Gaming server & machine learning interfaces.

Good cpu, high processing power.

**Memory optimised** – fast performance for workloads that process large data sets in memory.

High memory usage. (in memory database)

**Accelerated Computing** – Graphics / GPU based instance or high floating number calculation. Found in ISRO, NASA, Air Traffic control system.

**Storage Optimised** – High performance data read or write. RDBMS or non-rdbms, data warehousing.

* We should perform load testing after selecting these instance types.
* Connecting ubuntu from Kali command via ssh

ssh -i "youtube-key.pem" [ubuntu@ec2-13-233-100-78.ap-south-1.compute.amazonaws.com](mailto:ubuntu@ec2-13-233-100-78.ap-south-1.compute.amazonaws.com)

or, ssh -i "youtube-key.pem" ubuntu@13.233.100.78

* Connecting windows from Kali using Remmina tool. (install, put public ip, username & password)
* **Magic ip details:** curl 169.254.169.254/latest

curl 169.254.169.254/latest/meta-data/public-ipv4 – Retrieve public ip

curl 169.254.169.254/latest/meta-data/local-ipv4 – Retrieve private ip

* AWS changes public ip by default whenever you restart your EC2. To avail a static public ip, we need to associate/attach an elastic ip to EC2. 1 Elastic ip is free (if attached to an EC2)

To delete elastic ip: deallocate->release

* EBS (Elastic Block Storage): attaching a storage disk your EC2. Just like pendrive (additional storage except root volume).

EBS can attached to instance within same availability zone only.

By default one back up of EBS is available within the same availability zone.

S3 & EBS are like Azure Blob

Linux/ubuntu commands:

Sudo mkfs.ext4 /dev/xvdf

-used to format a disk before mounting. Xvdf is the name of the volume

Sudo mkdir /test

-it will generate one new test folder within root

Cd /

-it will take you to root.

Mount /dev/xvdf /test

-it will mount xvdf disk to test directory.

Mountpoint /test

* To test the newly mounted test disk.

Touch 1 2 3 4 – create 4 empty files. Echo “welcome” >demo.txt – Create text file.

Cd .. -to come back to root.

Umount /test- to unmount the xvdf disk storage EBS.

Cd /test & ls- you will find test is empty because pendrive has been ejected now.

Now to avoid payment, detach the ebs & delete.

\*Note: Before detaching we can also mount once again to view the content.

\*Note: If we mount an EBS in a already mounted folder (with another EBS), it will overwrite the current mount & will be mounted with new EBS.

File -s /dev/xvdf

-Used to check if disk is empty or not.

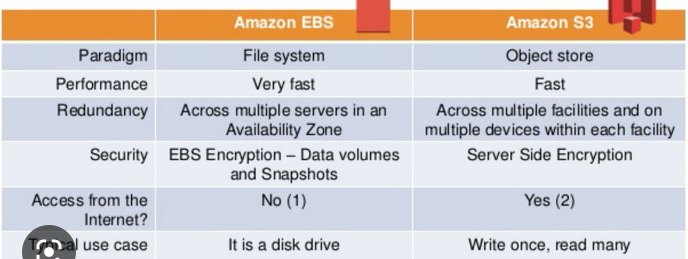
If it shows “/dev/xvdf: Linux rev 1.0 ext4 filesystem data” output, then we can be sure that it contains some data.

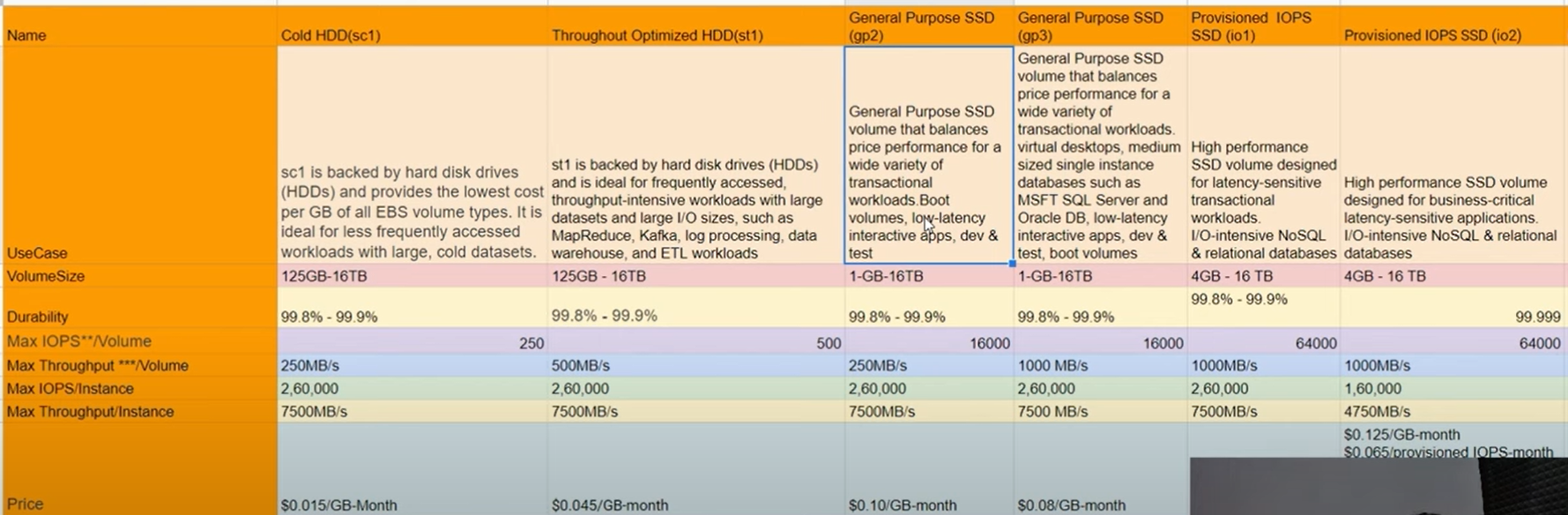
If it shows “/dev/xvdg: data” only then it means the ebs disk is empty.

**Modify Size of EBS** (only increase, can’t decrease):

Df -h -to see the volume size of file system

Resize2fs /dev/xvdf -It is run to increase the volume of actual file system.





**Modify Root volume:**

After modifying root volume from aws portal,

*Run lsblk* & *df -h* to know current size of disk.

Then run *file -s /dev/xvda1* to know if it’s ext4 type or xfs type.

If it’s ext4, then run

*Growpart /dev/xvda 1*  - 1 is the partition no here (first disk part). This command will increase the size of first disk.

Run *lsblk* & *df -h* once again to know current size of disk.

*Resize2fs /dev/xvda1*  - It will increase the actual size of /dev/xvda1

If it’s xfs, then run

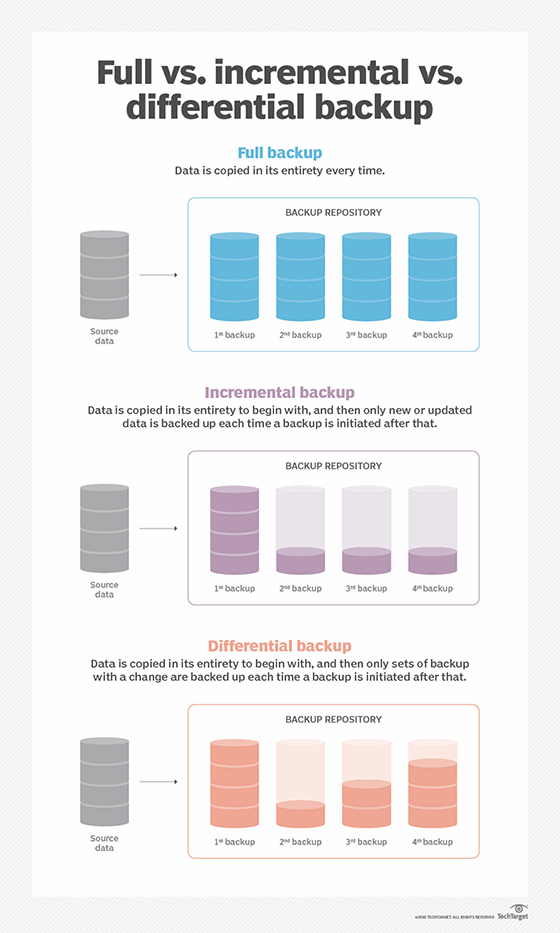
*Xfs\_growfs /dev/xvda 1*

* Multi-attach EBS: (only io2 for all regions & instance has to be from Nitro series)

AWS has two types of hypervisors. Xen (ex-t2) & Nitro (ex-t3)

For example: we can attach the same io2 EBS to multiple t3.micro instances.

* AWS stores snapshot in S3. Snapshot is time & region specific. AWS takes incremental backup for snapshots.



* **Types of Backups:**

***Full backup:*** The most basic and comprehensive backup method, where all data is sent to another location.

***Incremental backup:*** Backs up all files that have changed since the last backup occurred.

***Differential backup:*** Backs up only copies of all files that have changed since the last full backup.

* Yes “hello world” >> largetest.txt – This cmd will generate large size text file by saving the same line so many times.