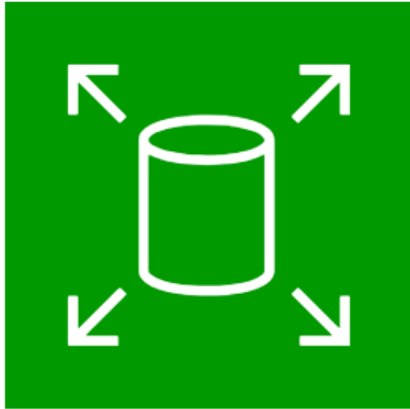# Storage services in AWS

BY: Salma Salah

Storage Services in AWS

Amazon Elastic Block Store

Amazon Simple Storage Service

Amazon Elastic File System

Amazon Simple Storage Service (S3)

An Object Storage Service with object
Max size 5 TB

Accessible Through REST APIs that is
Globally Unique

Provides 11 9s Durability & 4 9s Availability

Amazon S3 Storage Classes

Amazon S3 Standard

Amazon S3 Intelligent-Tiering

Amazon S3 Standard-Infrequent Access

Amazon S3 One Zone-Infrequent Access

Amazon S3 Glasier
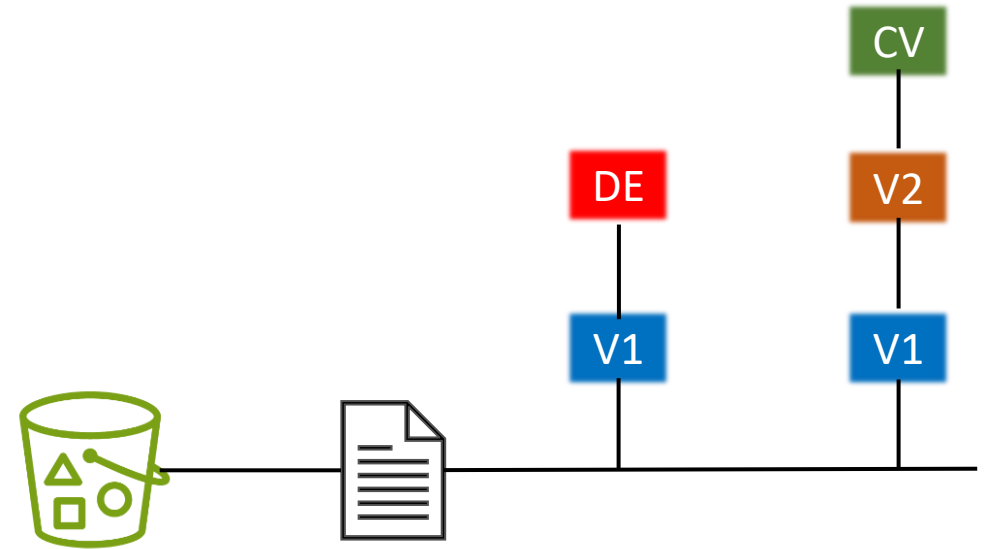
Amazon S3 Glasier Deep Archive

Amazon S3 Features

S3 Bucket Versioning

❑ To protect against object's Accidental Deletion or Overwritten

❑ Can add a Life Cycle Policies for the s3 versioning to delete the Non-Current Versions after certain amount of time
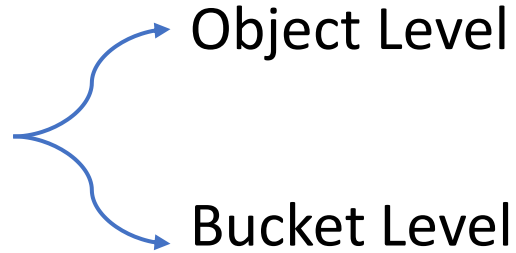
Amazon S3 Object Lock

WORM (Write Once Read Many) data storage model

Can be configured on
→ Object Level
→ Bucket Level

Two Different Ways to Enable Object Lock

Retention Period

- Governance Mode: Some users could have permissions

- Compliance Mode: NO one can do any action during retention period

Legal Hold

- Can Not make an expiration date

- Object is locked until hold is removed

Amazon S3 Features

S3 Pre-Signed URLs

S3 Transfer Acceleration

S3 Multi-part Upload

S3 Requester Pays
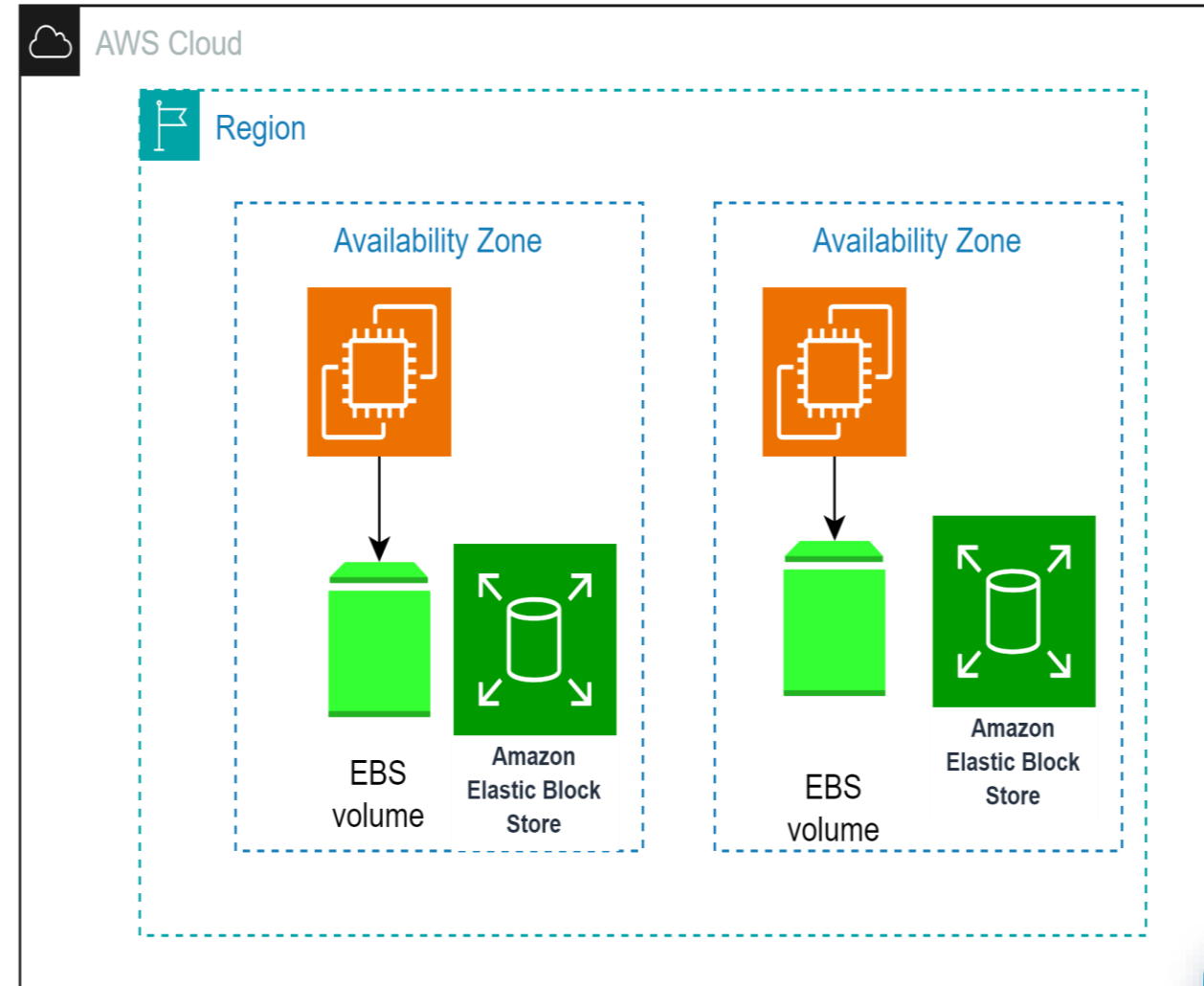
Amazon Elastic Block Store (EBS)

External Block Storage

Replicated in same Availability Zone

Only Attached to Single EC2

Both Instance and EBS volume MUST be in same Availability Zone

EBS uses KMS Customer Muster Keys (CMKs) To generate keys to Encrypt & Decrypt data

Data Encryption is done ON EC2 HOST means that it's Encrypted IN-Transit & on EBS volume

Amazon EBS Volume Types

SDD

General Purpose

- Small/ Random IOPs
- Highest Cost
- gp2 & gp2

Provisioned IOPS

- Intensive workloads
- Consistent performance
- io1 & io2

HDD

Throughput Optimized

- Large sequential IO load
- Big data / dataware house
- Streaming workload need fast consistent throughput
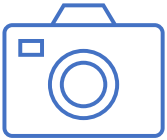
Cold HDD

- Large volumes that are Infrequent access
- Lowest Cost

Amazon EBS Snap Shots

EBS Snap Shots can be Automated/Scheduled or Manual

By Default Snap Shot is saved in S3 in same REGION

Two Ways to Manage Snap Shots

Cloud Watch Events

Can automate snap shots to be taken every period of time at a specific time

Data Life Cycle Manager

A policy can schedule when to create & delete a snap shot for single volume or multiple volumes attached to an EC2 instance
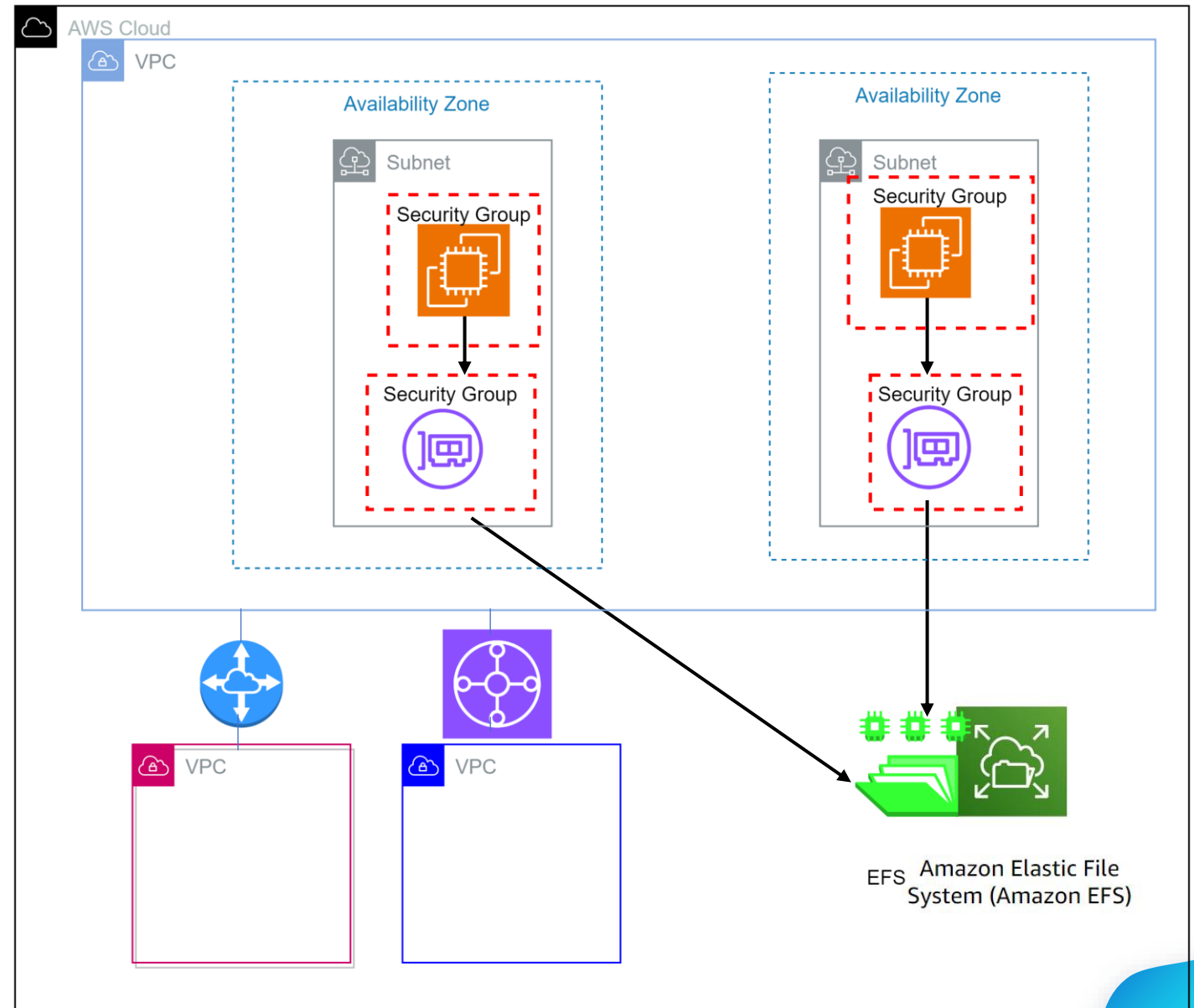
Amazon Elastic File System (EFS)

Network File System

Shared Storage

Can Scale to Beta Bytes

AWS Cloud

VPC

Availability Zone

Subnet

Security Group

Security Group

Availability Zone

Subnet

Security Group

Security Group

VPC

VPC

EFS Amazon Elastic File System (Amazon EFS)

Amazon (EFS) Storage Classes

Standard

Infrequent Access

Amazon FSx For Windows

For Windows Applications that need Storage in AWS

Encrypts data In-Transit & At-Rest

Can scale up to 64 TBs

Snow Family

Storage Devices to move data From & To AWS

SnowBall

SnowMobile

SnowCone