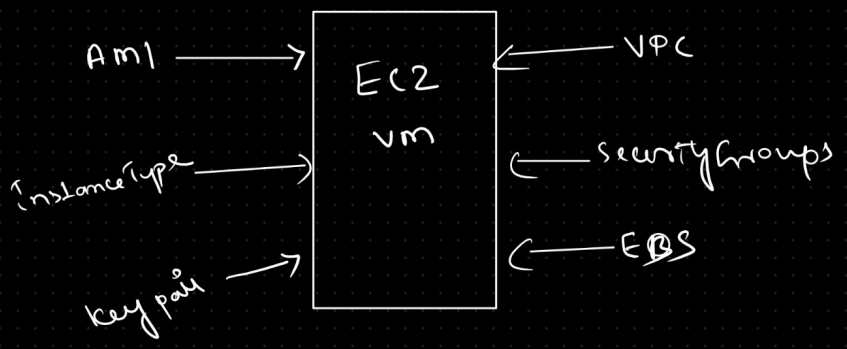
=> EC2



-> EBS (volumes & snapshots)
-> IPs
-> Static website hosting
-> Load balancer
-> Types of LBR
-> Autoscaling

=> Practicals on EC2 VM

① Create key pair (.pem file)

-> public key (aws will keep it)
-> private key (we will get)

② Create security group & update Inbound Rules to allow traffic

Windows RDP : 3389
Linux SSH : 22
HTTP : 80
HTTPS : 443
MySQL : 3306

3 Create EC2 Instance
- SELECT AMI
- SELECT Instance Type
- Select Key pair
- Select Security Groups
Select EBS Storage
Create machine

Types of IP's

--> private ip
--> public ip
--> elastic ip

--> Private IP --> Fixed IP -->Used for internal communication (Within VPC)
--> Public IP --> Dynamic IP in AWS --> used to connect with EC2 VM from outside --> Whenever we re start our VM then public Ip gets changed

-->Elastic IP: If we want Fixed IP --> Elastic IP's are commercial (Bills will be generated)

Public IPv4 address

13.203.198.254 | open address

Private IPv4 addresses
172.31.7.4

Public IPv4 address
13.233.66.166 | open address

Private IPv4 addresses
172.31.7.4

15.207.146.31 elastic ip : 15.207.146.31

: Lab Practicals on Elastic IP
--> Allocate Elastic IP (Getting from AWS)
--> Associate Elastic IP with EC2 VM
---> Restart and check public IP --> It will remain same and will not change
--> De associate Elastic IP
--> Release Elastic IP to AWS --> to avoid billing

=> EBS -> Elastic Block store

--> Block level storage device (HDD/SSD)

--> EBS will be attached with EC2 Instance.

--> In EBS we have 2 types of volumes (Storage)
-> Root Volume
-> Additional Volume

--> EBS provides both primary and secondary storages for EC2 instnaces

Whenever we launch EC2 instances by default we will be getting one Root volume

--> for windows VM : 30 GB

--> For Linux VM : 8GB default volume

Note : EBS volume can be upto 16TB

--> Root volume is mandatory to launch EC2 instance and if we try to remove root volume from EC2 then we cannot start or use that instance

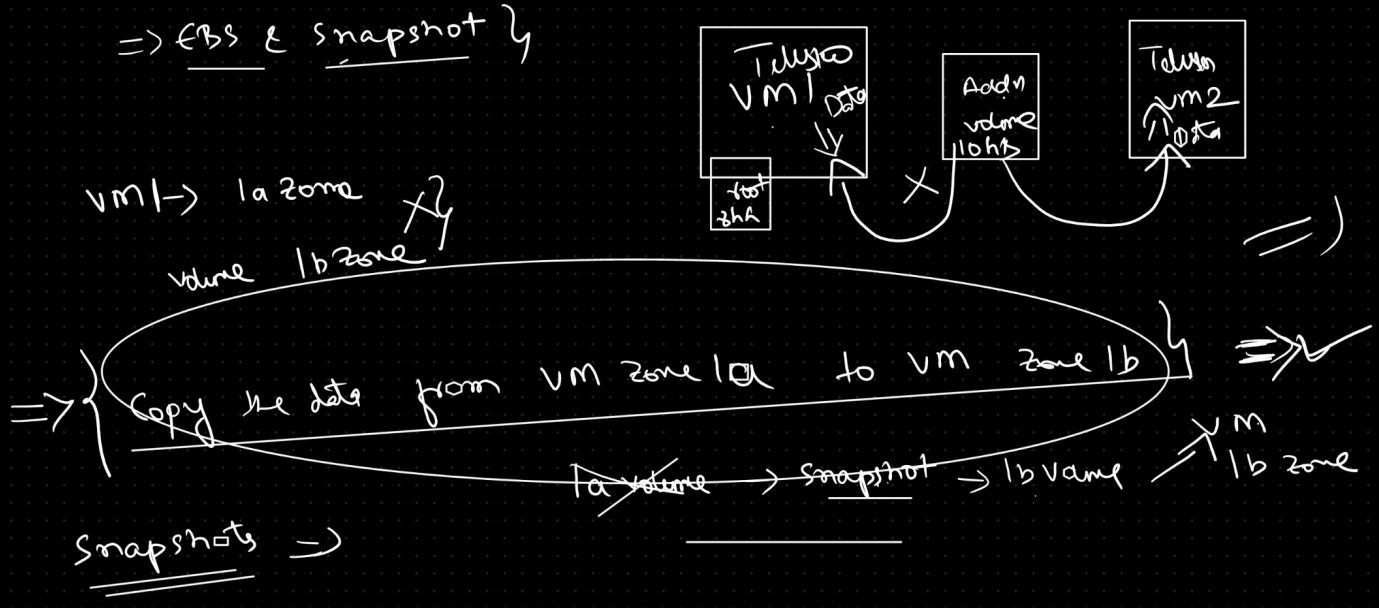
--> We can have Additional EBS Volumes and they are optional (we can add or remove based on need)

--> One EC2 VM can have multiple EBS volumes

--> One EBS Volume can be attached to one EC2 VM at time

--> EBS Volumes are Availability Zone Specific ... i.e If a EC2 VM is created in ap-south-1a then our EBS volume must also be there in ap-south-1a only then we can attach it.

EBS Volume Types :
==========
1) General Purpose -> Min : 1GiB and Max : 16384 GiB
2) Provisioned IOPS -->Min: 4 GiB, Max: 16384 GiB.
#3) COLD HDD --> Min: 125 GiB, Max: 16384 GiB.
4) Throughput Optimized --> Min: 125 GiB, Max: 16384 GiB.
5) Magnetic --> Min: 1 GiB, Max: 1024 GiB.

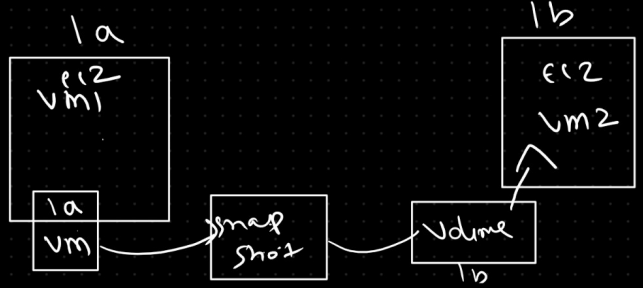


--> Snapshots are used for Volumes backup and they are regional specific (Volumes are zone specific)

-->From A volume we can create snapshot & From Snapshot we can create volume

Volume --> Snapshot --> Volume

--> Snapshots cannot be attached to EC2 Instance Directly (As seen before Volumes can be attached but not snapshots)



Copy data from 1a zone VM to 1b zone VM
==========

Create a snapshot for 1a vm volume
From that Snapshot create a volume in 1b zone
Attach created 1b volume to vm 1b zone

Lab task EBS Volumes :

Created EC2 VM --> EBS Root volume 8gb
Created a Additional Volume with 10gb (check AZ)
VM in 1a az then volume also in 1a az

Attach addiotional volume to exiting VM as shown in live class

Connect to VM from Mobaxterm or however you feel :

$ lsblk --> Check volumes attached
Store files into EBS additional Volume and follow below commands
$ sudo mkfs -t ext4 /dev/xvdb --> first time once not needed when we attach and connect to one more vm

$ mkdir dir1 --> created a dir

$ mounting --> Establishing relation between adddiontal volume and directory

$ sudo mount /dev/xvdb dir1 --> dev/xvdb is the name we have selected at the time of volume creation

$ cd dir1 --> Change dir to our created directory dir1

$ sudo touch f1.txt f2.txt create new file and add into dirc

Detached the addiotnal volume from EC2 vm1

Create new EC2 VM and attach EBS additional volume to EC2 new VM

Check that files by running following commands

$ lsblk
$ mkdir dir1

sudo mount /dev/xvdb dir1 // mounting

ls -l dir1

NOTE : Make sure after practice detach additional volumes and delete it to avoid billing .