AWS Notes :

Module 3 >>>

How to Copy EC2 from one region to another using AMI >>>>

First I create one EC2 instance for another region create duplicate to next region .

check instance Name after change the region diff AWS account EC2 Instance

Check Instance >>> Actions >>> Image and templates >>> create image (AMI amazon machine image **)**

fill the details >>>>>

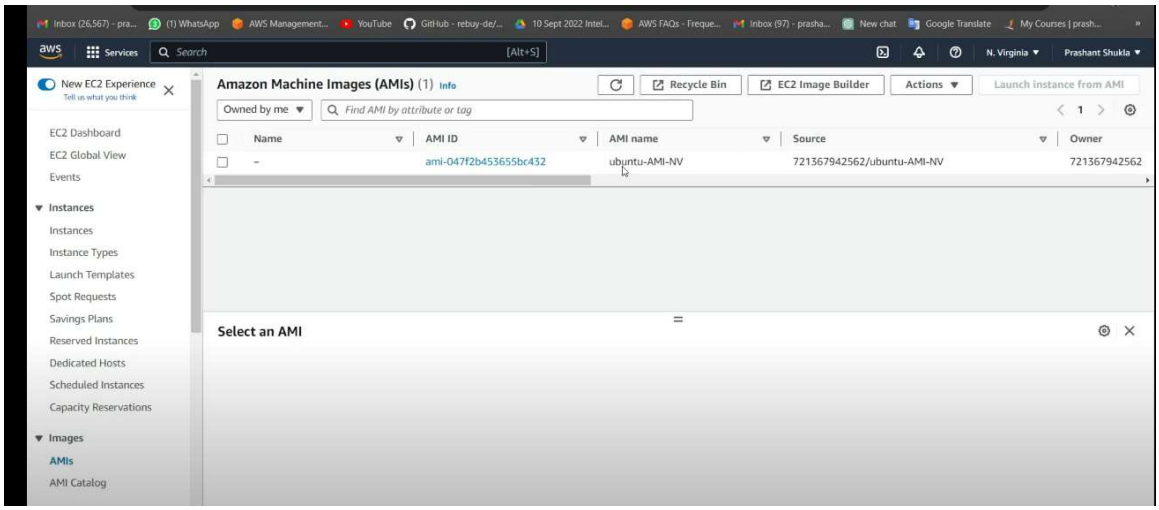
Image Name >>>> ubuntu-AMI-NV

Image Description >>>> copy AMI from the One region to another region .

Not click on Create Image button.

>>

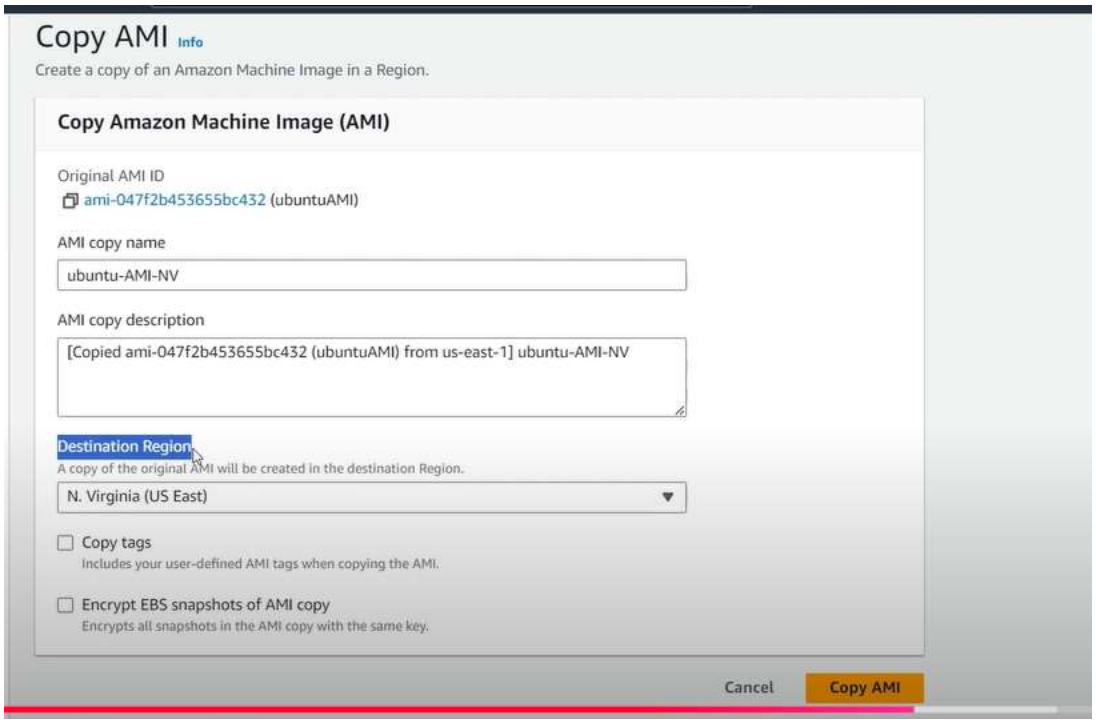
I got one AMI inside this AWS Account you can check



wait for few min AMI status should **pending** to **Available** like that

update AMI name and copy AMI also ..

When its created or **Available** then Goto **Actions options** >>> Copy AMI >>> open this form



Original AMI ID name >>> ubuntu-AMI-NV

Region >>>> Us West (Oregon)

And Goto Click **Copy AMI** button

How to check AMI is created or not >>> open duplicate tab

User logged with AWS account change the region name and check AMI is created or not.

You can check another region you got **AMI it is Got Images >>> AMI & snapshots Got it in EC2 Dashboard tab both ..**

When AMI is **created & Available** then you can GOTO **Launch instance from AMI** then open one form ...

Open new Page Launch an instance ..

Name & tags >>> oregon-ec2

not select and AMI

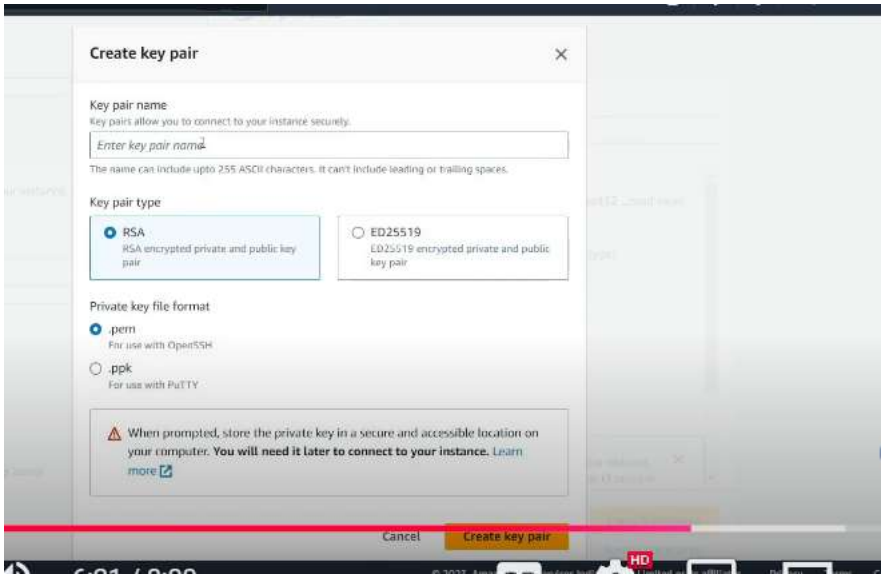
AMI from catalog >>> already get AMI here.

MY AMIs >>> already you are owner for the same AMI

for verify AMI Goto AMI from catalog tab ...

already created name >>> Going down Select Key pair name in dropdown if you not have any key so you can create key pair for the region ...

create key pair file



Enter Key Pair , create .pem file and **create key pair** button and click and download file ...

select file their and Launch instance its working ....

How to Attach / Mount EBS Volume in Ubuntu and Windows >>>>>>>>>>>

EBS (Elastic Block Storage) >>>

Is a amazon block-level storage service that is intended to be used exclusively with separate EC2 instances ; no two instances can have the same EBS volume attached to them. EBS provides a higher performance option for many use cases because it is directly attached to the instance and it is used for various databases (both relational and non relational) as well as wide range applications such a software testing and devlopment.

Features of EBS >>>

- **Amazon** EBS persistent storage volumes also know as Amazon EBS Volumes.
- Region and Availability zone or multiple Physical location of your resources such as instances and Amazon EBS Volume.

- Using Security groups , you can specify the protocols , ports and source IP ranges that can reach your instance.

- Elastic IP addresses are static IPr4 addresses used for dynamic cloud computing.

EBS concepts >>>

It is the raw unformatted block-level storage ; it is exposed as raw device to the EC2 instance EBS volumes parsist independently from the life of EC2 instance.

An EBS volume is automatically replicated with in an availability zone.

ThoughPut >>> It is sequential transfer rate that an SSD or HDD will maintain continuously..

IOPS (Input output per second)   >>>>

EBS volm Types >>>

1) GP2 : General purpose SSD

2) IO1 : Provisioned SSD

3) ST1 : Throughpur-optimized HDD

4) SC1 : Cold Storage HDD

New feature : EBS Multi Attach   >>>

we can now enable multi-Attach on Amazon EBS Provisioned IOPS io1 volumes to allow a single volm to be concurrently attached to up to 16 Aws Nitro System based Amazon EC2 instance in the same availability zone.

EC2 <=== EBS	EC2 <=== EBS (multi instance implement)
EC2 <=== EBS	EC2 <===
Before	**After**

>>>

Volume Types >>>

GP2 : General purpose SSD

- Baseline performance is 3 IOPS/GB with a min of 100 IOPS and a max of 10000 IOPS.
- Max burst performance is 3000 IOPS.
- Max throughput per volume is 160 MB/S (16 KB IO size).

IO1 : Provisioned SSD

- From 100 to 32000 IOPS can be provisioned.
- Max throughput per volumn is 500 MB/s.

ST1 : Throughput Optimized HDD

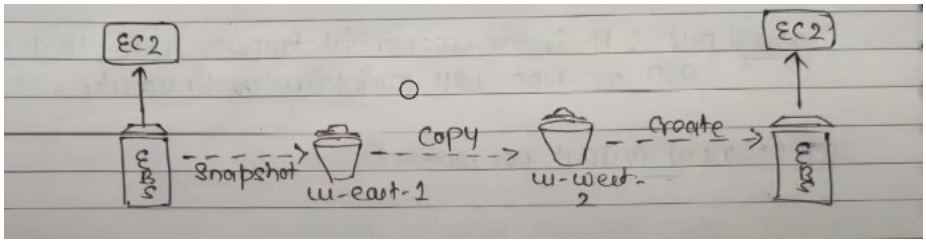
- Baseline performance is 40 MB/s per TB with a max of 500 MB/s per volume.
- Burst performance 250 MB/s TB with a max of 500 MB/s per volume.

SC1 : cold Storage HDD

- **Baseline** performance is 12 MB/s per TB with the max of 192 MB/s per volume.
- Burst performance 80 MB/s TB with a max of 250 MB/s per volume.

EBS Snapshots >>>

- Snapshots are used to backup data on EBS volume.
- All the snapshots is incremental backups except for the first one.
- Snapshots are copied to Amazon S3.



New Feature : Data lifeCycle Manager for snapshots.

Demo >>> EBS for ubuntu

Demo >>> EBS for windows

Demo >>> EBS for snapshots

Demo >>> EBS for ubuntu (Step by Step)

=> Launch ec2 - ubuntun (notedown availabity zone)

=> go to EBS - Volume

=> create Volume

=> Goto volm - attach it with ec2

=> Go to ec2 - check storage

now we have to format it and mount

=> connect ec2

=> **sudo apt-get update (command) like this**

format ===>

 # sudo file -s /dev/xvda

 # sudo file -s /dev/xvdf

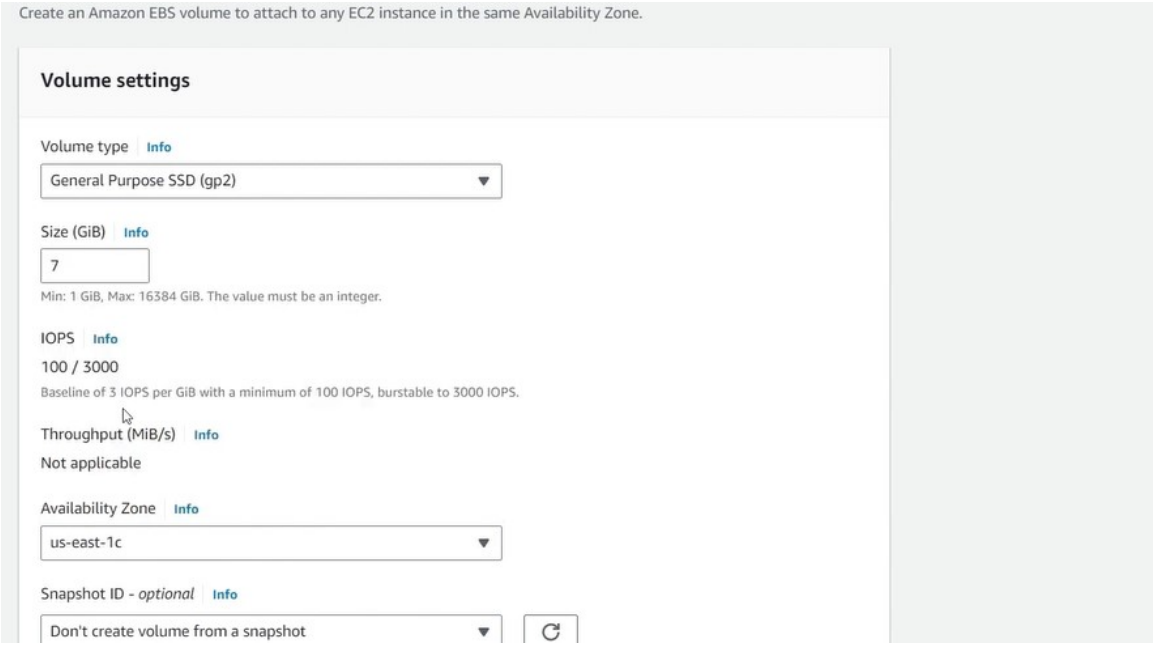
 # sudo mkts -t ext4 /dev/xvdf

First you can create EC2 instance >>>>

Search EBS in AWS account inside dashboard ...

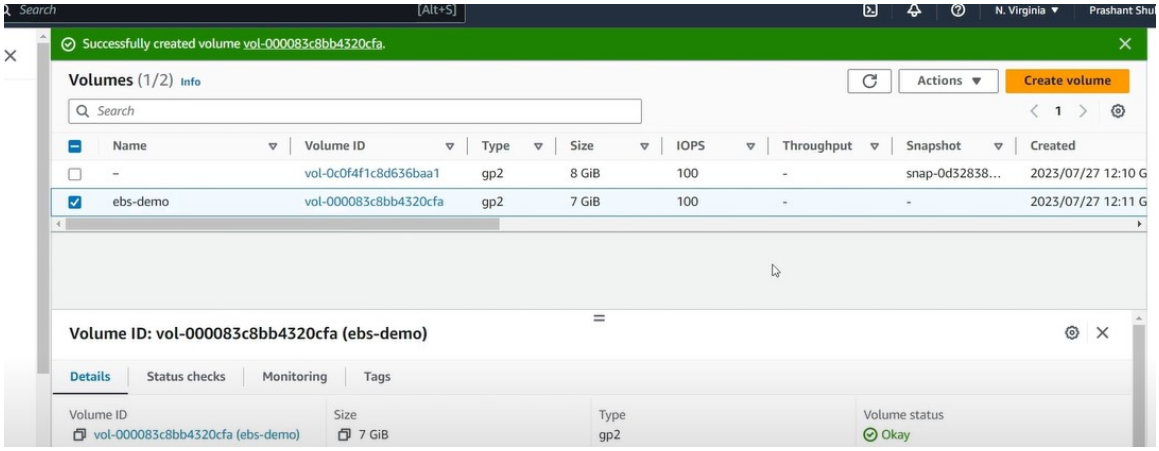
Goto Elastic Block Store menu >>> Select Volumes >>> create volume

open one form



Click on **Create Volume** button its create volume ...

You can check list of volume in AWS account.

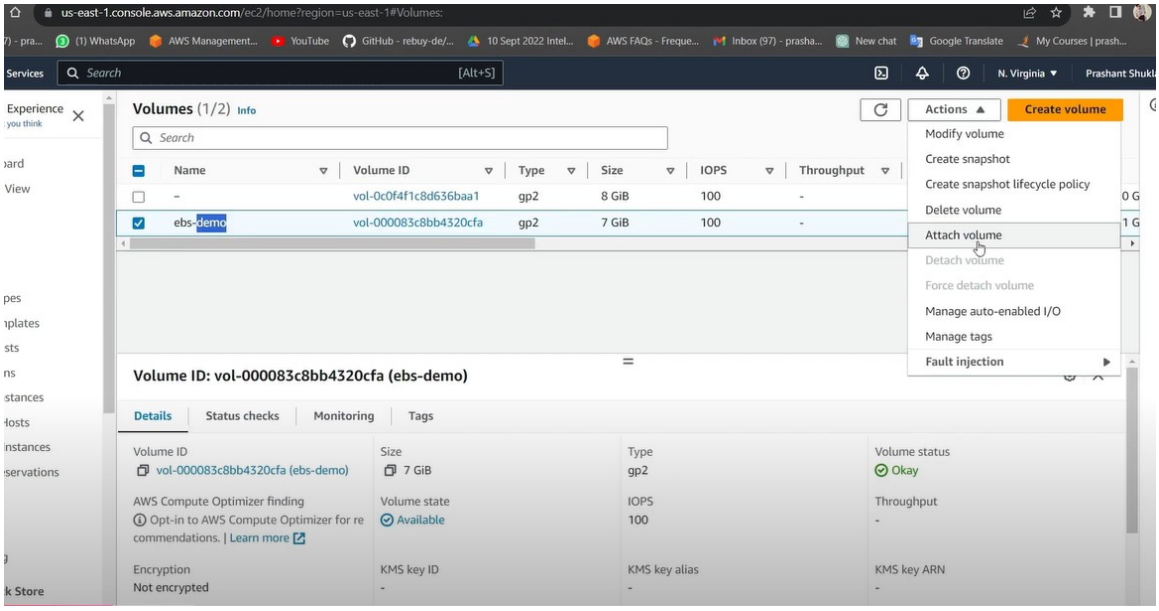


check instance like ebs-demo

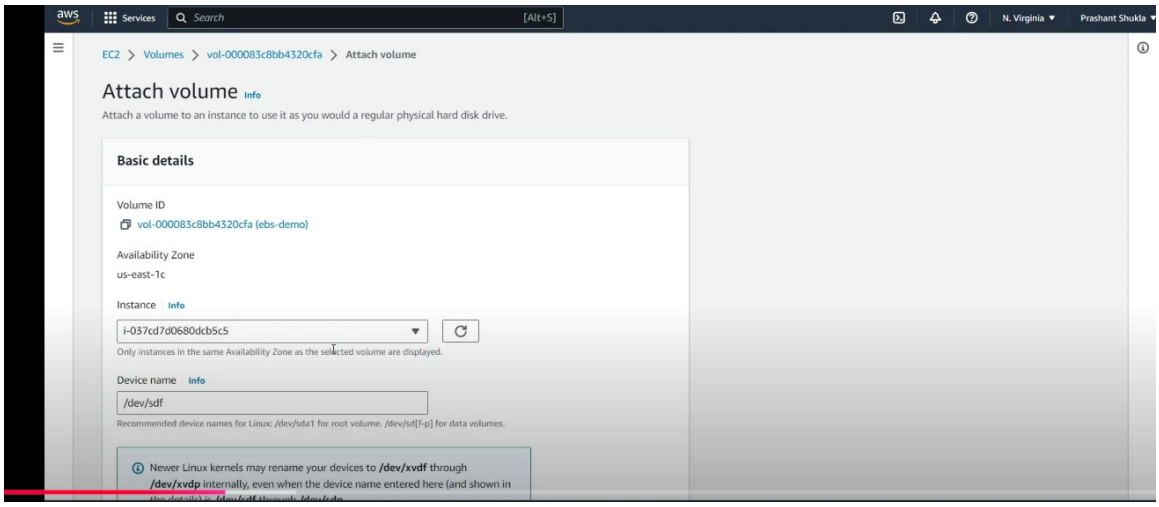
Click on Storage tab you can check volume size is 8 GiB

if you want to add next volume inside then you goto click on Volume Id which one you add on the same.

Click on Volume Id then you goto Actions >>> Manage auto-enabled I/O



Attach Volumn option Click you got opened next form

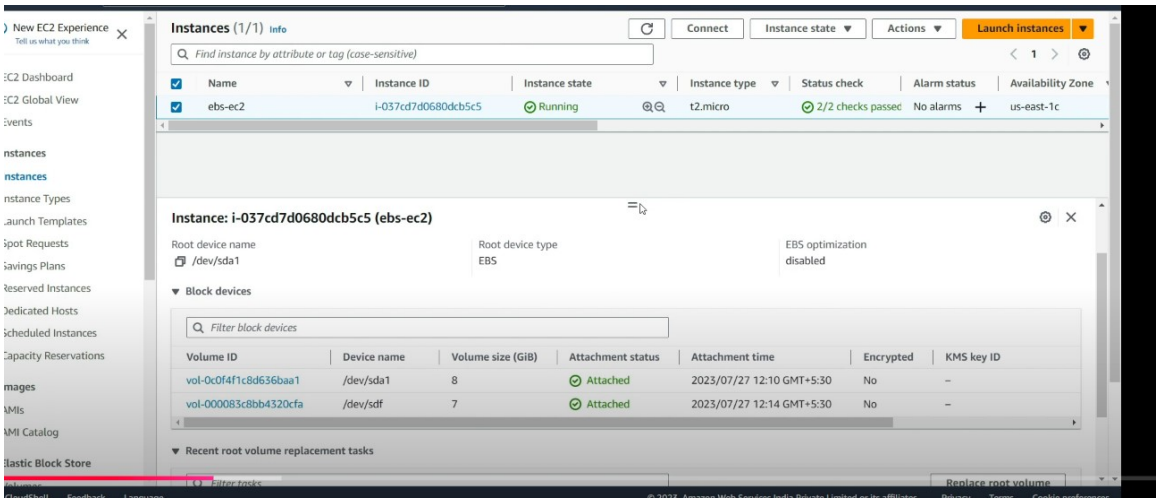


This type you can fill volume form and Click on **Attach volume .**

Now when you check volume you got both volume in volume list .

now you can check instance menu >>> click on Storage >>> Got volume list both merge & real

both exists in instance table.



When we are attach EBS then its storage in raw data , so need to format first & and after some time its Attached.

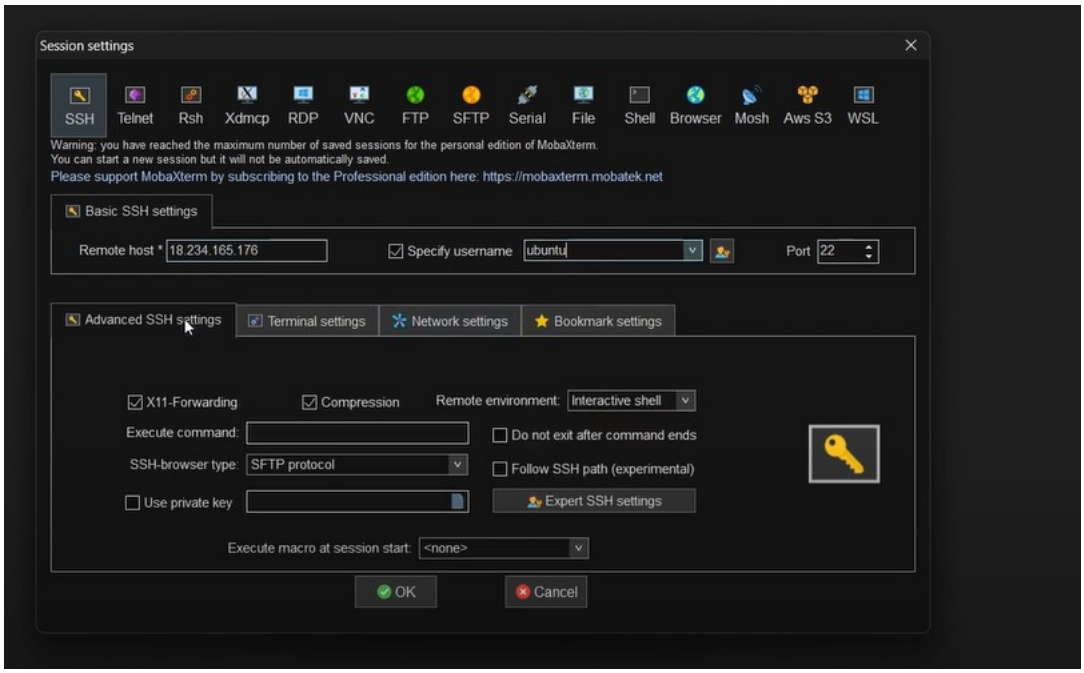
How to merged & use this EBS Storage.

now need to connect first.

connect Instance >>> EC2 Instance Connect >>> Copy Public IP address

use mobeXterm open and connect >>> Click on SSH >>> IP paste & username & port.

use private key file and OK



OK >>> Accept >>> Authentication via command line

 # now run command >>> sudo apt-get update

 # lsblk (list of our block)

```
ubuntu@ip-172-31-84-78:~$ lsblk
NAME     MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
loop0      7:0    0  24.4M  1 loop /snap/amazon-ssm-agent/6312
loop1      7:1    0  55.6M  1 loop /snap/core18/2745
loop2      7:2    0  63.3M  1 loop /snap/core20/1879
loop3      7:3    0 111.9M  1 loop /snap/lxd/24322
loop4      7:4    0  53.2M  1 loop /snap/snapd/19122
xvda     202:0    0     8G  0 disk
├─xvda1  202:1    0   7.9G  0 part /
├─xvda14 202:14   0     4M  0 part
└─xvda15 202:15   0   106M  0 part /boot/efi
xvdf     202:80   0     7G  0 disk
ubuntu@ip-172-31-84-78:~$
```

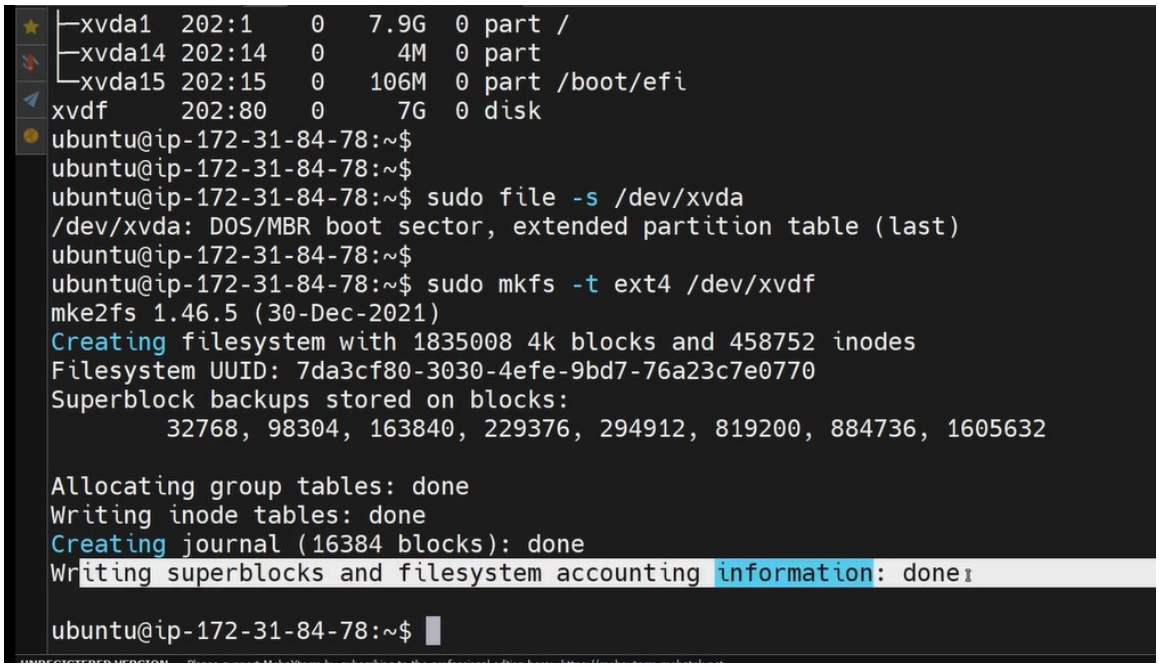
 # sudo file -s /dev/xvda

```
ubuntu@ip-172-31-84-78:~$ sudo file -s /dev/xvda
/dev/xvda: DOS/MBR boot sector, extended partition table (last)
ubuntu@ip-172-31-84-78:~$
```

mkfs (make file system)

 # sudo mkfs -t ext4 /dev/xvdf

for make file system in AWS account.

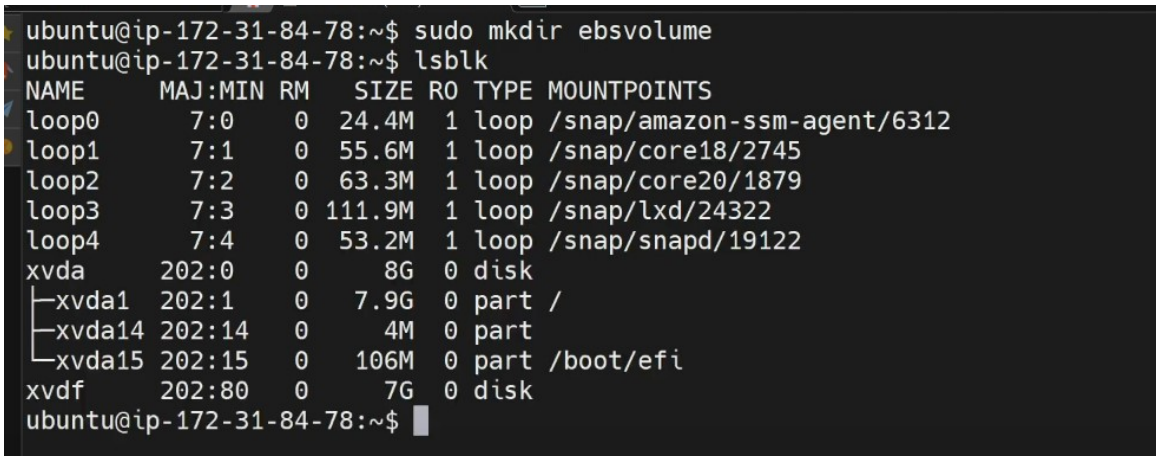


now we can run # sudo file -s /dev/xvda

 # now we can create dir via command >>>

 # sudo mkdir ebsvolume

 # lsblk (this command is says block in files)



 # when need to attach storage in EBS via command.

 # sudo mount /dev/xvdf ebsvolume

 # ls

 # lsblk

```
ubuntu@ip-172-31-84-78:~$ sudo mount /dev/xvdf ebsvolume
ubuntu@ip-172-31-84-78:~$ ls
ebsvolume
ubuntu@ip-172-31-84-78:~$ lsblk
NAME     MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
loop0      7:0    0  24.4M  1 loop /snap/amazon-ssm-agent/6312
loop1      7:1    0  55.6M  1 loop /snap/core18/2745
loop2      7:2    0  63.3M  1 loop /snap/core20/1879
loop3      7:3    0 111.9M  1 loop /snap/lxd/24322
loop4      7:4    0  53.2M  1 loop /snap/snapd/19122
xvda     202:0    0     8G  0 disk
├─xvda1  202:1    0   7.9G  0 part /
├─xvda14 202:14   0     4M  0 part
└─xvda15 202:15   0   106M  0 part /boot/efi
xvdf     202:80   0     7G  0 disk /home/ubuntu/ebsvolume
```

if you got detail in drive command is >>>

 # df -h

```
ubuntu@ip-172-31-84-78:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       7.6G  1.8G  5.8G  24% /
tmpfs           483M     0  483M   0% /dev/shm
tmpfs           194M  852K  193M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            97M  4.0K   97M   1% /run/user/1000
/dev/xvdf       6.8G   24K  6.5G   1% /home/ubuntu/ebsvolume
```

now if you want to check storage is mounted or not ? via command

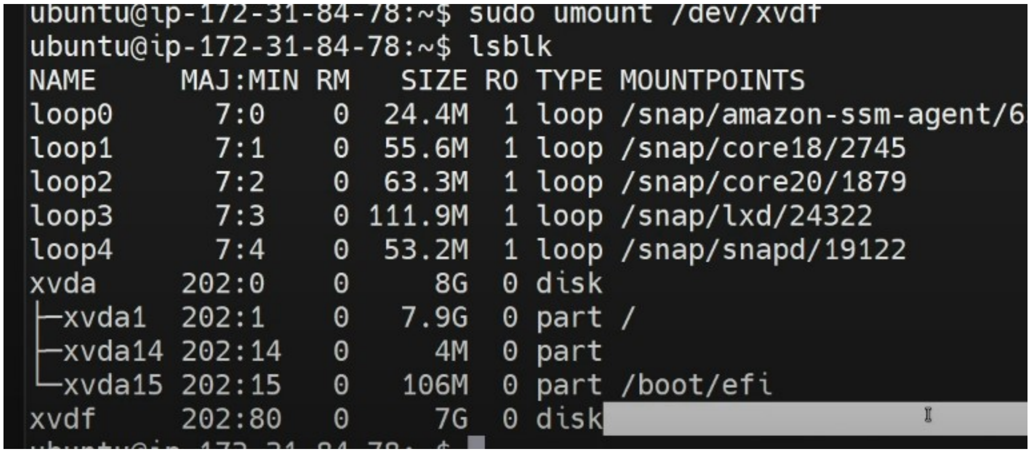
 # lsblk   (block list files via command)

unmount storage via command

 # sudo umount /dev/xvdf

now if you want to check storage is mounted or not ? via command

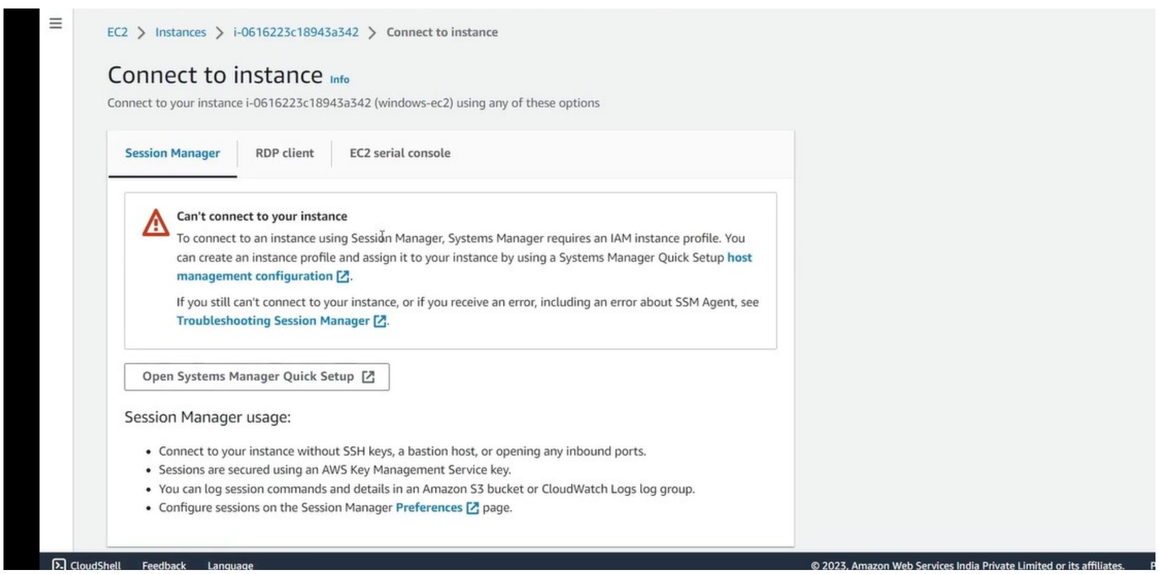
 # lsblk   (block list files via command)



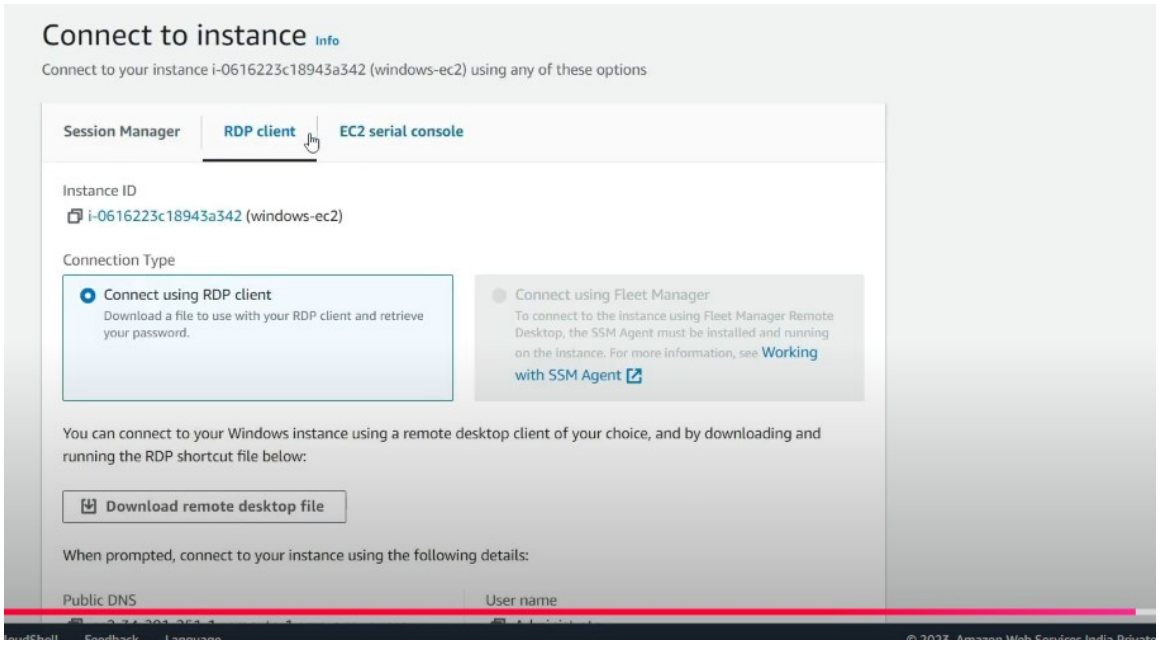
>>>

now we can connent steps >>>

connect instance for windows



Click on RDP client ....



download remote file & when download need to open file software , its opened >>> connect >>> its connect to ask password ..

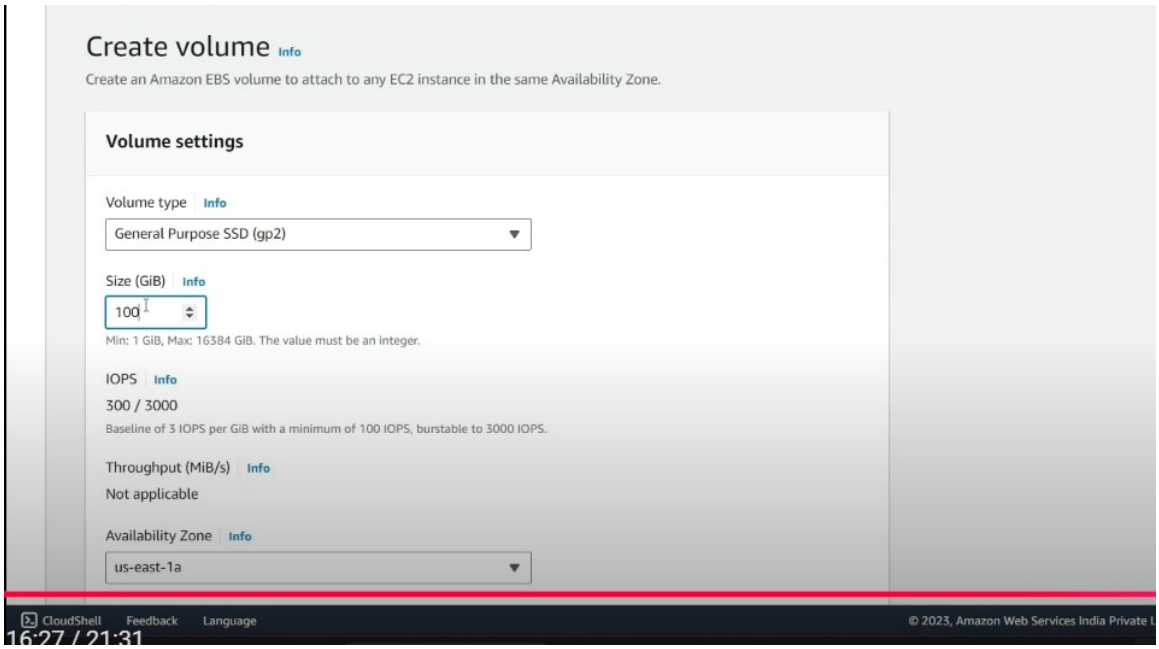
if ask for password then click on **get password >>> upload pv file (private file) >>> Decrypt password**

set password >>> connect >>> RDP client >>> connect >>> set password >>> RDP is opened >>> click on Yes >>> you are entered desktop proto calls

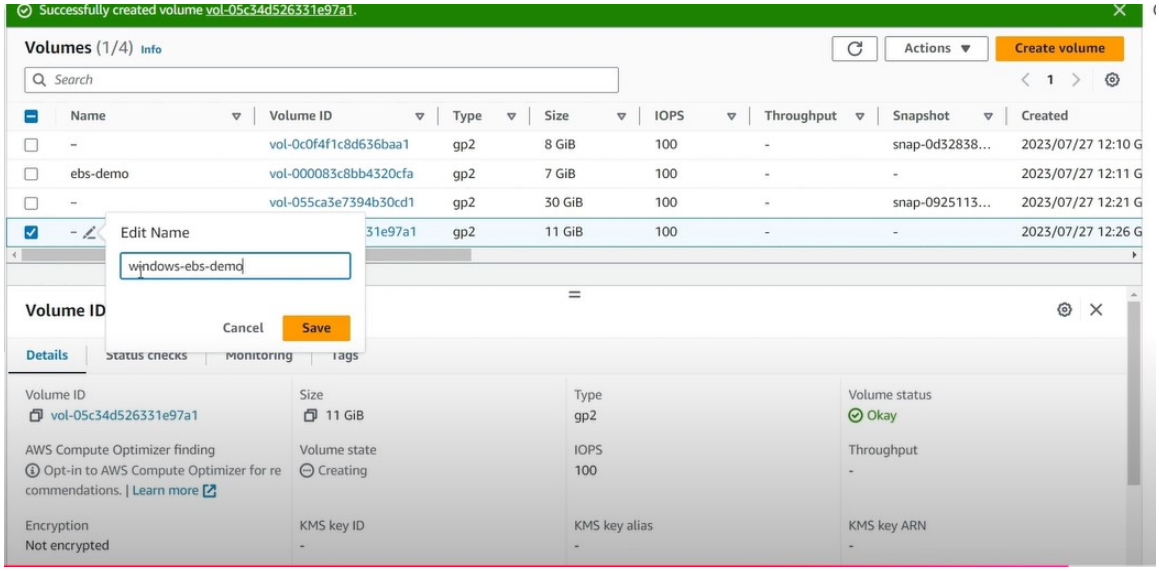
launch EBS volumes

Goto to volumes list click on create volume button.

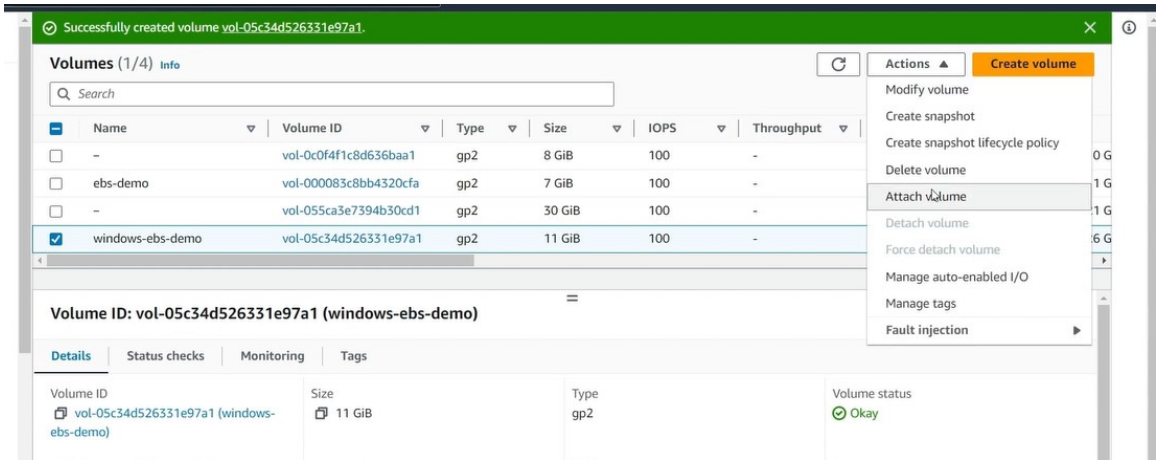
create volume like this ..



create volume & check in volume list .. & rename the volumn name its blank name.



Select row >>> Goto to Actions >>> Attach volumn inside this dropdown



Select Instance which on have dropdown list .

device name >>> xvdf

Click on Attach volume

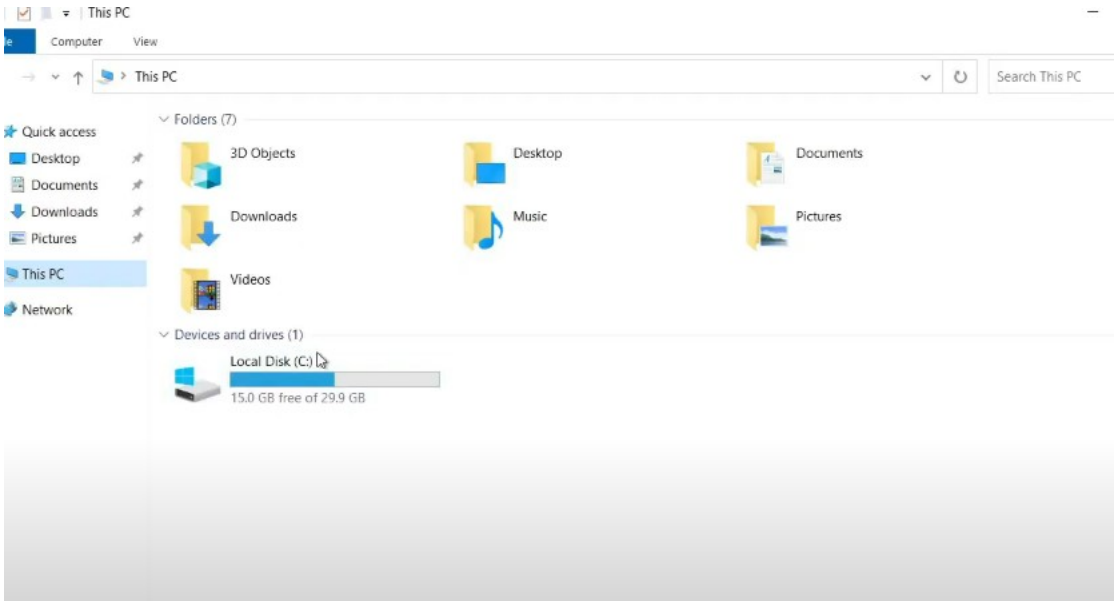
Goto to EC2 instance >>> click on particular row >>> inside tab Storage >>> check you instance is create in your instance list .

>>

RDP opened >>> My computer >>> Goto to any folder >>>

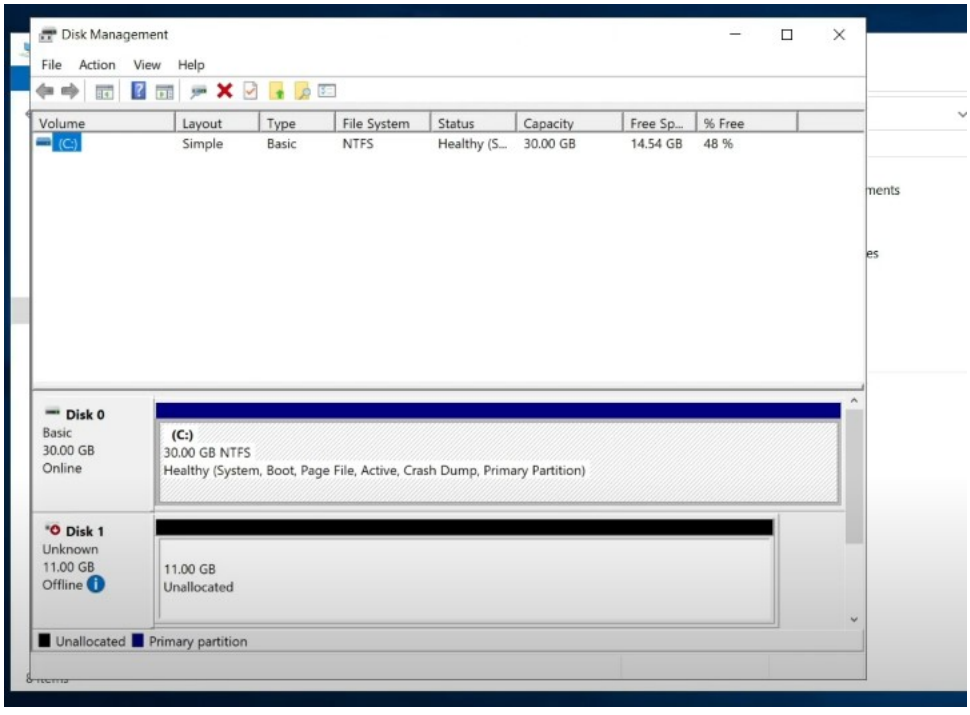
How to check memory is in storage or not ..

Like >>> in C drive have one drive like this



Search option disk management

now you can check

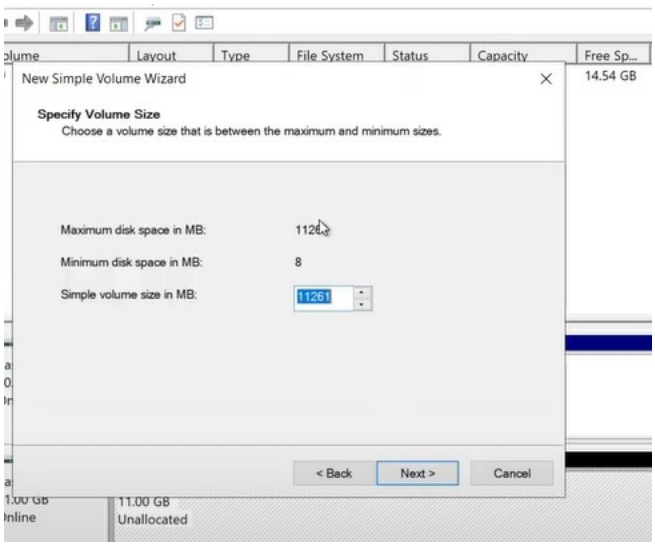


Disk 1 is offline , when i am click on right and select online and opened.

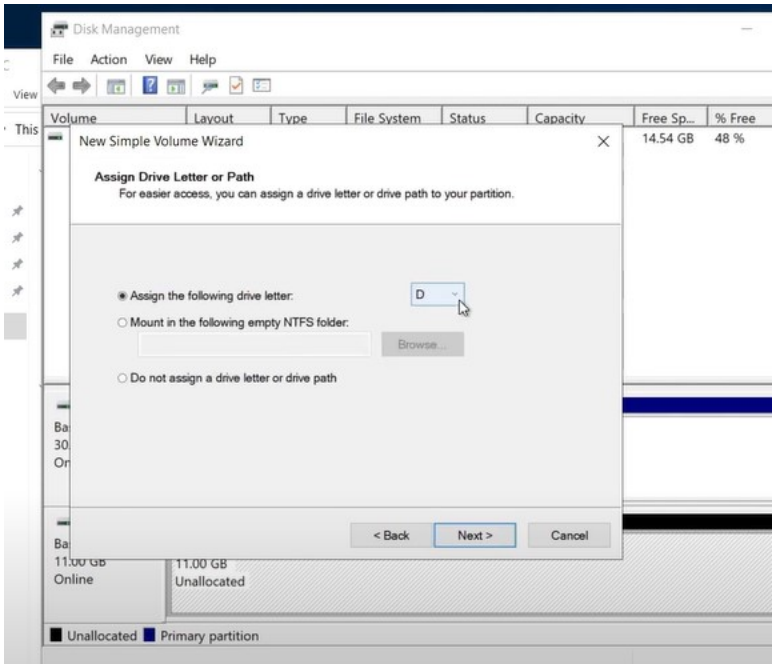
when its online & need to allocated this memory in storage.

Right Click on 11.GB Unallocated block >>> New simple volumes >>> fill form >>> Click on

Next .



Assign any drive name ...(like A , B , C , D)



next & next its complete form submit.

now you can check your location machine & check drive name C , D.

its process for windows EBS process or storage complete.