**EC2 (ELASTIC COMPUTE CLOUD) :**

**HOW TO LAUNCH THE INSANCES :**

To launch the instances first login to AWS account and go to services select EC2 and click on LAUNCH INSTANCE select free tire and what type of instance you want to launch select that one here ,

total 7 steps we have to launch instance

Choose AMI , Choose instance type , configure instance , Add Storage , Add Tags , Configure Security other, Review.

**1)CHOOSE AMI :**

**2)CHOOSE INSTANCE TYPE :**

**HOW TO INCREASE THE INSTANCE MEMORY :**

To increase the instance memory while we are launching the instance in the 2nd step CHOOSE INSTANCE TYPE there only we need to choose the instance type according to the memory.

>> here we can check CPU utilization also

3rd step :

**3)CONFIGURE INSTANCE :**

once you go to configure instance details here it will ask ,

**Number of instances :** 1 or 2 , it means at a time how many instance need to run that number we have to give suppose if i give 5 , at a time 5 instances will be run up.

>>Here only we will pass IAM roles , IAM roles means giving the permission to the instance.

>>here one more option we have like **SHUTDOWN BEHAVIOUR** , it means suppose if you shutdown instance it should be stop or terminate for this behaviour we are using , suppose if you give terminate whenever you shutdown your instance automatically it will delete your instance from account.

>>if you click on ADVANCE DETAILS it will be at the last , here you can pass any commands for example if you pass yum install java , by default java will be installed.

**4)ADD STORAGE :**

By default for LINUX it will take 10gb hard disk.

>>Suppose if you want 100gb then you can give here 100 in the SIZE now server will be created with 100gb.

>>Root volume by default 10gb will be there don't decrease it because if root volume will be below 10gb we can not launch the instance so if you want you can increase.

>>for root volume we will increase 10gb if you want to add extra volumes click on ADD NEW VOLUME how much memory you want for example if you want 200gb then add in SIZE 200 if you add like this it will add to instance while launching the instance.

we can add volumes after launching the instance also.

>>we have to enable DELETE ON TERMINATION why because suppose if i delete instance whatever the volumes i added to that instance that volumes also should be deleted so that purpose we have to enable DELETE ON TERMINATION option in ADD STORAGE

**5)ADD TAGS :**

>>Tags are nothig but name to assign the name for server , Suppose if you want to give instance name then click ADD TAG and enter the name liek SERVER-1

**6)CONFIGURE SECURITY GROUP :**

>>The configure security group is most important

>>While we are launching the instance click on add rule option in the configure security group it will show some different things select HTTP enable this ,

>>we will connect to server via ssh

>>After launching the instance suppose if you want to install tomcat in that server , the default port number of tomcat is 8080 , this port number you have to enable in CONFIGURE SECURITY GROUP ,

**HOW TO ENABLE PORT NUMBER IS :**

click on ADD RULE and select custom TCP and PROTOCOL TCP we have to give and under the port range give that port number 8080 , like this we have to enable port numbers for jenkins , svn , chef , etc

>>After the configuring service also we can do this things

**7)REVIEW AND LAUNCH INSTANCE :**

Here everything it will display like instance type , security group , instance details everything it will display ,

>>if you want to change anything here one option will be there **EDIT INSTANCE TYPE** click on that and you can modify

finally click on LAUNCH one key will generate by this key only we will connect to aws account , when we are launching the server select create an new key pair enter key pair name like INSTANCE and click on download after that launch instance.

**Now you launched instance in aws how to connect to server :**

by putty we can connect to server , i have downloaded pem file no that pem file i need to convert into ppk file using putty gen,

--> To convert pem file into ppk file we will use puttygen software

By default user name is >> ec2-user and password also ec2-user

to stop instance select instance ----> actions -----> stop intance

if we terminate it will be delete from account

**HOW TO LAUNCH WINDOWS INSTANCE :**

services--> ec2 -->launch instance-->select windows server-->launch

after launching the instance select instance and click on connect it will ask one remote key file to download , download it and open it will ask userame and password.

>>For windows server will add 32gb hard disk.

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**HOW TO ADD VOLUMES TO THE LAUNCHED INSTANCE :**

Suppose i launched linux server with 10gb default hard disk now i want to add 10gb volumes to that linux server HOW TO ADD ?

>>How i will add is first i will create EBS(ELASTIC BLOCK STORAGE) volume after that i will add that volume into instance after adding that volumes directly we can not use that 10gb hard disk we need to mount it.

**HOW TO CREATE EBS VOLUME :**

go to service --> click on EC2 ----> if you click on EC2 left side number of options will be displayed in that EBS also will be there.

under the EBS we have two options like VOLUMES AND SNAPSHOTS , snapshots means backup

NOW I WANT TO CREATE A VOLUME so click on volumes here it will show create a volume and select volume type give volume type like GP2 and next step is size give size of the volume is 10gb ( by default minimum memory is 1 gb),

here AVAILABILITY ZONE is important why because your creating the EBS volumes to add the instance so that instance in which availability zone you have installed in that availability zone only we have to create EBS volume to add to that instance.

>>Suppose if you launched instance with different availability zone and if you create different EBS volume with different availability zone you can not add that ebs volume into that instance.

next step is , select availability zone after click on create a volume

now volume is created

>>We can see that EBS volume in the EC2 dash board only

**NOW HOW TO ATTACH TO SERVER :**

select volume and click on actions --> select attach volume (if you want to modify select modify volume) ----> enter instance id ( for which instance you want to add that instance id you need to remember.

i have attached ebs volume into instance now what i have to do is i have to mount it so that login into server in putty hit a command **lsblk (LSBLK)** after hitting this command it will show the SIZE

name : xvda1 xvda2 , xvdf

hit a command df ----------------> df means disk file

>> still we didnot mount EBS volume , to mount first create one directory mkdir /fs1

**$mount -t ext4 xvdf /dev/xvdf /fs1/**

i got errot

>>First we need to create file system , how to create

**# mkfs.ext4 /dev/xvdf** -------------> here ext4 is a mount type

**# mkdir /fs1**

**#mount -t ext4 /dev/xvdf /fs1** -------------------> here xvdf is a device name of ebs volume

now hit a command , #df -h command , you can see size of xvdf

commands :

after login to server ,

#lsblk

#mkfs.ext4/dev/xvdf

#mkdir /dev/fs1 --------------> to mount volume into fs1 directory

#mount -t ext4 /dev/xvdf/fs1 ------> -t and ext4 is a mount type and dev is a device name

now you can go to fs1 directory here you can create evreything whatever the data you want

now i login to that volume i created some data like $cd fs1

$ mkdir file1 file2 file3 file4

$touch f1 f2 f3 f4

This all things will do by system administrator ,

now whatever the data i created in the volume if i want to take backup then i will click on snapshot option

>>to take the backup of volumes how many you have added to the server if you want to take backup using snapshot option we can take backup.

>>If you want to take backup of entire server then you have to use AMI option

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Suppose you created one EBS volume and attached to the instance incase if you want to increase the EBS volume and instance type in that time what i will do is i will select the EBS volume and click on actions and select modify volume here you can increase size and instance type

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**HOW TO TAKE BACKUP OF VOLUME :**

we have a option like SNAPSHOT under the EBS click on that create snapshot before that first select which volume you want to take backup after go to actions click on create snapshot , if you click on create snapshot it will ask snapshot name enter name like snap-1 and give some description in description option and create now entire volume backuped into snapshot

to check go to EBS select snapshot there you can see the snapshot name like SNAP-1

>>Now my requirement is whatever the data i took backup that same data i need to attach to the another server (server-2) how to attach is ,

So do things i need to create that SNAPSHOT into VOLUME after i will attach that volume into server

**HOW TO CREATE SNAPSHOT INTO VOLUME :**

**go to EBS --> select SNAPSHOT --> go to ACTIONS -->click on create volume**

now your creating new volume so same size you want or else you can increase and availability zone you can change based on the instance availability zone

>>Suppose you took backup of 10gb volume again when you converting that snapshot into volume you can increase the memory but you can not decrease.