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AWS account Creation

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AWS free tier limits :-

1 year free

every month : 750 hrs

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What is server

A server is a powerful computer designed to process, store and manage data for other devices (or) applications.

Server can host websites, run applications manage databases

server can operate on-premises & cloud

group of racks → datacenter

→ Physical servers are tangible machines located in datacenters / offices. They require cooling, electricity, maintenance, space. They offer full control, scaling, upgrading which is time consuming and costly.

→ Cloud servers are VM's hosted on internet. Eliminating physical which means no maintenance. They are cost-effective & Easy to scale.

Steps to create EC2 / VM / server / instance

→ Name & Tag

→ Amazon machine image
Selecting O.S & select Kernel 5.10 (free)

→ Instance type
CPU & RAM
Default : T2 micro
1-CPU & 1 GB RAM
max : u-24tb1.metal
448-CPU's & 24,576-GB RAM

→ Key-pair
We can create instance with & without Key-pair
without key is not best option.
For safe & secure login to servers
1. public key : stored by AWS (.ssh file)
2. private key : stored by users
Both the key's should be matched together then we can connect to
Private Key : .PEM & PPK

→ Security & Network
In networking, we can choose where can we create our server in which datacenter, you want IP address or not, on which network you want to create
Every instance has security firewall which is security group
1. inbound rule : What type of network traffic are allowed into the instance.
2. outbound rule : out of the instance.

→ Storage
Elastic block storage (EBS) :-
To provide storage for the network/server
Default : 8GB MAX : 16 TB

→ Advance details
we can run scripts
server behaviour, placement

In networking settings
Subnet → availability zones (you can choose)
Auto-assign public IP → always enable
Security group name → just name
Inbound security group rules
SSh (secure socket host / shell) used to connect linux
If we select window O.S then it should be RDP
(Remote desktop)

In configure storage (EBS volume)
minimum : 8GB (Free tier upto 30GB)
Maximum : 16 TB

Even if we stop the instance
The allocated EBS volume will be considered as usage and that will be billable.
So we have to terminate after the usage.
we can can take the backup of terminated instances by backup service which will be paid.

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Modification to existing EC2 :-

Public Ip :- (~~static~~) - x dynamic
→ connecting the server
→ Accessing application using internet
→ integrating with other tools.

Private Ip :- (~~dynamic~~) - x static
→ Accessing application within the server
→ SSH connection between server to server

(2/2) checks
1→ instance is properly configured in datacenter
1→ instance created in Console properly

(3/3) Checks
3→ EBS Volume

There checks can be found in status & alarm Tab

=> monitoring Tab
The amount of C.P.U you are using at particular time.

=> Security Tab
In & outbound rules

=> Networking Tab
Ip addresses, DNS names, availability zones, VPC

=> Storage Tab
EBS volume details (we can only increase volume 6 hrs gap to change volume)
In Actions → modify volume

=> Tags
name of instance

we can also access the application through DNS
Ex:- www.youtube.com

create an instance
and install http webserver
→ sudo -i
→ yum install httpd -y && systemctl start httpd
if we want to access this application httpd
then, you have mention the httpd port in security group
Type → http , Port range will comes automatically
source → my IP (only I can access)
anywhere IPv4 (Anyone can access)
custom (we can adjust the accessibility)
Paste the public IP in browser, you will get the application.

In my IP → have to give custom in source & give specific IP /32
here 32 means 2^{32-n} [n means n number of users]
if it is 1 user the n=32
$2^{32-32} = 2^0 = 1$

If you want to check the application through private IP which is in within your server
→ curl http://172.31.2.121/
curl http://<private IP>/

If you want to change the instance type like t2.micro to t2.medium
select the instance, instance should be stopped after stoped
actions → instance settings → change instance type
or search bar give t2.medium → change

To enable protection → instance setting →
change stop / termination protection → enable

Connecting instance through putty :-

PEM → privacy enhanced mail
PPK → putty private key

Putty → PPK

- mobaxterm, vscode, command prompt, Git bash → Pem

Better to use PEM

To connect this pem to putty by converting into PPK then we can connect putty

Install putty from putty.org from browser
when you install putty, putty gen will also downloads automatically for converting the file

→ open putty gen
→ load
→ select all files & your pem file } converting
→ save private key } pem to putty
→ save it by a name

→ open putty
→ paste the public Ip in hostname
→ click + SSH
+ Auth
credentials
click on first browse
select ppk file
open.

login as: ec2-user

→ To increase the front size → click on white bar → change settings → appearance → change → apply

→ To change color → Same like appearance → colours
→ default foreground → modify → ok - Apply

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Connecting instance through Mac :-

Select the instance → connect → SSH client
Go to the Downloads in Mac terminal through
cd Downloads
copy the third point command in SSH client &
copy the example command

Connecting instance through command prompt :-

→ cd Downloads
→ ssh -i "pemfile.pem" ec2-user@pubip