Basics of Network

- Networking
- Types of Network
- protocols
- Router/switches/OSI Model
- Network

AWS Network basic terminology

1

- VPC
- Subnets
- Route Table
- Internet gateway
- Security groups
- NACL (Network Access Control list).

6

App
compute (server)
Network
Database
Security/Storage

4 pillars

Ip Address

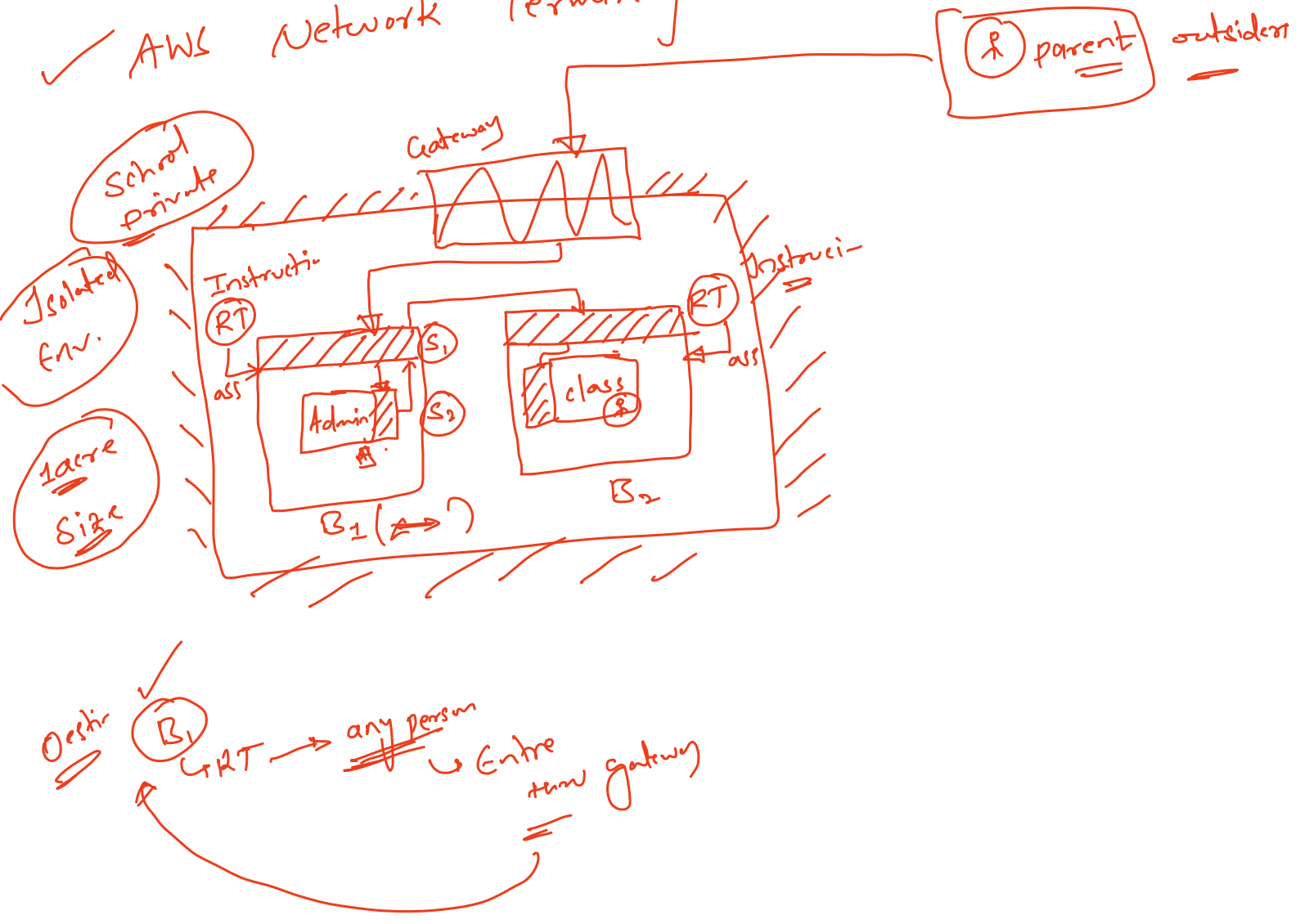
- public v/s private
- CIDR
- Subnet Mask
- Elastic Ip address.

Miscellinous Topics

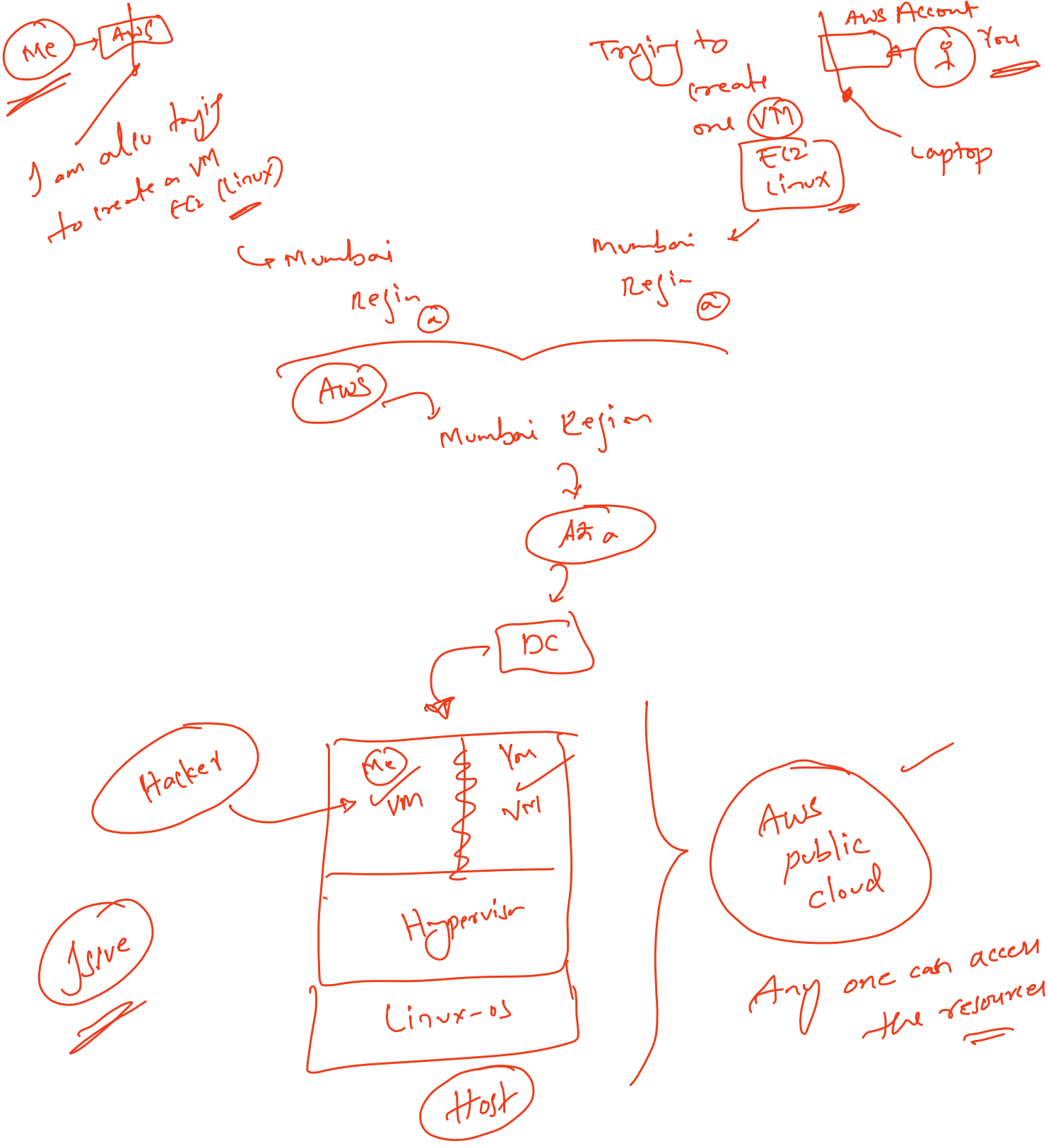
- Direct Connect
- vpc endpoint
- VPN
- Gateway → Transit gateway
- Bastion Host

- NAT Gateway
- VPC peering

✓ AWS Network core Terminologies :-

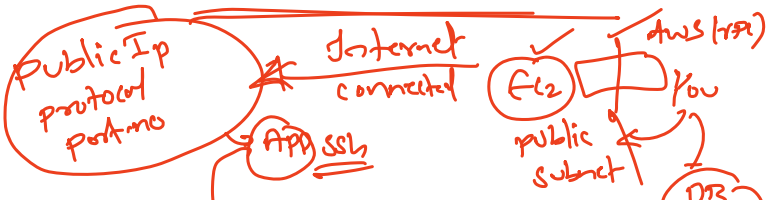


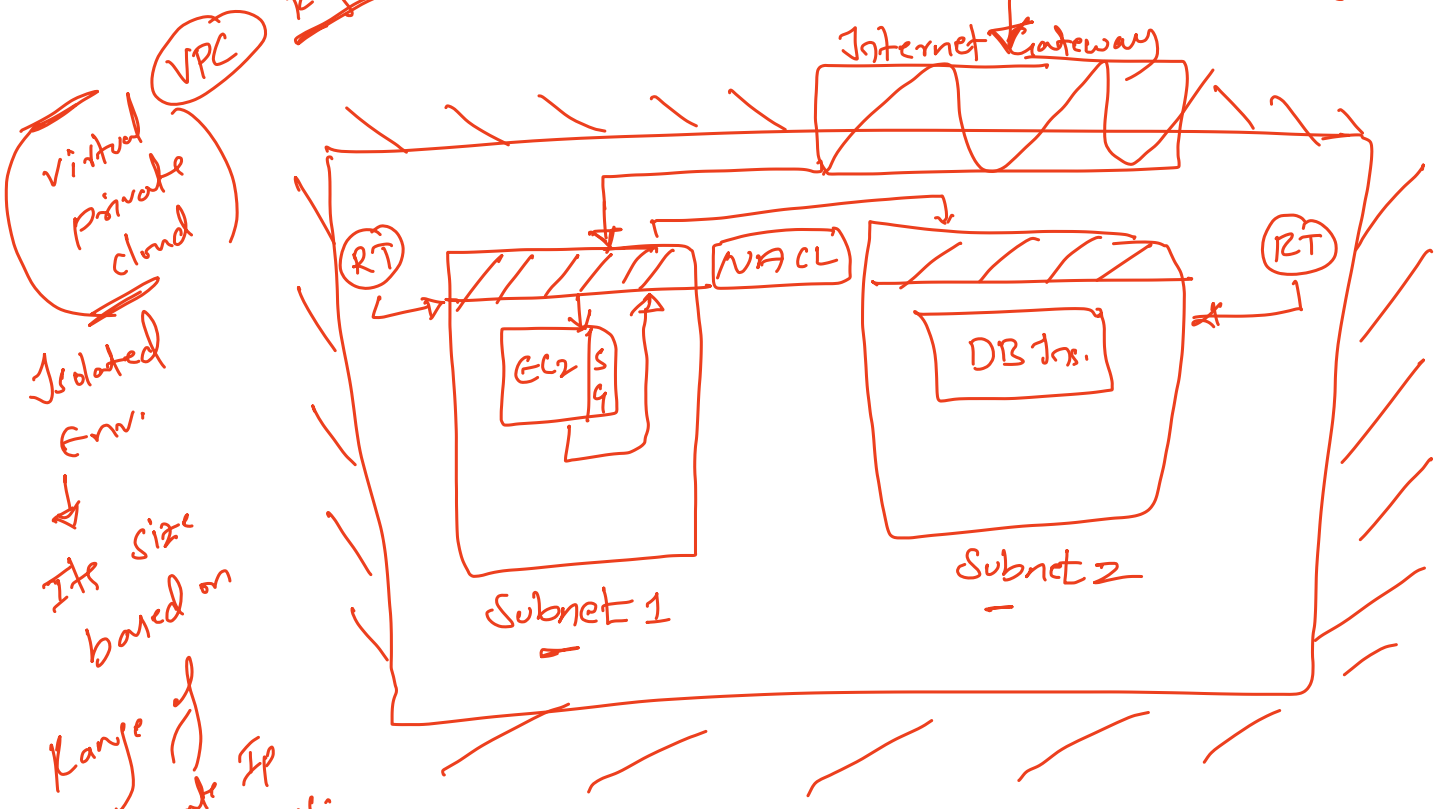
Destin → B1 → RT → any person → Entire → Home gateway


Me
AWS
I am also trying to create a VM EC2 (Linux)
Trying to create one
VM
EC2 Linux
AWS Account
You
Laptop
Mumbai Region
Mumbai Region
AWS
Mumbai Region
AZ a
DC
Hacker
Me
VM
You
VM
Hypervisor
Linux-OS
Host
Jsive
AWS public cloud
Any one can access the resources.

Within the aws public cloud we have the private env.

By default aws creates in every Region.
↳ u can also customise.



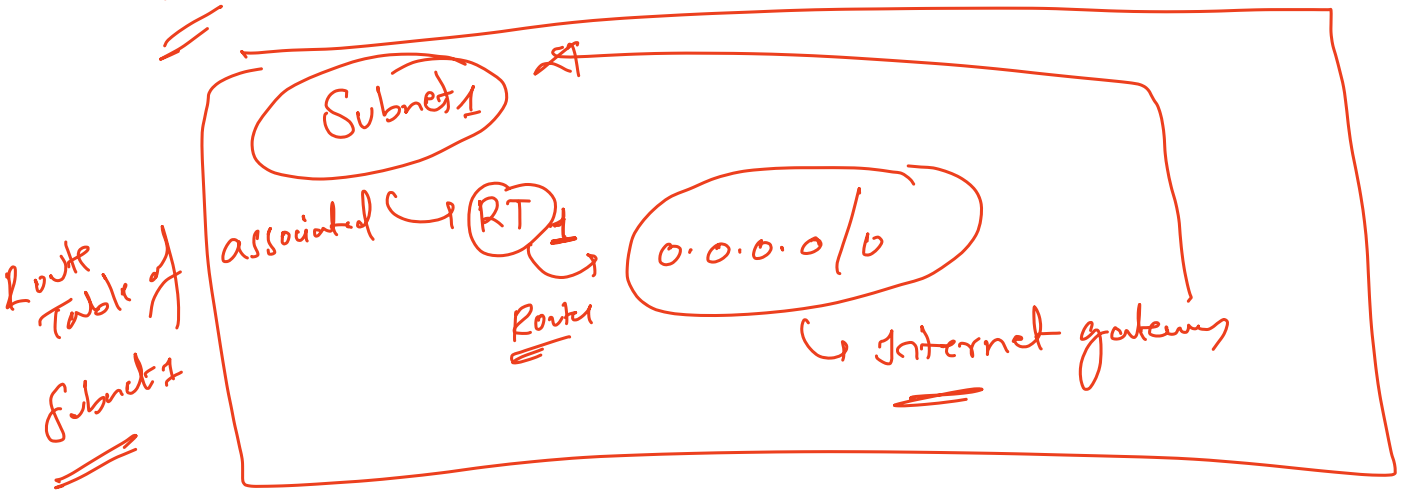


Isolated Env.

↓

Its size based on

Range of private Ip address.



Route Table of Subnet 1

NACL → Network Access Control List

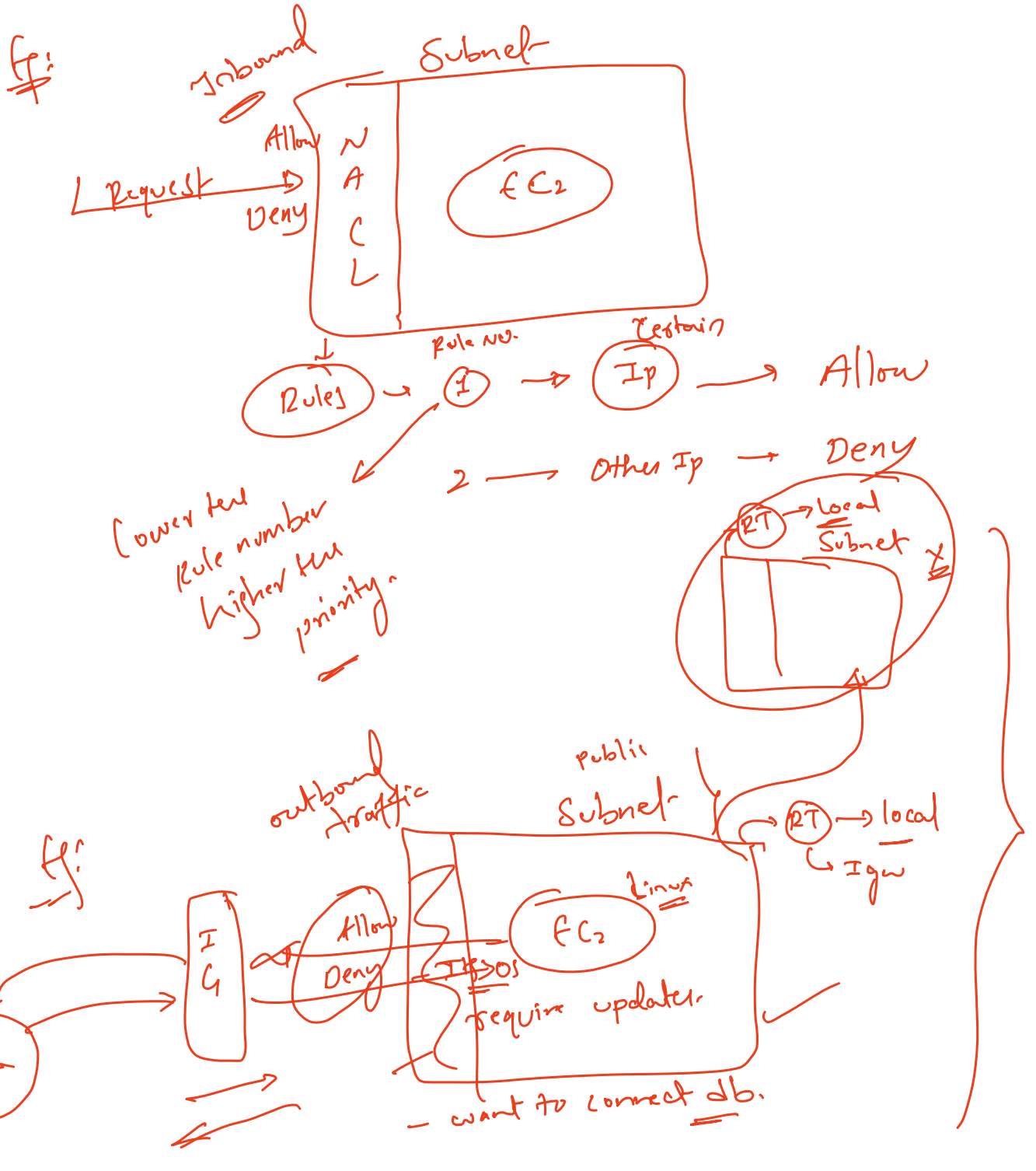
↓

Stateless

Security at Subnet Level.

Allow
Deny
} for both Inbound (Incoming traffic)
Outbound (outgoing traffic)

Eg:

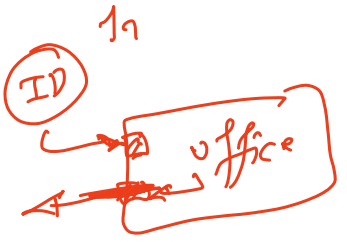


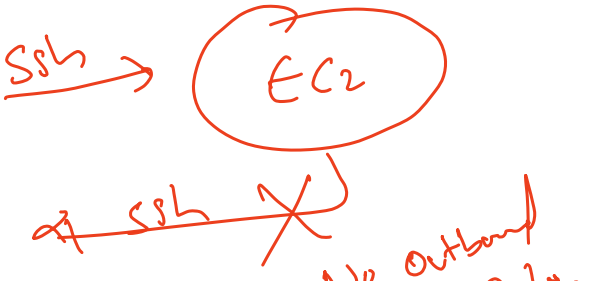
Security Group → It is the firewall / security at instance level.

By default, it only supports Allow Rules

↳ Also allows all Outbound traffic

Stateful





VPC

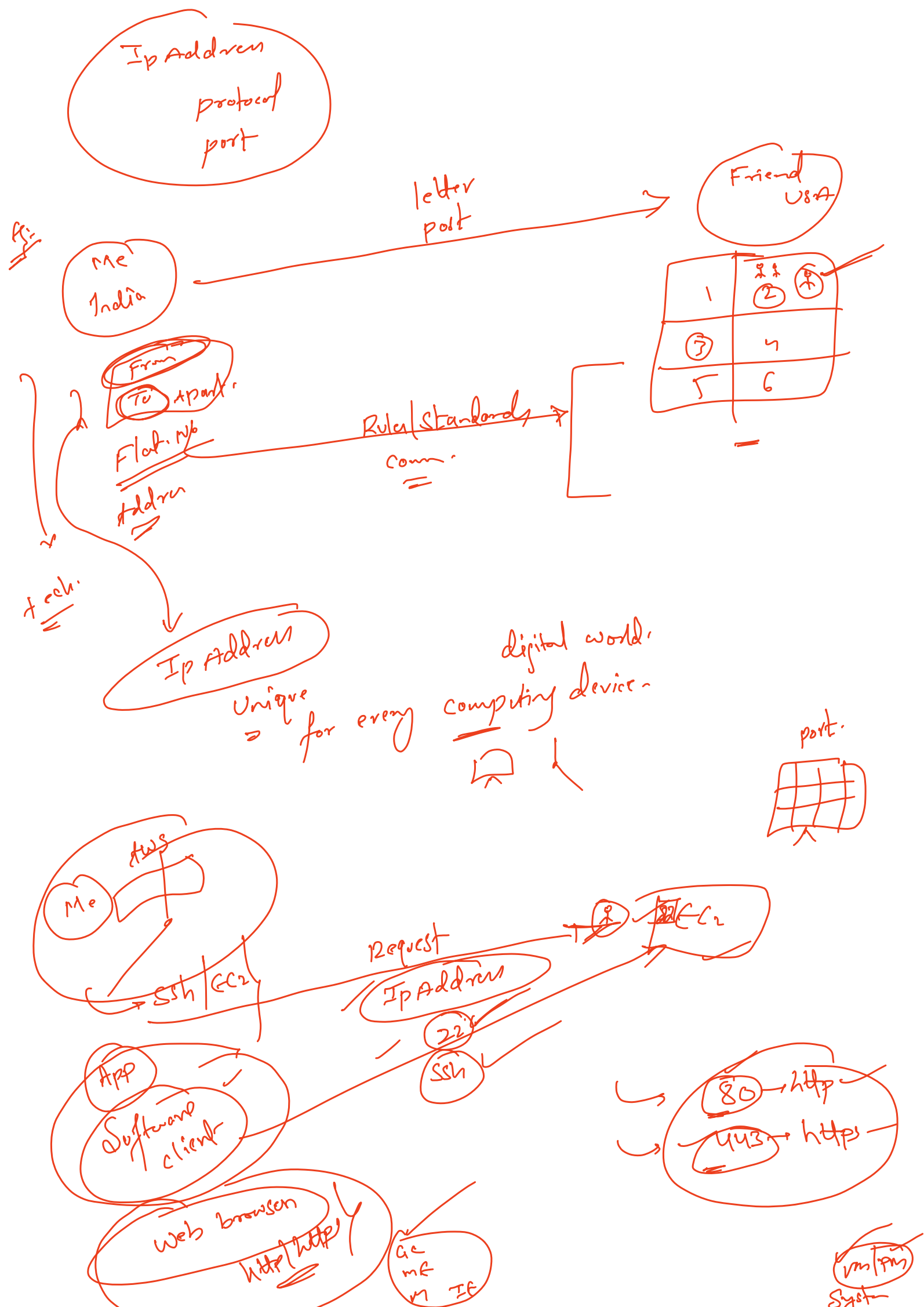
Subnet

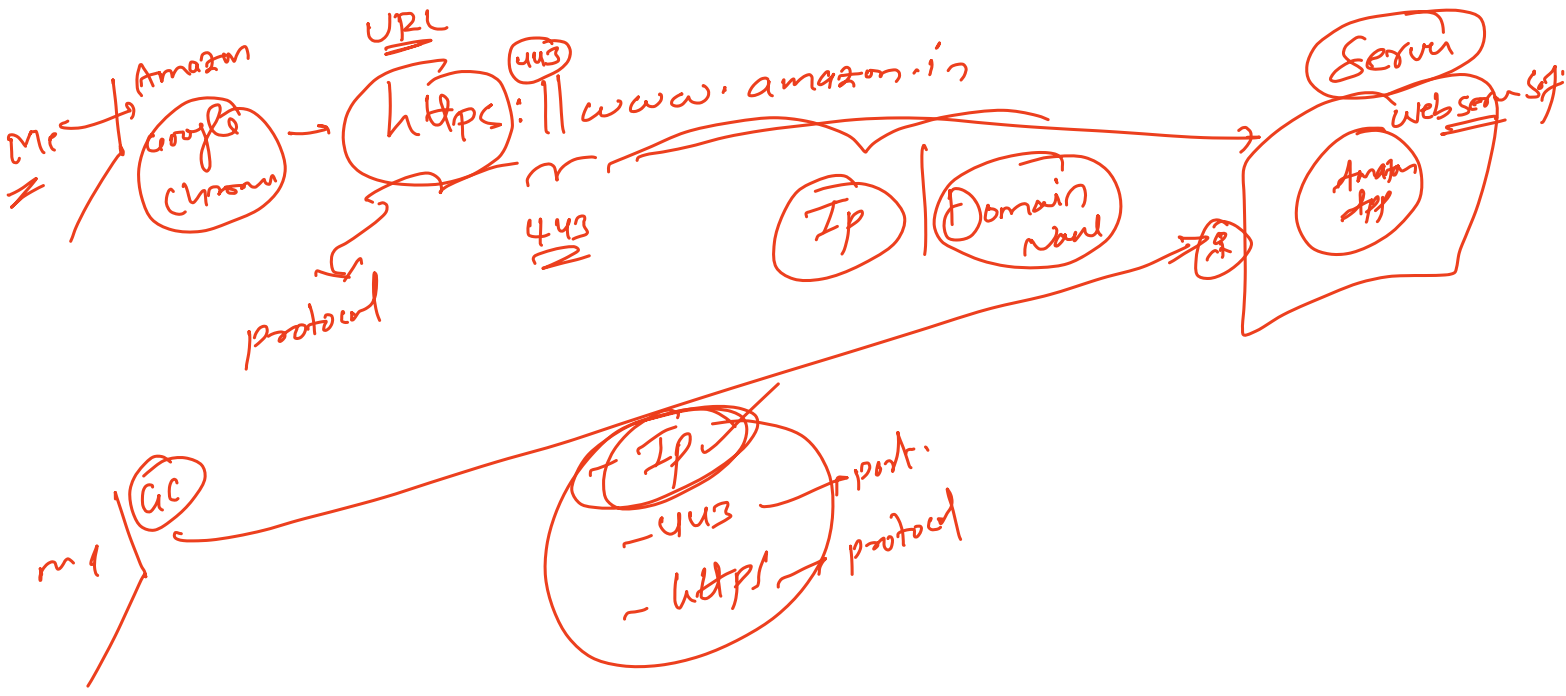
Internet gateway

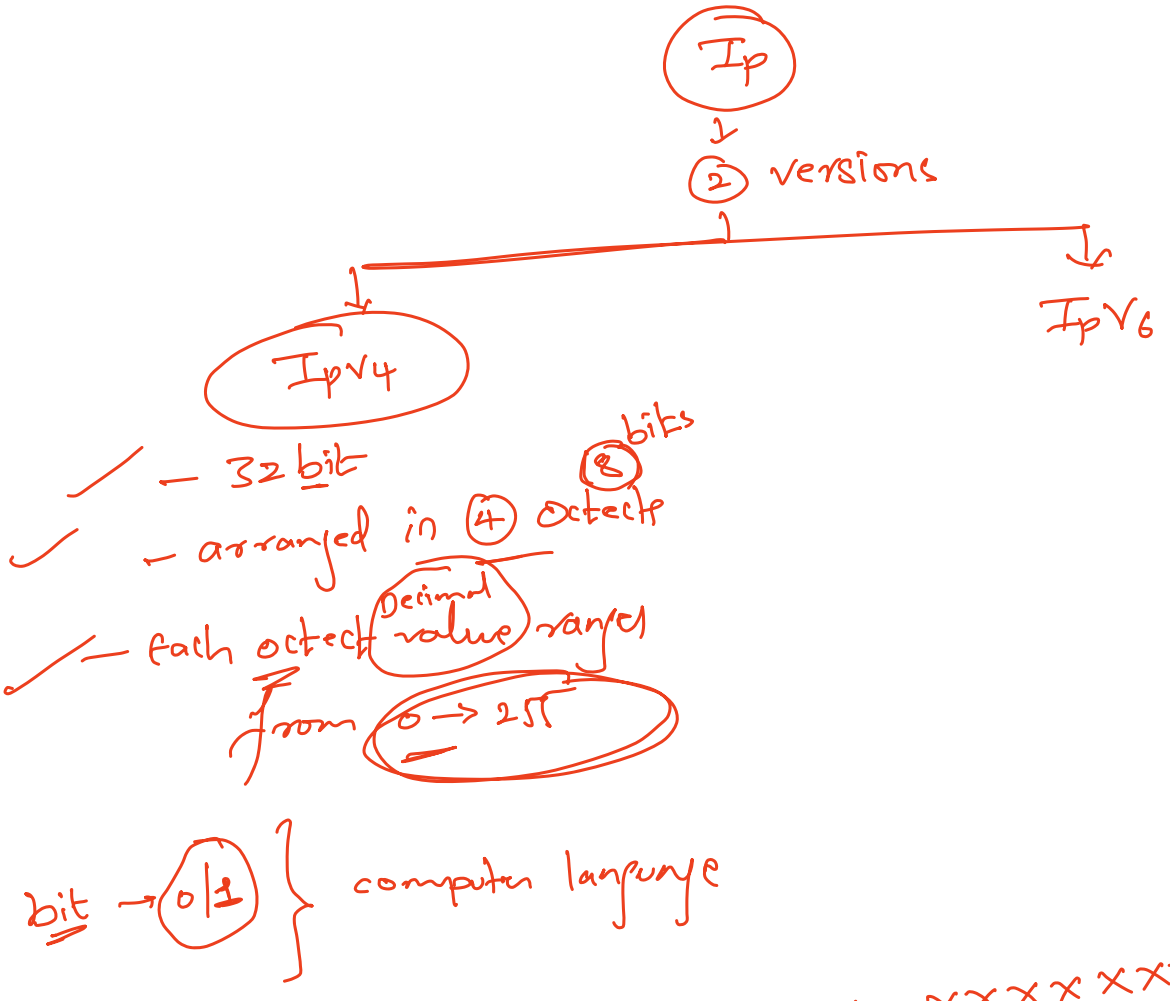
Route table

NACL

Security Group


Ip Address
protocol
port
letter
post
Friend
USA
me
India
From
To
Flat. no
Address
Rules/Standards
comm.
tech.
Ip Address
Unique
for every computing device.
digital world.
port.
me
aws
ssh/EC2
request
Ip Address
22
ssh
EC2
App
Software
client
80
http
443
https
web browser
http/https





bit → 0 | 1 } computer language

xxxxxxxx. xxxxxxxx. xxxxxxxx. xxxxxxxx

n=0 → 00000000. 00000000. 00000000. 00000000

It is binary format.

Decimal format → 0.0.0.0

x=1 → 11111111.11111111.11111111.11111111

Decimal value → 255 . 255 . 255 . 255

0 → 255

256 values.

256^4

Eg:

0.0.0.0

0.0.0.1

0.0.0.2

⋮

0.0.0.255

256

0.0.1.0

1.1

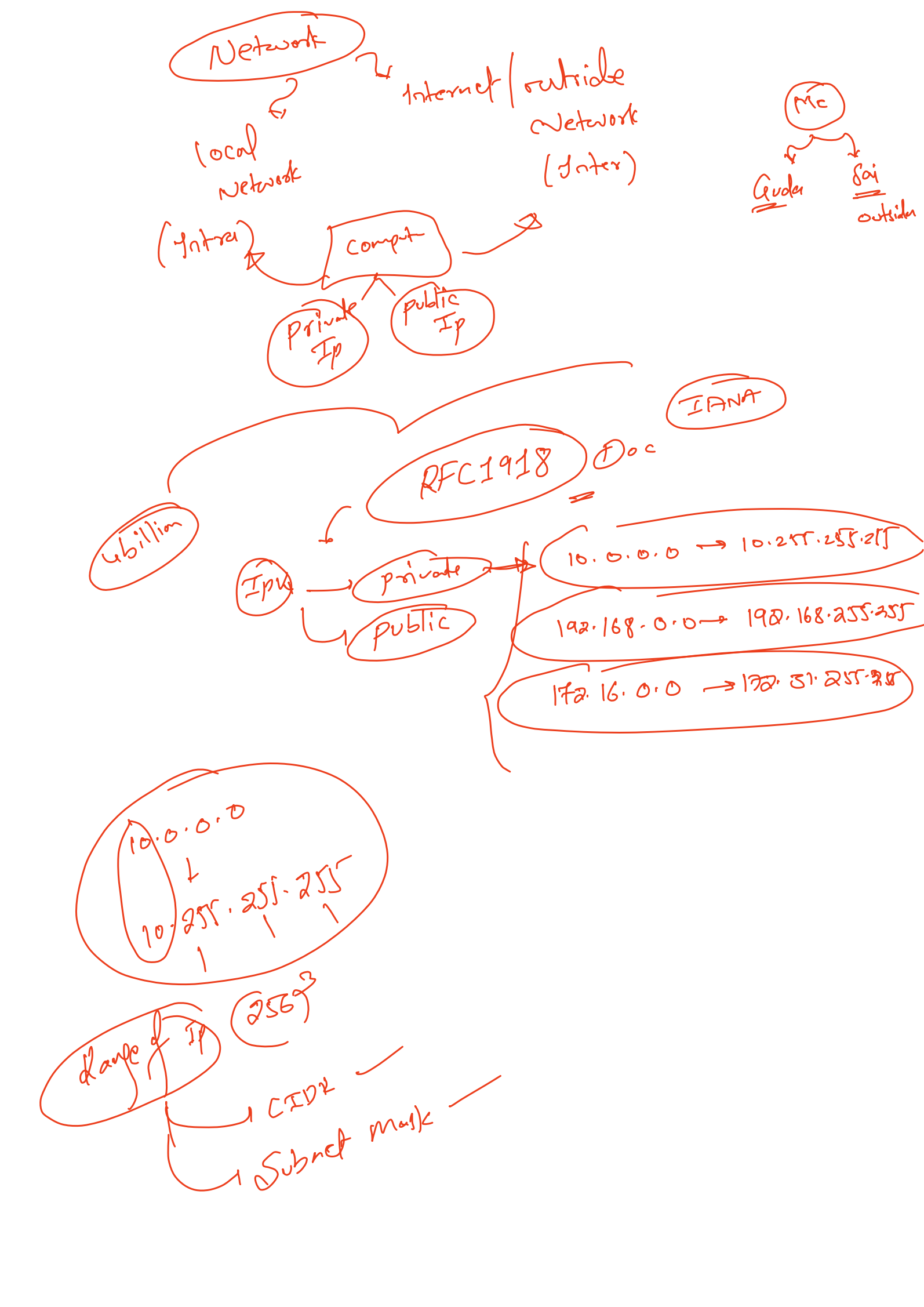
1.2

1.⋮

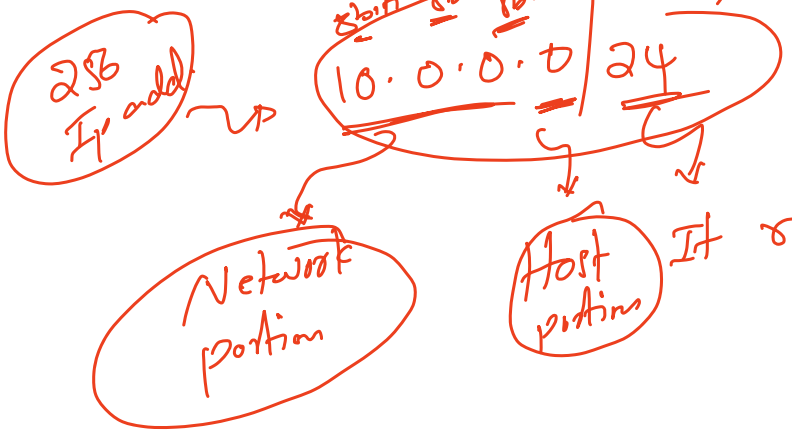
⋮

256

256^4 → 4 billion Ip → 2 types (Usage)


Network
Internet / outside network (inter)
local network
MC
Gudu
Sai
outside
Intra
compt
private Ip
public Ip
IANA
RFC1918 Doc
4billion
Ipv4
private
public
10.0.0.0 → 10.255.255.255
192.168.0.0 → 192.168.255.255
172.16.0.0 → 172.31.255.255
10.0.0.0
10.255.255.255
256
Range of Ip
CIDR
Subnet mask

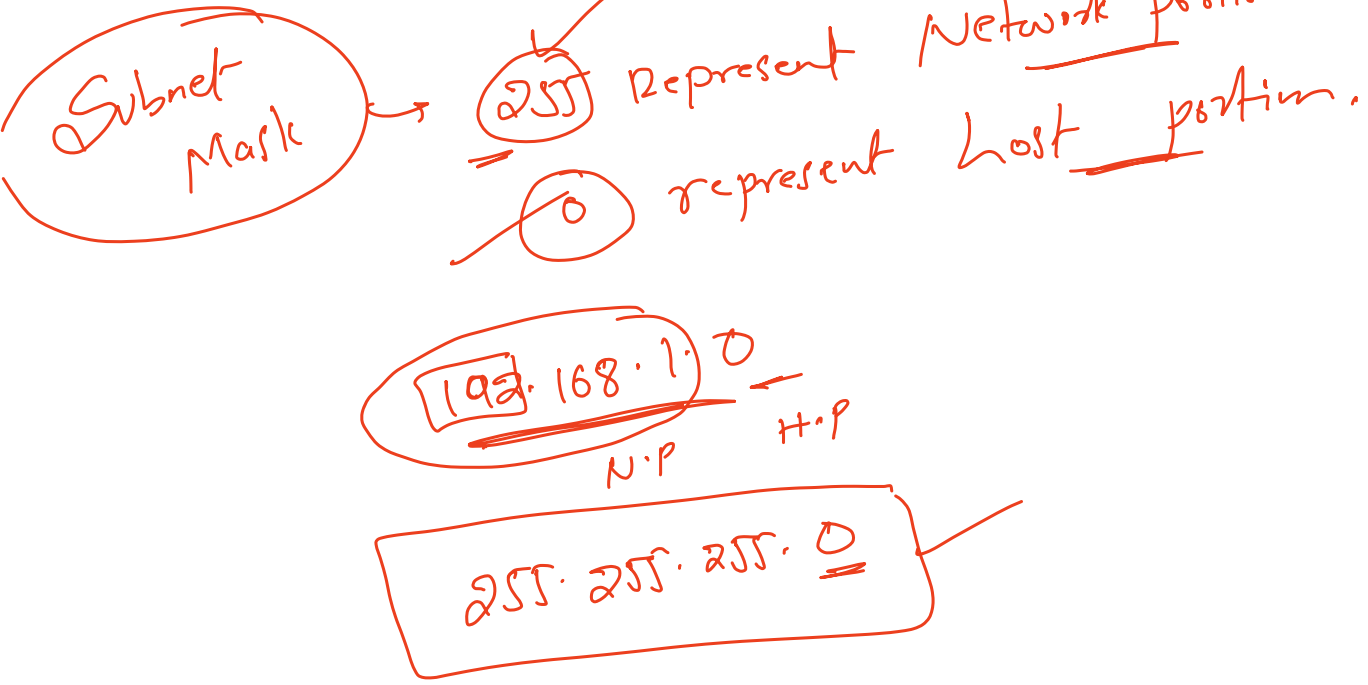
CIDR (Classless Inter Domain Range)



Ex: 14.13.5.0/32 → 1

5.14.7.0/0

$(256)^n$



192.168.0.0

Subnet mask → 255.0.0.0 → N.P H.P → $(256)^3$

CIDR → 192.168.0.0/8 → N.P H.P

Range of $(256)^2$ Ip

Eg: 172.16.0.1 → 256 x 256

CIDR → 172.16.0.0/16 → N.P | 1 255.255 H.P

Subnet mask → 255.255.0.0 → N.P H.P

Eg: 17.5.6.0 → N.P H.P → 256 Ip

CIDR 17.5.6.0/24

Subnet mask. 255.255.255.0

Eg: 14.12.0.0

256^2

CIDR 14.12.0.0/16

N.P H.P

255 255

256^2

Subnet Mask 255.255.0.0

N.P H.P

Google

RFC 1918

cidr.xyz

10.0.0.0 → 10.255.255.255 → 10.0.0.0/8

192.168.0.0 → 192.168.255.255 → 192.168.0.0/16

172.16.0.0 → 172.31.255.255 → 172.16.0.0/12

8+4

+15

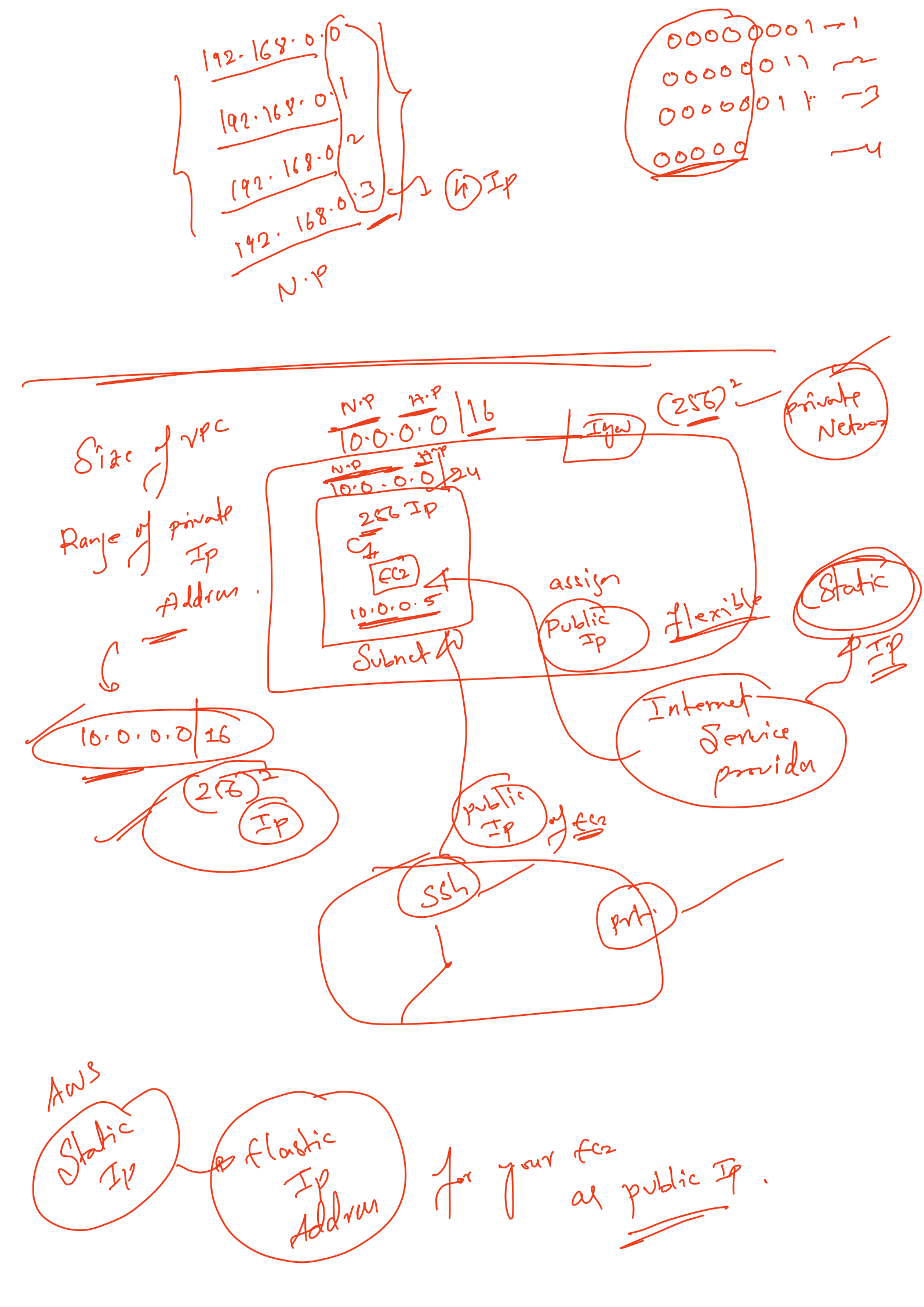
12.V

13.V

4 bit

8+8

private IP


192.168.0.0
192.168.0.1
192.168.0.2
192.168.0.3
N.P
H Ip
00000001 → 1
00000011 → 3
00000000 → 4
Size of VPC
Range of private Ip Address.
N.P H.P
10.0.0.0/16
(256)^2
Igw
private Network
N.P H.P
10.0.0.0/24
256 Ip
EC2
10.0.0.5
Subnet
assign
public Ip
Flexible
Static Ip
Internet Service provider
10.0.0.0/16
256 Ip
public Ip of EC2
SSh
port
AWS
Static Ip
Elastic Ip Address
for your EC2 as public Ip.