SESSION: 49

- Router is the device which is used to connect two computers with different network.

- Routing Table:

route -n → shows the routing table.

- Range == Network

- Netmask is the one who decides the network name of an IP.

- First ip is always reserved for network name.

Ansible
SESSION: 51 Networking

- Netmask helps us find our network name. ex. 255.255.255.0 slash network is /24. And 0 decides the total no of hosts a network has.

255.255.255.0
↓

$$[00000000] \leftarrow octet$$
$$\scriptstyle\llcorner 2^8 = 256$$

$32 - 24 = 8$, $2^8 = 256$ hosts
$\llcorner$ Total $\llcorner$ subnet /24

if /25,
$32 - 25 = 7$, 2^7 hosts

- /17 → 255.255.128.0
↓

$$[1000\ 0000]$$

                enp0s3
ifconfig 192.168.1.2 netmask 255.255.255.252
              or   /30

ping 192.168.1.1
        $\llcorner$ won't work

route add -net 192.168.1.0/30 netmask enp0s3

ping 192.168.1.1

- If the dest. ip is in the same network the source ip will atleast generate the packets. If they are connected they will reply otherwise no reply.

- If the dest ip doesn't belong to the same network, the source ip won't generate any packets.

route add -net 8.8.8.0 netmask 255.255.255.0 enp0s3.

- If dest is 0.0.0.0 that means all the ips.
- If gateway is 0.0.0.0 that means we don't know it.

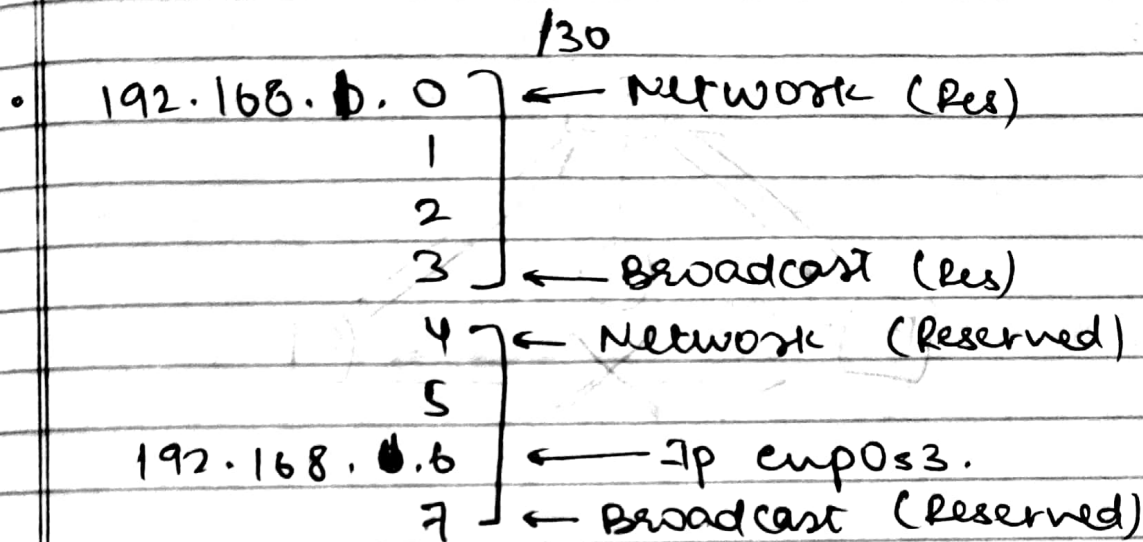→ # gw 192.168.0.1 enp0s3

Tusk: (i) Create a setup
Reach: google but not facebook

———————— sep ————————

SESSION: 52 NETWORKING

- First ip is always for network name. As well as last ip is reserved for broadcast.

/30

- 192.168.0.0 ⟵ Network (Res)
  1
  2
  3 ⟵ Broadcast (Res)
  4 ⟵ Network (Reserved)
  5
  192.168.0.6 ⟵ Ip enpOs3.
  7 ⟵ Broadcast (Reserved)
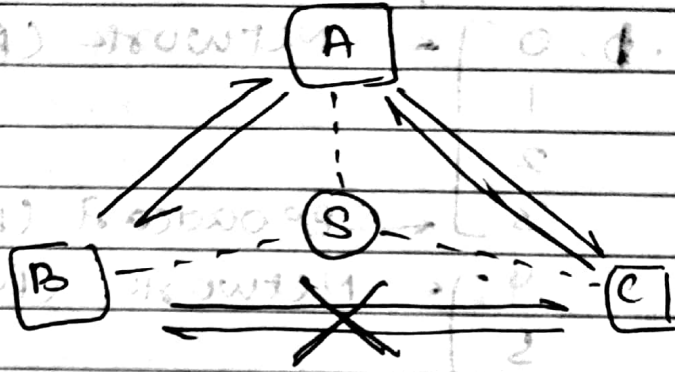
  So, only 2 ips are available for usage (.5, .6)

\# route add -net 192.168.1.4 netmask 255.255.255.252 enpOs3

- Settings > Network > Host-Only Adapter
  ∟ It creates a virtual switch and connects it with all the VMs

- FLSM: Fixed length Subnet Mask
  ∟ when all the ips are in sequence.
- VLSM: variable length Subnet Mask
  ∟ ip not in sequence.

\# route add -net 192.168.1.4 netmask 255.255.255.252 enpOs3.

• ~~tabe~~ We must have updated routing table in both the IPs ~~~~ and connected with a switch to ping them be able

TASK:

google (172.217.166.164)

\# rm : 0.0.0.0 gw 192.168.0.1

\# route add -net 172.217.166.0 netmask 255.255.255.0 / ~~enp0s3~~ gw 192.168.0.1
enp0s3

windows

\# route PRINT