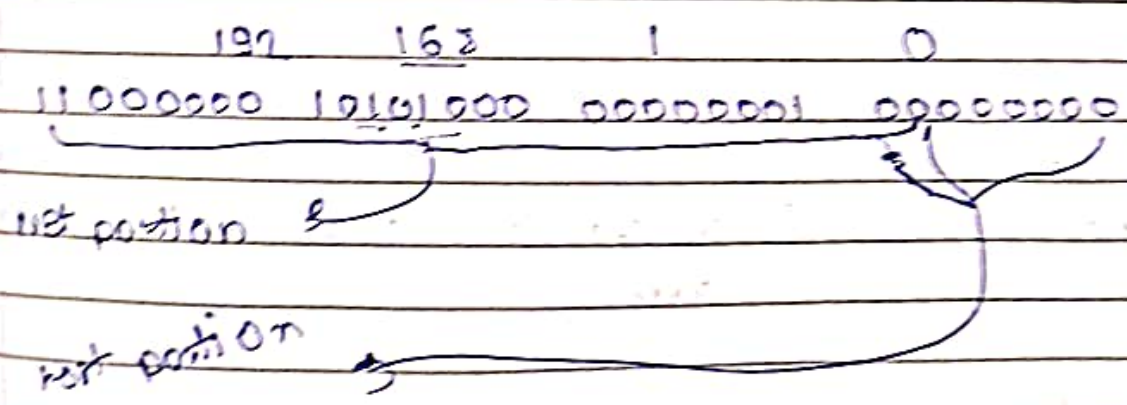Find out subnett mask, number of addresses & usable host if given CIDR 192.168.10/2

step 1: Understand the CIDR notation
192.162.10/26 is net addr

step 2: /26 this means that 1st 26 bits of the address represent the network portion & the remaining bit represent host portion that is 26 + 6 = 32

step 2: convert it to binary.

192   168   1   0
11000000 10101000 00000001 00000000

net portion &

net portion

step 3: find subnet mask
i) All net portion will be 1
& host zero

11111111 . 11111111 . 11111111 . 11000000

step: calculate net broadcast address.
i) All host must zero

Network address : at

while calculating net address all host bits

are zero.

192 . 168 . 1 . 0

11000000 10101000 00000000l 00 000000

(1) Broadcast address

all host bits will be one

11000000 10101000 00000001 -00 111111

192 . 168 . 1 . 63

step : calculate number of host

host bits = 2
host = 2^6
host = 64 (including network & broadcast address)

Usable host = 64-2 = 62

net broad
addn addr

step 6 : Identify IP range

First ip addr = 192. 168. 1. 62 !

Last ip addr = 192.168.1. 62

Given networks · 192.168.10.0/26

step : Understan CIDR notation
192.168.10.0/26 is net addr

step2 : 26 bits represent networks addrs
6 bit represent host addrs

step2 : convert into Binary

192	168	10	0
11000000	10101000	00001010	00 000000

network portion   host portion

step 3 : find subnet mask

For OSDF

1) Take 2 PC PC₀ & PC₁

2) then go take 2 switches of 2960

3) then take 3 router's of versio 2911

3) the from PC to ~~router~~ switch take copper
& strait & some for switch to
router

3) then serial OEE & for 3 router
after offig swich & adding
HWIC-2T & then again on
the switches
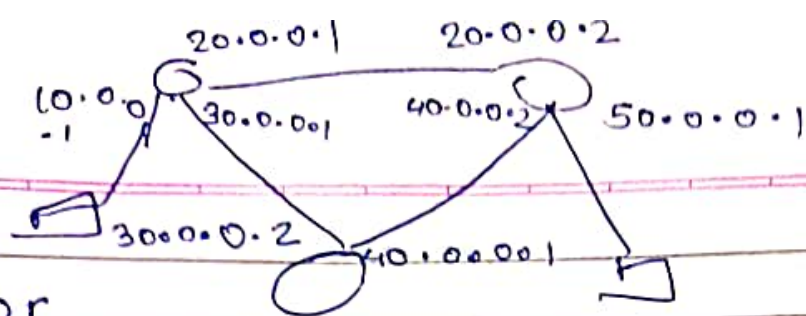
Now for PC₀ & PC₀1
PC₀
Desktop → IPV4 Addrss = 10.0.8.2
Default Gateway = 10.0.0.1

PC₁
——— 11 ——— = 50.0.0.2
50.0.0.1

Now the Router

For

Router 0
Gigabit Ethernet 0/0 = 10.0.0.1
Serial 0/3/0 = 20.0.0.1
    (Pointing R1)
Serial 0/3/1 = 30.0.0.1

Router 1
Gigabit Ethernet 0/0 = 50.0.0.0
                       20.0.0:2
Serial 0/3/0 = 30.0.0.2 from R0
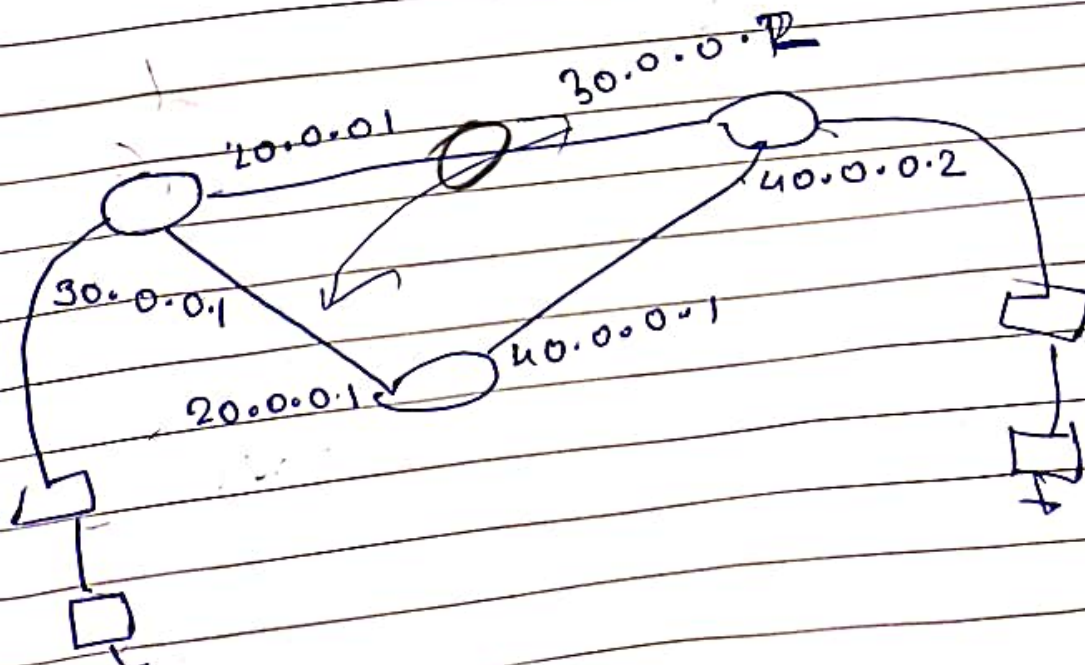Serial 0/3/1 = 40.0.0.2 - To R2

for serial 0.

Router 2
Gigabit Ethernet 0/0 = 30.0.0.2
Serial 0/3/0 = 20.0.2 from R0
Serial 0/3/1 = 40.0.0.2 from R.
                        To R1

Now cmds

Router (config) # router ospf 10
Router (config-router) # network 10.0.0.0
0.255.255.252 area 0
network 20.0.0.0
— " — 0.255.255.255 area 0
network 30.0.0.0
— " — # 0.255.255.253 area 0

exit
Router (config) # router ospf 11
network 20
40
50

Router 2
#exit
Router (config) # router ospf 12
network 30.0.0 — "
80 — "
40 — "

Same for DARP. just no area 0 in there.

all Past-Ethernet in switch - 10
ξ~ ?

Now CLI

Switch ?
- en
- config terminal
- VLAN 10
  - name CSE
- VLA· 20
  - name IT

conf·if
```
# int Fa 0/1
# switchport mode acces
# switch^pur access VLAN 10
# int Fa 0/2
# switchport mode acss
# switchport acces VLAN 10
# int Fa0/3
# switchport mode access
# switchport acces VLAN 20
# int fa 0/4
# switchport node acss
# switchpat acces VLAN 20
# int Fa 0/5
# switchpat node trunk
```

conf E

VLAN 10

notive

VLAN   in cisco

1) Take 4 PC
2) 1 swich
3) 1 router

to config

PC0 —   IP   192.168.1.10
          Gateway   192.16.1.20 4

PC1 —   IP   192.168.1.20
          Gateway 192.168.1.1

For
PC2 —   IP   192.168.2.10
          gateway   192.168.2.2

PC3 —   IP   192.168.2.20
          gateway   192.16.2.2

For route

c

en

conf

interface GigabitEthernet 0/0

no shutdown

int GigabitEthernet 0/0.10

encapsulation dot1q 10

ip add 192.168.1.1 255.255.255.0

int GigabitEthernet 0/0.20

encapsulation dot1q 20

ip add 192.168.2.2 255.255.255.0