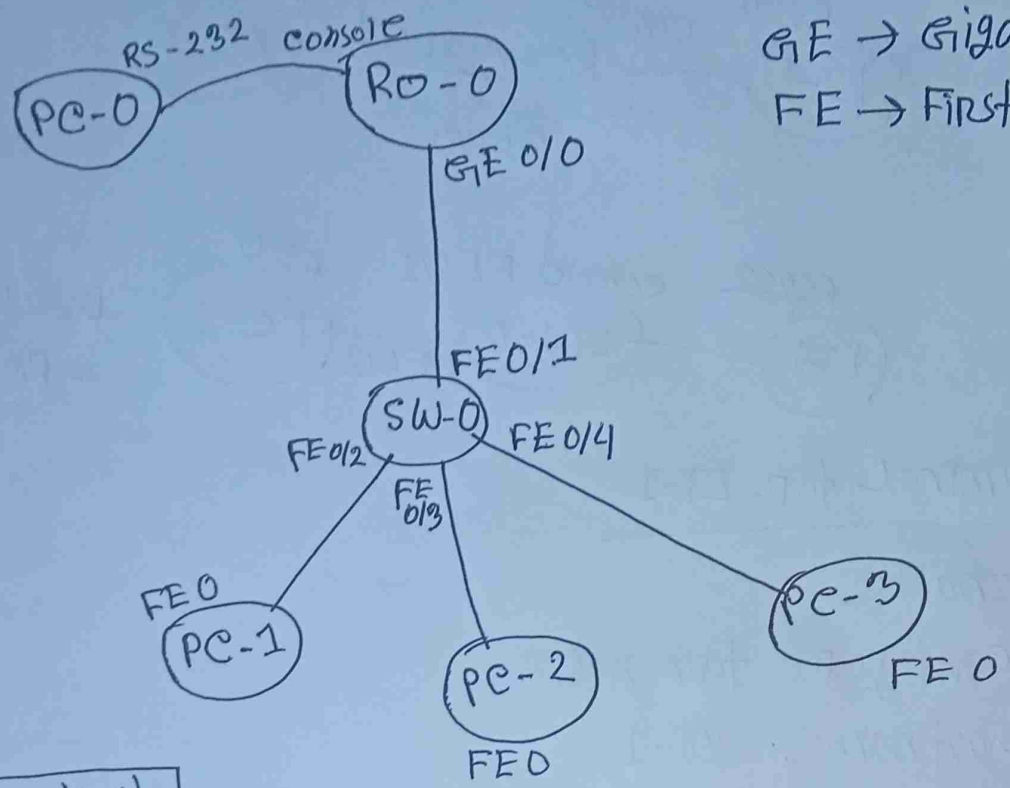
LAB1

R0-0
R0 → Router-0
SW-0 → Switch-0
GE → GigabitEthernet
FE → FirstBit Ethernet

#Basic router configuration.



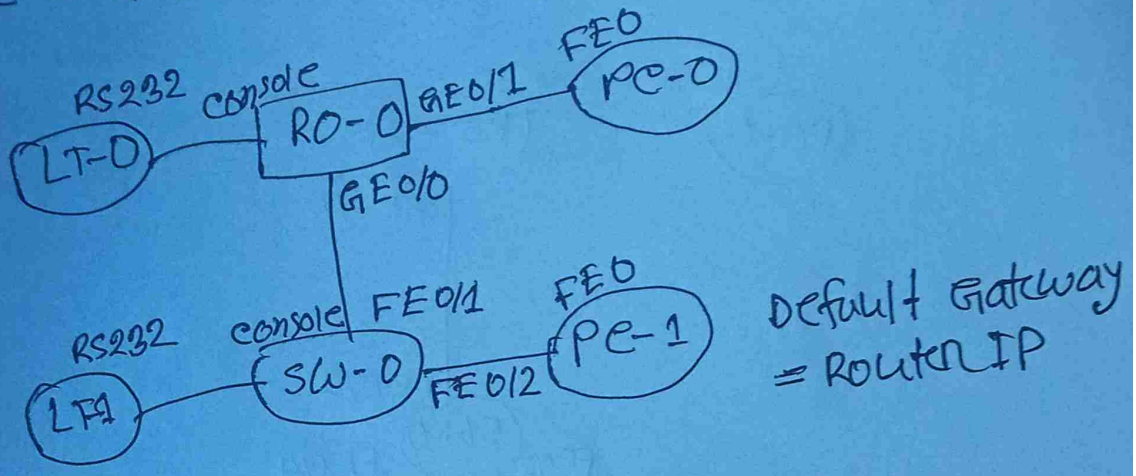
Terminal
PC-0 ↑

→ NO
→ enable
→ configure terminal
→ Interface GigabitEthernet 0/0
→ no shutdown
→ exit
→ exit
→ write memory
→ show running-configure
→ exit

— o —

LAB 2

#change hostname, security, virtually control.



Terminal for LT-1

→ enable
→ configure terminal
→ hostname SW-1
→ banner motd #Enter password Here#
→ enable secret piw / enable password 123
→ service password-encryption
→ line console 0
→ password piwhasan
→ logging synchronous
→ login
→ history size 20
→ exec-timeout 10
→ exit
→ exit
→ write memory
→ show running-config
→ exit

LT-0's terminal

same as LT-1's commands then,

→ configure terminal
→ interface GigabitEthernet 0/0
→ no shutdown
→ ip address 192.168.1.1 255.255.255.0
→ exit
→ exit
→ write memory
→ show running-config
→ exit

LT-1

→ enable
→ configure terminal
→ interface vlan 1
→ no shutdown
→ ip address ~~192.168.1.2~~ 192.168.1.2 255.255.255.0
→ exit
→ ip default-gateway 192.168.1.1
→ exit
→ configure terminal
→ line vty 0
→ password cse
→ logging synchronus
→ login

→ history size 10
→ exec-timeout 10
→ exit
→ exit
→ write memory
→ exit

LT-0

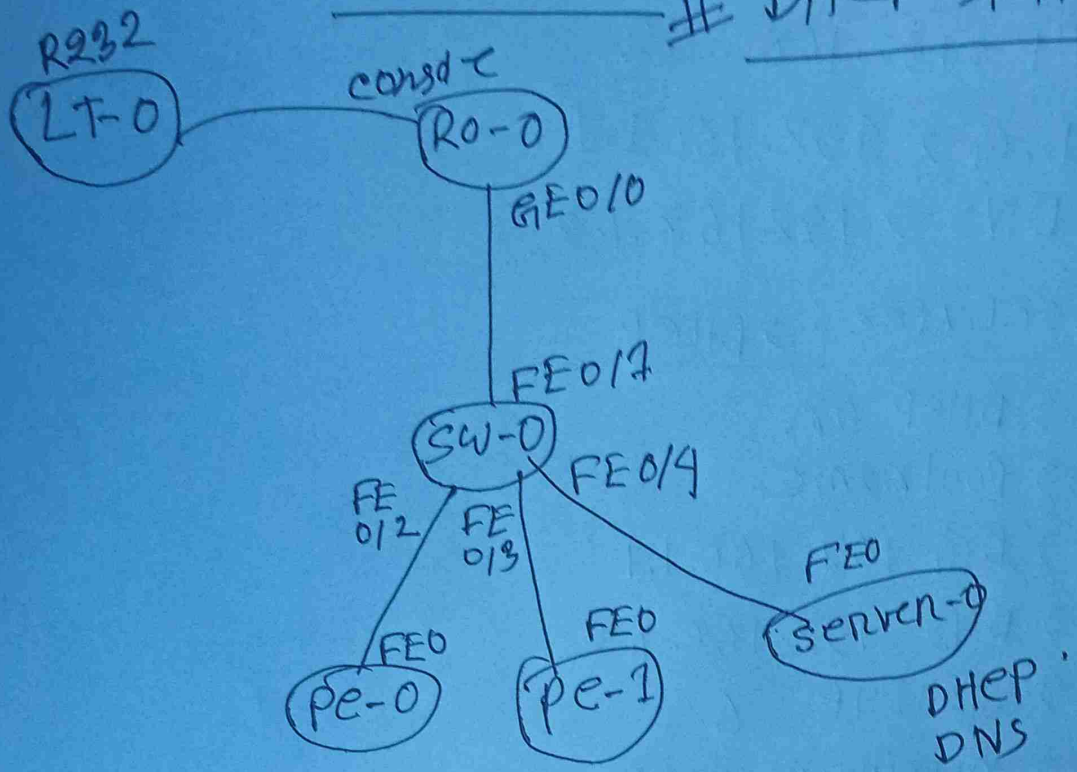
→ enable
→ configure terminal
→ interface GigabitEthernet 0/1
→ no shutdown
→ ip address 192.168.2.1 255.255.255.0
→ exit
→ line vty 0
→ password eee
→ logging synchronus
→ history size 10
→ exec-timeout 10
→ exit
→ exit
→ write memory
→ exit

PC-0 and PC-1

add IP address, default gateway from their network

Then command - telnet 192.168.1.2.

LAB 3.1 — DHCP static part



LT-0

→ enable
→ configure terminal
→ interface gigabitEthernet 0/0
→ no shutdown
→ ip address 192.168.1.1 255.255.255.0
→ exit
→ exit

Server-0

#IP → 192.168.1.2

D.G → 192.168.1.1

DNS → 192.168.1.2

#Service → DHCP

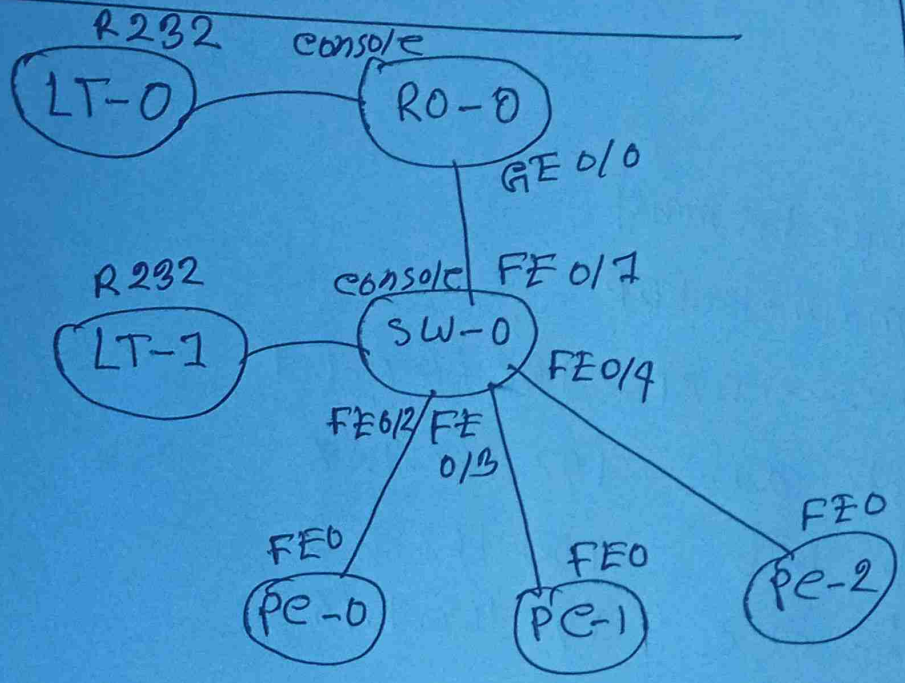
→ DHCP on
→ Poolname
→ DG 192.168.1.1
→ DNS 192.168.1.2
→ Start IP 6
→ maximum users → 248
→ PC-0, PC-1 → DHCP click and auto ip assign.

#Service → DNS

Add name aaa, bbb with ip address.
Then ping from command line.

LAB 3.2

DHCP → Dynamic Part



LT-0

→ enable
→ configure terminal
→ interface giga 0/0
→ no shutdown
→ ip address
192.168.1.1
255.255.255.0
→ exit
→ exit
→ write memory
→ exit

LT-0

→ enable
→ configure terminal
→ service dhcp
→ ip dhcp pool setpool
→ network 192.168.1.0 255.255.255.0
→ default-router 192.168.1.1
→ dns-server 192.168.1.1
→ domain-name set.com
→ exit
→ ip dhcp excluded-address 192.168.1.1 192.168.1.7
→ exit
→ write memory
→ show ip dhcp binding
→ Then PC's dhcp turn on

→ Then ping (~~same terminal~~)
→ show ip dhcp binding

LP-0

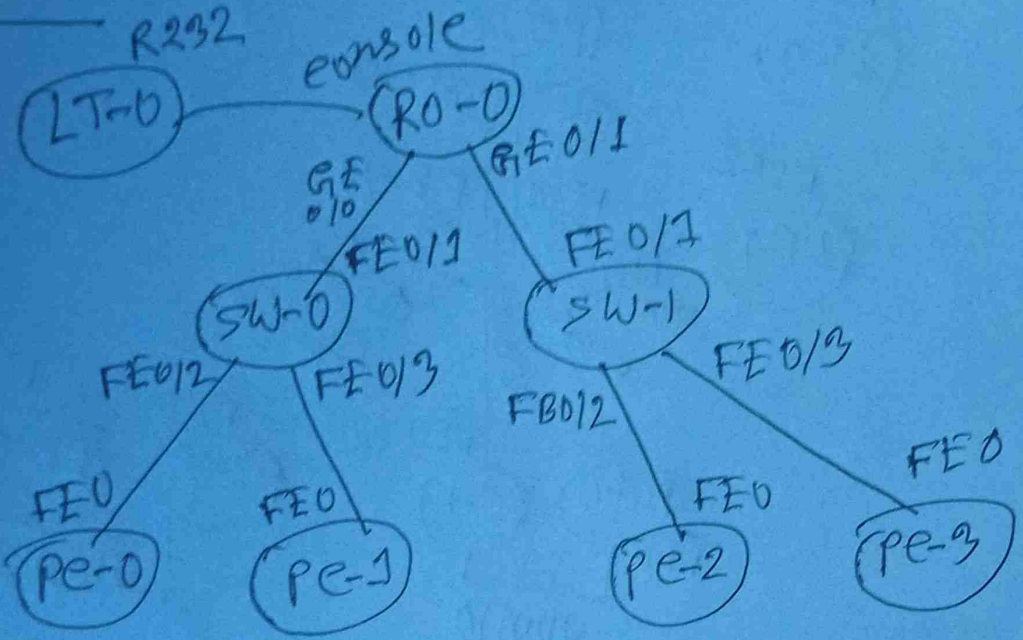
→ enable
→ configure terminal
→ ip domain-lookup
→ IP name-server 192.168.1.1
→ IP host aaa 192.168.1.8
→ IP host bbb 192.168.1.9
→ IP host ccc 192.168.1.10
→ exit
→ write memory
→ ping (aaa → from Router)
→ exit
→ show running-config

LT-1

enable
→ configure terminal
→ ip default-gw 192.168.1.1
→ interface vlan1
→ no shutdown
→ ip address dhcp
→ exit
→ ping (aaa → from switch → not working)

LAB 4.1

#Vlan

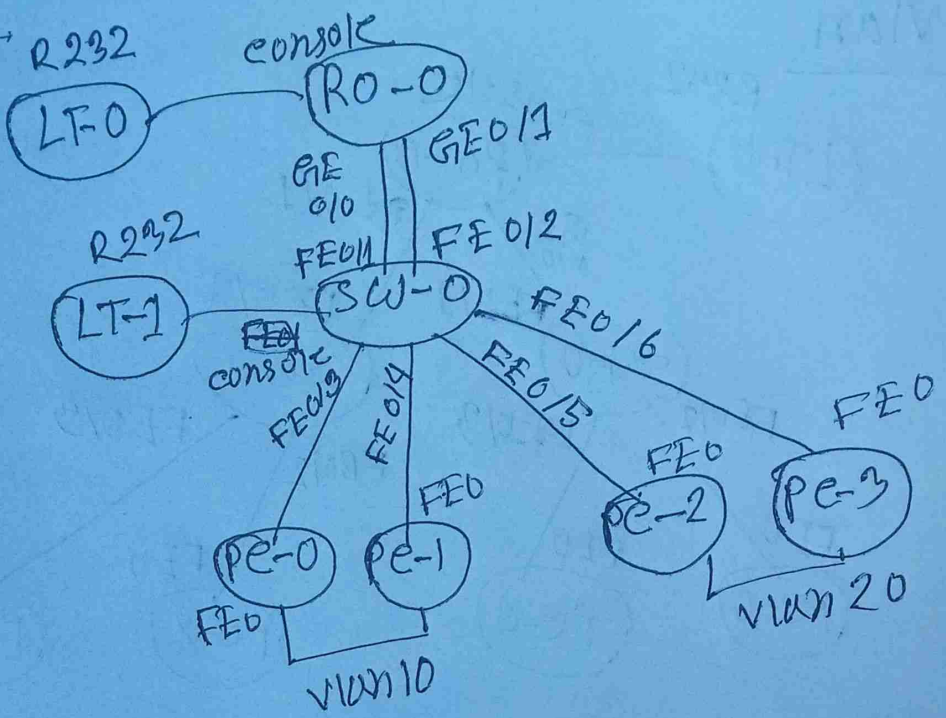


LT-0

→ enable
→ configure terminal
→ interface gigabit ethernet 0/0
→ ip address 192.168.1.1 255.255.255.0
→ no shutdown
→ exit
→ write memory
→ exit
⇒ same as GigabitEthernet 0/1
⇒ then ping from pc

LAB-4.2

vlan



LT-0

same as 4.1 LT-0

SW-0

→ enable → show vlan
→ configure terminal
→ vlan 10
→ name student
→ exit
→ same as vlan 20 for faculty
→ write memory
→ show vlan

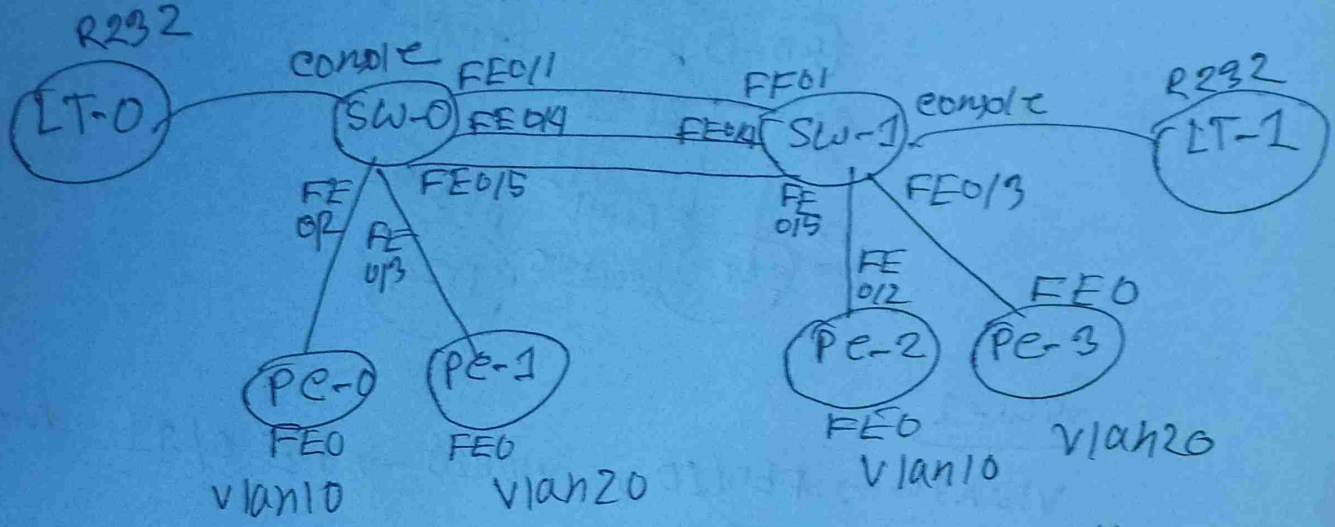
→ config terminal
→ interface FE 0/1
→ switchport mode access
→ switchport access vlan 10
→ exit
→ same as FE 0/3, FE 0/4

For vlan faculty, same formula apply the previous vlan stude

GE 0/0 → vlan 10
GE 0/1 → vlan 20

#Vlan

LAB 5.1



#SW-0 and SW1, create vlan 10, Vlan 20, then membership.

Vlan 10 → SW0: FE0/1, FE0/2
SW1: FE0/1, FE0/2

Vlan-20 → SW-0: FE0/4
FE0/3
Vlan 20 → SW1: FE0/4
FE0/3

LAB 5.2

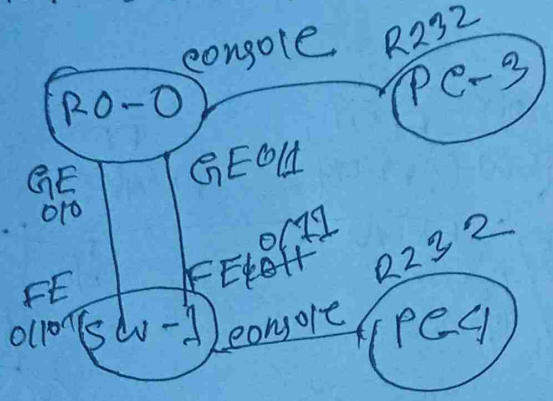
same as Lab 5.1 but remove the auto cable connection between SW-0 and SW-1, then replace both FE0/1 by SW-0 and SW-1.

Both for SW-0, SW-1

→ enable
→ configure terminal
→ interface fastEthernet 0/1
→ switchport mode trunk
→ switch port trunk allowed vlan 1, 10, 20
→ exit
→ exit
→ write memory

LAB 5.3

Add router sw-1 then up & ip assign.



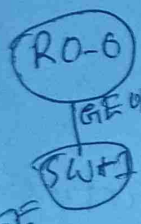
sw-1

vlan 10 → FE 0/10, vlan 20 → FE 0/17 member.

Then ping from PC

LAB 5.4

same as previous but R0-0 and sw-1 connected single line cable.



sw-1

→ enable
→ configure terminal
→ interface fE 0/20
→ sw port mode trunk
→ sw tr allowed vlan 1,20,10
→ exit
→ write memory

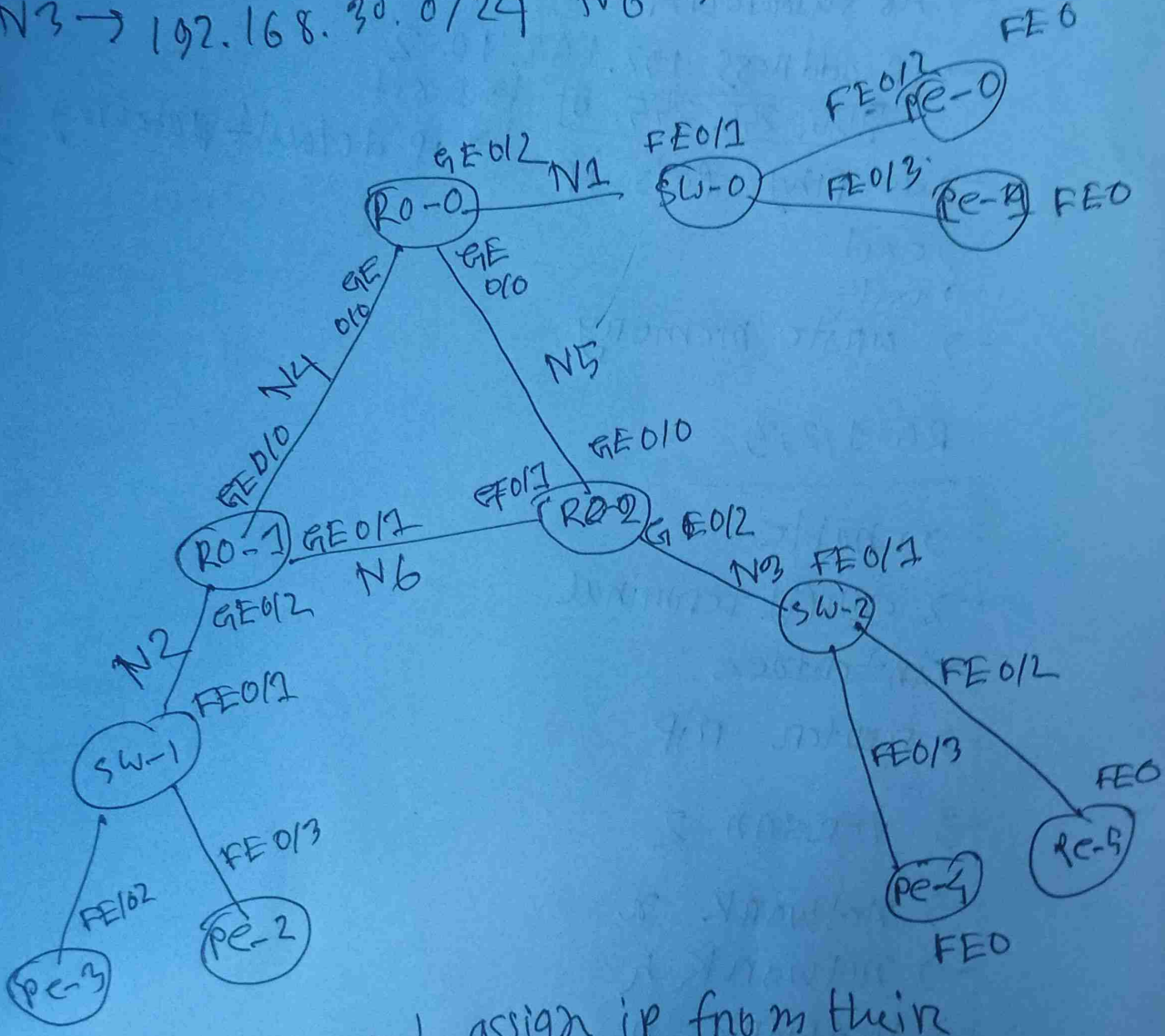
R0-0

→ enable
→ config ter
→ inter Gig 0/2
→ no shutdown
→ ex
→ inter giga 0/2.10
→ encapsulation dot1Q 10
→ ip address 192.168.10.1 255.255.255.0
→ same as others vlan
→ exit
→ memory write
→ exit

RIP

LAB-6

N1 → 192.168.10.0/24
N2 → 192.168.20.0/24
N3 → 192.168.30.0/24
N4 → 192.168.3.0/24
N5 → 192.168.5.0/24
N6 → 192.168.7.0/24



First R0 up and assign ip from their network.

SW0, SW1, SW2

→ enable
→ configure terminal
→ interface vlan 1
→ no shutdown
→ ip address 192.168.10.2 255.255.255.0
→ Exit
→ ip default gateway 192.168.10.1
→ do ping pcs ip
→ exit
→ exit
→ write memory

R0-1,2,3

→ enable
→ config terminal
→ ~~interface~~
→ router rip
→ version 2
→ network x
→ network y
→ network z
→ exit
→ write memory.

OSPf LAB7

Same as LAB6, before R0-1,2,3.

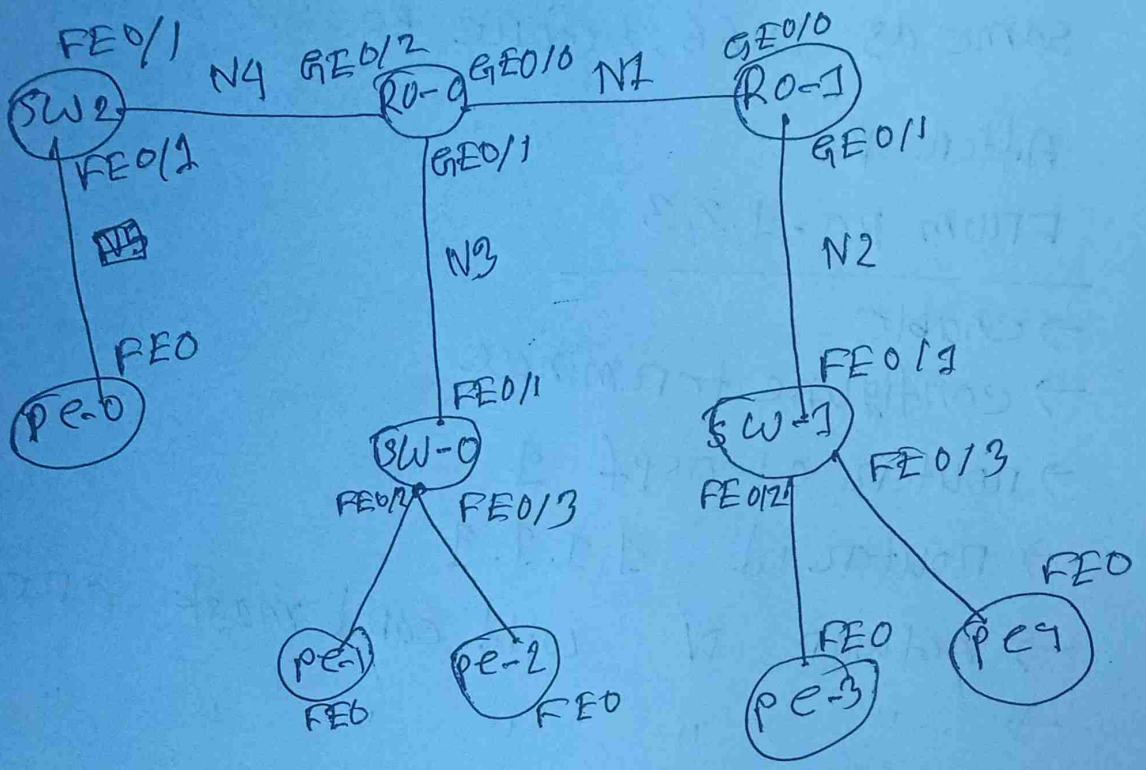
~~After R:~~

From R0-1,2,3

→ enable
→ configure terminal
→ router ~~of~~ ospf 1
→ router id 1.1.1.1
→ network N wild card mask area 0
→ " " " " " " "
→ " " " " " " "
→ exit
→ exit
→ write memory
→ exit

NAT-PAT

LAB 8



N1 → 192.168.1.0
N2 → 192.168.2.0
N3 → 192.168.3.0
N4 → 192.168.4.0

IP address assign and,
RO state up their network.

Then

RO-0 destination sub mask
ip route N2 255.255.255.0 N1 (192.168.1.2)
(RO-1 Gateway IP address)

same as RO-1.

#NAT-PAT

LAB 9

Same as LAB 8.

ISP router:

ip route R0-0 network R0-1 G.W. Add subnet mask R0-0 G.W. Address

Router-0

IP route 0.0.0.0 0.0.0.0 ISP G.W Address

R0

⇒

ip access-list standard 1
exit
access-list 1 permit N/S wild eand mask

#→configure terminal
→ip nat pool Public_access start IP End IP
R0-0 → R0-1
network address

net mask 255.255.255.0
→ip nat inside source list 1 pool Public_access
→exit
→ write memory

ISP router

→configure terminal
→ interface Lookback 1
→no shutdown
→ip address 8.8.8.8 255.255.255.0
→ write memory.

ROUTER

→ configure terminal
→ interface giga 0/0
→ ip nat outside
→ exit
→ interface giga 0/1
→ ip nat inside
→ show ip nat translations
→ ip inside source list 7 pool public_access overload.
→ exit
→ write memory.