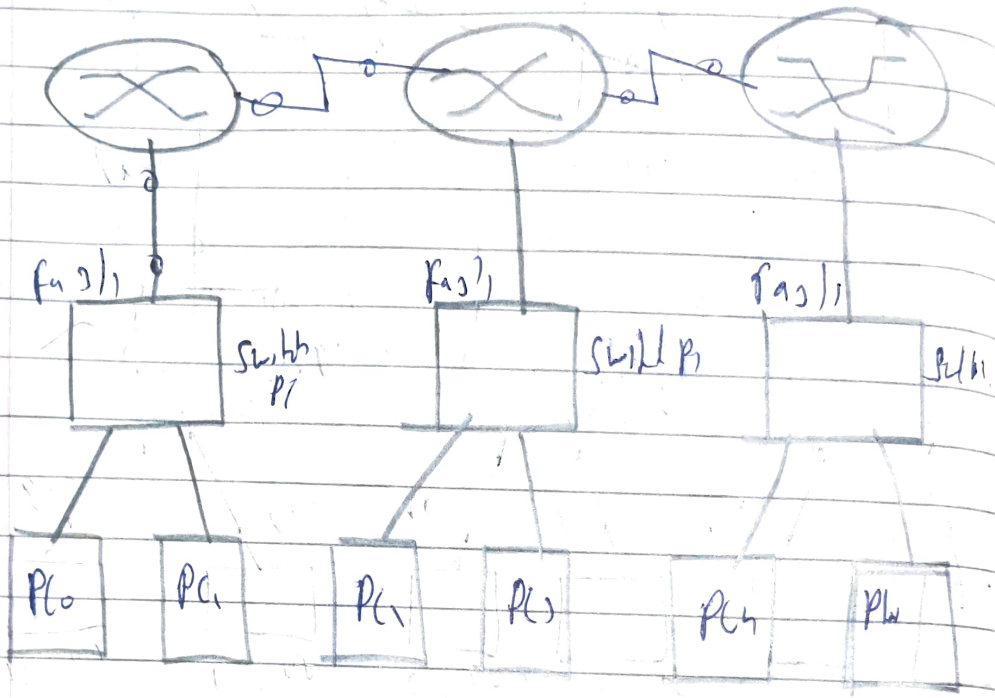
24/11/22

Lab 3

Aim: To configure router to using minimum commands
Configure default route to the routers

Topology:



Procedure:

1) Place 3 generic routers switches & 6 generic PCs in the workspace.

2) Connect the PCs to the switches using copper straight through wire

3) Connect the switches to routers also using the straight wire

4) Connect the routers to each other using serial DCE

5) Set the IP add of each PC and subnet mask in the fast ethernet 0.

6) Set the default gateway for each PC using settings

7) Click on the router & enter the following commands to establish connection b/w the switches

→ enable
→ config t
→ interface fast ethernet 0/0.
→ ip address 10.0.0.1 255.0.0.0
→ no shut.

After some time the light which was amber for the switch will turn green indicating the switches and routers are ready for communication.

Repeat the same for the other router
Click on the router to now establish connection b/w the neighbouring

→ enable
→ config t
→ interface serial 2/0
→ ip address 20.0.0.10 255.0.0.0
→ no shut

click on router1

- enable
- config t
- interface serial 2/0
- ip address 20.0.0.20 255.0.0.0
- no shut

The red light b/n the 2 routers will turn green indicate they are ready for communication.

Teaching Router 0 about network 30, 40, 50

click on router 0, open CLI:

- enable
- config t
- interface serial 2/0
- ip route 0.0.0.0 0.0.0.0 20.0.0.20
- exit
- show ip route

It will show that network 30, 40 50 are connected via gateway 20.0.0.20.

Teaching Router 1 of network to 4 40

Tech route 2 of network 10.20 & 30

- enable
- config t
- interface serial 2/0
- ip route 0.0.0.0 0.0.0.0 30.0.0.10
- exit
- show ip route

- Simulation mode:
Add a simple PDU by selecting the PCs & click on the 'also' option from the result panel.

- Real time mode:
select the PC PC0 and go to its command prompt & ping a PC in network 80. At first it will show request timed out & packet will be lost during transmission. But on executing the command once more. The PC now would have learnt the network so the message will be sent successfully to P4.

- Observations

Learning outcome: In this network

router R1 does not have a default route since R0 & R2 can't become a default. Similarly if any one of R0 & R2 is default then the packets that are supposed to R1/R2 route R1 can go to as they are defined.

Result

PC> Ping 50.0.0.1
Pinging 50.0.0.1 ē 32 bytes of data

Request timed out
Reply from 50.0.0.1: bytes = 32 time = 1ms TTL=1
Reply from 50.0.0.1: bytes = 32 time = 1ms TTL=1
Reply from 50.0.0.1: bytes = 32 time = 1ms TTL=1

Ping statistics for 50.0.0.1:
Packets: Sent = 4, received = 3 lost = 1 (25% loss)

PC> Ping 50.0.0.1
Pinging 50.0.0.1 ē 32 bytes of data
Reply from 50.0.0.1: bytes = 32 time = 31ms TTL=126
Reply from 50.0.0.1 bytes = 32 time = 2ms TTL=126
Reply from 50.0.0.1: bytes = 32 time = 11ms TTL=126
Reply from 50.0.0.1: bytes = 32 time = 2ms TTL=126

Ping statistics for 50.0.0.1:
packets: Sent = 4, received = 4, lost = 0 (0% loss)