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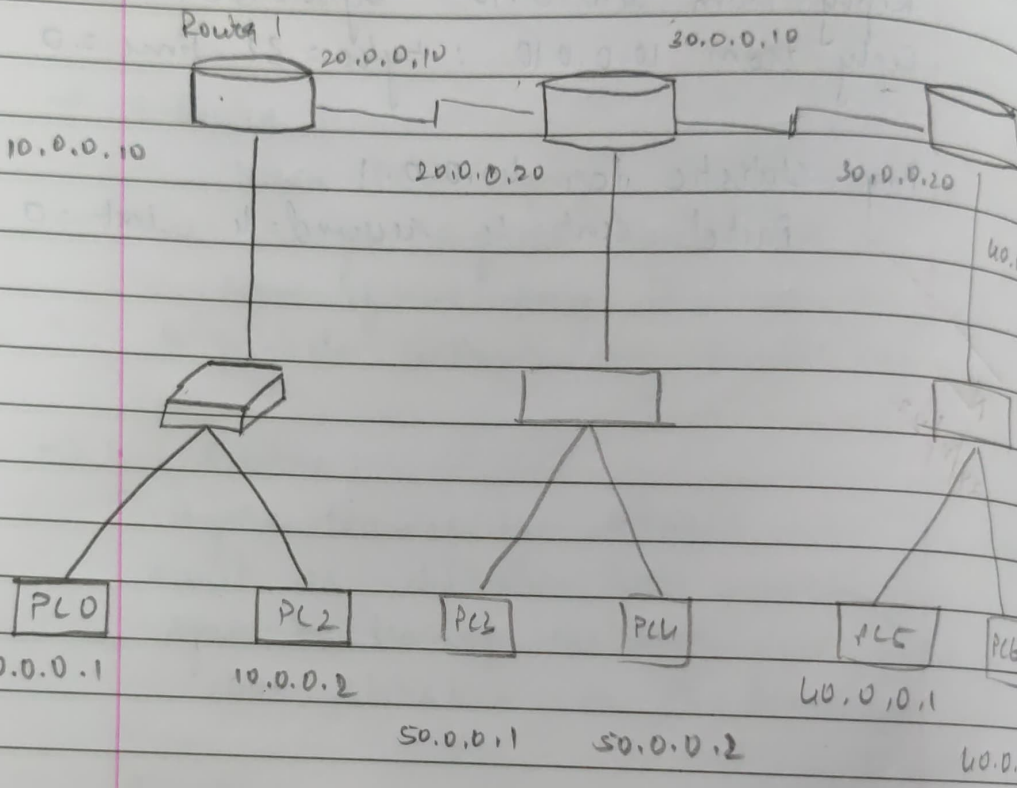
Experiment - 3

Aim: Configuring default route to the router.

Topology:



Procedure:

i) Place 3 generic routers and two generic PCs in workspace

ii) connect all routers using single dce cable and connect all switch, router and PC's with copper straight as shown above.

iii) A PC is clicked to set the attributes for a PC and each PC has three attributes which are the IP address.

subnet mask and the gateway and all the three are set according to the nodes placed. This process is done for all 6 PC's

iv) For router, the configuration are done in the command line interface. The IP address and subnet mask are set for both interfaces - fastethernet 0/0 as 10.0.0.10 and 255.0.0.0 and serial 2/0 as 40.0.0.1 and 255.0.0.0 Router 2 is the default router for Router 1 and this is done by the command ip route 0.0.0.0 0.0.0.0 0.0.0.0

v) For Router2 the IP address and subnet mask are set for all three interfaces - fastethernet 0/0 as 20.0.0.3 and 255.0.0.0 and serial 2/0 as 40.0.0.20 and 255.0.0.0 and serial 3/0 as 50.0.0.10 & 255.0.0.0. Router 2 does not have any default route and the static routing is done for the network 10 & 40 by the following command

ip route 10.0.0.0 255.0.0.0 40.0.0.10

ip route 30.0.0.0 255.0.0.0 50.0.0.10

vi) Router 3 is configured in both interfaces and the route is set by ip route 0.0.0.0 0.0.0.0 50.0.0.1

vii) Ping command is executed from 10.0.0.1 to 20.0.0.1 and from 10.0.0.1 to 30.0.0.2

Observation :

-> One router cannot have two default route
-> The default route for first router is the middle router because any packet which have to be delivered will go to the middle router
-> The default route for third router is the middle sector for the same reason
-> The middle router does not have any default route because if one of the router is made default then there is a chance that the packet which are to be sent to the switch are sent to router.

Result :

ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data
Request timed out
Reply from 20.0.0.1 bytes = 32 time = 1ms TTL = 126
Reply from 20.0.0.1 bytes = 32 time = 2ms TTL = 12
Reply from 20.0.0.1 bytes = 32 time = 2ms TTL =

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ping 30.0.0.2

pinging 30.0.0.2 with 32 bytes of data
Request timed out
Reply from 30.0.0.2 bytes = 32 Time = 4ms TTL = 125
Reply from 30.0.0.2 bytes = 32 Time = 1ms TTL = 125
Reply from 30.0.0.2 bytes = 32 Time = 1ms TTL = 128