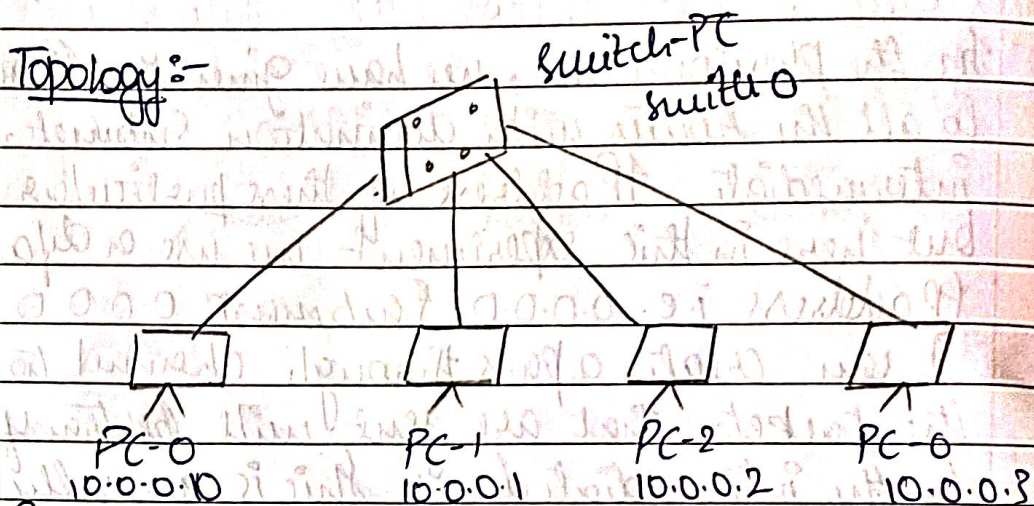


Experiment - 4:-Lab - 4 4(A):-Topology:-Procedure:-

- > Connect 3 PC's & 1 server to a switch using copper straightthrough cable.
- > click on server & go to services tab select DHCP & turn on DHCP service.
- > Set the IP address of the server IP address as 10.0.0.2 & click on OK-button.
- > Before this, set the IP address of server in config tab under fastEthernet to 10.0.0.1
- > Next click on PC0 & go to desktop tab, here click on IP configuration. Select DHCP here. It will request for an IP address & successfully get the DHCP request also set the IP address.
- > Repeat this step for other 2 PC's
- > To send a packet across PC's, go to PC's command prompt & type ping destination IP address.

Ping output:-

packet tracer PC command line 101

PC > ping 10.0.0.3

pinging 10.0.0.3 with 32 bytes of data.

Reply from 10.0.0.3 : bytes = 32 time = 0ms TTL = 128
 Reply from 10.0.0.3 : bytes = 32 time = 0ms TTL = 128
 Reply from 10.0.0.3 : bytes = 32 time = 1ms TTL = 128
 Reply from 10.0.0.3 : bytes = 32 time = 0ms TTL = 128

ping statistics from 10.0.0.3

Packets sent = 4 Received = 4 Lost = 0 (0% loss)

Approximate round trip times in ms.

Minimum = 0ms, Maximum = 2ms, Average = 0ms

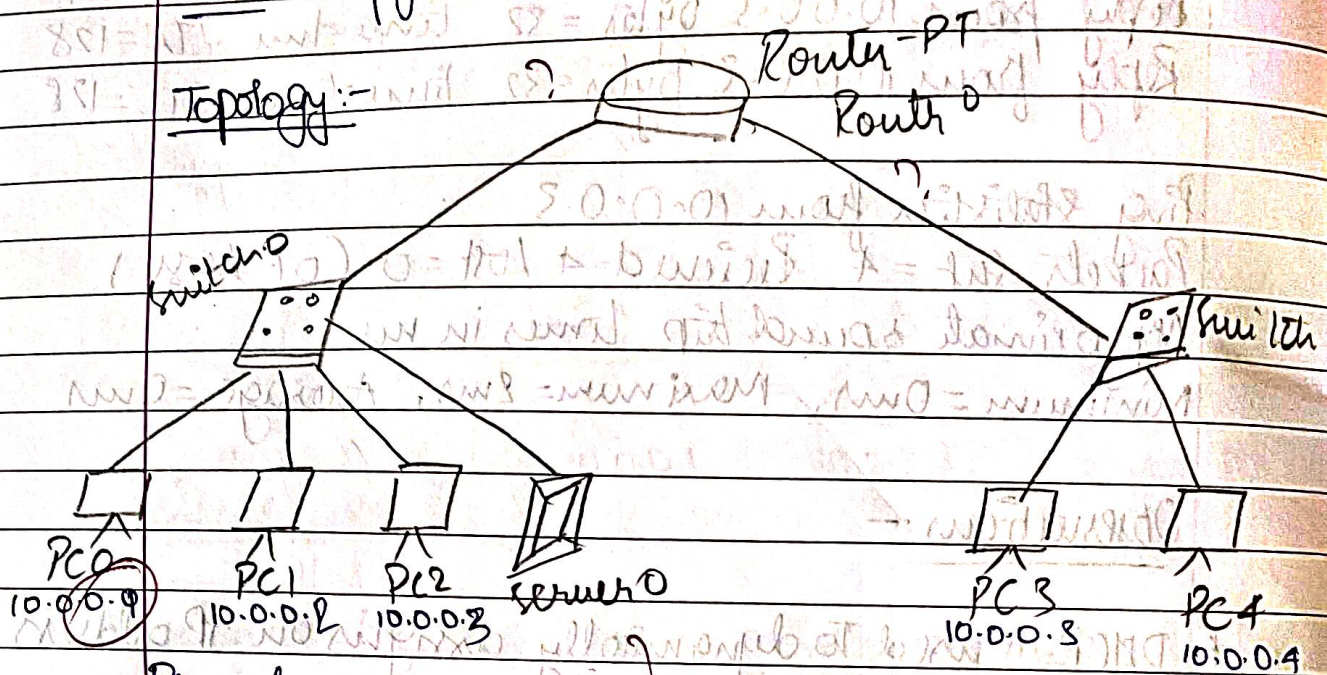
Observations:-

- * DHCP is used to dynamically assign or IP address to any device or node.
- * It is a client-server protocol in which servers manage a pool of unique IP address & also about client configuration parameters.
- * DHCP enabled clients send a request to DHCP server when they want to connect to a network.
- * The DHCP server responds to the client request by providing IP configuration information from address pools, previously, specified by a network administrator.

4[B] :-

Aim :- Configure DHCP within a LAN & outside LAN.

Topology :-



Procedure :-

- > Add a router, a switch & 2 PC's do 4(A) program network & connect the router to both switches.
- > Set the server IP address of server & with the help of server set the first 3 PC's IP address through DHCP.
- > Click on server.
- > Go to desktop -> IP configuration
- > Add IP address, subnet mask & gateway

IP address 10.0.0.1

Subnet mask 255.0.0.0

Gateway 10.0.0.26

- > Configure the router
Click on router go to CLI
enable.


```

Router # config t
Router (config) # fastEthernet 0/0
Router (config) # ip address 20.0.0.20 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # interface fastEthernet 1/0
Router (config) # ip address 20.0.0.20 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit

```

Routing Table

Router → show ip route

10.0.0.0/1 is directly connected. fastEthernet 0/0

- > Go to server [DHCP server configuration]
 - select server then go to DHCP
 - set service on
 - set start IP address pool (i.e. 20.0.0.0) then save

- > then configure the PC's
 - select a PC then desktop - go to IP configuration select DHCP.
 - Repeat the same procedure for all other PC's

Observations:

- DHCP is used to assign IP address dynamically to different devices.
- To assign continuous IP address we create a server pool where we assign the starting IP address & a default gateway number. For PC's under different switches we create a different server pool again & start