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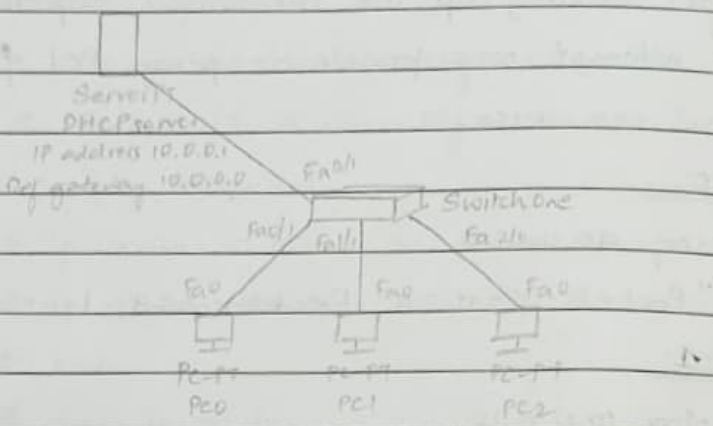
LAB-05

01 Objective:

Design a DHCP network within a LAN.

Proce Topology:



Procedure:

→ Place three PCs, one switch and a server. Connect the end devices to the switch, and the switch to the server using copper straight wire.

→ Go to DHCP server → Desktop → IP configuration and set the IP address as 10.0.0.1 and default gateway as 10.0.0.0

→ Now go to config → Services → DHCP and turn the service to "On".

→ Change Pool name to Switch One and set 10.0.0.0 as default gateway, start IP as 10.0.0.3, max users as 100 and click on "Add".

→ Now go to each PC's Desktop → IP configuration and enable DHCP. Requests are sent to obtain and assign IP addresses respectively.

→ Ping from PC0 to PC2.

Observation:

→ The IP addresses have been successfully set as

10.0.0.2

10.0.0.3

10.0.0.4

→ ping 10.0.0.2

Ping statistics for 10.0.0.3:

Packets: Sent = 4, Received = 1, Lost = 3 (75 % Loss)

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20/11/24.

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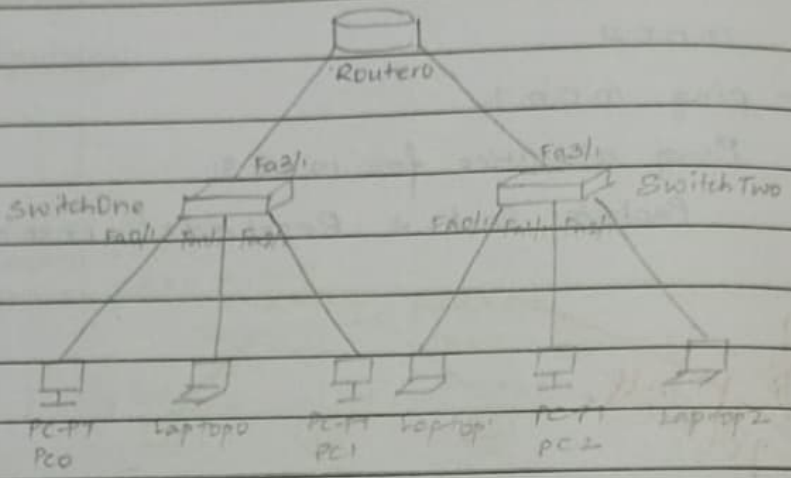
02. Objective:
Design a DHCP network outside LAN using router

Topology



Procedure:

→ Place PCs and Laptops to a total of six, one server, two switches and a router. Connect the end devices to switches to router & server to switch using copper straight wire.

→ Go to the DHCP server's IP configuration and set IP address as 10.0.0.2 and default gateway as 10.0.0.1

→ Go to the DHCP services in Config, turn the services to "ON" and do the following:
Set the poolname to SwitchOne, Default gateway to 10.0.0.1, Start IP to 10.0.0.3 and 100 users

→ Do the same for switch two with default gateway as 20.0.0.1, start IP to 20.0.0.3 and 100 users.

→ Now go to the CLI of the router & do the following:
>enable
#config terminal
#interface fa4/0 ip address 10.0.0.1 255.0.0.0

ip helper address 10.0.0.2
no shut
exit
interface fa 0/0
ip address 20.0.0.1 255.0.0.0
ip helper address 10.0.0.2
no shut.

→ Now go to all end devices and change the IP configuration from static to DHCP. This enables the IP addresses to be automatically requested and assigned based on the server settings.

Observations:

→ The IP addresses have been successfully set

10.0.0.3 — 20.0.0.3
10.0.0.4 — 20.0.0.4
10.0.0.5 — 20.0.0.5

→ ping 10.0.0.3

Ping statistics for 10.0.0.3:
Packets: Sent=4, Received=0, Lost=4 (100% Loss)

→ ping 20.0.0.3

Ping statistics for 20.0.0.3:
Packets: Sent=4, Received=4, Lost=0 (0% Loss)