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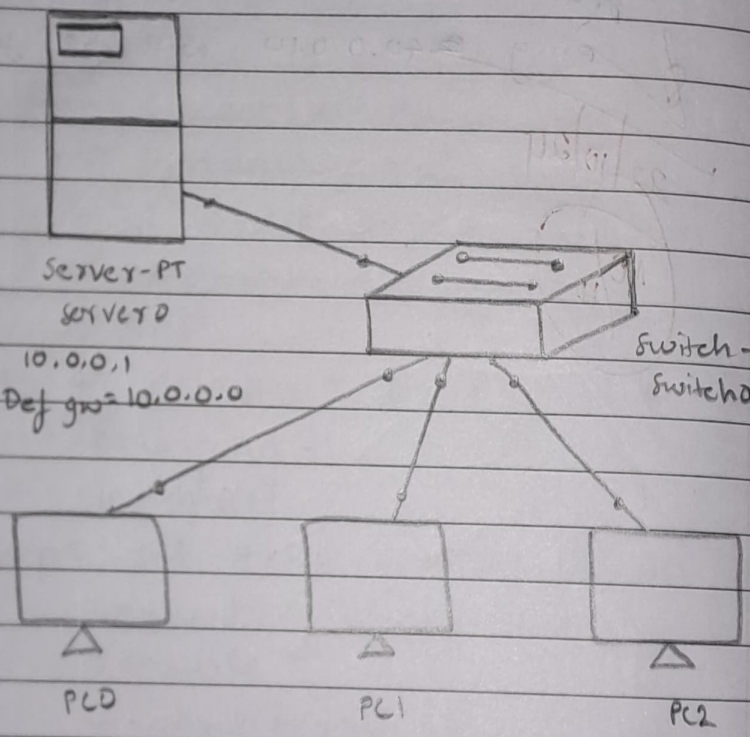
Lab-4

→ Dynamic IP allocation

Objective: Dynamic IP allocation using DHCP(dynamic host configuration protocol)

Topology:



Procedure:

Step 1: Place one generic server, one switch and 3 PCs in the environment.

Step 2: Connect PCs to switch using copper straight through cable. And connect this switch to the server using same

Step 3: Set the servers ip as 10.0.0.1 and default gateway as 10.0.0.0

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Step4: In server go to services, select DHCP, then make it as
poolname → switch1
default gateway → 10.0.0.0
start ip → 10.0.0.3
Maxnumber → 100
then add it.

Step 5: Go to end systems and select ip configuration, select DHCP option server will automatically allocate ip to them.

Observations:

- DHCP helps in dynamic allocation of Ip address to end systems
- DHCP helps to minimize configuration errors caused by manual Ip address configurations.

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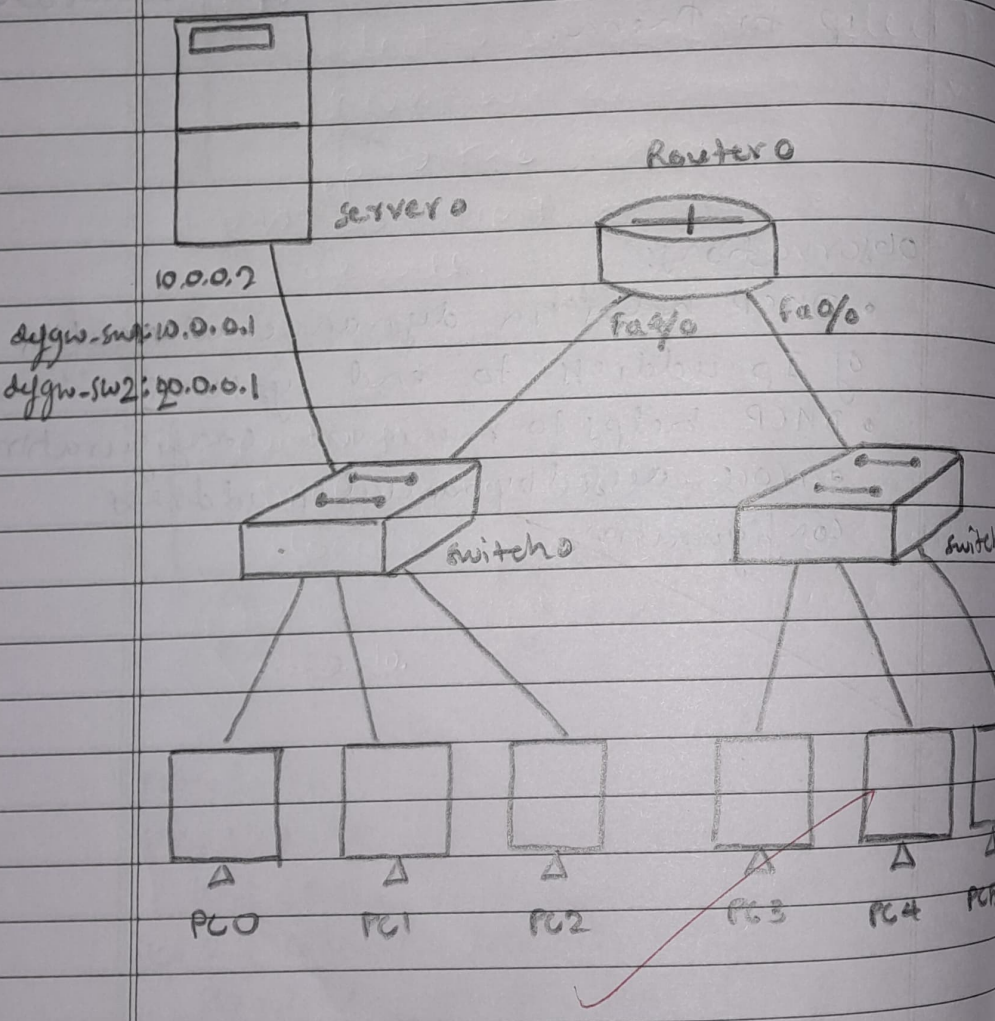
⇒ Dynamic allocation of ip for two different networks.

Objective: Dynamic Ip allocation using DHCP for two different networks connected using router.

Topology:



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Procedure:

Step 1: Place one generic server, two switches and one router along with 6 PCs.

Step 2: Connect 3 PCs to switch 0 and 3 PCs to switch 1 using copper straight through.

Step 3: Connect server to switch 0, then connect switch 0 and switch 1 to Router 0 as shown.

Step 4: Set ip of server as 10.0.0.2 and default gateway as 10.0.0.1

Step 5: configuring server for switch 0

server → services → DHCP

pool name → switchone

default gateway → 10.0.0.1

start ip → 10.0.0.3

maxm number of users → 100

add this configuration.

Step 6: configuring server for switch 1

server → services → DHCP

pool name → switchtwo

default gateway → 20.0.0.1

start ip → 20.0.0.3

maxm no. of users → 100

add this configuration.

Step 7: router configuration

go to CLI

execute below for switch 0

>enable

#config terminal

#interface fastethernet 4/0

#ip address 10.0.0.1 255.0.0.0

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#ip helper-address 10.0.0.2
no shut
exit.

Step 8: config router
go to CLI
exicute below for switch 1
follow as previous step
change ip to 20.0.0.1
and just ethernet to 0/0

Step 9: Now go to end systems and select ip configuration, select DHCP server will automatically give ip to the system.

Step 10: Do step 9 for other end systems as well.

observations:

- DHCP can be used to dynamically allocate ip address to end systems which are part of different networks.

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