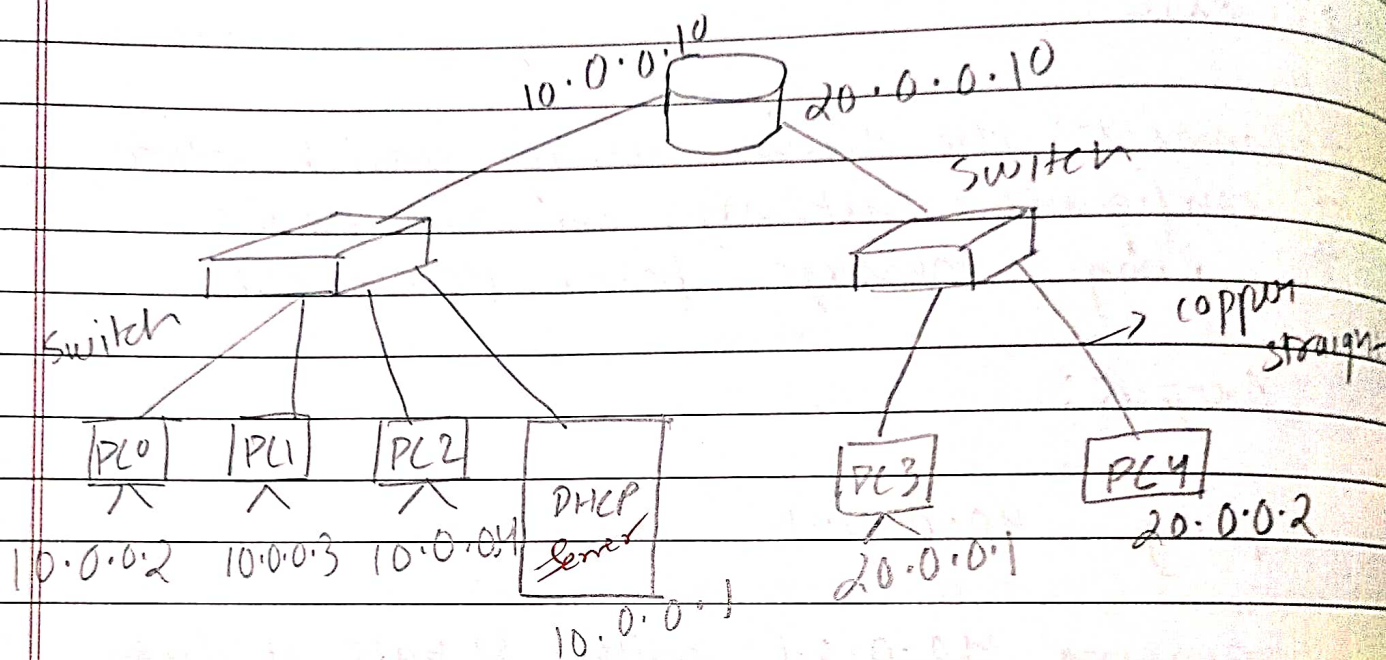


13-7-23

Experiment - 9

Date
Page

Aim: To configure DHCP within a LAN and outside LAN



Procedure:

- Place 3 end devices and a server under one switch in a network
- Place 2 other end devices under another switch in a different network
- Connect the switches through a router
- Configure ip address for the router for both interface
- open the server and open the services tab and DHCP services
- Add two server pools with respective gateway and starting ip address 10.0.0.10.
- open router CLI and open interface to which the server is not connected and type the following command.

7 ip helper-address 10.0.0.10
where 10.0.0.10 is the static ip address of the server

open each device and configure ip address through dhcp.

Output

ping 20.0.0.2

Request timeout

Reply from 20.0.0.2 bytes = 32 time < 1ms TTL = 127

Reply from 20.0.0.2 bytes = 32 time < 1ms TTL = 127

Reply from 20.0.0.2 bytes = 32 time < 1ms TTL = 127

Ping statistics for 20.0.0.2

Packet sent = 4, Received = 3, Lost = 1 (25% loss)

Approximate round trip times in milliseconds.

Minimum = 0ms, Maximum = 27ms, Average = 9ms

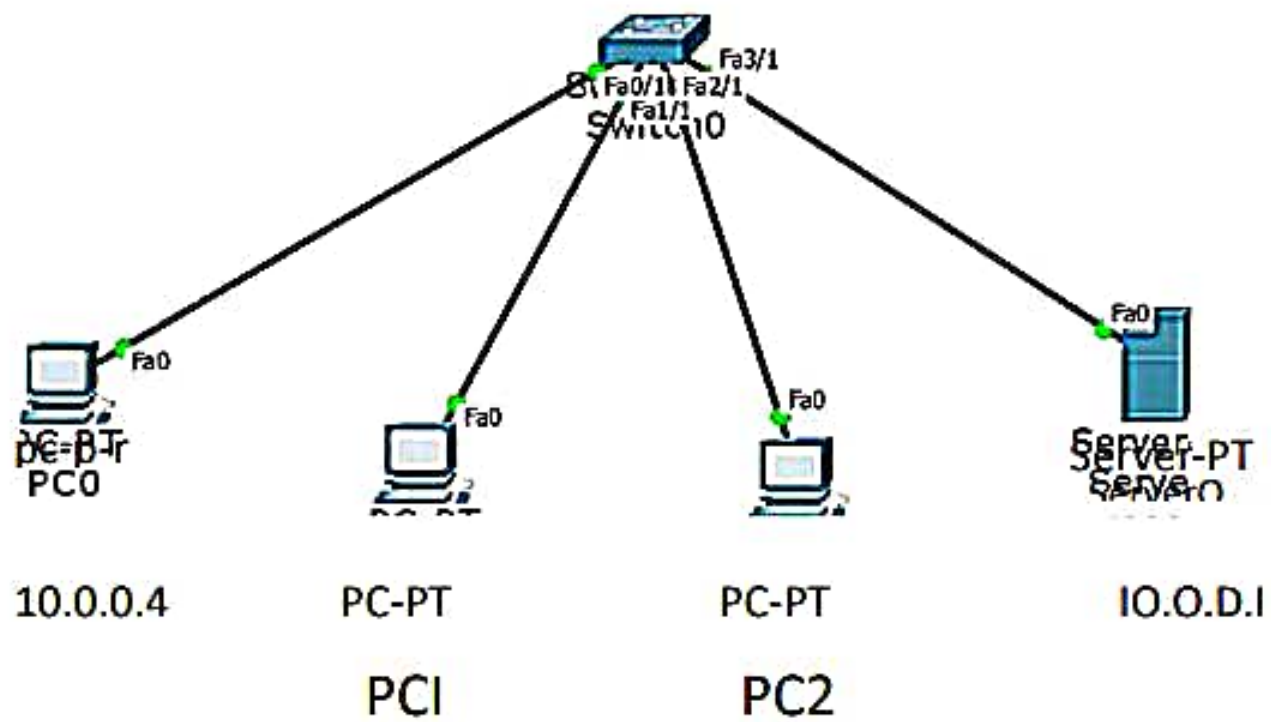
Observation:

Each end device get ip address from the server

→ Message is pinged from a device in one network to another

→ It can be seen that the end devices get the ip address from configured static ip address.

pool	DHCP config:	gateway	static ip
serverPool		20.0.0.10	20.0.0.1
serverPool		10.0.0.10	10.0.0.2



```
Router (config-if) 'ip address  
20.0.0.20 255.0.0.0 Router (config-if)  
*no shut
```

```
LINK-S-CHANGED:Interface Serial2/0, changed state to down  
Router (config-if) *exit  
Router (config) interface serial 3/0  
Router (config-if) 'ip address 30.0.0.10 255.0.0.0  
Router (config-if) shut
```

```
'LINK-S-CHANGED: interface serial3/0, changed state to down  
Router (config-if) 'exit  
Router (config) #
```

```
LINK-S-CHANGED:Interface Serial2/0, changed state to up
```

```
*LINEPROTO-S-UPDOWN: protocol on Interface serial2/0, Changed State to up
```


Router (config-if)#

LINK-S-CHANGED: Interface serial2/0, changed state to up

LINEPROTO-S-UPDOWN: Line protocol on Interface serial2/0, changed state to up

Router (config) *interface fastethernet0/0

Router (config-if) address 40.0.0.10 255.0.0.0

Router (config-if) shut

Interface FastEthernet0/0, changed state to up

Router (config-if)#

LINK-S-CHANGED: Interface

Line protocol on Interface FastEthernet0/0, changed state to up

LINEPROTO-S-UPDOWN:

exit

Router (config)# show ip route

Invalid input detected at marker.

Router (config) *exit

Router#

SYS-5-CONFIG_

I: Configured from console by

console show ip route

Codes: C - connected, S - static, I - IGRP, R -

RIP, M - mobile, B - BGP D - EIGRP, EX - EIGRP

external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external

type 2, E1 - OSPF external type 1, E2 - OSPF external

type 2, E - EGP, i - IS-IS, L1 - IS-IS level-1, L2 - IS-

IS level-2, ia - IS-IS inter area

* - candidate default, U - per-user static

route, o - ODR P - periodic downloaded static

route

Gateway of last resort is not set

C 30.0.0.0/8 is directly

connected, Serial2/0 C 40.0

.0.0/8 is directly connected, Fa

stEthernet0/0 Router#

IP Configuration

O DHCP O Static

DHCP request

successful.

IP Configuration



IP Address 20.0.0.4

Subnet Mask 255.0.0.0

Default Gateway

20.0.0.20 DNS Server

0.0.0.0

IPv6 Configuration

O DHCP O Auto Config O Static

IPv6

Address

FE80::2E0:F7FF:FE6B:D733

Link Local Address

IPv6 Gateway

IPv6 DNS Server

pinging 20.0.0.2 with 32 bytes of data:

```
Reply from 20.0.0.2 : bytes=32
time=1ms TTL=127 Reply from
20.0.0.2 : bytes=32 time=0ms
TTL=127 Reply from 20.0.0.2 :
bytes=32 time=0ms TTL=127 Reply
from 20.0.0.2 : bytes=32 time=0ms
```

Ping statistics for 20.0.0.2 :

Packets : Sent -- 4, Received = 4, Lost =
0 loss) , Approximate round trip times in milli-
seconds:

Minimum = 0ms, Maximum = 1ms, Average = 0ms