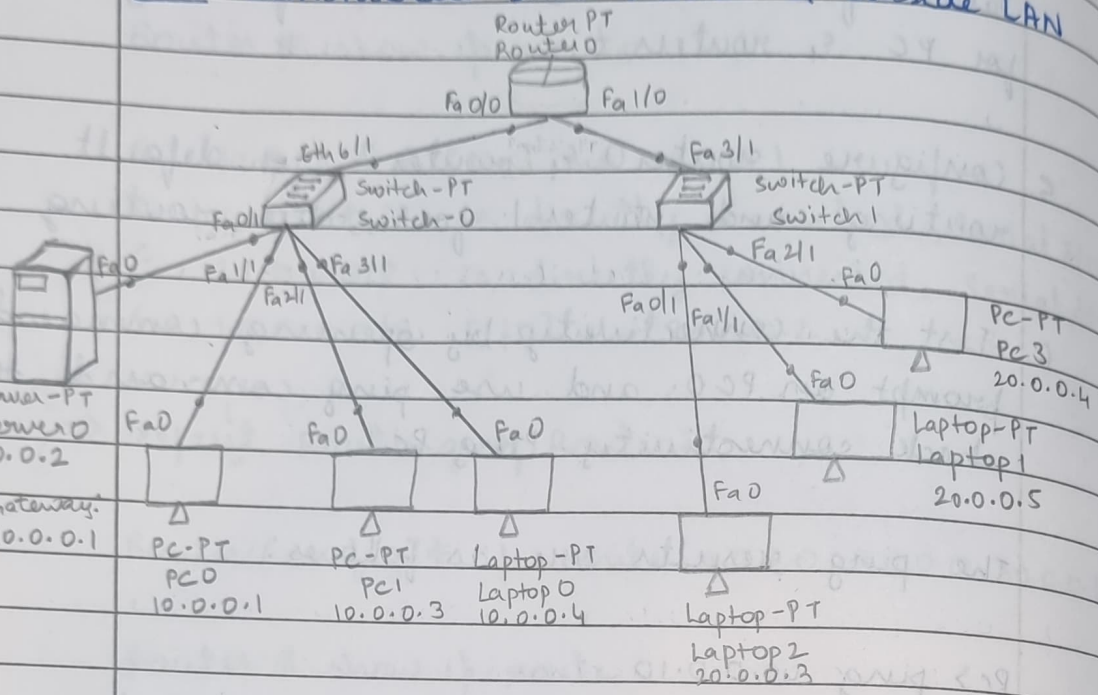
Date 13/11/24
Page

Experiment - 4

Q. Configure DHCP within a LAN and outside LAN

Aim: Demonstrate DHCP within & outside LAN



Topology:

1. Switch0 connected to Router0 interface Fa 0/0 using copper straight-through cable from Eth 6/1.

2. PC0, PC1, PC2 connected to switch0 via copper straight-through with IP address - 10.0.0.1, 10.0.0.3, 10.0.0.4 resp

3. Server0 connected to switch 0 with ip address 10.0.0.2.

4. PC3, PC4, PC5 connected to switch1 with ip address 20.0.0.4, 20.0.0.5, 20.0.0.3 resp.

Date __/__/__
Page _____

5. switch1 connected to router 0 interface Fa1/0 using copper straight through cable from Fa 3/1.

Procedure:

1. Open cisco packet tracer and drag the following components:
   - Router: Place 1 router in the middle.
   - Switch: connect two switches to Router 0
   - Pc: Take 3 Pcs and connect it to switch 0 & another 3 Pcs to switch1
   - Server: Place one server & connect it to the switch1 via ~~copple~~ → copper straight-through cable.

2. Configure server 0 by clicking on the server & click IP configurations
   set IP address as 10.0.0.2,
   Subnet mask as 255.0.0.0,
   Def gateway as 10.0.0.1

3. In DHCP services, config switch 0 with
   Pool Name - switch1
   Start ip address - 10.0.0.0
   Def gateway - 0.0.0.0
   Subnet Mask - 255.0.0.0

4. In DHCP services add switch1 config with
   Pool Name - switch2
   start ip address - 10.0.0.3
   Def gateway - 10.0.0.1
   Subnet Mask - 255.0.0.0

Date __/__/__
Page

5. Set the ip configuration of all PC's to DHCP due to which each PC attains its ip address, subnet mask & default Gateway.

6. Configure Router0 by clicking on the router and selecting CLI
Assign IP addresses to the router interfaces.

```
Router> enable
Router# config terminal
Router(config)# interface fa 0/0
Router(config)# ip address 10.0.0.1 255.0.0.0
Router(config)# ip helper-address 10.0.0.2
Router(config)# no shut

Router(config)# interface fa 1/0
Router(config)# ip address 20.0.0.1 255.0.0.0
Router(config)# ip helper-address 10.0.0.2
Router(config)# no shut
Router# exit
```

Observation:

If config & cabling are correct, you will receive successful ping replies b/w two PCs

```
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=1ms TTL=120
Reply from 10.0.0.3: bytes=32 time=0ms TTL=120
Reply from 10.0.0.3: bytes=32 time=0ms TTL=120
Reply from 10.0.0.3: bytes=32 time=2ms TTL=120
```

Date __/__/__
Page _____

Ping statistics for 10.0.0.3:
    Packets: sent=4, received=4, loss=0 (0% loss)
Approx round trip times in milliseconds:
    Minimum=0ms, Maximum=2ms, Avg=0ms.