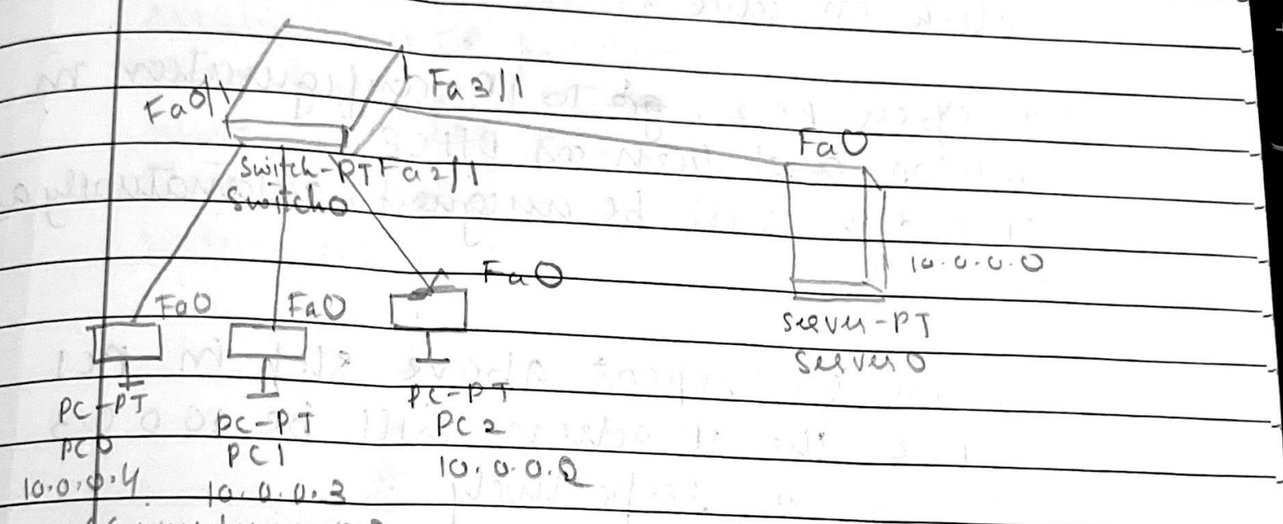
CONFIGURE DHCP WITHIN A LAN AND OUTSIDE LAN

4a. Configure DHCP within a LAN and outside LAN

Aim: To configure DHCP within a LAN and outside LAN
4A: within a LAN

Topology:



Procedure. 24/3/2022

1) The topology is created by choosing 3PCPTs and one server-PT

2) Genin switch, switch-PT as connecting device and place it in workplace.

3) Copper Straight through is used to connect all the devices.

4) Set IP address of server 0 on desktop IP configuration tab. Set IP address to

10.0.0.1 set subnet mask

5. On the DHCP protocol by going to server 0 → services → DHCP - on. Set start IP address as 10.0.0.2 Subnet mask as 255.0.0.0

6. Set default gateway 10.0.0.20 and click on save.

7. Open PC2, ~~go~~ To IP configuration in desktop and turn on DHCP IP address will be assigned automatically as 10.0.0.2

8. When we repeat above step in PC1 and PC2 the IP adress will be 10.0.0.3 and 10.0.0.4 respectively.

Ping output
on PC0

PC> ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data

Reply from 10.0.0.2: bytes=32 time=1ms TTL=128
Reply from 10.0.0.2: bytes=32 time=1ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Date __/__/__
Page

Ping statistics for 10.0.0.2:
Packets sent: 4 Received = 4, lost = 0 (0% loss)
Approximate round trip times in milliseconds
Minimum = 0ms Maximum = 1ms Average = 0ms

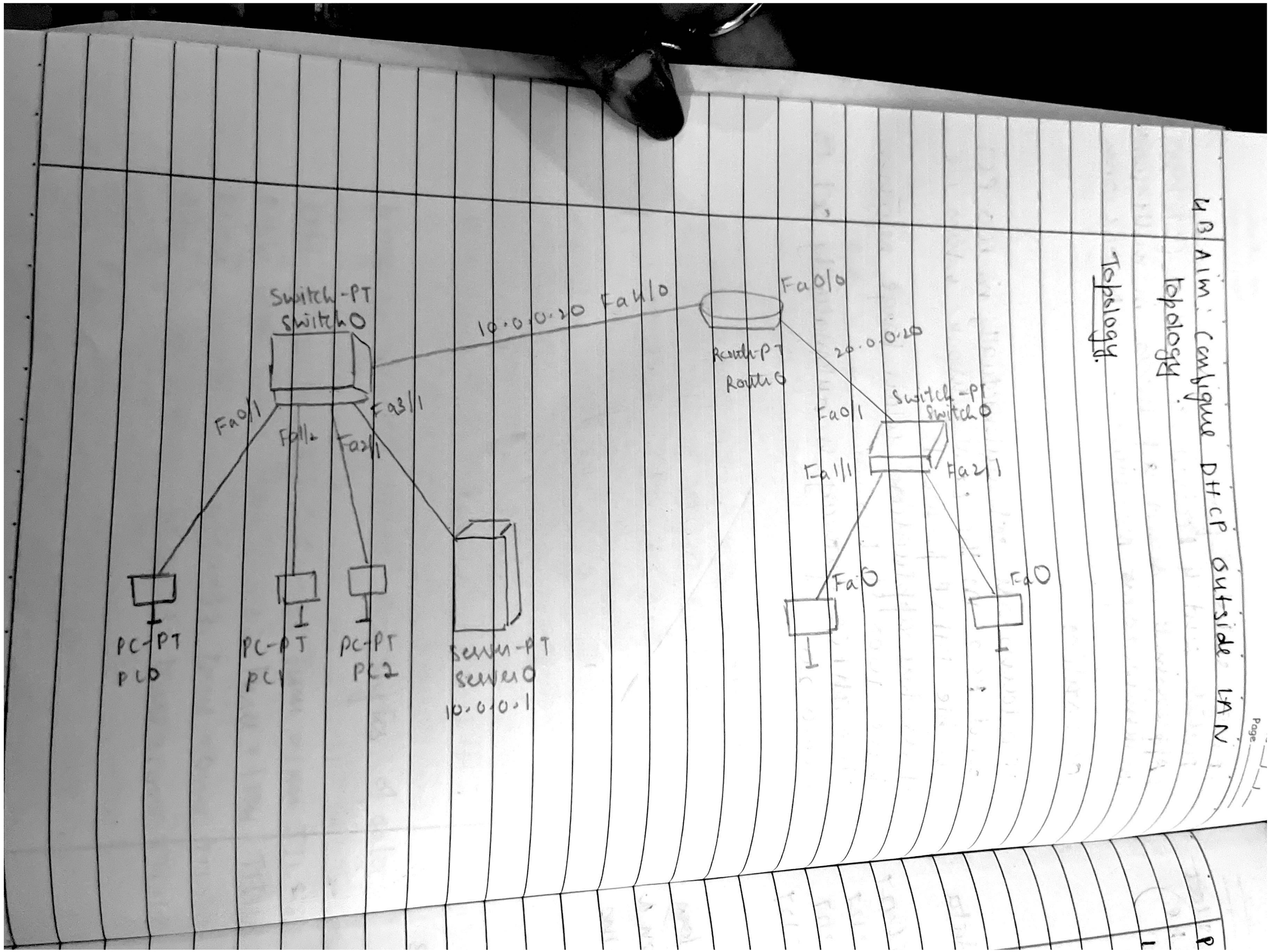
Observation

IP addams are set automatically in PC0, PC1 and PC2 in the LAN network when we enable DHCP protocol.
This has application when large networks have 100s of PCs.
For all PCs gateway is automatically set to 10.0.0.20

4B Aim: Configure DHCP outside LAN

Topology:

Topology



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Procedure:

1. To the topology created in 4A, connect a generic router (router 0) using copper straight through wire.

2. Through switch - PT switch 1 connect 2 PCs, PC3 and PC4 and connect switch 1 TO Router 0.

3. In Router 0, set IP address using steps in previous experiments. Set IP addres & Fa 4/0 to 10.0.0.20 and Fa 0/0 to 20.0.0.20

4. In Router 0,
interface fastethernet 0/0
router (config-if) # ip hellpu-addres 10.0.0.1
router (config-if) # no shut

5. In server 0,
goto config > settings > Gateway
and set Gateway - 10.10.0.0.20

6. Set services to DHCP
poolName to serverPool11
Set default Gateway to 20.0.0.20
Start IP address to 20.0.0.2
Subnet mask to 255.0.0.0

Add it

7. In Desktop mode of PC3 and PC4 select DHCP and they will automatically be assigned IP address as 20.0.0.2 and 20.0.0.3

Ping output

PC0

PC> ping 20.0.0.2

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=20ms TTL=127
Reply from 20.0.0.2: bytes=32 time=20ms TTL=127
Reply from 20.0.0.2: bytes=32 time=20ms TTL=127

Pinging statistics for 20.0.0.2
Packets sent=4, Received=4, Lost=0 (0% loss)
Approximate round trip times in milli-seconds
Maximum=20ms Maximum=1ms, Average=20ms

Observations

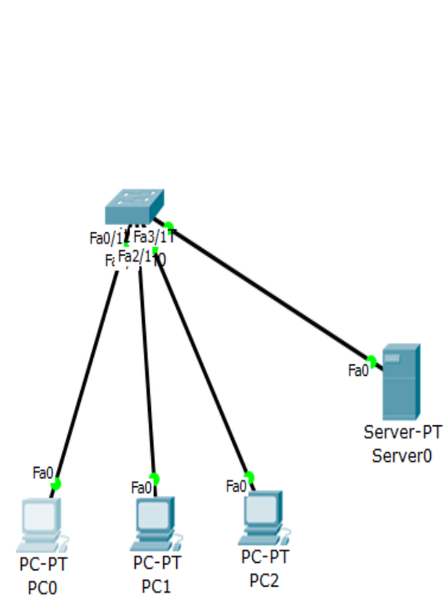
IP address of PC3 and PC4 are also automatically set by the server 0 IP address of PC3 to 20.0.0.2 and PC4 to 20.0.0.3 we could succesfully ping PC3 from PC0 without any loss.

24/9/2024

Cisco Packet Tracer Student

File Edit Options View Tools Extensions Help

Logical | [Root] | New Cluster | Move Object | Set Tiled Background



PC0

Physical | Config | Desktop | Custom Interface

Command Prompt X

```
Packet Tracer PC Command Line 1.0
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=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

Time: 00:03:58 | Power Cycle Devices | Fast Forward Time

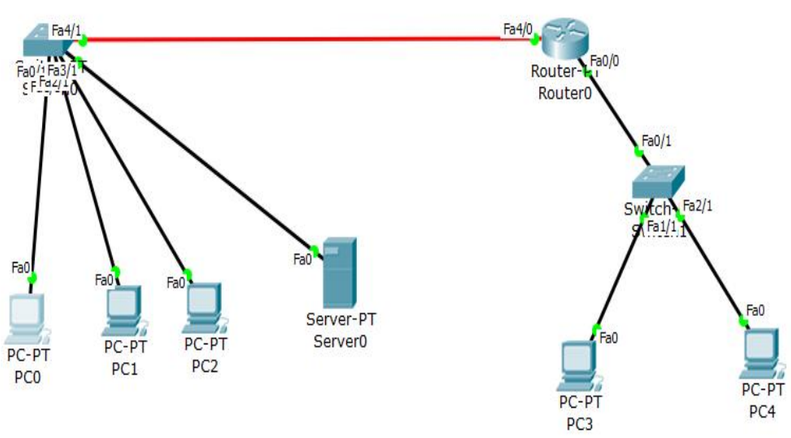
Scenario 0 | New | Delete

Fire | Last Status | Source | Destination | Type | Color | Time(se | Periodic | Num | Edit | Delete

Cisco Packet Tracer Student - C:\Users\Avani\Cisco Packet Tracer 6.2sv\saves\4b.pkt

File Edit Options View Tools Extensions Help

Logical | [Root] | New Cluster | Move Object | Set Tiled Background | Viewport



PC0

Physical | Config | Desktop | Custom Interface

Command Prompt X

```
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Request timed out.
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 TTL=127

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

Time: 00:27:26 | Power Cycle Devices | Fast Forward Time | Realtime

Connections

Scenario 0 | New | Delete

Fire | Last Status | Source | Destination | Type | Color | Time(se | Periodic | Num | Edit | Delete