CN LAB-4

OBSERVATION

PROGRAM 4.1

13/7/23 Lab-4

Program 4.1

Aim:-

   Configure DHCP within a LAN establishation

Topology.

PC-0T
PC-0   PC-0T   PC-0T   Server 0
                        PC-1   PC-2   10.0.0.1

Procedure

- Connect 3 PC's and 1 server to a switch using copper straight through cable
- Click on server and go to services tab select DHCP and Turn on the DHCP service
- Set the IP address of the start IP address as 10.0.0.2 and click on save button
- Before the set the IP address of server in config Tab under fast Ethernet as 10.0.0.1
- Next click on PC0 and go to desktop tab then click on IP configuration. Select DHCP here it will request for an IP address successfully

get the DHCP request also sets the IP address
• Repeat this steps for other 2 PC's
• To send a packet across PC's, go to PC3
  command prompt and type ping destination
  IP address

Output

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 = 0m TTL = 128
Reply from 10.0.0.3 : bytes = 32 time > 0 ms TTL = 128
Reply from 10.0.0.3 : bytes = 32 time = 1 ms TTL = 128
Reply from 10.0.0.3 : bytes = 32 time > 0 ms TTL = 128

Ping statistics from 10.0.0.3
Packets: Sent > 4, Received > 4, Lost > 0, (0% loss)
Approximate round trip times in milli seconds
   Minimum > 0ms; Maximum = 1m; Average > 0m

Observation

• DHCP is used to dynamically assign an IP address
  to any device or node
• It is a client server protocol in which server manage a pool
  of unique IP address & also about client configuration
  parameters.
• DHCP - enabled client send a request to DHCP server to connect to network
• DHCP server responds to the client request by providing
  IP configuration information from address pool, previously specified
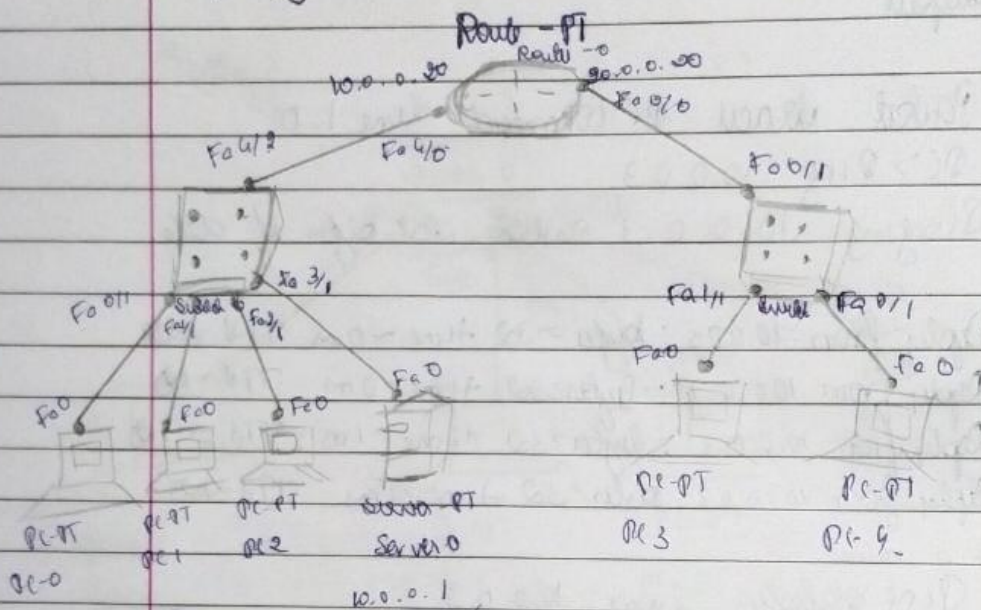 by N/W admin

PROGRAM 4.2

Program 4.2

Dim:

Configure DHCP Outside LAN.

Topology.

Procedure

- Add a Router, a switch & 2 PC's to a program network & connect the router to both switches

- Set the server IP address of server and with the help of a server. Set the first 3 PC's

- IP address through DHCP

- Now set the router IP address with the following commands statically

Step-1:- No

Step-2: enable

Step-3: Config T

Step-4: Interface fastethernet 4/0

Step 5: IP address 10.0.0.20 255.0.0.0.

Step 6: No shut

Step 7: Exit

Step 8: interface fastethernet 0/0

Step 9: IP address 20.0.0.20 255.0.0.0

Step 10: No shut

Step 11: Exit

Step 12: Show network Exit

Step 13: Show IP route

- Go to server and set the gateway as 10.0.0.20
- Again go to router CLI and follow these commands.

Step-14: Config T

Step-15: interface gigethernet 0/0

Step-16: IP helper address 10.0.0.1

Step-17: No shut

Step-18: Exit

- Now go to server service and add one more pool name as server pool, start IP address as 20.0.0.2 and default gateway as 20.0.0.20 Then click add server
- Now set the other 2 PCs address by going to their desktop configuration and selecting DHCP which will automatically generate its IP address
- Now mention the network is complete and can send packets from any PC to other by typing ping destination IP address in their respective command prompts

Per Output
_____

Packet tracer PC command line 1.0
PC7 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 = 0 ms TTd = 127
Reply from 20.0.0.2: bytes = 32 time = 0 ms TTd = 127
Reply from 20.0.0.2: bytes = 32 time = 0 ms TTd = 127

Ping statistics for 20.0.0.2
Packets sent = 4 Received = 3 lost = 1 (25% loss);
approximate round trip times in milliseconds
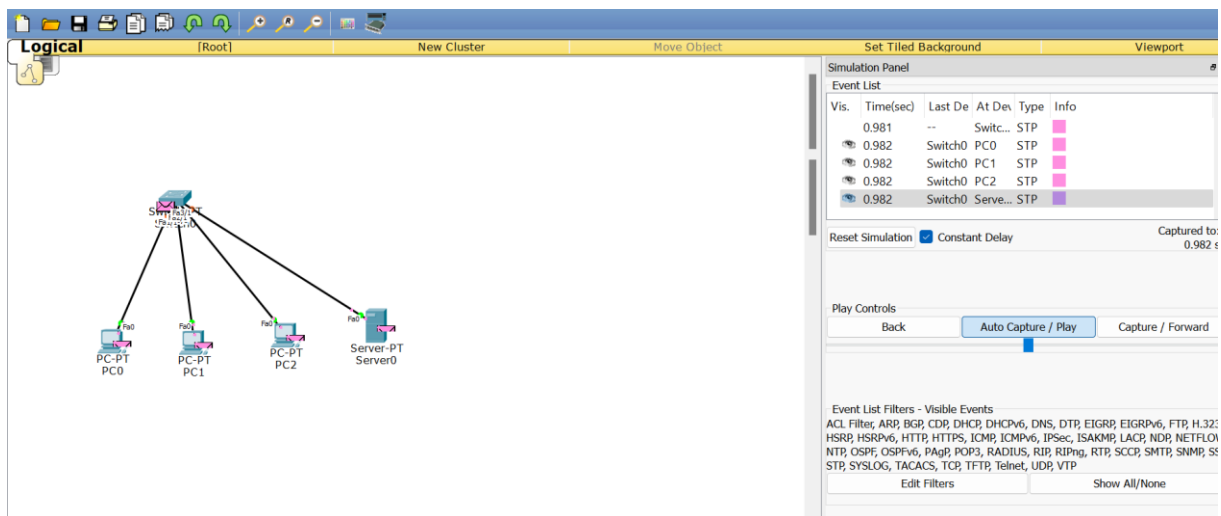   Minimum = 0 ms   Maximum = 0 ms   Average = 0 ms

Observation

- DHCP is used to assign IP address dynamically to different devices.
- To assign continuous IP address we create a server pool where we assign the starting IP address and a default gateway number.
- For PCs under different switch we create a different server pool & start again. This takes care of delivering packets to correct destination IP address and also sends back to unused device.

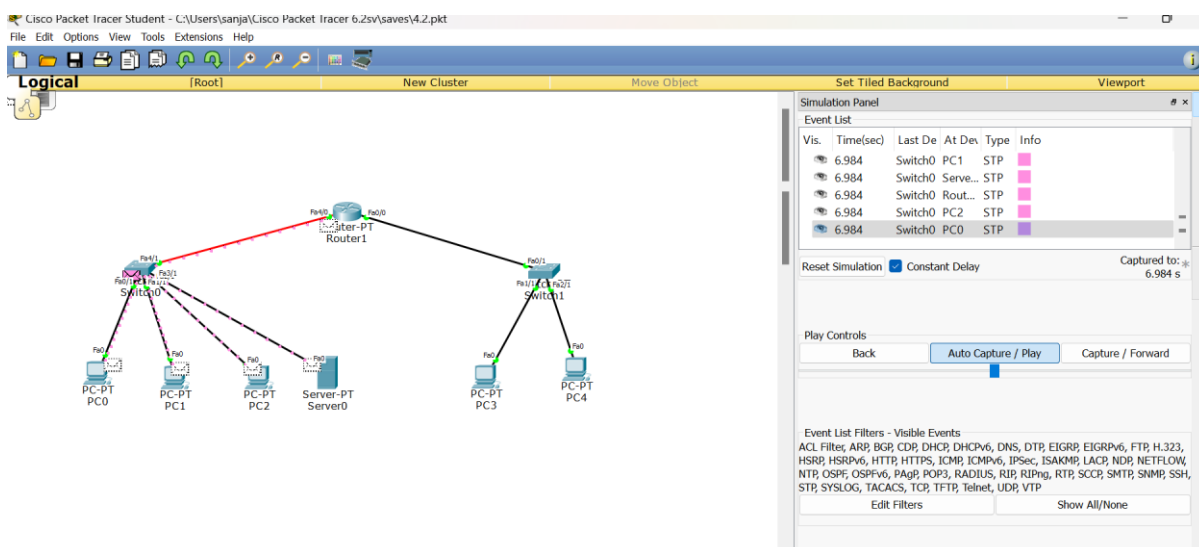# TOPOLOGY & OUTPUT

PROGRAM 4.1


```
PC>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```

PROGRAM 4.2

```
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>
```