LAB 4

Configure DHCP within a LAN and outside LAN.

OBSERVATION:

4A]   Lab-4   9

Aim: Internal.
Configure DHCP within a LAN and outside LAN

Topology:-
                              switch - PT
                              switch 0

PC-PT
PC-0   PC-PT
                PC-1   PC-PT
                                        PC-2   PC-PT
                                                PC-3

Procedure:

→ connect 3 PCS and 1 server to a switch using
   copper straight through cable

→ click on server & go to services tab select
   and turn on the DHCP services

→ set the IP address of the start IP address as
   10.0.0.2 & click on save button.

→ Before this set the IP address of server in
   config Tab under fastethernel as 10.0.0.1

→ next click on PC0 and go to desktop tab
   here click on IP configuration select DHCP here
   it will request for an IP address & successfully
   gets 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 PC's command prompt & type ping destination ip address

Ping output :-

Packet travel PC command line 10

PC> ping 10.0.0.3

Pinging 10.0.0.3 with 32 byte of data

Reply from 10.0.0.3 bytes = 32 time = 0ms TTL = 18

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 = 0ms 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

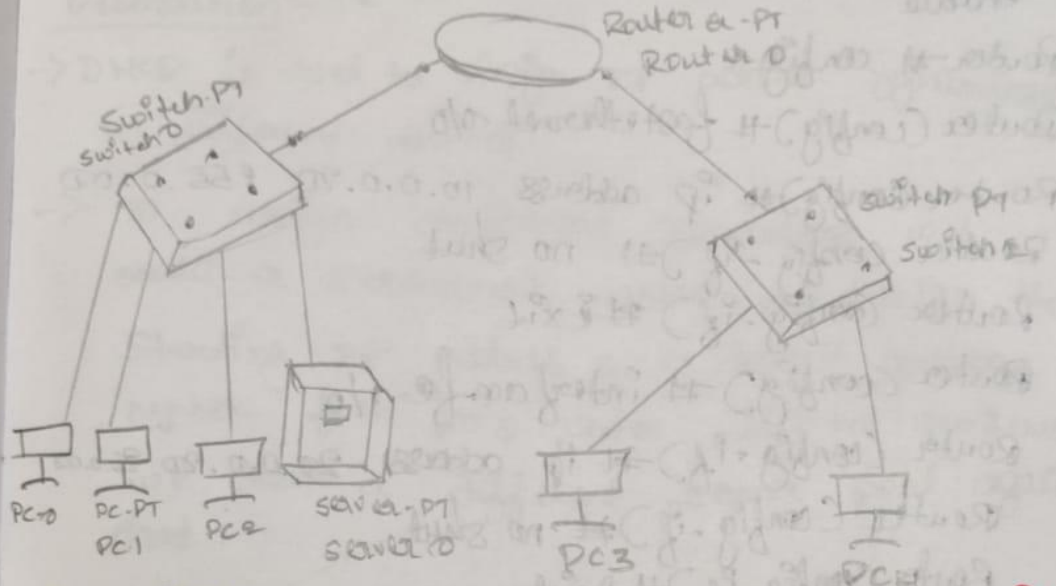minimum = 0ms, Maximum = 1ms, Average - 0ms

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.

→ The DHCP server responds to the client request by providing IP-configuration information from address pools, previously specified by a network administrator.

4[B]

Aim: configure external DHCP within a LAN & outside LAN

Router a-PT
Router 0

Switch-PT
Switch 0

switch-pt-1
switch 1

PC-0   PC-PT   PC2   server-PT
        PC1   server 0
                                PC3   PC4

Procedure:-

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

-> set the server IP address of server with the help of server set the first 3 PC's IP address through DHCP

-> click on server

-> go to desktop -> IP configuration

-> Add IP ddress, subnet mask & gateway

IP address   10.0.0.1
subnet mask   255.0.0.0
Gateway   10.0.0.20

step 3:- configure the router

→ click on router go to CLI
enable

Router # config t

Router (config) # fastethernel 0/0

Router (config) # ip address 10.0.0.20 255.0.0.0

Router config -if) # no shut

Router (config -if) # exit

Router (config) # interface 1/0

Router (config - if) # ip address 20.0.0.20 26.0.00

Router (config - if) # no shut

Router (config - if) # exit

exit

Routing enable

Router → show ip route

C: 10.0.0.0/1 is directly connected fe 0

step 4:- Go to server [DHCP server config]

→ select servers then go to DHCP

→ set service on

→ set start ip address from (ex - 20.0.0.0) then
save

→ step 5:- Then configure the pc's

Select a pc then desktop -go to ip config
select DHCP

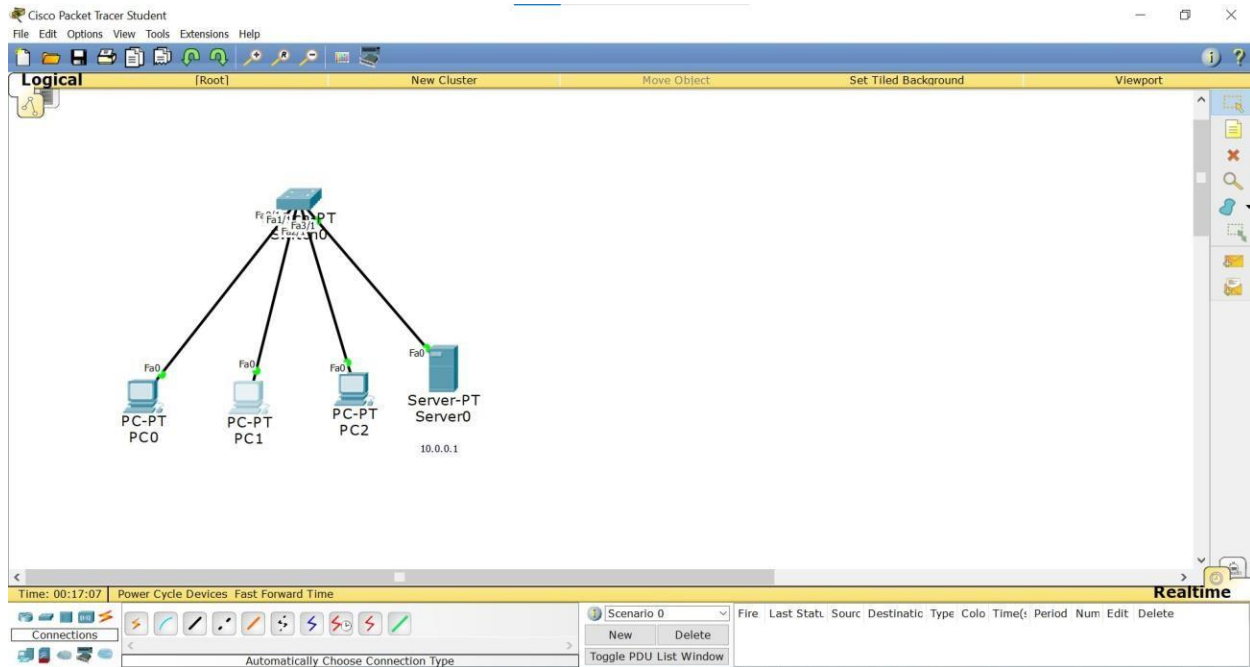→ Repeat the same procedure for all other 23 PC's

<u>Observation:</u>

→ DHCP is used to design IP address dynamically to different devices

→ To assign continuous IP address we create a serverpool where we assign the starting IP address & a default gateway number for PC's under different switches we create a different server pool again & start.
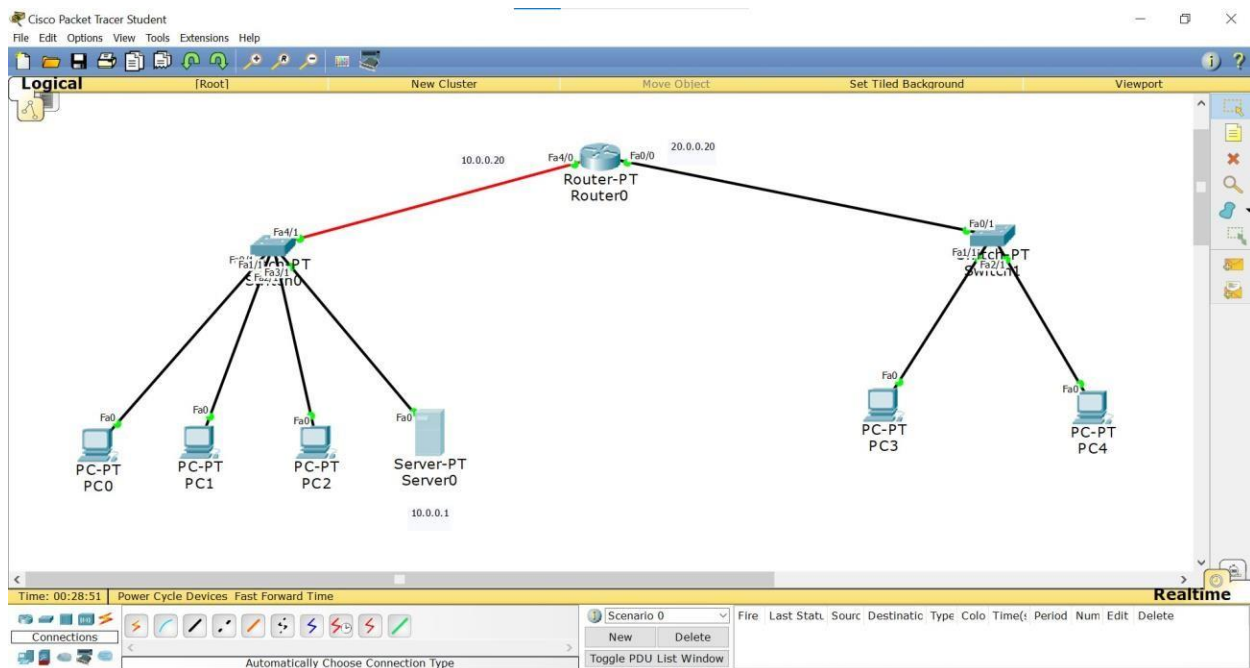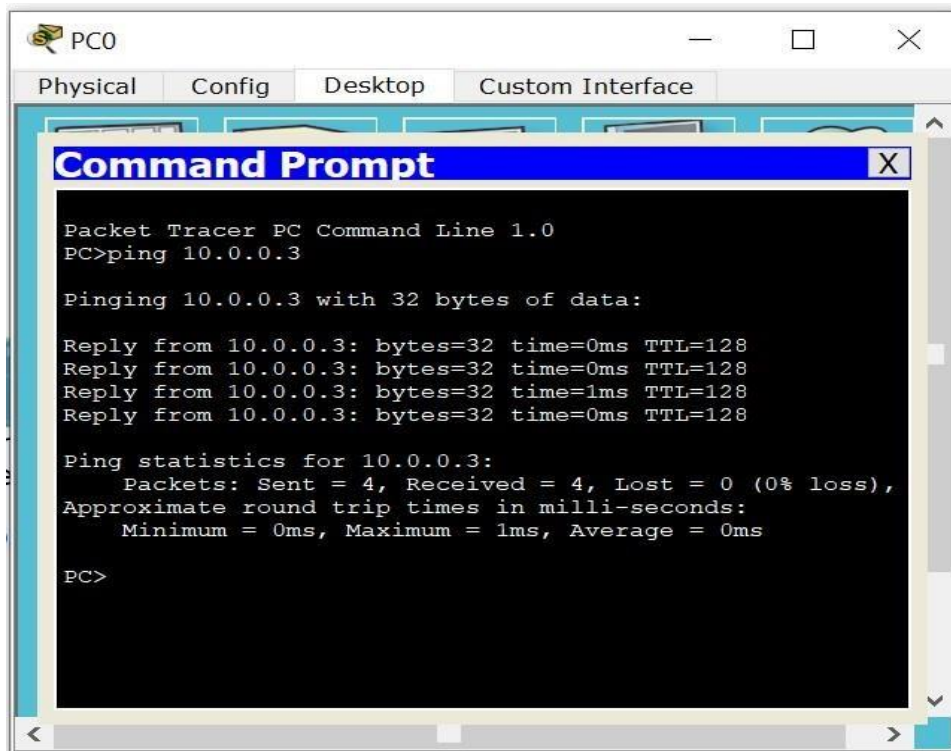
lee
19/7/23

TOPOLOGY:

PROGRAM 4.1:

PROGRAM 4.2:

OUTPUT:

PROGRAM 4.1:

PROGRAM 4.2:

PC0

Physical	Config	Desktop	Custom Interface

Command Prompt

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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>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```