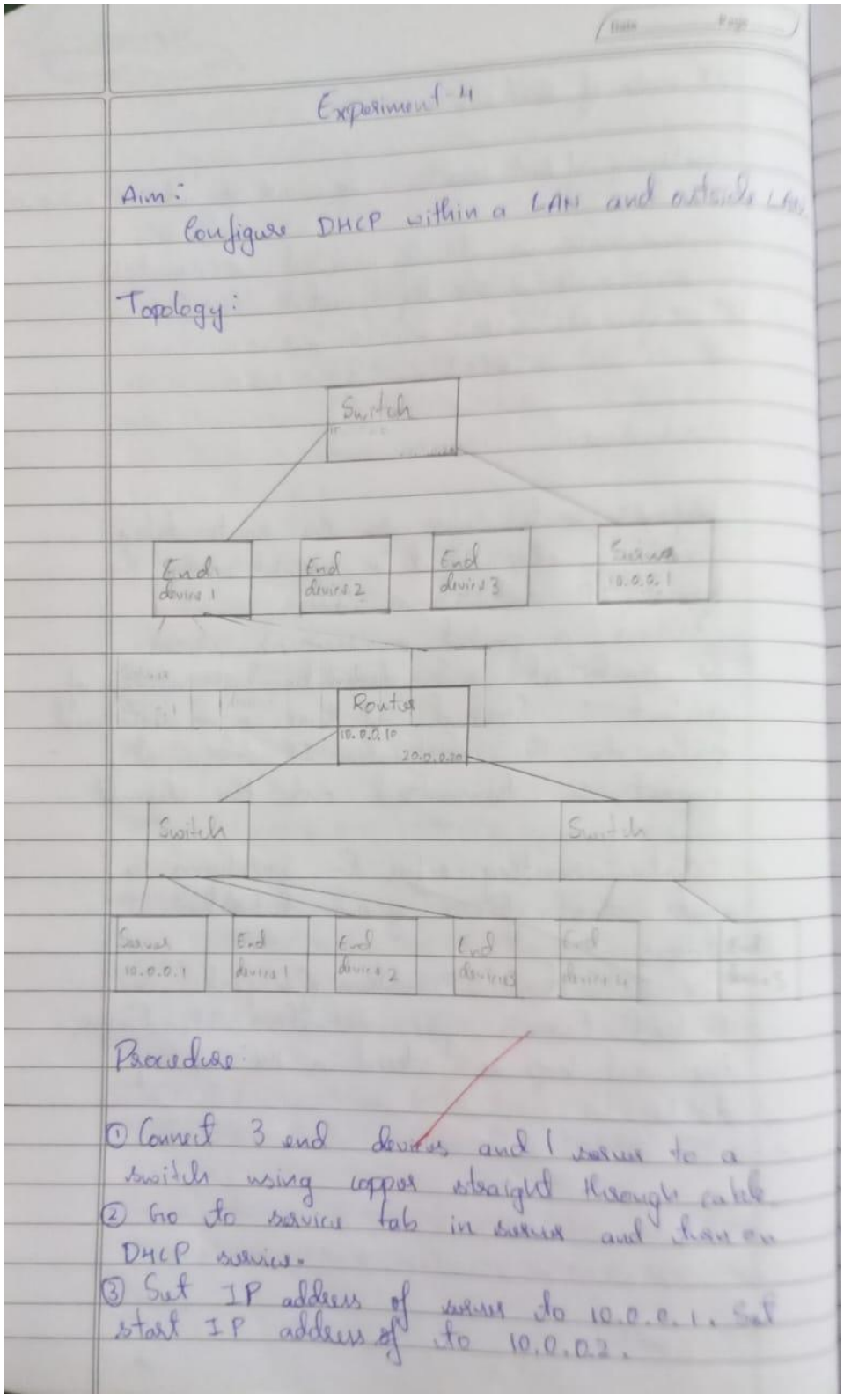
EXPERIMENT-4

Configure default route, static route to the Route



Experiment - 4

Aim:

Configure DHCP within a LAN and outside LAN.

Topology:

Procedure

1. Connect 3 end devices and 1 server to a switch using copper straight through cable.
2. Go to service tab in server and turn on DHCP service.
3. Set IP address of server to 10.0.0.1. Set start IP address of to 10.0.0.2.

SURYA Gold
Date Page

④ Click on end device, go to desktop tab, go to IP configuration. Select DHCP. Repeat process for all end devices within the LAN.
⑤ Ping end devices and observe output.

⑥ Add one router, a switch and two end devices.
⑦ Change server pool and set start IP address to 20.0.0.1.
⑧ Configure 3 router IP address. Use the following commands

(i) ~~enable~~ Router> enable
(ii) ~~config~~ t Router# config t
Router(config)# interface <port>
Router(config-if)# ip address
<ip address> <subnet mask>
Router(config-if)# no shut
Router(config-if)# exit.

⑨ Go to server and set gateway as 10.0.0.10.
⑩ Move to router CLI, interface connecting secondary LAN. Use command
~~ip~~ Router(config-if)# ip helper-address <server ip address>
Router(config-if)# ip helper-address 10.0.0.1
⑪ Repeat ~~step~~ ⑨ for all end devices in secondary LAN.
⑫ Ping end devices and observe output.

Result:

ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data

Reply from 10.0.0.3: bytes=32 time=2ms TTL=127
Reply from 10.0.0.3: bytes=32 time=0ms TTL=127
Reply from 10.0.0.3: bytes=32 time=1ms TTL=127
Reply from 10.0.0.3: bytes=32 time=0ms TTL=127

Ping statistics from 10.0.0.3:
Packets: sent=4, Recieved=4, Lost=0 (0% Loss)
Approximate round trip times in milli seconds
Minimum=0ms, Maximum=1ms Average=0ms

ping 20.0.0.2

pinging 20.0.0.2 with 32 bytes of data

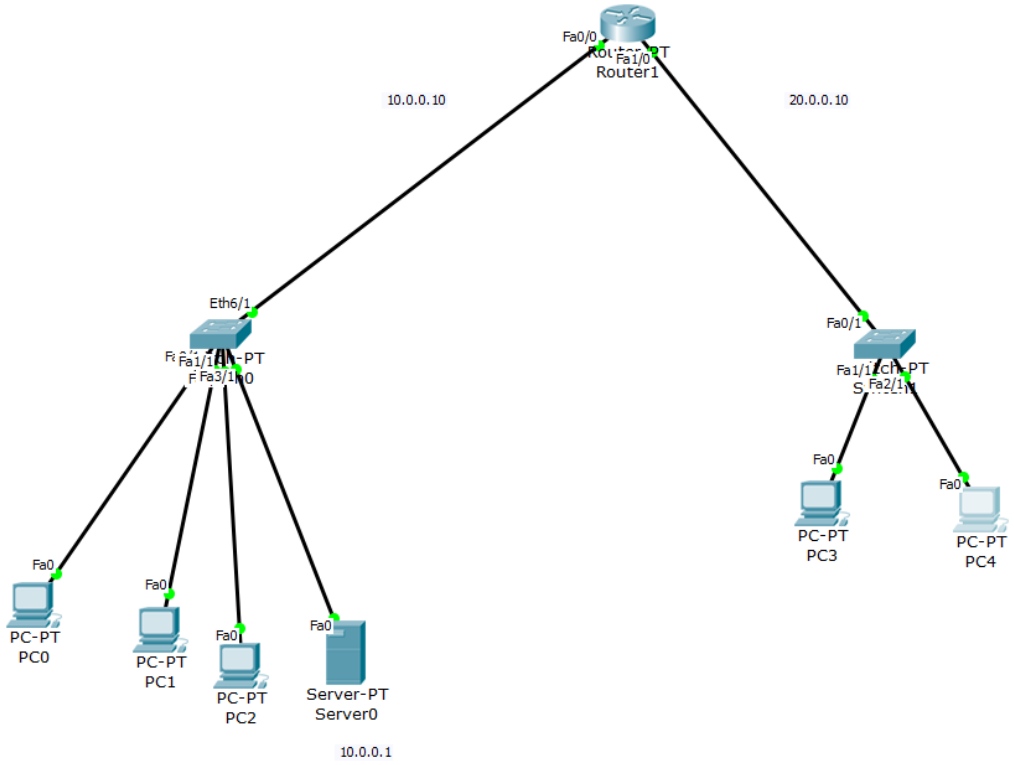
Request timed out.
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.2
Packets sent=4, Recieved=3, Lost=1 (25% Loss)
Approximate round trip times in milli seconds
Minimum=0ms, Maximum=0ms, Average=0ms.

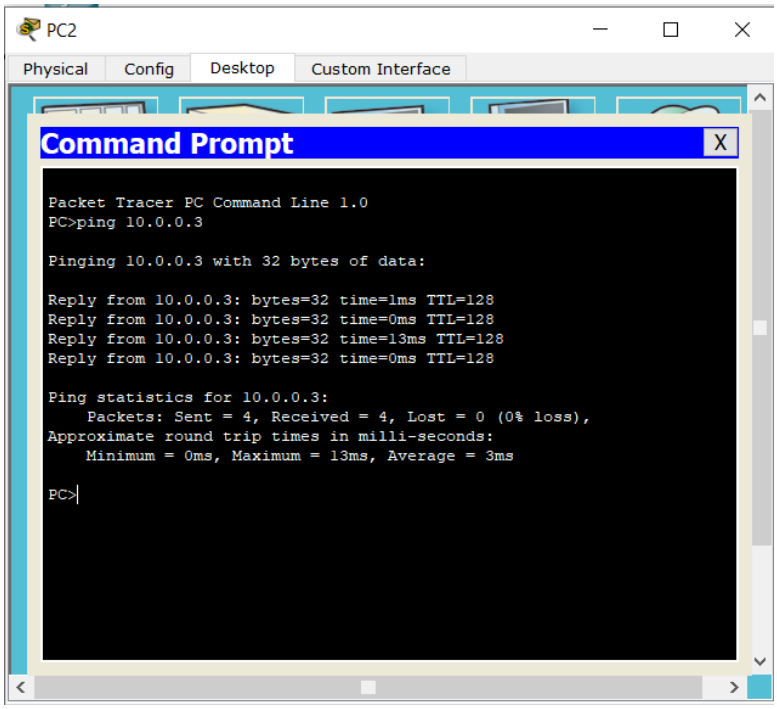
Observation:

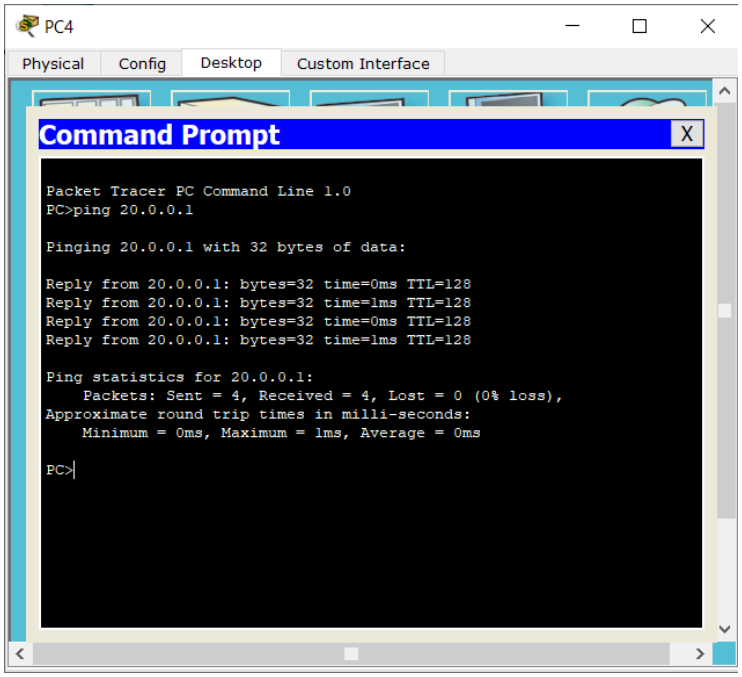
DHCP (Dynamic Host Configuration Protocol) is used to dynamically assign IP addresses to other devices.
The server manages a pool of IP addresses (known as server pool). The server responds to a client request. The provided IP configuration is based on information from address pools.

Topology:


Fa0/0
Fa1/0
Router1
10.0.0.10
20.0.0.10
Eth6/1
Fa0/1
Fa0
PC-PT
PC0
Fa0
PC-PT
PC1
Fa0
PC-PT
PC2
Fa0
Server-PT
Server0
10.0.0.1
Fa0
PC-PT
PC3
Fa0
PC-PT
PC4

Result:


PC2
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=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=13ms 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 = 13ms, Average = 3ms
PC>


PC4
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time=0ms TTL=128
Reply from 20.0.0.1: bytes=32 time=1ms TTL=128
Reply from 20.0.0.1: bytes=32 time=0ms TTL=128
Reply from 20.0.0.1: bytes=32 time=1ms TTL=128
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>