Program 4

To configure IP addresses of the host using DHCP server present within the LAN and present in a different LAN.

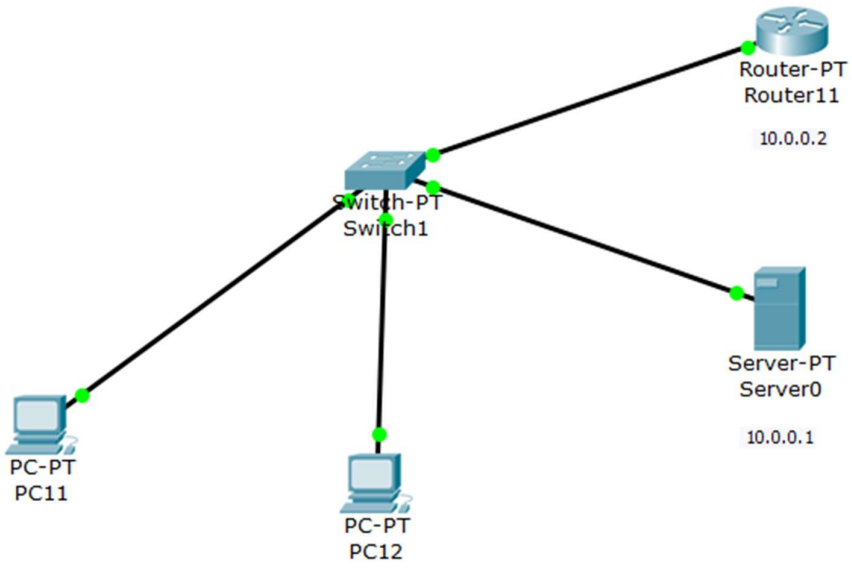


Figure 26: Topology

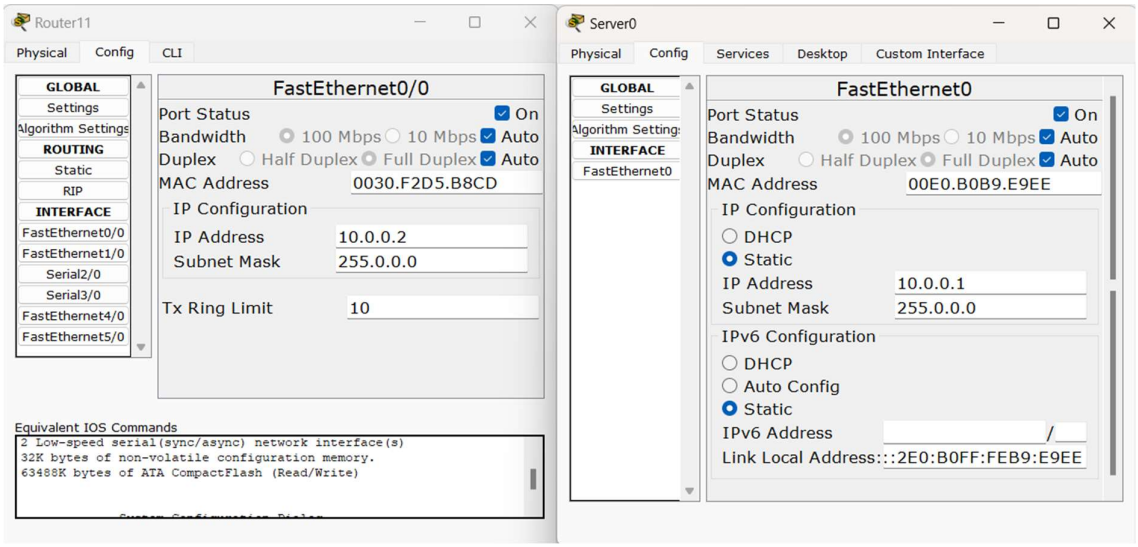


Figure 27: IP Addresses

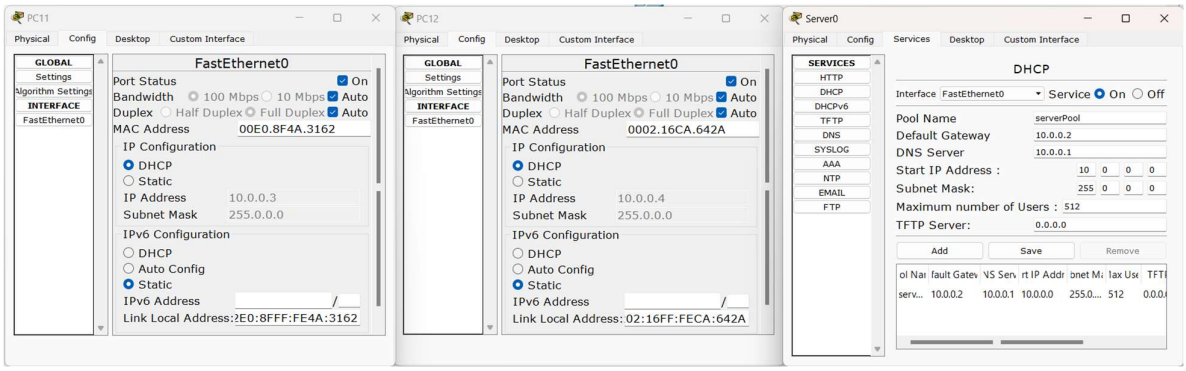


Figure 28: DHCP

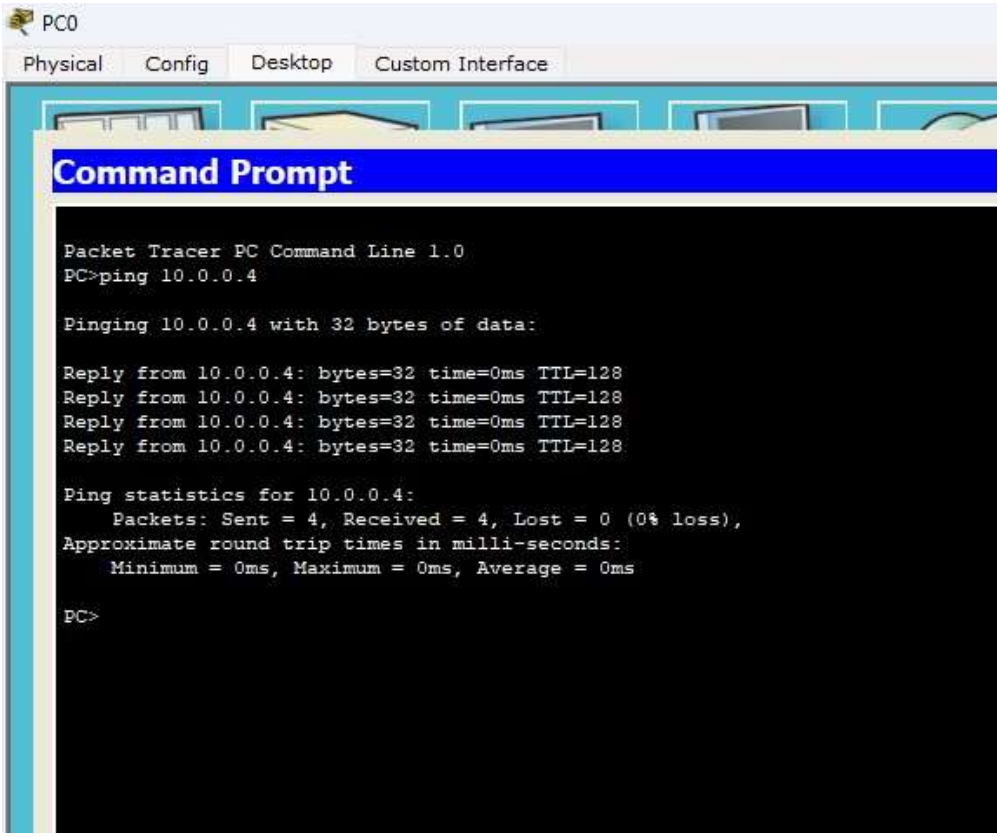


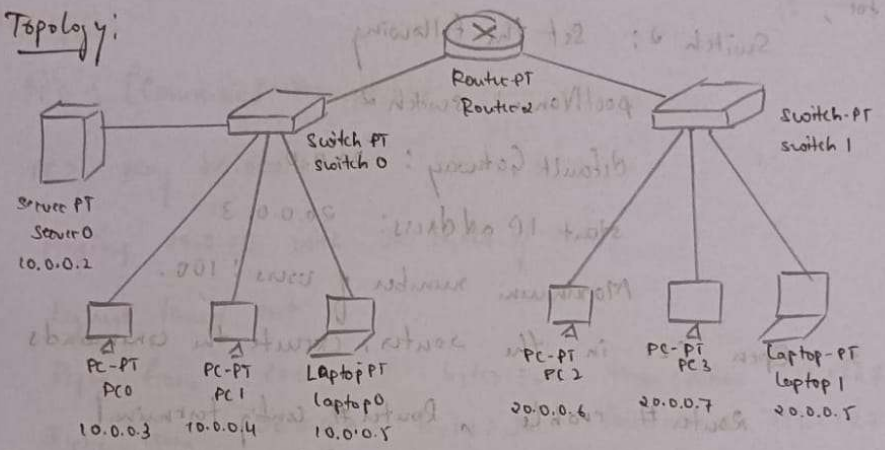
Figure 29: ping command output

Experiment 4:- 13-11-2024

Configure DHCP within a LAN and outside LAN.

Aim: To configure and verify the functioning of DHCP both within a LAN and in a network that extends beyond the local LAN.

Topology:



Procedure:

1. Connect the end devices and server with the routers using copper straight through as shown in the topology.
2. In Server,
   go to Desktop > IP configuration and set the static address as.
   IP address: 10.0.0.2
   Subnet mask: 255.0.0.0
   Default Gateway: 10.0.0.1
   Then go to Services > DHCP
   Configure the Pools like below.

Figure 30: Observation Book 1

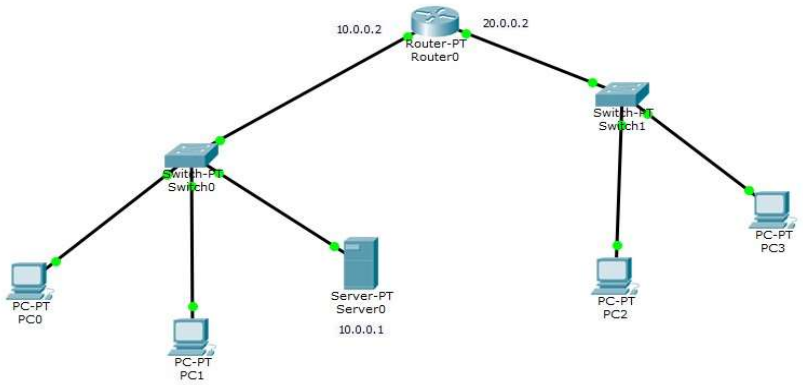


Figure 4: Topology for DHCP in different LAN

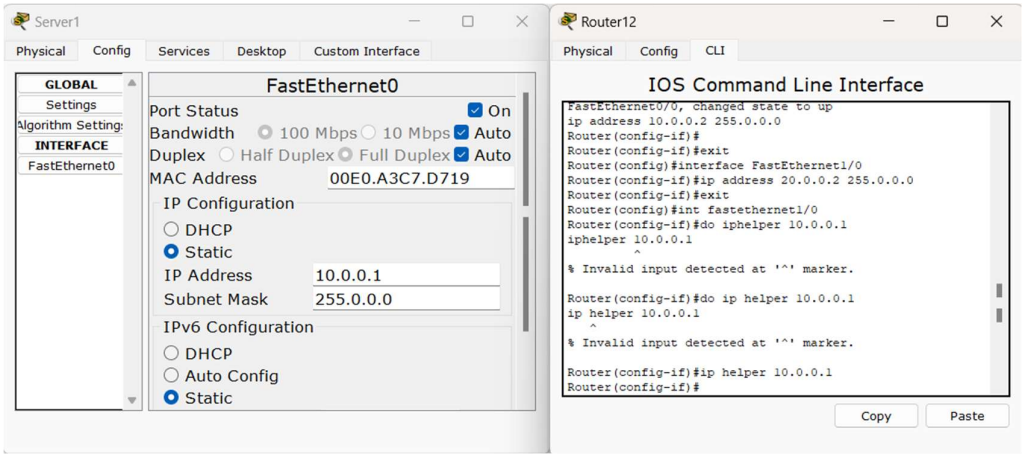


Figure 5: Router CLI and Server IP Address

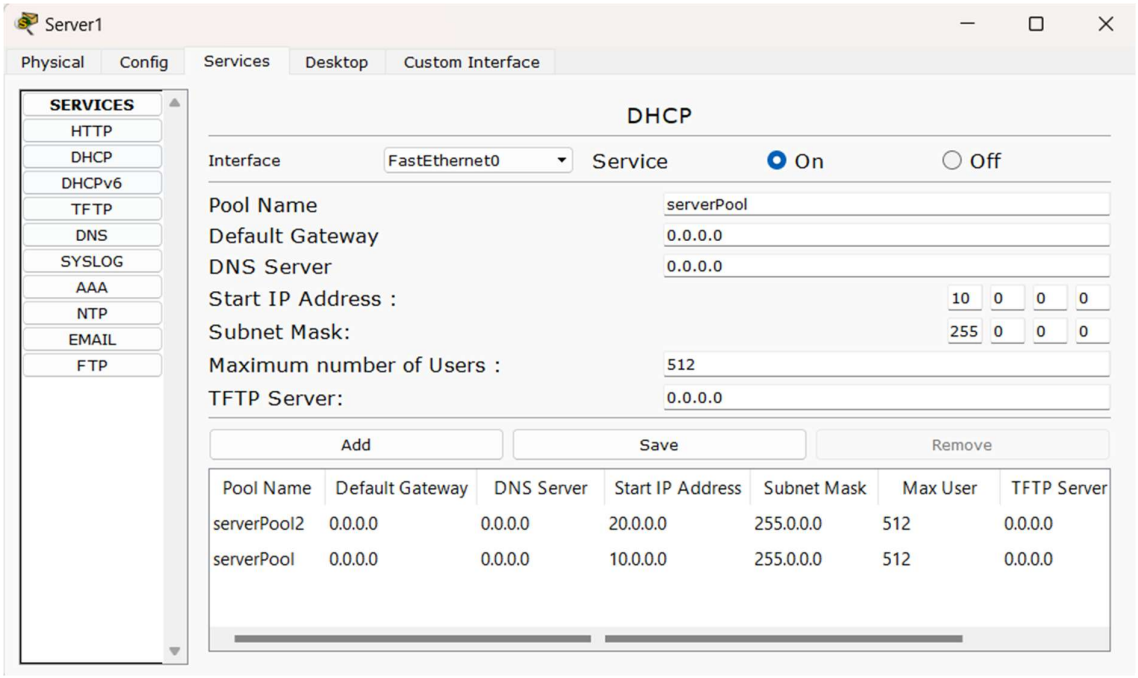


Figure 6: Server Pools of the DHCP Server

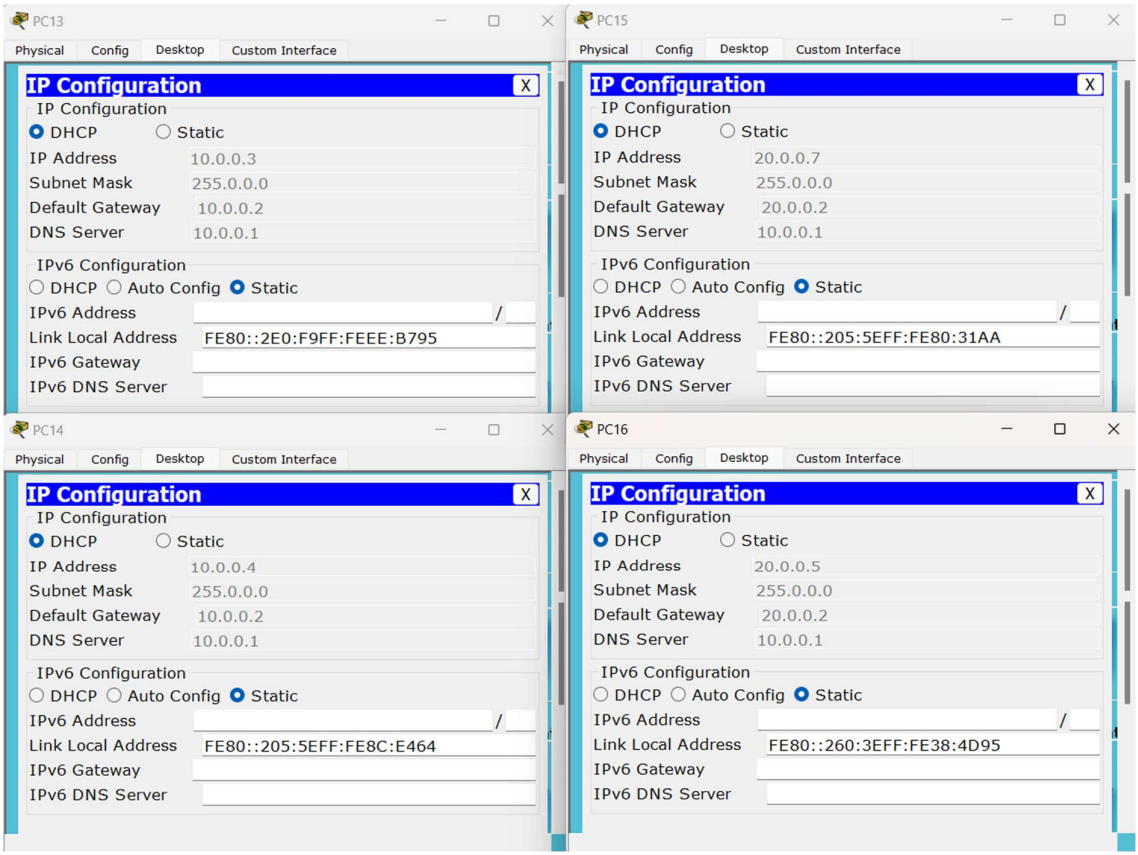


Figure 7: PC IP addresses automatically assigned by DHCP Server

```
PC>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

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=3ms 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 = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 0ms

PC>
```

Figure 8: ping command output

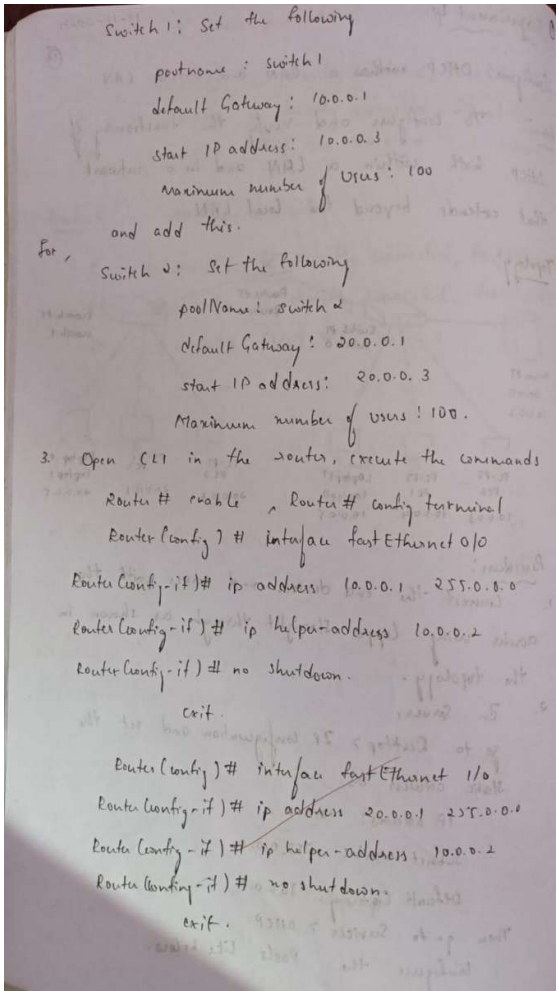


Figure 9: Observation book 1

Observation: Set up the Routes with the fastEthernet (17)
cable connected to the two switches. by setting up
the helper address which is the IP address of the
server, the other network 20.0.0.0 can access the
DHCP service which has been set in the pool service
in the server.

Output:

PC0 : [Command Prompt]

PC> ping 20.0.0.7

pinging 20.0.0.7 with 32 bytes of data:

Request timed out

Reply from 20.0.0.7 : bytes = 32 time = 0ms TTL = 127

Reply from 20.0.0.7 : bytes = 32 time = 0ms TTL = 127

Reply from 20.0.0.7 : bytes = 32 time = 0ms TTL = 127

Ping statistics for 20.0.0.7

Packets : Sent = 4, Received = 3, Lost = 1 (25% loss).

Minimum = 0ms, Maximum = 0ms, Average = 0ms.

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Figure 10: Observation book 2