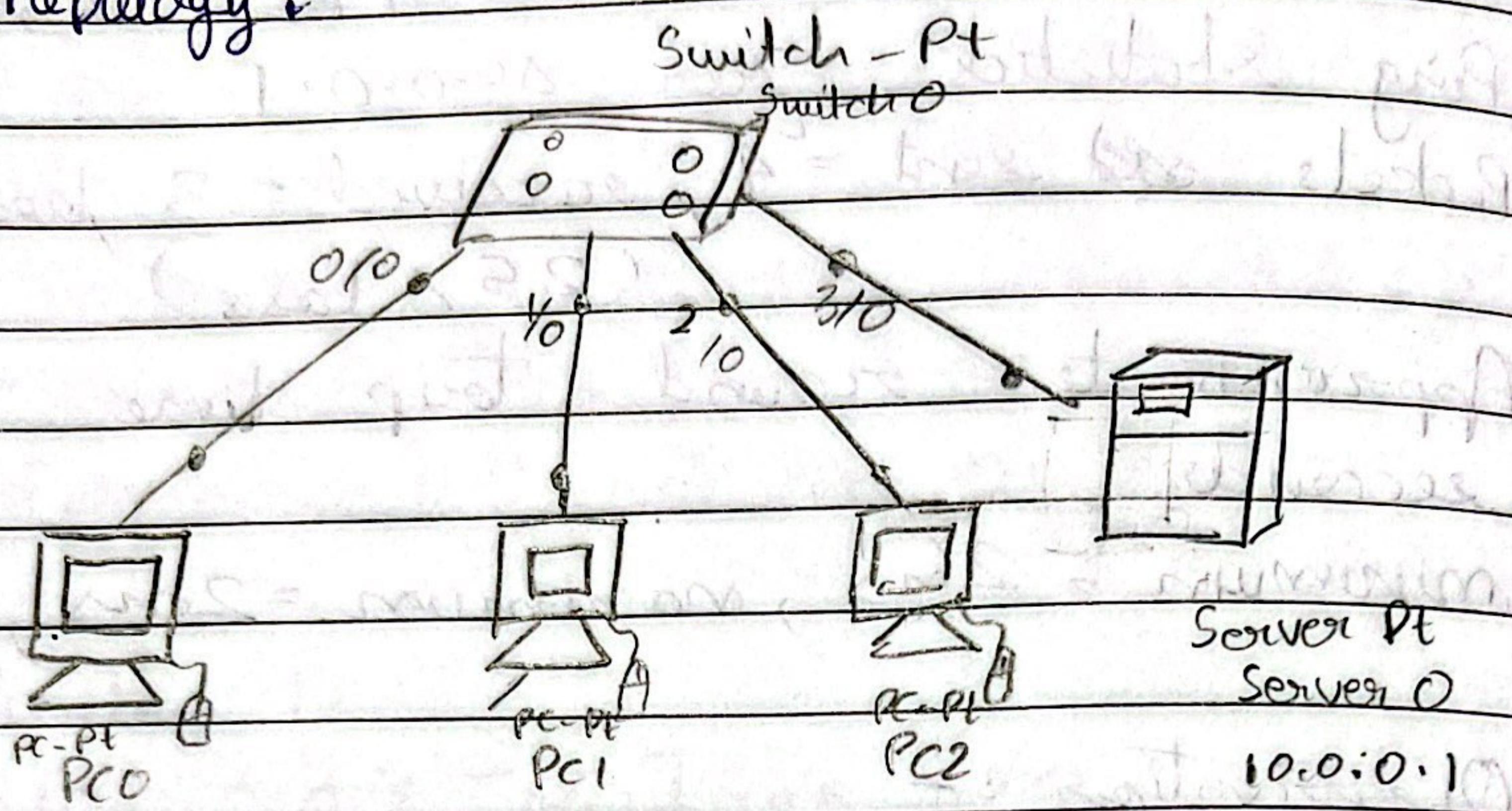


Aim: Configure DHCP within a LAN and cut

LAN

Topology :-



Procedure

- 1) Connect 3 ~~dots~~ PC's and 1 server to a switch using copper straight through cable
- 2) Click on server and go to services tab. Select DHCP and turn on the DHCP service
- 3) Set IP address of the start IP address as 10.0.0.1
- 4) Now click on PC0 and press go to desktop tab, click on config. Select DHCP here. It will request for an IP address and get DHCP request also set IP address
- 5) Repeat step for other 2 PC's
- 6) To send a packet across PC's go to PC's command prompt and type destination address.

Ping Output

socket tracer PC command line 10

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 = 1ms 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)

Approx round trip time in milli-seconds

Minimum = 0ms , Maximum = 1ms , Average = 0ms

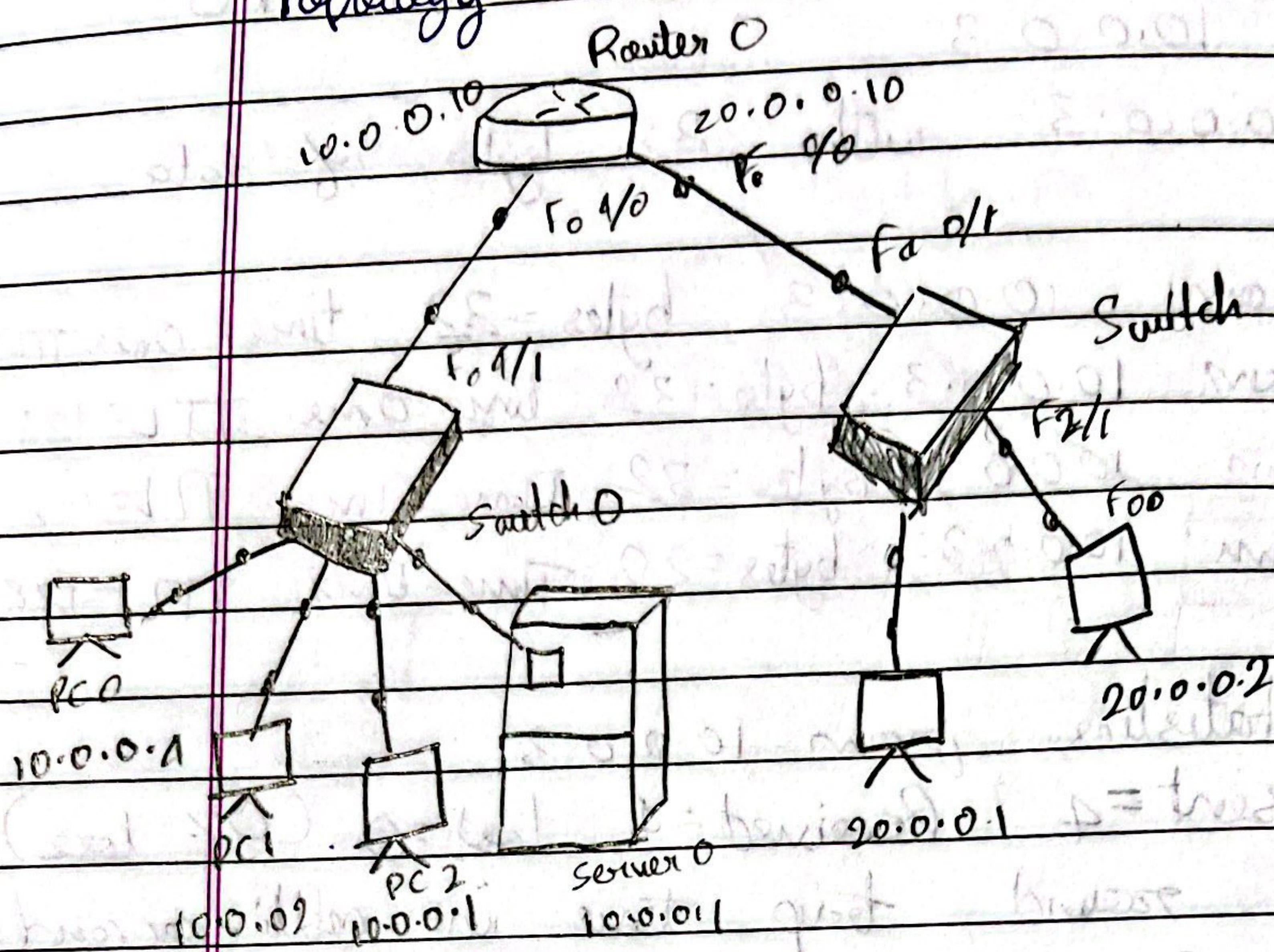
Observation :-

DHCP is used to dynamically assign an IP address to any device or node. It is a client-server protocol in which server manages a pool of unique IP addresses & also about client config parameters. DHCP enabled clients sends a request to DHCP server.

DHCP server responds by providing config information per specified by network administrator

N.D
27/7/2023

Outside of LAN Topology :-



Procedure

- Follow previous steps pertaining to Inside LAN by creating a 10.0.0.0 network with IP addresses 10.0.0.1 and gateway.
- Create another network with 2 PCs and a switch and connect 2 networks using a router.
- Config the router to connect the 2 networks using router through gateway
- Config router to connect 2 networks >enable
> config +
> interface .fa 4/0
> ip address 10.0.0.20 255.0.0.0
> no shut
> exit

> interface fa0/0

ip address 20.0.0.20 255.0.0.0

> no shut

> exit

Set another DHCP pool gateway to 20.0.0.10
and then the via the CLP commands
of router set the server as a
ip address helper

The following are the 2 pools

Pool name	Default gateway	dns servIP	Subnet mask	lease
ServerPool	10.0.0.10	0.0.0.0	10.0.0.2	255.0.0.0 512
ServerPool	20.0.0.10	0.0.0.0	20.0.0.1	255.0.0.0 512

> config t

> interface fa0/0

> ip helper address < desired ip address >

> no shut

exit

Ping from 10.0.0.2 to 20.0.0.2

Result

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 = 1ms TTL = 127

Ping statistics for 20.0.0.2
Packets sent = 4 Received = 3 Lost = 1
Approx time -
Minimum = 0ms, max = 1ms, storage = 1ms

Observation:-

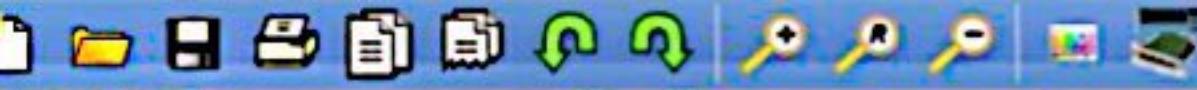
The DHCP helps manage allocation of IP addresses to end users.

The device ~~answering~~ ~~requesting~~ ~~receiving~~ to access a network gets and IP address allocated dynamically to it by the user.

The allocated IP address is taken back when shutdown.

If the requesting device is outside the LAN then device IP address must be assigned to the router as the address helps so that it can automatically configure that device's IP address.

✓
27/7/2023



Logical

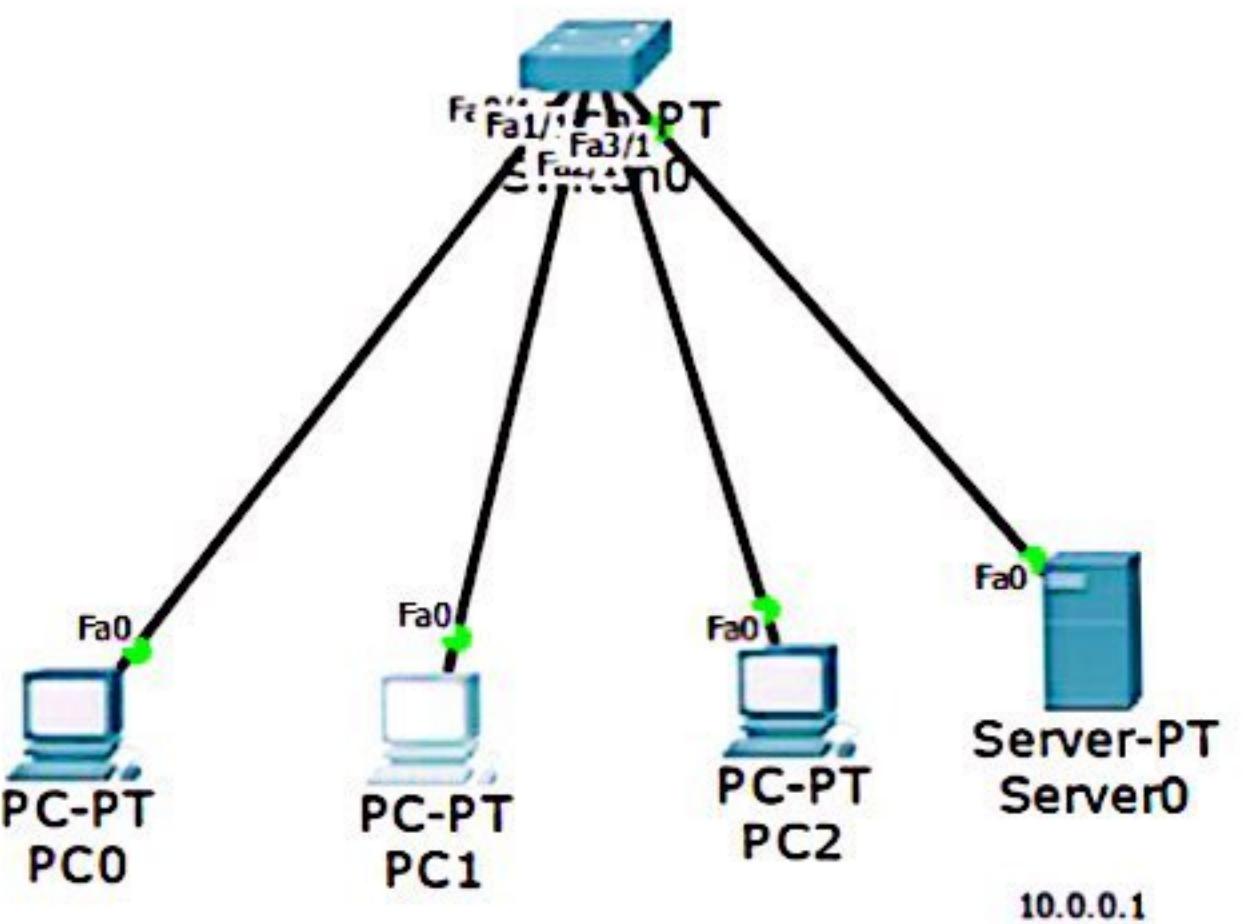
[Root]

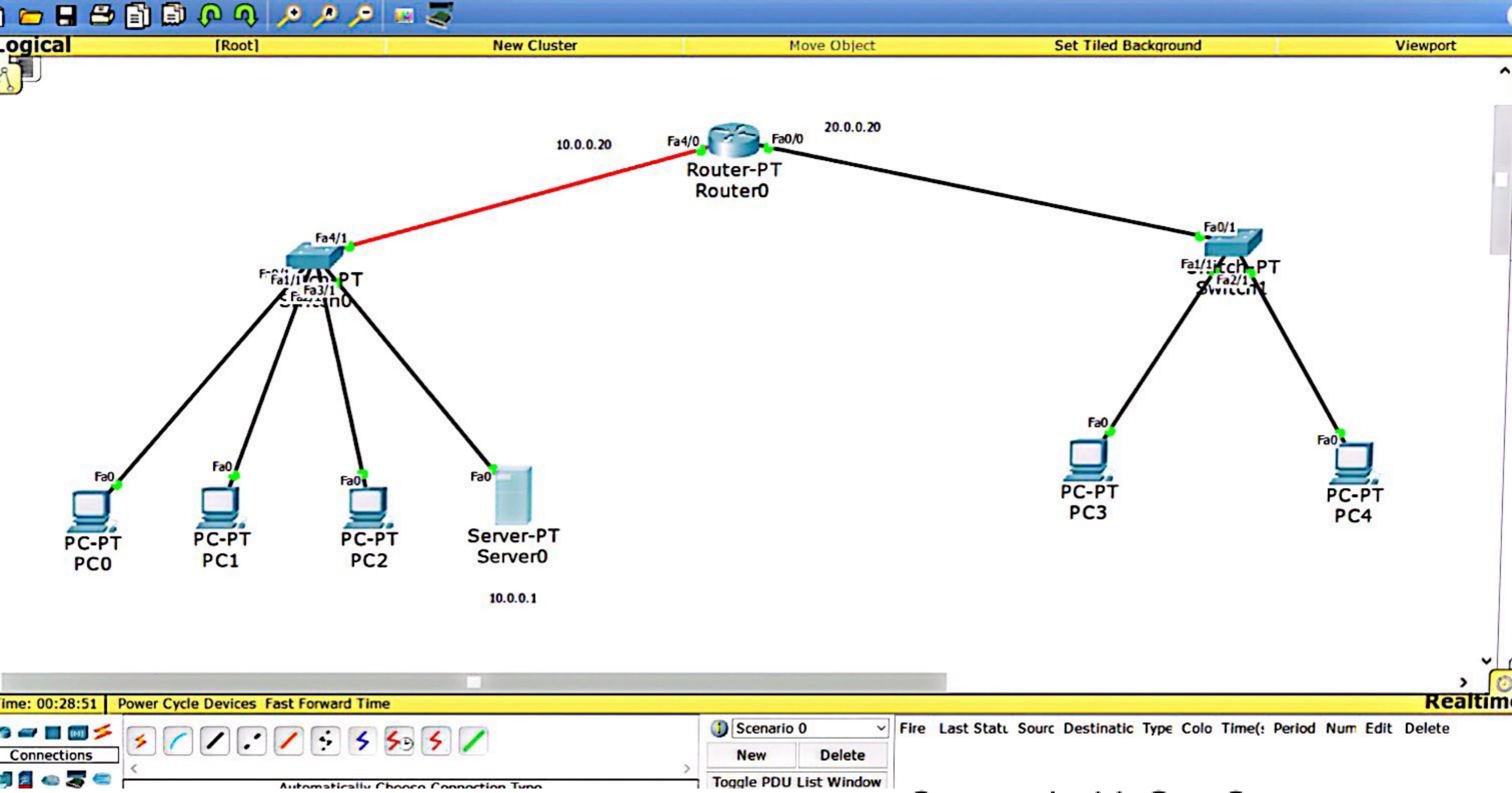
New Cluster

Move Object

Set Tiled Background

Viewport





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>

Command Prompt

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>