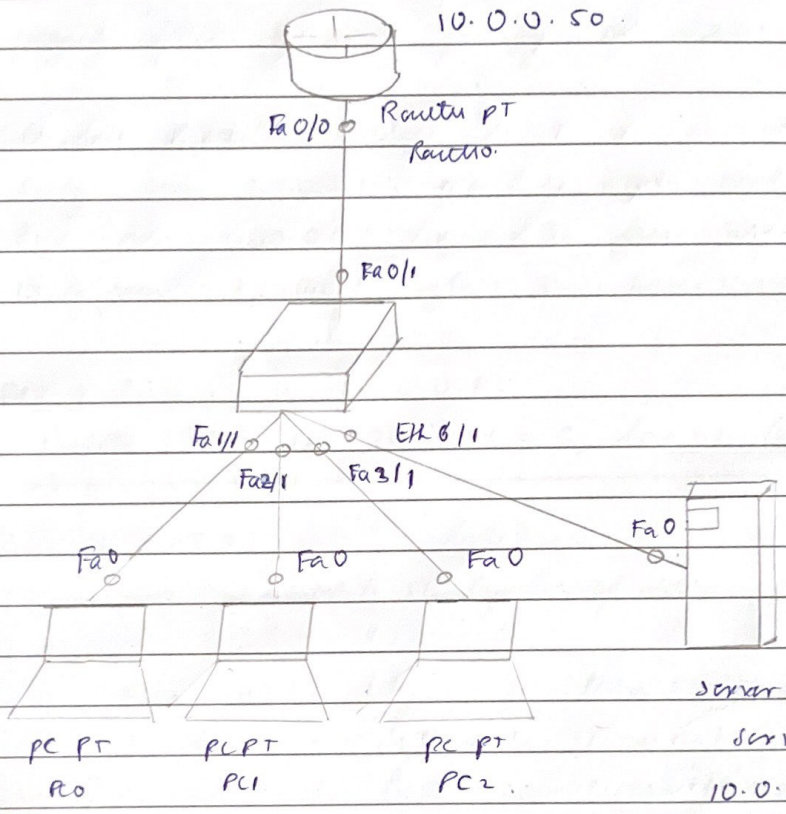
Experiment 4

28/11/22

Title: Configuring DHCP within a LAN in a packet tracer.

Aim :- Configuring DHCP within a LAN in a packet tracer.

Topology -



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procedure :- * Place a generic router, a generic switch, a server and 3PCs in the work space as shown in topology.
* Connect the PCs to the switch using copper straight through
* Connect the server to the switch and the switch to the router using copper straight through.
* Place a note below the server and keep its ip address as 10.0.0.1
* Configure the IP address of the server as 10.0.0.1
* Make the gateway of server as 10.0.0.50.
* Open CLI of router and enter following commands to establish connection between them.
  → enable
  → config t
  → interface fastethernet 0/0
  → ip address 10.0.0.50 255.0.0.0
  → no shut.

* The light will turn green for router and will turn amber for switch.
* after some time the amber color changes to green.
* Click on the server →
  → open the services tab.
  → Click on DHCP
  → turn the switch on.
  → set default gateway as 10.0.0.50
  → DNS server = 10.0.0.1 (IP address).
  → TFTP server = 10.0.0.1 (IP address of server).
  → start IP address → 10.0.0.2
  → click on save.

* Click on each PC and go to desktop tab
* click on IP configuration
* click DHCP
* if no error it will show successful
* repeat for other two PCs as well.

Simulation mode - Add a simple PDU by selecting the PCs and click on auto capture from right panel.

Real time mode - Select the PC PC0 and go to its command prompt and ping PC1 once the message has been successfully sent repeat this with PC1.

Results :-

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 = 3ms. TTL = 128

ping statistics for 10.0.0.3 :
packets : sent = 4, recieved = 4, lost = 0 (0% loss)

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 = 0ms 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 = 1ms TTL = 128

Ping statistics for 10.0.0.4:
Packets: sent = 4, received = 4, lost = 0 (0% loss)

Learnings: The server automatically sets the IP address and subnet, and gateway to all the PCs and IP address is allocated serially in DHCP protocol.