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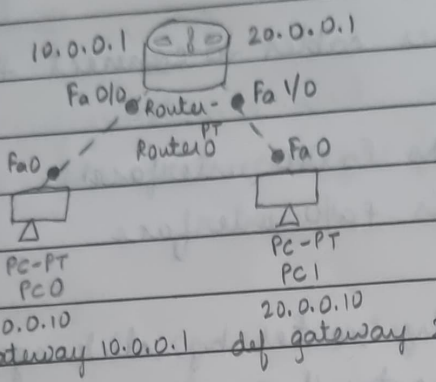
Exp-2 : Configure IP address to routers in packet tracer. Explore: ping responses, destination unreachable, request timed out, reply.

1. Aim: To connect two PCs on two different networks using a router

Topology:



1. PC0: Connected to router's interface Fa 0/0 using a cross-over cable.
   IP address : 10.0.0.10
   Default Gateway : 10.0.0.1

2. PC1: Connected to the router's interface Fa 1/0 using a cross-over cable
   IP address : 20.0.0.10
   Default Gateway : 20.0.0.1

3. Router:
   Interface Fa 0/0 connected to PC0
   Interface Fa 1/0 connected to PC1
   IP address of Fa 0/0 : 10.0.0.1
   IP address of Fa 1/0 : 20.0.0.1

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Procedure:

1. Open cisco packet tracer and drag the following components onto the workspace:
   Router: Place one router in the middle
   PCs: Place two PCs on either side of the router

2. Use Cross-over cables to connect the devices as follows:
   PC0 → Router's Fa 0/0 interface
   PC1 → Router's Fa1/0 interface

3. Configure the router by clicking on the router and enter the CLI
   Assign IP addresses to the router interfaces:
   Router> enable
   Router# configure terminal
   Router(config)# interface fastethernet 0/0
   Router(config-if)# ip address 10.0.0.1 255.0.0.0
   Router(config-if)# no shutdown

   Router(config)# interface fastethernet 1/0
   Router(config-if)# ip address 20.0.0.1 255.0.0.0
   Router(config-if)# no shutdown

4. Configure the PCs:
   For PC0:
   * click on PC0 and set the IP Address to 10.0.0.10, subnet mask to 255.0.0.0 and default gateway to 10.0.0.1

   For PC1:
   * click on PC1 and set the IP Address to 20.0.0.10, subnet mask to 255.0.0.0 and default gateway to 20.0.0.1

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5. Test connectivity by opening the command prompt on PC0 & PC1
Use the ping command to check connectivity:
From PC0, ping PC1's IP (20.0.0.10)
From PC1, ping PC0's IP (10.0.0.10)

Observation:

1. If the configurations and cabling are correct, you will receive successful ping replies b/w the two PCs

2. If there is no connectivity, troubleshoot by verifying: correct IP addressing, cabling type, both router interfaces are up & running.

3. Routing table is observed as following:
Router> show ip route
Codes: C- connected, S- static, I- IGRP, R- RIP, M- mobile, B- BGP, D- EIGRP, EX- EIGRP external, O- OSPF, IA- OSPF inter area, N1- OSPF NSSA external type 1, N2- OSPF NSSA external type 2, E1- OSPF external type 1, E2- OSPF external type 2, E- EGP, i- IS-IS, L1- IS-IS level-1, L2- IS-IS level-2, ia- IS-IS inter area, *- candidate default, U- per-user static route, o- ODR, p- periodic downloaded static route.
Gateway of last resort is not set
C 10.0.0.0/8 is directly connected, FastEthernet0/0
C 20.0.0.0/8 is directly connected, FastEthernet1/0

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4. The ping results are as follow:

PC> ping 20.0.0.10

Pinging 20.0.0.10 with 32 bytes of data:

Reply from 20.0.0.10: byte=32 time=0ms TTL=127

Reply from 20.0.0.10: byte=32 time=0ms TTL=127

Reply from 20.0.0.10: byte=32 time=0ms TTL=127

Reply from 20.0.0.10: byte=32 time=0ms TTL=127

Ping statistics for 20.0.0.10:

Packets: sent=4, received=4, lost=0 (0% loss),

Approximate round trip times in milli-seconds:

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

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