

Experiment Using router and PC

AIM: Configuring IP address to router in packet tracer to explore the following messages:
ping responses, destination unreachable,
Request timer reply

Procedure:-

Using single router, 2 PC's

1. place a generic router and 2 generic PC's in workspace
2. Connect the router and PC's using copper cross over
3. Configure IP address of each PC and in the configuration. Under settings set gateways for PC's to router
4. Click on the generic-router and go to CLI. Enter the following commands to set up connections between PC's and generic router through gateway 10.0.0.10

Next.

Do the following steps

→ No

→ Enable

config

(config)# interface fastethernet 0/0

(config-if)# IP address 10.0.0.10 255.0.0.0

no shut

exit

Now to setup connection between PC's and router

through gateway 20.0.0.10

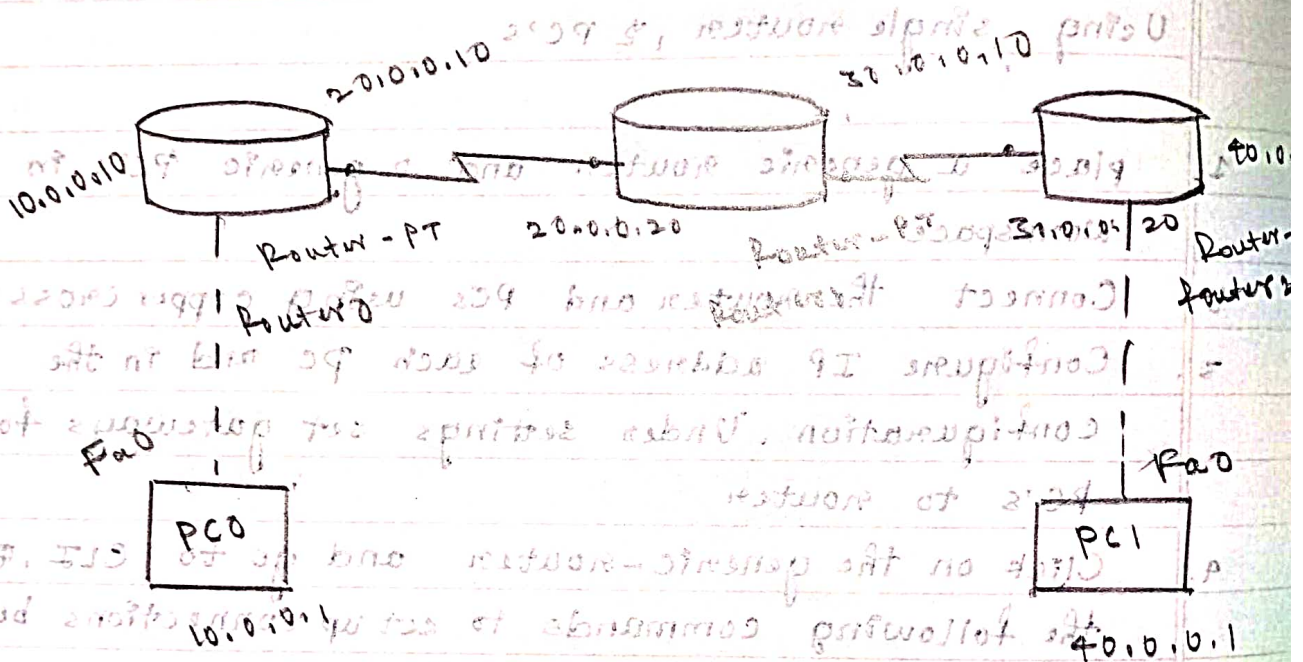
interface fastethernet 1/0

ip address 20.0.0.10 255.0.0.0

no shut

Experiment Using Router and PC

Aim: Configuring IP address to router in packet tracer to explore the following messages:
 ping responses, destination unreachable,
 Using 3 router & 2 PC's



Go to the following steps

1. Enable

2. Config

3. (config) # interface fastEthernet 0/0

4. (config-if) # IP address 10.0.0.10 255.255.255.0

5. # no shut

6. # exit

7. Now setup connection between PC's and router

8. through packet tracer

9. # interface fastEthernet 0/0

10. # IP address 10.0.0.20 255.255.255.0

Once we enter "no shut" both times and the amber light between the PC and router turns green indicating that the two lines are connected.

Simulation mode :- Add simple PDU by selecting the PC's and click on auto capture from the right panel

Real-time mode :- Select the PC you want to send the packet from PC, and open its command prompt from desktop tab, specify the destination bar address. A response is sent from destination PC to source PC.

★ Using three routers, 2 PC's

1. Place 3 generic routers and generic PCs
2. Place a node for each device and specify the IP address
3. Connect the router using serial DCE
4. Click on PC and then configure tab and configure IP address of PC's
5. Next, click on settings in config tab set gateway as IP address of next router
6. IP address of PC and its gateway address should belong to same network.

For connecting routers

click on Router 0

Go to CLI and enter the commands

→ no

→ enable

→ interface serial 2/0

→ IP address 20.0.0.10 255.0.0.0

Repeat the same for Router 1

- After this, the red signal changes to green indicating they are ready for communication
- For connecting two devices (PC and a router)

→ go to router

→ Open CLI for router 0 and enter the following commands

→ no

→ enable

→ config

→ interface fastethernet 0/0

→ IP address 10.0.0.10 255.0.0.0

→ no shut

The red light changes to green, indicating that they are ready for communication

Connecting Router 0 of network 30:

→ no

→ enable

→ config

→ interface serial 2/0

→ IP route : 30.0.0.0 255.0.0.0 20.0.0.20

→ exit

→ show IP route

Connecting Router 0 of network 40

→ no

→ enable

→ config

→ interface serial 2/0

→ IP route 40.0.0.0 255.0.0.0 20.0.0.20

→ exit

→ show IP route

Similarly repeat for router 1 & router 2

Simulation mode:- Add a simple PDU by selecting PC2 and click on auto capture from right panel.

Real-time mode:- select the PC 0 and go to its command prompt and ping the router 0, Once the message has been sent successfully. Repeat the with router 1 & 2 as well. Finally ping PC2

Observation:-

1 Router:

When PC0 pings PC1 for the first time, we get the first packet as request time out

Now, if we ping PC1 again we get all 4 packets, reset reverse the pinging of PC0 from PC1

2 Router:

Before training the routers we get the result as destination not reachable. After training the routers, we get to clear statistics.

Result

1] Using 1 router, 2 PC

ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data

Request timed out

Reply from 20.0.0.1: byte = 32 time < 1ms TTL=127

Reply from 20.0.0.1: byte = 32 time < 1ms TTL=127

Reply from 20.0.0.1: bytes = 32 time < 1ms TTL=127

ping statistics for 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data

Reply from 20.0.0.1 bytes=32 time < 1ms TTL=127

Reply from 20.0.0.1 bytes=32 time < 1ms TTL=127

Reply from 20.0.0.1 bytes=32 time < 1ms TTL=127

Reply from 20.0.0.1 bytes=32 time < 1ms TTL=127

ping statistics for 20.0.0.1

packets = sent = 4, received = 4, lost = 0

2] Using three routers two PCs

ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

ping statistics for 40.0.0.1

packets: sent = 4, received = 4, lost = 4

3] Ping 20.0.0.10 with 32 bytes of data

Reply from 20.0.0.10 with 32 bytes = 32 time = 1ms
TTL = 255

Reply from 20.0.0.10 : bytes = 32 time = 0ms TTL = 255

ping statistics for 20.0.0.10 :

packets : sent = 4, received = 4, lost = 0

4] Ping 30.0.0.10

pinging 30.0.0.10 with 32 bytes of data

Reply from 30.0.0.10 : bytes = 32 time = 1ms TTL = 255

Reply from 30.0.0.10 : bytes = 32 time = 1ms TTL = 255

Reply from 30.0.0.10 : bytes = 32 time = 1ms TTL = 255

Reply from 30.0.0.10 : bytes = 32 time = 0ms TTL = 255

ping statistics : 30.0.0.10 :

packets : sent = 4, received = 4, lost = 0

5] Ping 40.0.0.1

pinging 40.0.0.1 : bytes = 32 time = 10ms TTL = 125

Request timed out

Reply from 40.0.0.1 : bytes = 32, time = 10ms TTL = 125

Reply from 40.0.0.1 : bytes = 32, time = 8ms TTL = 125

Reply from 40.0.0.1 : bytes = 32, time = 8ms TTL = 125

ping statistics for 40.0.0.1 :

packets : sent = 4, received = 4, lost = 1

6] Ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data.

Reply from 40.0.0.1 : bytes = 32, time = 2ms TTL = 125

Reply from 40.0.0.1 : bytes = 32, time = 9ms TTL = 125