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Program 1

Creating a topology and simulating sending a simple PDU from source to destination using hub and switch as connecting devices.

Topology

2 PCs, 1 HUB, 1 Switch

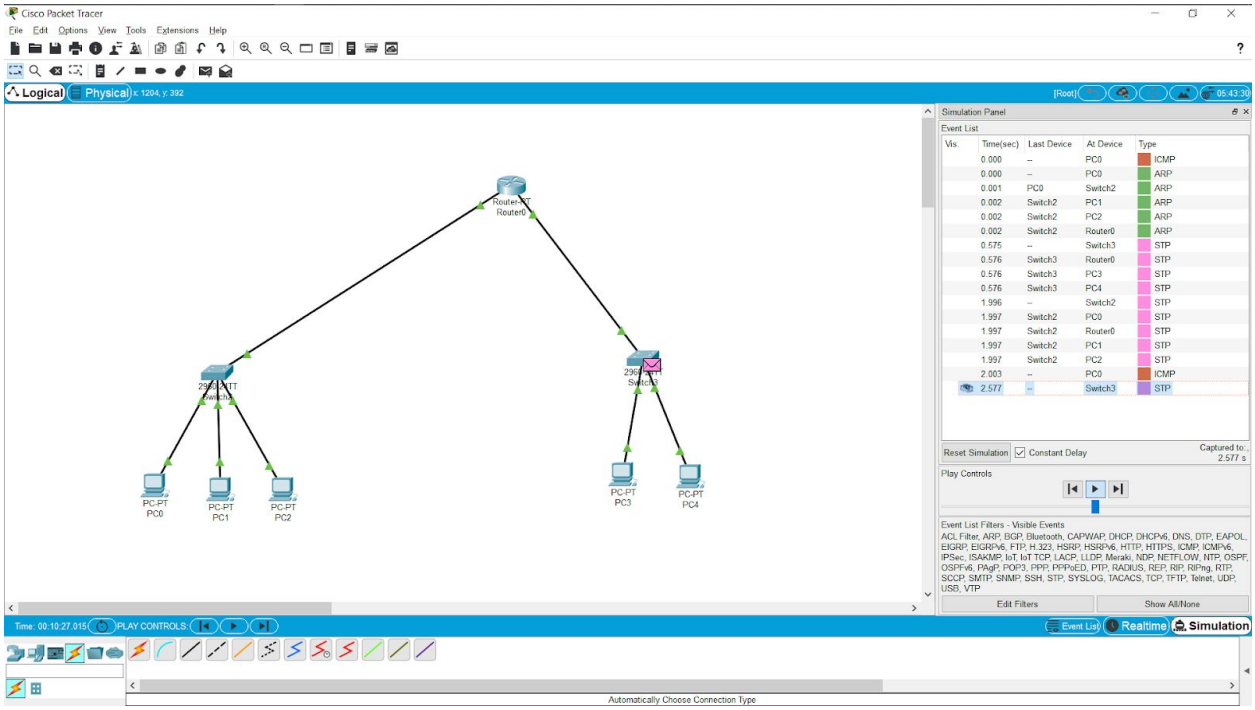
Steps

- All PCs should start from ip address 10.0….. And with same gate-way
- No need to config hub
- Switch is not config.
- Go to simulation and edit filters, turn all on (especially imcp)
- Send simplu pdu

Program 2

Configuring IP address to Routers in Packet Tracer. Explore the following messages: Ping Responses, Destination unreachable, Request timed out, Reply

Topology



Steps

PCs under switch1 will have ip address as 10.0.0.10, 10.0.0.11, 10.0.0.12 and PCs under switch2 will have ip address as 20.0.0.10, 20.0.0.11.

Now, configure router using steps as:

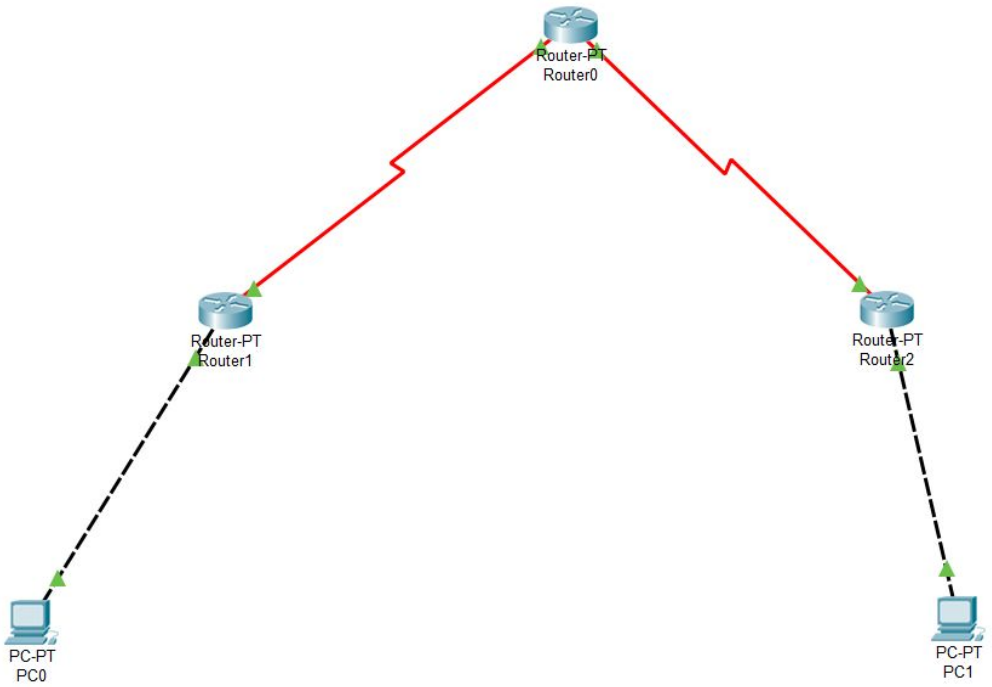
1. Router > enable
2. Router # config t
3. Router (config) # interface FastEthernet 0/0
4. Router (config-if) # ip address 10.0.0.1 255.0.0.0
5. Router (config-if) # no shut

6. Router (config-if) # exit
7. Router (config) # interface FastEthernet 1/0
8. Router (config-if) # ip address 20.0.0.1 255.0.0.0
9. Router (config-if) # no shutdown

Program 3

Configuring default route to the Router

Topology



Steps

Assign ip address to PC0 and PC1 as 10.0.0.10 and 20.0.0.10 and gw as 10.0.0.1 and 20.0.0.1 respectively.

Configure router using :-

R0 :

1. Go to config and fa 0/0 :-
- 10.0.0.1
  And turn it on
2. Now go to se 2/0 :-
- Ip address 20.0.0.1
  And now turn it on

R1 :

1. Go to config and se 2/0 :-

- 20.0.0.2
  And now turn it on
2. Now go to se 3/0 :-
- Ip address 30.0.0.1
  And turn it on

R2 :

1. Go to config and se 2/0 :-
- 30.0.0.2
  And turn it on
2. Now go to fa0/0 :-
- Ip address 40.0.0.1
  And turn it on

Now all configs are done, but R0 does not know about R2 and PC1 and same goes with other Routers so we'll config using CLI

R0 :-

1. Router > enable
2. Router # config t
3. Router(config) # ip route 30.0.0.0 255.0.0.0 30.0.0.2
4. Router(config) # ip route 40.0.0.0 255.0.0.0 30.0.0.2
5. To see all connected devices :-
   - Router # show ip route

R2 :-

1. Router > enable
2. Router # config t
3. Router(config) # ip route 20.0.0.0 255.0.0.0 30.0.0.1
4. Router(config) # ip route 10.0.0.0 255.0.0.0 30.0.0.1
5. To see all connected devices :-
   - Router # show ip route

R1 :-

1. Router > enable
2. Router # config t

3. Router(config) # ip route 10.0.0.0 255.0.0.0 20.0.0.1
4. Router(config) # ip route 40.0.0.0 255.0.0.0 30.0.0.2
5. To see all connected devices :-
    - Router # show ip route

Now go to PC0 -> Desktop -> cmd ->

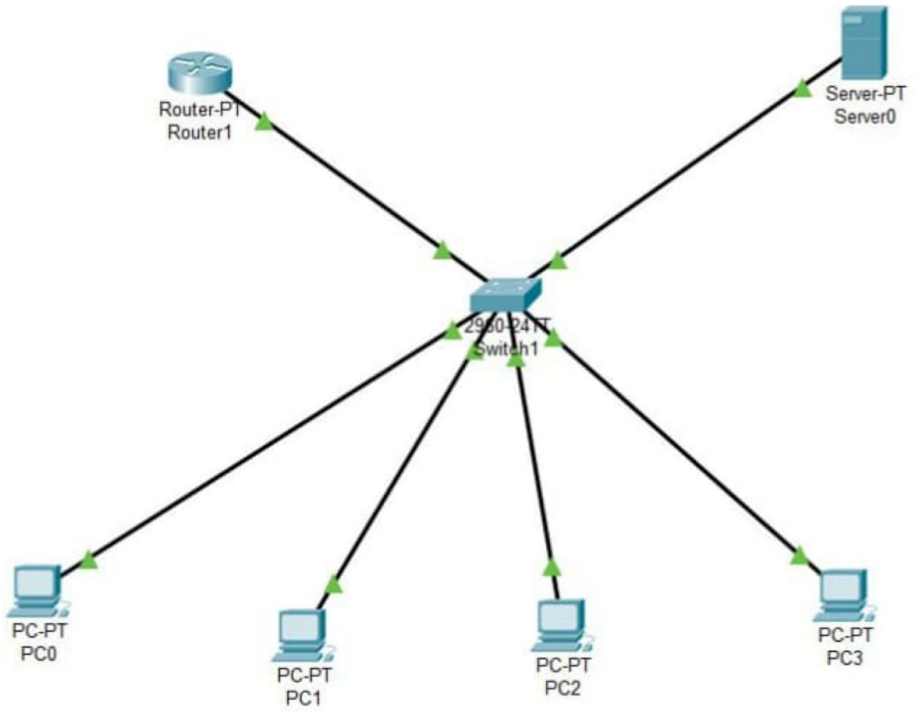
- ping 40.0.0.1

Result should be either 0% loss or 25% loss only.

Program 4

Configuring DHCP within a LAN in a packet Tracer

Topology



Steps

Take one router, one switch, one server and any number of PCs.

Router :-

Go to fa :-

- Assign the ip address to it as 10.0.0.1

Server :-

Assign ip address and gw:-

- Ip address - 10.0.0.2
- Gw and dns - 10.0.0.1

Go to services -> DHCP

- Turn DHCP on
- Give gw same as the ip address of router
- Assign dns server as : 10.0.0.2
- Start ip address as 10
- Start subnet mask as 255
- Any number of maximum users
- TFTP server same as dns : - 10.0.0.2

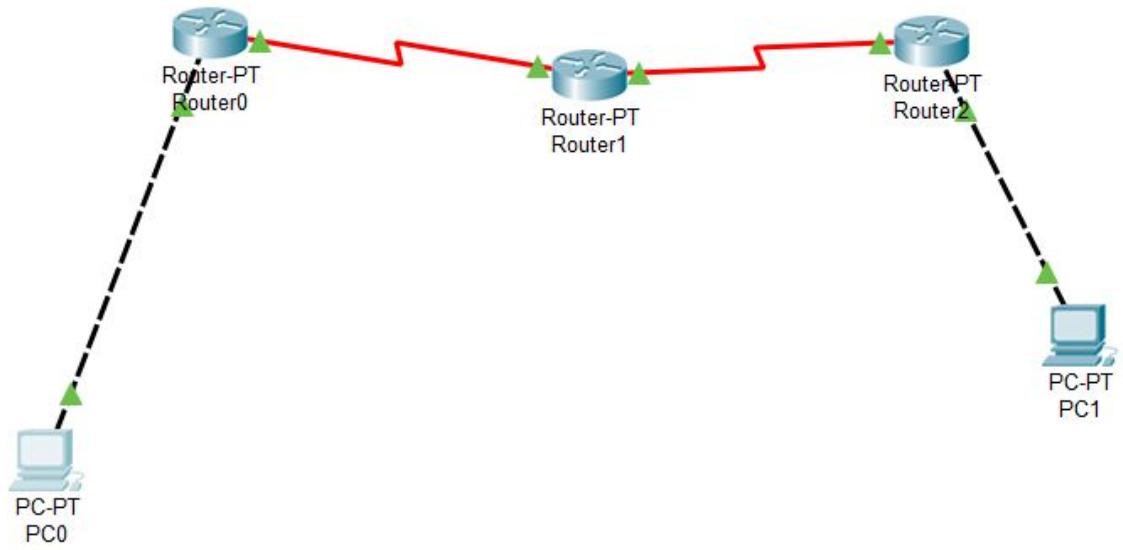
PC:-

Go to desktop -> ip config
And change it to DHCP and it should automatically assign all the values and DHCP should be successful
Do the same for all PCs

Program 5

Configuring RIP Routing Protocol in Routers

Topology



Steps :

Assign Ip address to PC0 and PC1 as 10.0.0.10 and 20.0.0.10 and gw as 10.0.0.1 and 20.0.0.1 respectively.

Configure router se2/0 and fa 0/0 for Router 0
Configure router se 2/0 and se3/0 for router 1
Configure router se2/0 and fa 0/0 for router 2

R0:-

Go to CLI and do encapsulation and set clock rate:-

- Router(config) # interface se2/0
- Router(config-if)# ip address 20.0.0.1 255.0.0.0
- Router(config-if)# encapsulation ppp
- Router(config-if)# clock rate 64000
- Router(config-if)# no shut

R1 :-

Go to CLI and do encapsulation :-

- Router(config) # interface se2/0
- Router(config-if)# ip address 20.0.0.2 255.0.0.0
- Router(config-if)# encapsulation ppp
- Router(config-if)# no shut

Now,

- Router(config) # interface se3/0
- Router(config-if)# ip address 30.0.0.1 255.0.0.0
- Router(config-if)# encapsulation ppp
- Router(config-if)# clock rate 64000
- Router(config-if)# no shut

R2 :-

Go to CLI and do encapsulation :-

- Router(config) # interface se2/0
- Router(config-if)# ip address 30.0.0.2 255.0.0.0
- Router(config-if)# encapsulation ppp
- Router(config-if)# no shut

Now add router RIP to each router:

R0 :-

- Router(config) # router rip
- Router(config-router) # network 10.0.0.0
- Router(config-router) # network 20.0.0.0

R1 :-

- Router(config) # router rip
- Router(config-router) # network 20.0.0.0
- Router(config-router) # network 30.0.0.0

R2 :-

- Router(config) # router rip
- Router(config-router) # network 30.0.0.0
- Router(config-router) # network 40.0.0.0

Now, for all routers see,

- show ip route

It should have 2 Rs and 3 Cs for R0 and R2 & 2Rs and 4Cs for R1.

Now go to PC0 -> Desktop -> cmd

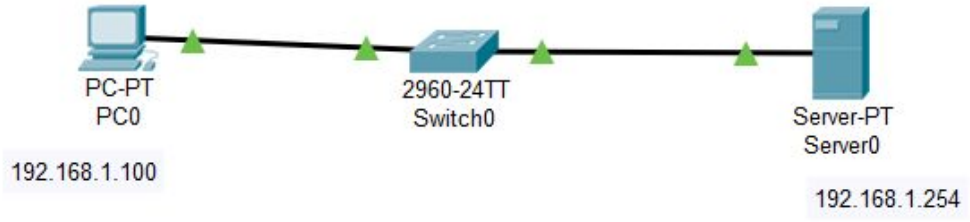
- ping 40.0.0.10

The loss should be either 0% or 25%.

Program 6

Demonstration of WEB server and DNS using Packet Tracer

Topology



Steps

First config PC0 :-

- ip - 10.0.0.10
- Gw - 10.0.0.1

Now config Server0 :-

- Ip address, dns and gw - 10.0.0.1

Now, HTTP, HTTPs and DNS should be on.

Add name as - name.com

And address and same of server’s ip address : 10.0.0.1

Now browse browser from PC0 on desktop and enter address or name.