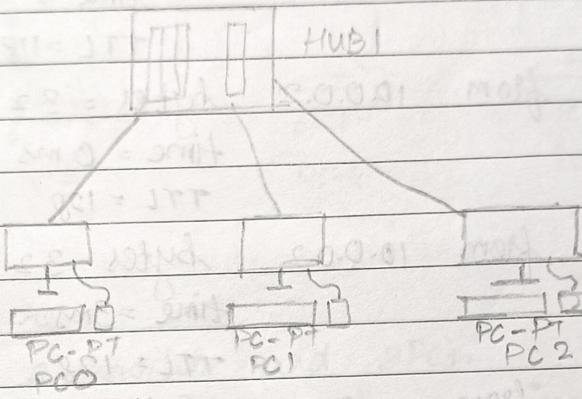


EXP-1

Create a topology, hence simulate sending a simple PDO, from source to destination using a single hub and ports as connecting.

Topology :- Hub to PC



Procedure:-

- Select hub and three PC's.
- Connect the hub to the individual PC with copper straight through wires.
- Assign the IP address to the PC's. 10.0.0.1, 10.0.0.2, 10.0.0.3.
- Select the packet and select the source and destination PC.

Observation : In simulation mode.

- PC sends packet to hub and hub sends it to both PC1 and PC2.
- PC1 discards the message whereas PC2 accepts it.

- PC2 sends the acknowledgement packet to the hub.
- Hub again sends it to PC0 and PC1
- PC1 discards and PC0 accepts it.

Output :-

Reply from 10.0.0.2 bytes = 32
time = 2ms
TTL = 118

Reply from 10.0.0.2 bytes = 32
time = 0 ms
TTL = 128

Reply from 10.0.0.2 bytes = 32
time = 3ms T
TTL = 128

Reply from 10.0.0.2 bytes = 32
time = 0ms
TTL = 128

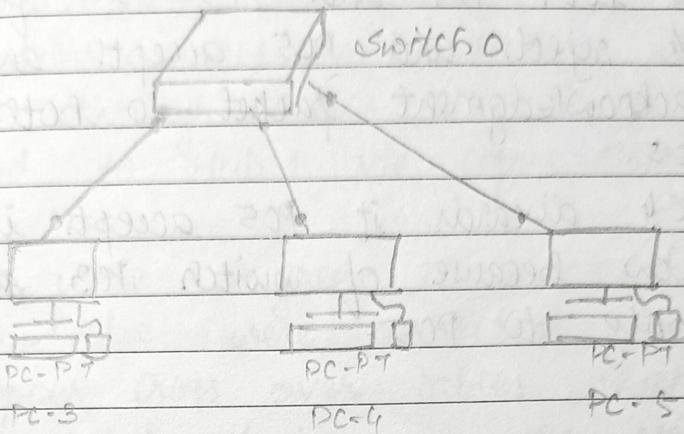
Ping statistics for 10.0.0.2

Packet : sent = 4 , Received = 4 ,
lost = 0 (0% loss)

Approximate round trip time is milliseconds

minimum = 0ms , maximum = 3ms
Average = 0ms.

Topology :



Procedure

Select a switch and 3PC's,

Connect the switch to the individual PC's using a copper straight through.

Assign the IP address to the PC's - 10.0.0.4, 10.0.0.5, 10.0.0.6 respectively.

Select the PDU and the source and destination PC.

Output

Reply from 10.0.0.5 bytes = 32 time = 0ms TTL = 128
 Reply from 10.0.0.5 bytes = 32 time = 0ms TTL = 128
 Reply from 10.0.0.5 bytes = 32 time = 3ms TTL = 128
 Reply from 10.0.0.5 bytes = 32 time = 3ms TTL = 128

Ping statistics for 10.0.0.5

Packets sent 4, Received = 4 lost = 0 (0% loss)

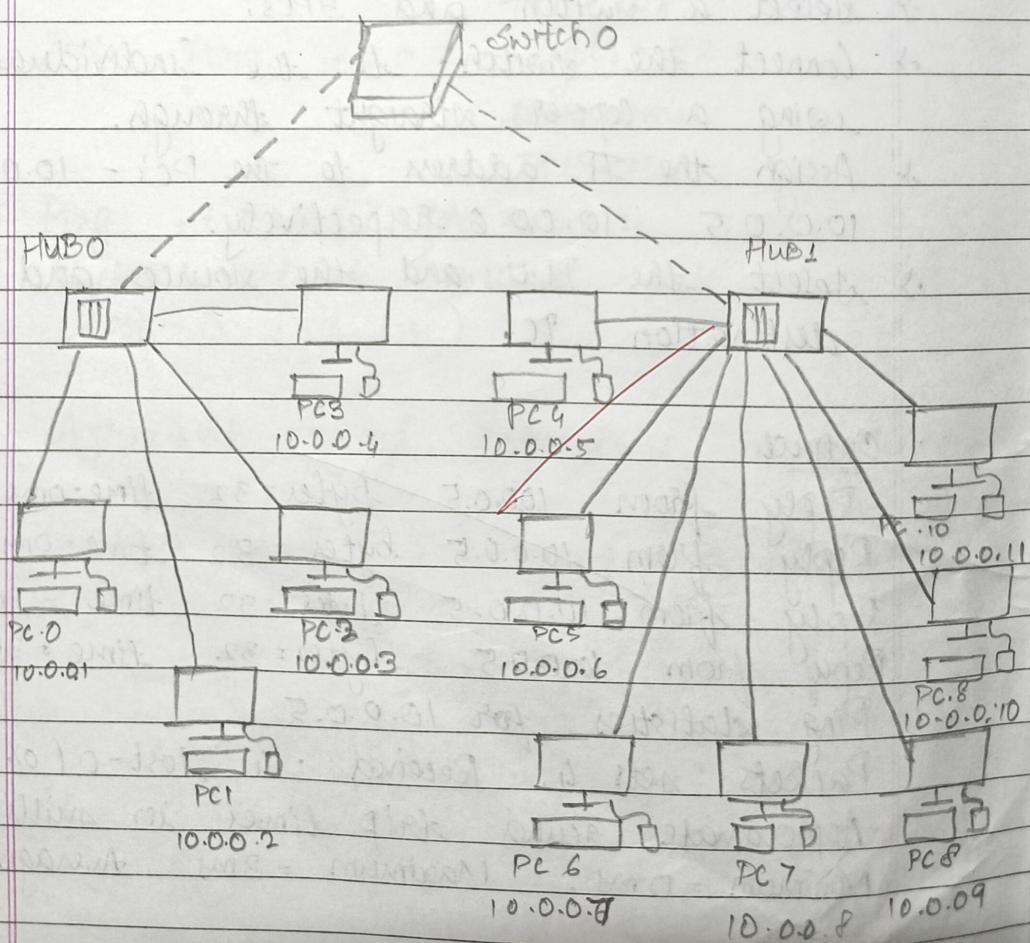
Approximate round trip times in milliseconds

Minimum = 0ms, Maximum = 3ms, Average = 2ms

Observation : In simulation mode

- PC 3 sends packet to switch and it sends to both PC4 and PC5 in first round.
- PC4 rejects and PC5 accepts and sends acknowledgment packet to both PC3 and PC5.
- PC4 discards it PC5 accepts it.
Now because of switch PC3 sends packets only to PC5.

Topology \rightarrow Hybrid - hub and switch



PROCEDURE

- 11 PCs & generic Hub's and 1 switch were placed in the workspace.
- 4 PCs were connected to Hub 0 via copper straight through cables. Remaining 7 PCs were connected to Hub 1 via copper through straight cable.
- All PCs were assigned IP's (10.0.0.1 to 10.0.0.11)
- The 2 hubs were connected to the switch via copper cross over cables which are used to connect devices on the same level.

Result

PC1 command line.

PC1 ping 10.0.0.8

Pinging 10.0.0.8 with 32 bytes of data.

Reply from 10.0.0.8 bytes=32 time = 8 ms TTL = 128
Reply from 10.0.0.8 bytes=32 time = 0 ms TTL = 128
Reply from 10.0.0.8 bytes=32 time = 0 ms TTL = 128
Reply from 10.0.0.8 bytes=32 time = 0 ms TTL = 128

~~Ping statistics for 10.0.0.8~~

Packets sent = 4, Received = 4, Lost = 0 (0% loss)

Approximate round trip time in milliseconds
Minimum = 0 ms Maximum = 8 ms Average = 2 ms

OBSERVATIONS

Hub :- A hub receives data and broadcasts it to all devices connected to it.

Switch :- A switch prevents traffic between devices from being shared with other devices connected to it. It sends messages only to the receiver