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## Introduction to cisco packet tracer

Menu bar - The main bar with file and edit options

Main tool bar - It contains shortcut icons, undo, redo and sizing options

Common tools bar - (all the right side)

Provides commonly used tools select, delete, resize, etc

There are two workspaces

- Logical
- Physical

Device-type selection box -

It contains two areas - one containing the end devices like generic, tv, phone, tablets, etc and other containing connection networks like routers, switches, hubs, wireless devices and connection wires

There are two types of modes -

- Simulation mode - It contains event list and power cycle devices and used for simulating through simulation panel.
- Realtime mode - This contains a clock with relative time display and CLI is used for operations

Beside device selection box, there is an user created packet window to describe the events in simulation mode.

Write regd cables:

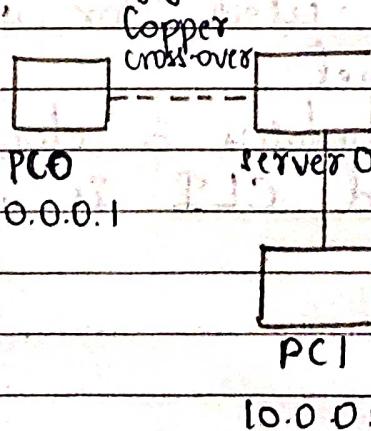
Exp 1 -

Aim - To understand simple PC-PDU configuration.

Procedure -

1. Select PC from end devices. select generic PC and drop it in workspace. Similarly, select generic server.
2. Choose copper-cross-over in the connections and choose Fastethernet.
3. Click on server and choose Fastethernet(1).
4. Click on PC and go to config tab. Set IP address to 10.0.0.1 and click on subnetMask.
5. Repeat same step and set IP address for server.
6. In simulation mode, in edit filters click only ICMP.
7. Add a simple PDU from PC to server.
8. Click on autocapture/ play.

Topology:



Observation -

1. Packet transfer takes place from PC to server then to the other PC in the autocapture / play.
2. Acknowledgment is sent from second PC to first PC.

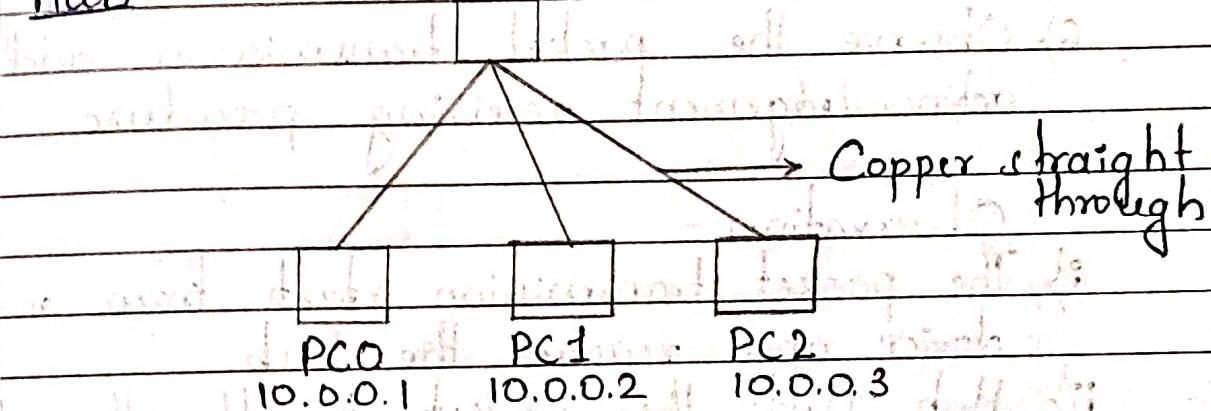
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## Tille - Packet tracer using hub and switch topology

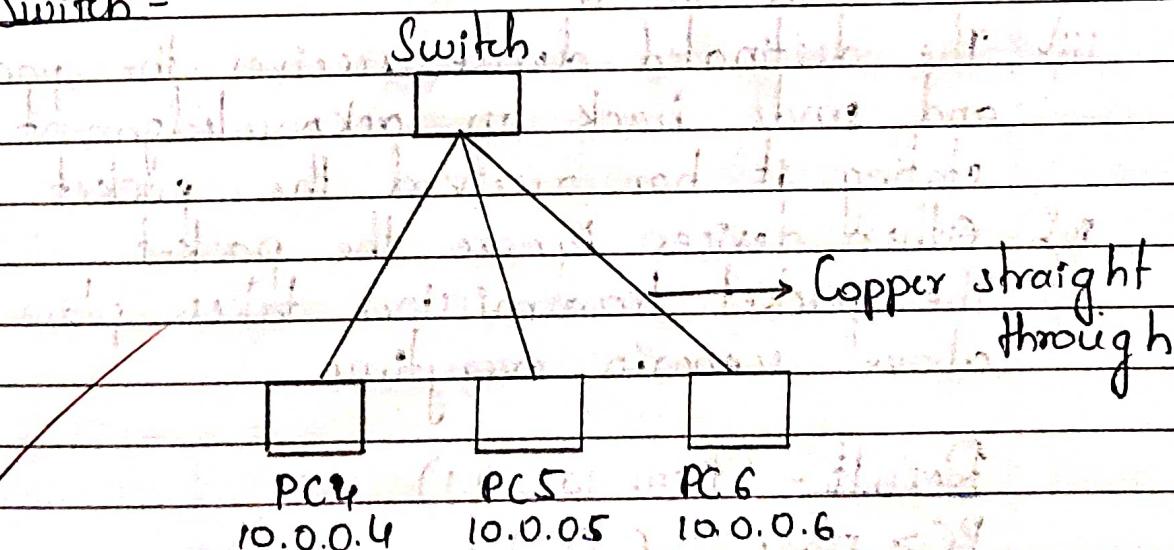
Aim - Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping message.

Topology -

Hub -



Switch -



Hub -

Procedure -

- 1) Select the end devices and change their IP addresses suitably.
- 2) Select hub as the connecting device.
- 3) Select copper straight-through as the connecting wire between end devices and hub.
- 4) Connect the fast ethernet to hub ports.
- 5) Select the message and first click on source device and destination device.
- 6) Observe the packet transmission and acknowledgement receiving procedure.

Observation -

- i) The packet transmission starts from source device and reaches the hub.
- ii) Hub sends the packet to all other devices connected to it.
- iii) The destined device receives the packet and sends back an acknowledgement stating it has received the packet.
- iv) Other devices ignore the packet.
- v) The packet transmission takes place in the above scenario everytime.

Result - (From 10.0.0.1)

PC > ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=8 ms TTL=128  
Reply from 10.0.0.2: bytes=32 time=0 ms TTL=128  
Reply from 10.0.0.2: bytes=32 time=0 ms TTL=128  
Reply from 10.0.0.2: bytes=32 time=0 ms TTL=128

Ping statistics for 10.0.0.2:

• Packets: Sent = 4, Received = 4, Lost = 0

Approximate round trip times in milli-seconds:

Minimum: 0 ms, Maximum: 8 ms, Average: 2 ms

### Switch -

#### Procedure -

- 1) Select the end devices and change their IP addresses suitably.
- 2) Select switch as the connecting device.
- 3) Select copper straight through as the connecting wire between end devices and hub.
- 4) Connect the fastethernet to hub ports.
- 5) Select the message and first click on source device and then destination device.
- 6) Observe the packet transmission and acknowledgement receiving procedure.

#### Observation -

- i) The packet transmission starts from source device and reaches the switch.
- ii) Switch sends the packet to all devices connected to it.

- iii} The destined device receives the packet and sends an acknowledgement back to switch stating it has received the packet
- iv} Switch remembers the device sending the acknowledgement and only communicates with that device for further transmission
- v} Other devices do not receive the packet from next transmission

### Result - (from 10.0.0.5)

PC > ping 10.0.0.3

Reply from 10.0.0.3: bytes: 32 time=6 ms TTL=128  
 Reply from 10.0.0.3: bytes: 32 time=0 ms TTL=128  
 Reply from 10.0.0.3: bytes: 32 time=0 ms TTL=128  
 Reply from 10.0.0.3: bytes: 32 time=0 ms TTL=128

Ping statistics for 10.0.0.3:

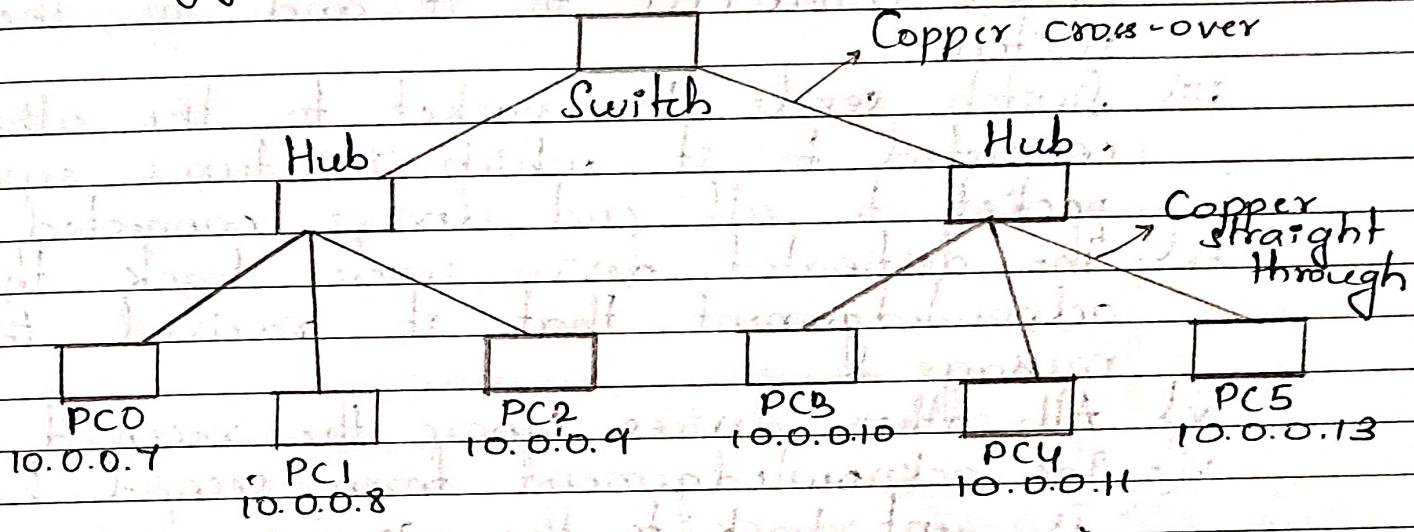
Packets: Sent = 4, Received = 4, Lost = 0

Approximate round-trip time in milliseconds:

Minimum = 0 ms, Maximum = 6 ms, Average = 1 ms

Aim - Create a topology involving multiple hubs and a switch connecting them to simulate a simple PDU.

Topology -



Procedure -

- 1} Select the end devices and connect them to two different separate hubs
- 2} Connect the two hubs to a switch
- 3} End devices are connected to the hub using copper straight through wire
- 4} Hubs are connected to switch using copper cross-over wire
- 5} Select the message. Select the source device connected to one hub and destination device connected to another hub.
- 6} Observe the packet transmission and acknowledgement procedure.

### Observation -

- i) The packet transmission starts from 'source device' which sends it to the hub connected to it.
- ii) This hub sends the packet to all the devices connected to it and to the switch.
- iii) Switch sends the packet to the other hub connected to it which in turns sends the packet to all end devices connected to it.
- iv) The destined device sends back the acknowledgement that it received the message.
- v) All other devices ignore the received packet.
- vi) The acknowledgement from second hub is sent back to the source device through switch in the same manner.

(a)

Result - (From 10.0.0.7)

PC > ping 10.0.0.13

Reply from 10.0.0.13: bytes=32 time=0ms TTL=128  
Reply from 10.0.0.13: bytes=32 time=1ms TTL=128  
Reply from 10.0.0.13: bytes=32 time=0ms TTL=128  
Reply from 10.0.0.13: bytes=32 time=1ms TTL=128

Ping statistics for 10.0.0.13:

Packets: Sent = 4, Received = 4, Lost = 0

Approximate round trip times in milli-seconds:

Minimum = 0 ms, Maximum = 1 ms, Average = 0 ms

