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Week-1

1) Creating a network using end user, server & copper crossover cable Set IP address & DNS settings

2) Sent simple test messages, using PDU (simple) from PC to server, understood scenario settings and deleting PDU to shifting to new one.

3) Established a web server connection using the PC's Web Browser. In PC config Window, type URL in IP DNS settings, & go to Web Browser under Desktop tab & enter that URL

4) Captured Events & animations in the Simulation mode checking packets in the simulation mode.

5) Devices tables & Reset Network (ARP tables)

Connection Links:

1 Console Cable: Connects PC to router/switches, requires matching settings for speed, data bits & parity.

2) Copper Through: Standard ethernet cable for connecting device at different OSI layers eg: switches to PC

3) Copper Crossover: Ethernet cable for connecting devices at the same OSI layer eg PC to PC

4) Fiber: used for connections b/w fiber ports. 100 Mbps
5) Phone: connects device with modem ports typically for dialog into an internet.
6) Coaxial: Connects device with coaxial ports.

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

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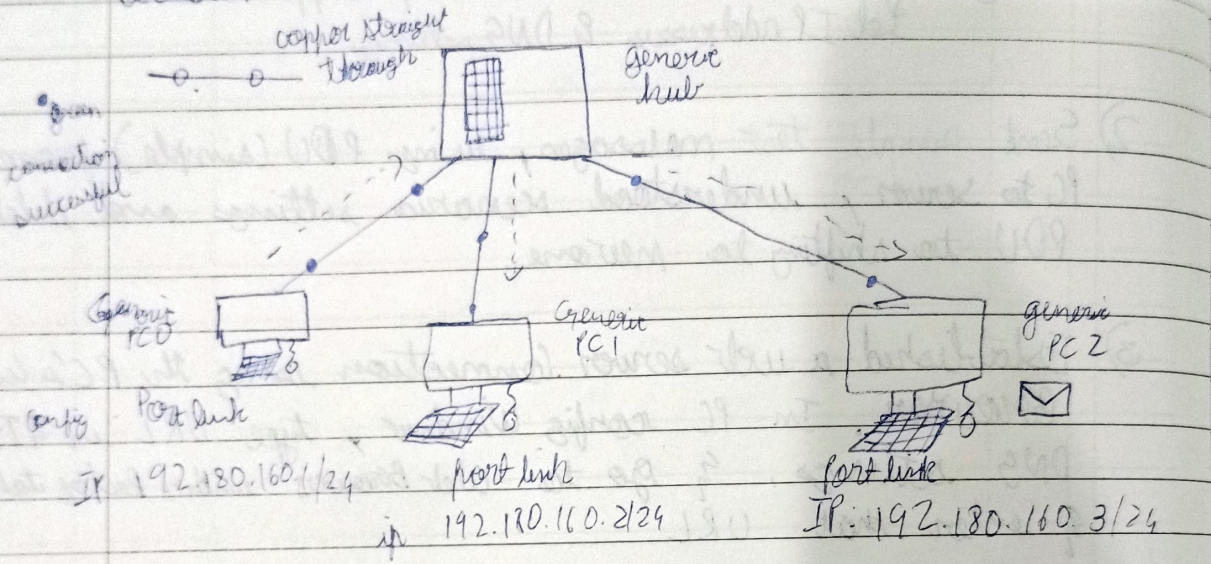
Lab-1
Hub

Aim: to demonstrate the transmission of a simple PDU between 2 devices connected using a hub and a switch.



Observation / procedure

Setup

1. Launch Cisco packet Tracer
2. Add devices: left icon menu → select end devices → add 3 PCs to workspace.
   add one hub from the network devices section.
3. Connect devices: use copper straight through cable to connect each PC to the hub, establish the connection should turn from red to green.
4. IP config
   go to each device click → select config → then fast ethernet 0 do this for all 3 PCs

	address value	subnet mask
PC1	192.180.160.1/24	255.255.255.0
PC2	192.180.160.2/24	255.255.255.0
PC3	192.180.160.3/24	255.255.255.0

5. switch to simulation from real time at the right bottom
6. add simple PDU
   another click on the source PC 0 & destination PC2
   this will create an ICMP packet from PC1 to PC2

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7) Run the simulation / click Auto Capture / play

Result (observation)

→ from PC0 to PC2 & PC1 the PDU (protocol data Unit)

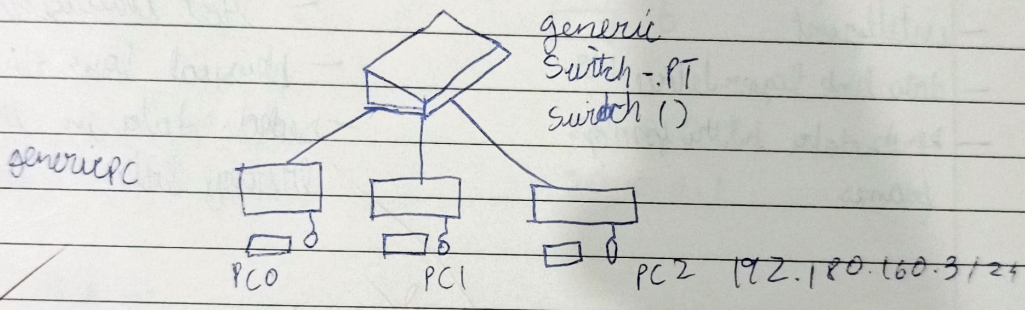
→ Screen msg/ PDU is sent from PC2 to PC0 that it is received.

→ but only PC2 will accept the PDU hence ✕ mark on PC1

Since it is hub broadcast happens to all connected to hub only intended PC will PC received.

Switch

Connecting PC to switch.



IP 192.180.160.1/24 192.180.160.2/24

Observation / Procedure

1. open Cisco packet Tracer.
2. Add devices.
   switch → Networks devices
   Network devices - (generic switch)
   end devices.
   generic PC
3. Connect the 3PCD 1 2 to switch ports using copper straight through
4. setup devices by providing ip's.
   Go to config → fast ethernet → input i/p

IP 1	192.180.160.1
IP 2	192.180.160.2
IP 3	192.180.160.3

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5) Switch to simulation mode choose visible event / protocol
6) Add PDU to source & destination to PC2
7) Rerun simulation. Auto capture / play
   i cmp (ping) one sent to only correct device with correct mac.

Observation

8) Result switch uses mac address to intelligently forward the ping (iCMP) packets to the correct destination rather than broadcasting to all connected devices like a hub would

difference

Switches
- direct to mac
- intelligent
- data link layer device
- sends data in the form of frames

hubs
- broadcast model
- Not intelligent
- physical layer device
- sends data in the form of binary bits

Connection Lost

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