LAB 1
1BM21CS044

Create a topology and simulate sending a simple PDU from source to destination using switch and hub as connecting domain.

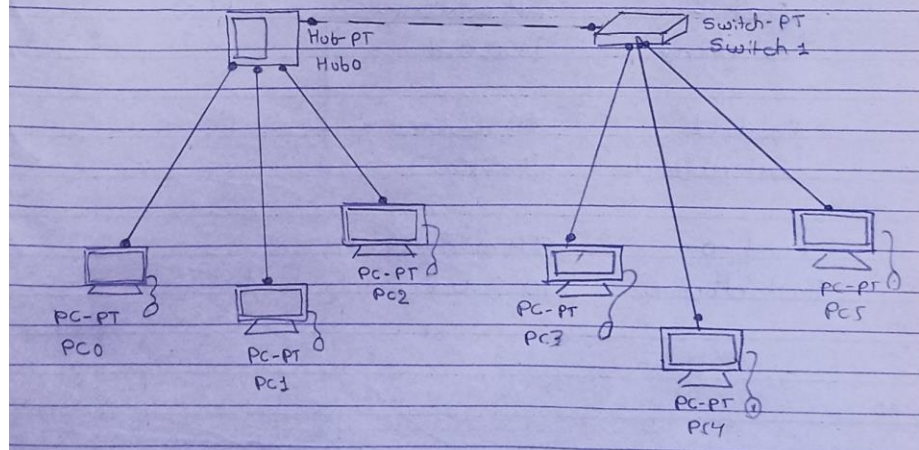
Aim:

Create a topology and simulate sending a simple 'pdu' from source to destination using switch and hub as connecting domain.

Procedure:-

→ Connect 3 or more Pc's and connect it to different ports of the hub
→ also connect 2 or more Pc's to switch.
→ Configure each Pc's by providing IP addresses 10.0.0.1, 10.0.0.2 so on.
→ then also connect switch and hub
→ To see the process of how packets are transferred, give sample PDU to both Pc0 and Pc1 and then run simulation.
→ To check whether connection is successful or not, ping Pc1 from Pc0 to do this click on source Pc select desktop then go to command prompt. Then run ping followed by IP address of Pc1.

Topology:-



Observation:- Sending data packet from PC_0 to PC_3

Command prompt

```
Pc > ping 10.0.0.4
Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4 : bytes=32 time=6ms TTL=128
Reply from 10.0.0.4 : bytes=32 time=6ms TTL=128
Reply from 10.0.0.4 : bytes=32 time=6ms TTL=128
Reply from 10.0.0.4 : bytes=32 time=6ms TTL=128
```

Result: We connected 2 pc's through a Cisco-switch and verified packet transfer by pinging PC. We observed that hub transmits data to all devices on a network regardless of whether data placed contains any mac address or not whereas switch transmits data to devices on a network by checking mac addresses.

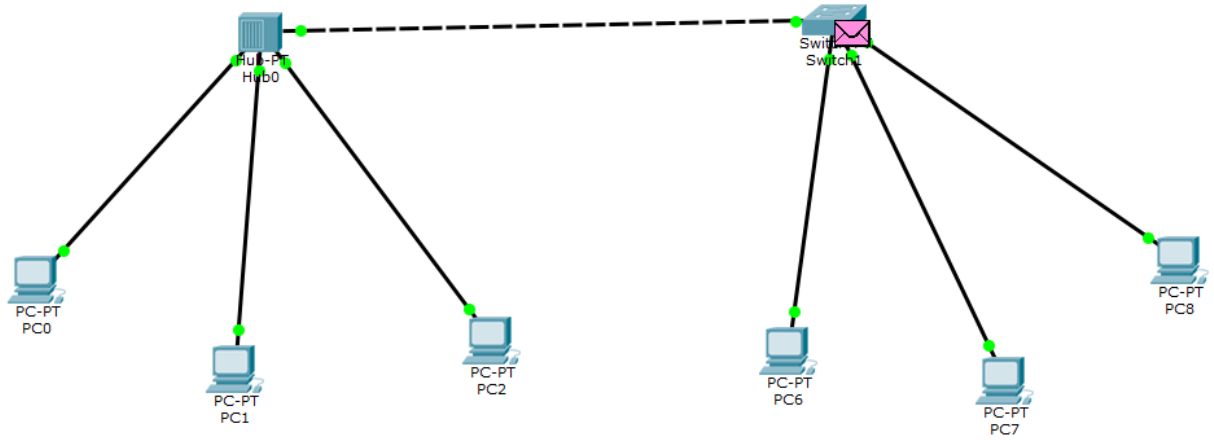
Switch:

Port 2 fast ethernet	IP address: 10.0.0.4	PC-3
Port-1 fast ethernet	IP address 10.0.0.5	PC-4
Port-0 Fast ethernet	IP address 10.0.0.6	PC-5

5/6/2023

File Edit Options View Tools Extensions Help

Logical | [Root] | New Cluster | Move Object | Set Tiled Background | Viewport



Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type	Info
	0.002	Hub0	PC2	ICMP	
	0.002	Hub0	Switch1	ICMP	
	0.003	Switch1	PC6	ICMP	
	0.004	PC6	Switch1	ICMP	
	0.005	Switch1	Hub0	ICMP	
	0.006	Hub0	PC0	ICMP	
	0.006	Hub0	PC1	ICMP	
	0.006	Hub0	PC2	ICMP	
	0.173	--	Switch1	STP	

Reset Simulation | Constant Delay | Captured to: 0.173 s

Play Controls

Back | Auto Capture / Play | Capture / Forward

Event List Filters - Visible Events

ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

Edit Filters | Show All/None

Time: 00:09:49.335 | Power Cycle Devices | PLAY CONTROLS: Back | Auto Capture / Play | Capture / Forward | Event List | Simulation

Connections

Copper Cross-Over

Scenario 0 | New | Delete | Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC6	ICMP		0.000	N	0	(edit)	(delete)

Output:

PDU sent from pc0 to pc6