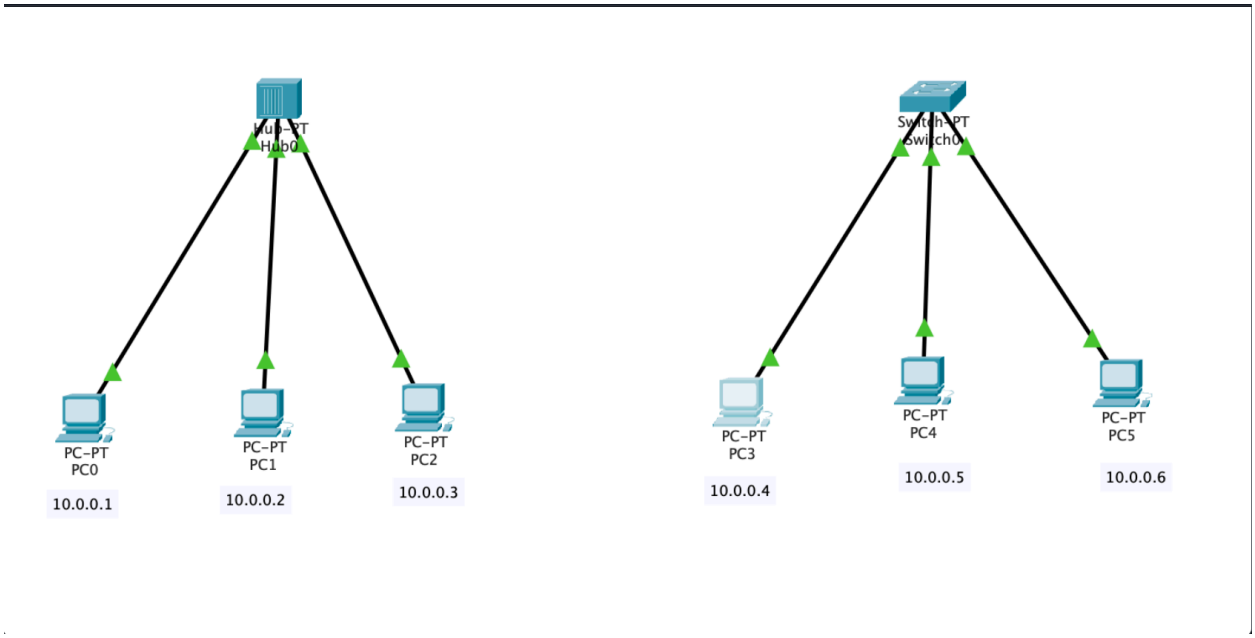


PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=1ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

PC3

Physical | Config | Desktop | Programming | Attributes

Command Prompt

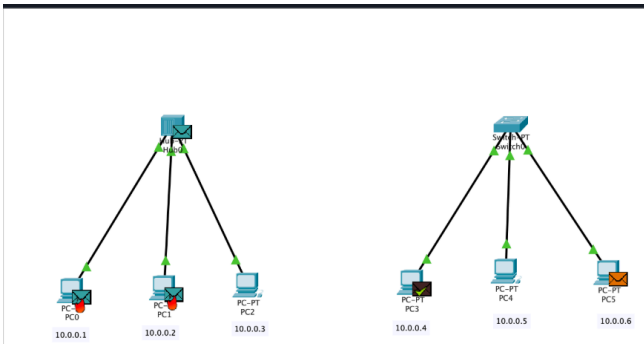
```
Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.6

Pinging 10.0.0.6 with 32 bytes of data:

Reply from 10.0.0.6: bytes=32 time=1ms TTL=128
Reply from 10.0.0.6: bytes=32 time=1ms TTL=128
Reply from 10.0.0.6: bytes=32 time<1ms TTL=128
Reply from 10.0.0.6: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```



Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.003	PC3	Switch0	ICMP
	0.003	Hub0	PC1	ICMP
	0.003	Hub0	PC2	ICMP
	0.003	PC2	Hub0	ICMP
	0.003	PC5	Switch0	ICMP
	0.003	--	PC2	ICMP
	0.004	Switch0	PC5	ICMP
	0.004	Hub0	PC0	ICMP
	0.004	Hub0	PC1	ICMP
	0.004	Switch0	PC3	ICMP
	0.004	PC2	Hub0	ICMP

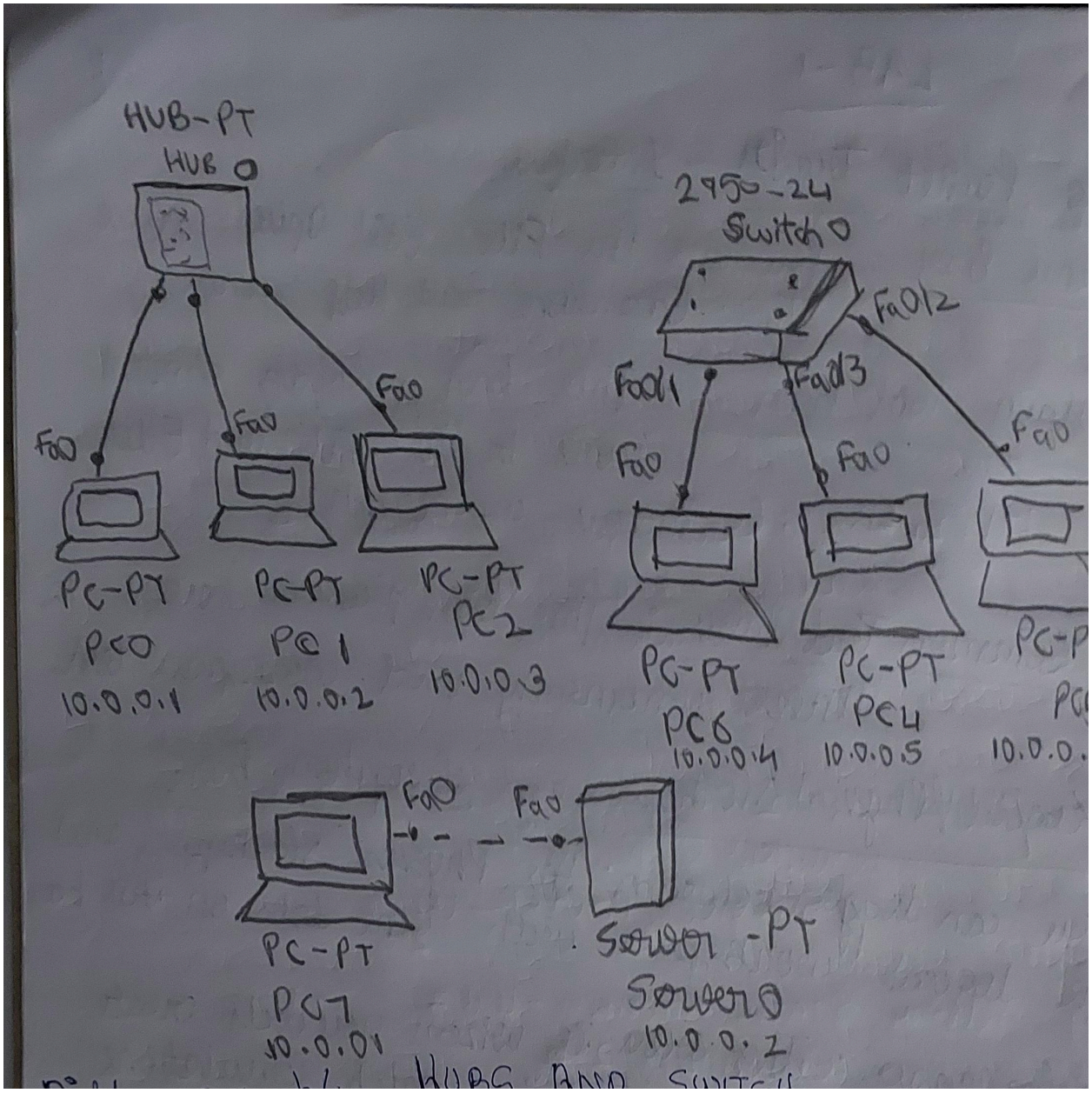
Reset Simulation | Constant Delay | Captured to: 0.004 s

Play Controls

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, 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


HUB-PT
HUB 0
Fa0
Fa0
Fa0
PC-PT
PC0
10.0.0.1
PC-PT
PC1
10.0.0.2
PC-PT
PC2
10.0.0.3
2950-24
Switch 0
Fa0/2
Fa0/1
Fa0/3
Fa0
Fa0
Fa0
PC-PT
PC6
10.0.0.4
PC-PT
PC4
10.0.0.5
Fa0
Fa0
PC-PT
PC7
10.0.0.1
Server-PT
Server0
10.0.0.2

Aim: Exp 1

Dt. 3

1) PC to server

AIM: To set up a point to point network between a PC and a server, facilitating direct communication to observe data exchange

Topology: A PC (PC0) is connected to a server (server0) using a crossover ethernet cable

IP address of PC0 10.0.0.1

IP address of server0 10.0.0.2

Observation: The direct connection allows PC0 to communicate with server0, which is typical in service requests testing server responses to client queries

2) Hub and Switch

AIM: To create a simple network consisting of three PCs connected to a central hub and another network with three PCs connected in a switch. This configuration will help observe the behaviour of data transmission using hub and switch devices

Topology: 1) Hub Network: Three PCs (PC0, PC1, PC2) are connected to a hub (Hub0) using straight-through ethernet cables.

IP addresses: PC0 = 10.0.0.1, PC1=10.0.0.2, PC2= 10.0.0.3

2) Switch Network: Three PCs (PC3, PC4, PC5) are connected to a switch (switch0) using straight through ethernet cable

IP addresses: PC3 = 10.0.0.4 PC4 = 10.0.0.5, PC5 = 10.0.0.6

Procedure:

1) Add 1 hub, 1 switch and 6 PCs (PC0, PC1, PC2 for the hub; PC3, PC4, PC5 for the switch) to the cisco packet tracer workspace.
2) Use copper ~~straight~~ through cables to connect PC0, PC1 and PC2 to Hub0. Next connect PC3, PC4 and PC5 to switch0 using same type of cables.
3) Assign IP addresses to each PC and obtain subnet mask.
4) Switch to simulation mode to observe data traffic behaviour when packets are sent between the devices.
5) In the hub network notice how the hub broadcasts packets to all devices, causing potential traffic overload.
In the switch network, observe how the switch forwards packets only to the intended recipient reducing unnecessary traffic.
6) The hub broadcasts data to all connected devices leading to more network congestion while the switch efficiently sends data only to the correct device, optimizing performance.

Observation:

1) The hub broadcasts packets to all devices which may cause unnecessary traffic.
2) The switch forwards packets only to the appropriate device by learning MAC addresses making it more efficient in reducing traffic.

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