

15-6-2023

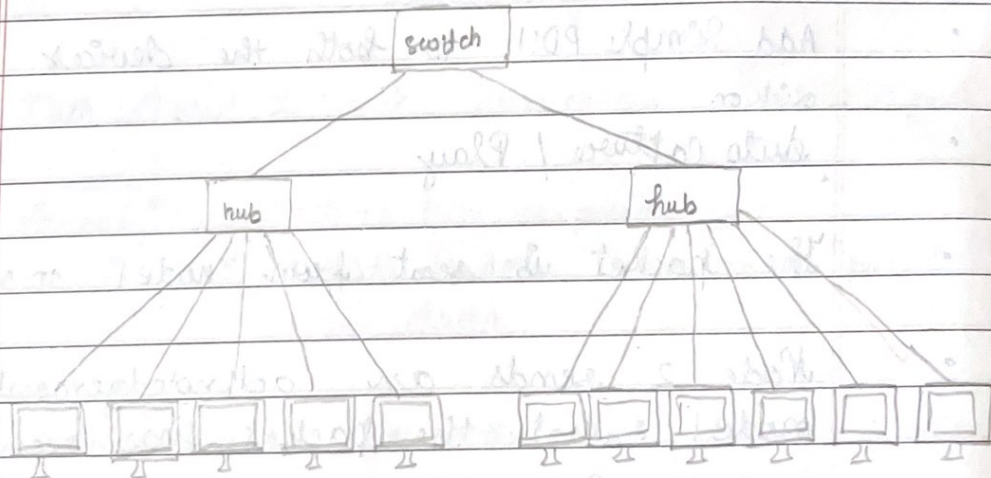
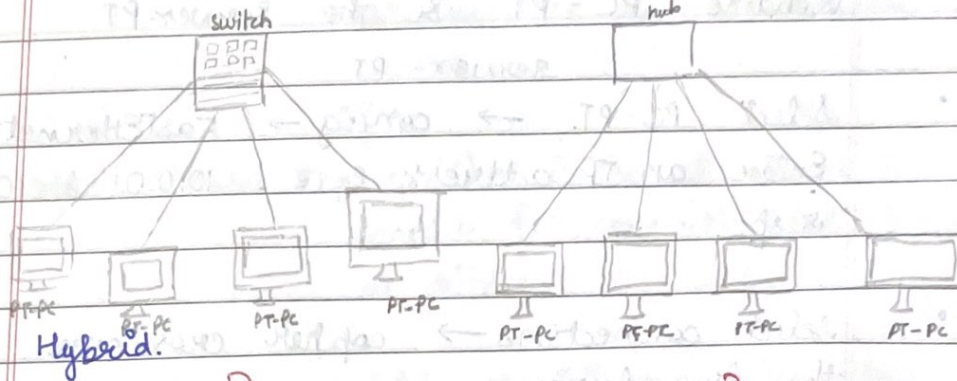
EXPERIMENT - 2

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:

switch:

hub:



Procedure for hub:

- Select a hub from the bottom toolbar.
- select generic PC-PT and insert them into the logical interface
- Add IP Address for each of them.
- Connections, copper straight-through is used to connect the hub and the generic PC-PT.
- Simple PDU's are added to the source and to the destination.
- and the simulation is started.
- Finally an acknowledgement is received by the router.

For Runtime

PC > ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

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

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

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

Reply from 10.0.0.3: bytes = 32 time = 0ms 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 = 0ms, Average = 0ms

PC >

Procedure for switch.

- Consider a generic switch.
- Place upto 10 generic PT-PC's on the logical interface.
- Add an IP address for each of them.
- connect the PT-PC's to the switch using copper straight-through.
- Simple PDU's are added the source and to the destination devices
- and simulation is started
- It initially broadcasts, after it identifies which node it must send the information so its unicasted
- Finally an acknowledgement is ~~send~~ received by the node.

realtime :-

PC> ping 10.0.0.11

Pinging 10.0.0.11 with 32 bytes of data:

Request timed out.

Ping statistics for 10.0.0.11:

Packets : send = 1, Received = 0, lost = 1 (100% loss)

Control - C

^C

PC>

PC> ping 10.0.0.8

Pinging 10.0.0.8 with 32 bytes of data:

Reply from 10.0.0.8: bytes = 32 time = 1ms TTL = 128

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

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

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

Ping statistics for 10.0.0.8:

Packets: Sent = 4, received = 4, lost = 0 (0% loss).

Approximate round trip times in milli-seconds:

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

⇒ Procedure for switch and hub:-

- consider two hubs.
- Place PT-PC's on to the logical interface.
- Add an IP address for each of them.
- connect the PT-PC's to the hubs using copper straight through.
- Then these two hubs will be connected to a switch.
- Simple PDU's are added to the source and to the destination devices.
- simulation is started
- Finally the acknowledgement is received by the node 1.

exit time :-

Packet Tracer PC command line 1.0

PC > ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Replying from 10.0.0.10: bytes=32 time=0ms TTL=128

Reply from 10.0.0.10: bytes=32 time=5ms TTL=128

Reply from 10.0.0.10: bytes=32 time=0ms TTL=128

Reply from 10.0.0.10: bytes=32 times=0ms TTL=128

Ping statistics for 10.0.0.10:

Packets : Sent = 4, Received = 4, lost = 0 (0%)

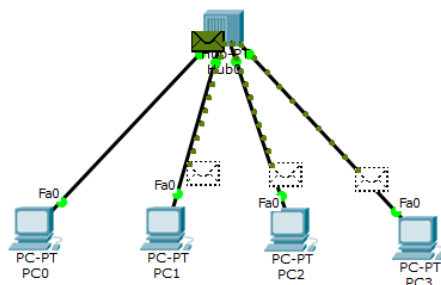
Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 5ms, Average = 1ms

9/10

PC>

N
22/6/23



Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type	Info
	0.000	--	PC0	ICMP	
	0.001	PC0	Hub0	ICMP	
	0.002	Hub0	PC1	ICMP	
	0.002	Hub0	PC2	ICMP	
	0.002	Hub0	PC3	ICMP	

Reset Simulation

☒ Constant Delay

Capturing...

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: 00:43:46.766

Power Cycle Devices

PLAY CONTROLS:

Back

Auto Capture / Play

Capture / Forward

Event List

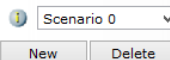
Simulation



Connections



Copper Straight-Through



New

Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	In Progress	PC0	PC2	ICMP		0.000	N	0

Physical

Config

Desktop

Custom Interface

Command Prompt

X

PC>reset

Invalid Command.

PC>clear

Invalid Command.

PC>cls

Invalid Command.

PC>cli

Invalid Command.

PC>

PC>

PC>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

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

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

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

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

Ping statistics for 10.0.0.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

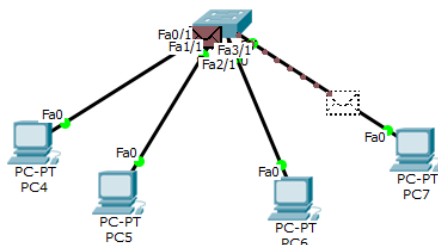
Approximate round trip times in milli-seconds:

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

PC>



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



Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type	Info
	0.000	--	PC4	ICMP	
	0.001	PC4	Switch0	ICMP	
	0.002	Switch0	PC7	ICMP	

Reset Simulation

☒ Constant DelayCaptured to: *
0.002 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: 00:43:27.544

Power Cycle Devices

PLAY CONTROLS:

Back

Auto Capture / Play

Capture / Forward

Event List

Simulation



Connections



Copper Straight-Through

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	In Progress	PC4	PC7	ICMP		0.000	N	0

Physical

Config

Desktop

Custom Interface

Command Prompt

```
PC>ping 10.0.0.11
```

```
Pinging 10.0.0.11 with 32 bytes of data:
```

```
Request timed out.
```

```
Ping statistics for 10.0.0.11:
```

```
    Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),
```

```
Control-C
```

```
^C
```

```
PC>
```

```
PC>ping 10.0.0.
```

```
Ping request could not find host 10.0.0.. Please check the name and try again.
```

```
PC>ping 10.0.0.8
```

```
Pinging 10.0.0.8 with 32 bytes of data:
```

```
Reply from 10.0.0.8: bytes=32 time=1ms TTL=128
```

```
Reply from 10.0.0.8: bytes=32 time=0ms TTL=128
```

```
Reply from 10.0.0.8: bytes=32 time=0ms TTL=128
```

```
Reply from 10.0.0.8: bytes=32 time=0ms TTL=128
```

```
Ping statistics for 10.0.0.8:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

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

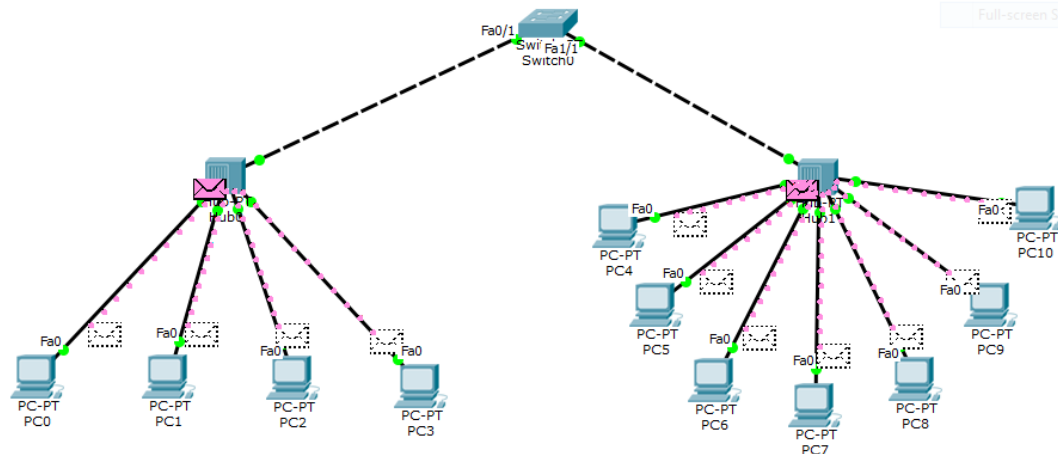
```
PC>
```



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



Full-screen Snip



Time: 00:29:54.245 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Event List

Simulation

Connections



Copper Straight-Through

Scenario 0

New

Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	Successful	PC0	PC8	ICMP		0.000	N	0



Physical

Config

Desktop

Custom Interface

Command Prompt

X

Packet Tracer PC Command Line 1.0

PC>ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time=0ms TTL=128

Reply from 10.0.0.10: bytes=32 time=5ms TTL=128

Reply from 10.0.0.10: bytes=32 time=0ms TTL=128

Reply from 10.0.0.10: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.10:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 5ms, Average = 1ms

PC>|