



Date: 27 / 06 / 2025

Lab Practical #04:

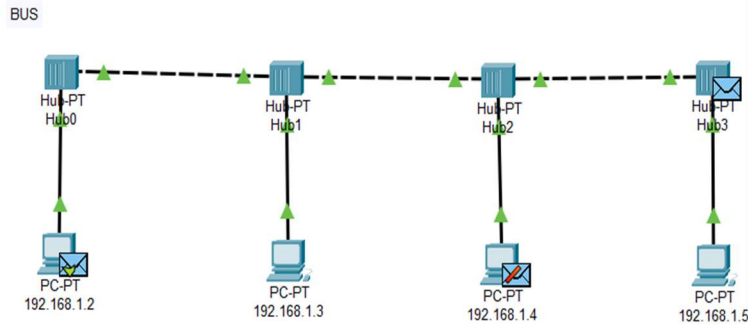
Installation of Network Simulator (Packet Tracer) and Implement different LAN topologies.

Practical Assignment #04:

- 1. Create a simple network with switch and two or more pc. Also check connectivity between them using ping command or PDU utility.**
- 2. Implement different topologies in packet tracer.**
 - a. Bus**
 - b. Ring**
 - c. Star**
 - d. Mesh**
 - e. Tree**

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a. Bus



PDU Information at Device: 192.168.1.2

OSI Model | Inbound PDU Details

At Device: 192.168.1.2
Source: 192.168.1.2
Destination: 192.168.1.3

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 0	
Layer 2: Ethernet II Header 00E0.F98A.A935 >> 00D0.FF36.425C	
Layer 1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

PDU Information at Device: 192.168.1.2

OSI Model | Inbound PDU Details

PDU Formats

EthernetII

Bytes			
PREAMBLE: 101010...10		DEST ADDR: 00D0.FF36.425C	
SRC ADDR: 00E0.F98A.A935	TYPE: 0x00	DATA (VARIABLE LENGTH)	FCS: 0x00000000

IP

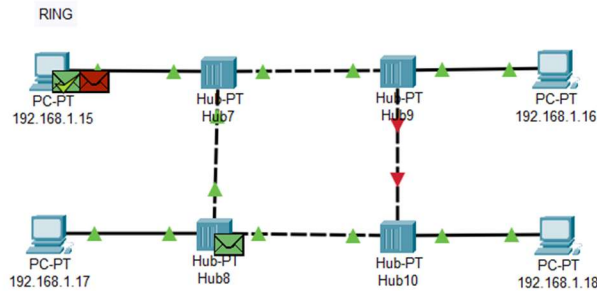
Bits			
VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x0004		FLAGS: 0x0	FRAG OFFSET: 0x000
TTL: 128	PRO: 0x01	CHKSUM	
SRC IP: 192.168.1.3			
DST IP: 192.168.1.2			
DATA (VARIABLE LENGTH)			

ICMP

Bits		
TYPE: 0x00	CODE: 0x00	CHECKSUM

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b. Ring



PDU Information at Device: 192.168.1.15

OSI Model | Inbound PDU Details

At Device: 192.168.1.15
Source: 192.168.1.15
Destination: Broadcast

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer3
Layer2: Ethernet II Header	Layer2
00E0.A323.7918 >> 0000.0C8B.6B0D ARP	
Packet Src. IP: 192.168.1.16, Dest. IP: 192.168.1.15	
Layer 1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

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PDU Information at Device: 192.168.1.15

OSI Model | **Inbound PDU Details**

PDU Formats

EthernetII

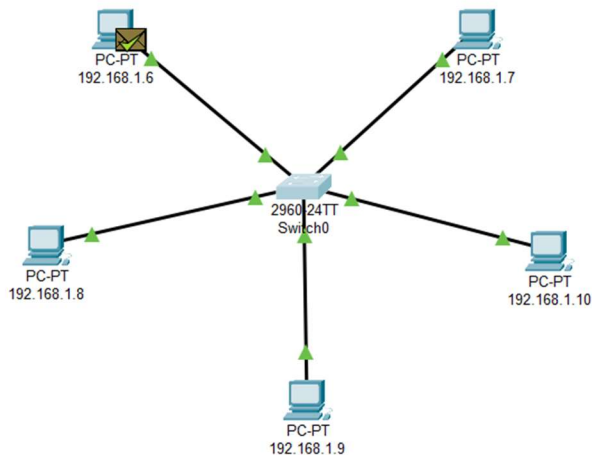
Bytes			
PREAMBLE: 101010...10		SF D	DEST ADDR: 0000.0C8B.6B0D
SRC ADDR: 00E0.A323.7918	TYPE: 0x0806	DATA (VARIABLE LENGTH)	FCS: 0x00000000

Arp

Bits		
HARDWARE TYPE: 0x0001		PROTOCOL TYPE: 0x0800
HLEN: 0x06	PLEN: 0x04	OPCODE: 0x0002
SOURCE MAC : 00E0.A323.7918		
SOURCE IP : 192.168.1.16		
TARGET MAC: 0000.0C8B.6B0D		
TARGET IP: 192.168.1.15		

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c. Star



PDU Information at Device: 192.168.1.6

OSI Model | Inbound PDU Details

At Device: 192.168.1.6
Source: 192.168.1.6
Destination: 192.168.1.10

In Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3: IP Header Src. IP: 192.168.1.10, Dest. IP: 192.168.1.6 ICMP Message Type: 0
- Layer2: Ethernet II Header 0030.F239.7E86 >> 0090.219A.5AEC
- Layer1: Port FastEthernet0**

Out Layers

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer2
- Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

PDU Information at Device: 192.168.1.6

OSI Model | Inbound PDU Details

PDU Formats

EthernetII

Bytes			
PREAMBLE: 101010...10	SF D	DEST ADDR: 0090.219A.5A EC	
SRC ADDR: 0030.F239.7E86	TYPE: 0x0800	DATA (VARIABLE LENGTH)	FCS: 0x00000000

IP

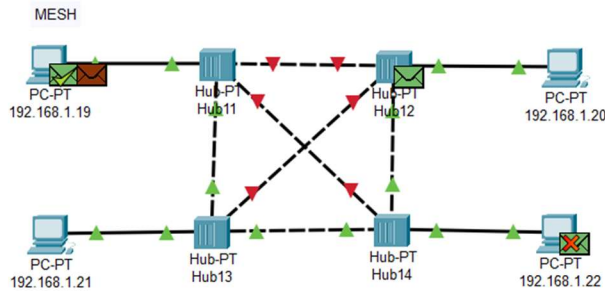
Bits			
VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x0004		FLAGS: 0x0	FRAG OFFSET: 0x000
TTL: 128	PRO: 0x01	CHKSUM	
SRC IP: 192.168.1.10			
DST IP: 192.168.1.6			
DATA (VARIABLE LENGTH)			

ICMP

Bits		
TYPE: 0x00	CODE: 0x00	CHECKSUM

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d. Mesh



PDU Information at Device: 192.168.1.19

OSI Model Inbound PDU Details

At Device: 192.168.1.19
Source: 192.168.1.19
Destination: Broadcast

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer3
Layer 2: Ethernet II Header	
0001.4244.D877 >> 0001.C7EC.7DC5 ARP	
Packet Src. IP: 192.168.1.21, Dest. IP: 192.168.1.19	
Layer 1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

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PDU Information at Device: 192.168.1.19

OSI Model Inbound PDU Details

PDU Formats

EthernetII

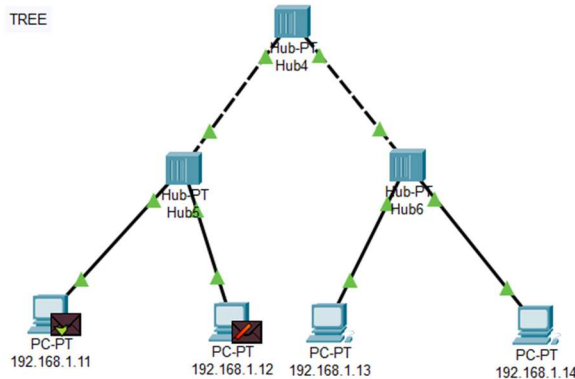
Bytes			
PREAMBLE: 101010..10		SF D	DEST ADDR:0001.C7EC.7DC5
SRC ADDR:0001.4244.D877	TYPE:0x0806	DATA (VARIABLE LENGTH)	FCS:0x00000000

Arp

Bits		
HARDWARE TYPE:0x0001		PROTOCOL TYPE:0x0800
HLEN:0x06	PLEN:0x04	OPCODE:0x0002
SOURCE MAC :0001.4244.D877		
SOURCE IP :192.168.1.21		
TARGET MAC:0001.C7EC.7DC5		
TARGET IP:192.168.1.19		

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e. Tree



PDU Information at Device: 192.168.1.11

OSI Model Inbound PDU Details

At Device: 192.168.1.11
Source: 192.168.1.11
Destination: 192.168.1.14

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3: IP Header Src. IP: 192.168.1.14, Dest. IP: 192.168.1.11 ICMP Message Type: 0	Layer3
Layer2: Ethernet II Header 0060.2F7B.3B5E >> 0060.4725.61C3	Layer2
Layer1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

PDU Information at Device: 192.168.1.11

OSI Model Inbound PDU Details

PDU Formats

EthernetII

Bytes			
PREAMBLE: 101010..10	SF D	DEST ADDR: 0060.4725.61C3	
SRC ADDR: 0060.2F7B.3B5E	TYPE: 0x0800	DATA (VARIABLE LENGTH)	FCS: 0x00000000

IP

Bits			
VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x000a		FLAGS: 0x0	FRAG OFFSET: 0x000
TTL: 128	PRO: 0x01	CHKSUM	
SRC IP: 192.168.1.14			
DST IP: 192.168.1.11			
DATA (VARIABLE LENGTH)			

ICMP

Bits		
TYPE: 0x00	CODE: 0x00	CHECKSUM