

LABORATORY PROGRAM – 7

Demonstrate the TTL/ Life of a Packet

⑧ Demonstrate the TTL/Life of a packet.

> Observation:

① Before Routing information Protocol:

In Router 2:-

(Show IP route)

C 30.0.0.0/8 is directly Connected

C 50.0.0.0/8 is directly Connected

R 10.0.0.0/8 [120/2] via 50.0.0.1

Procedure:-

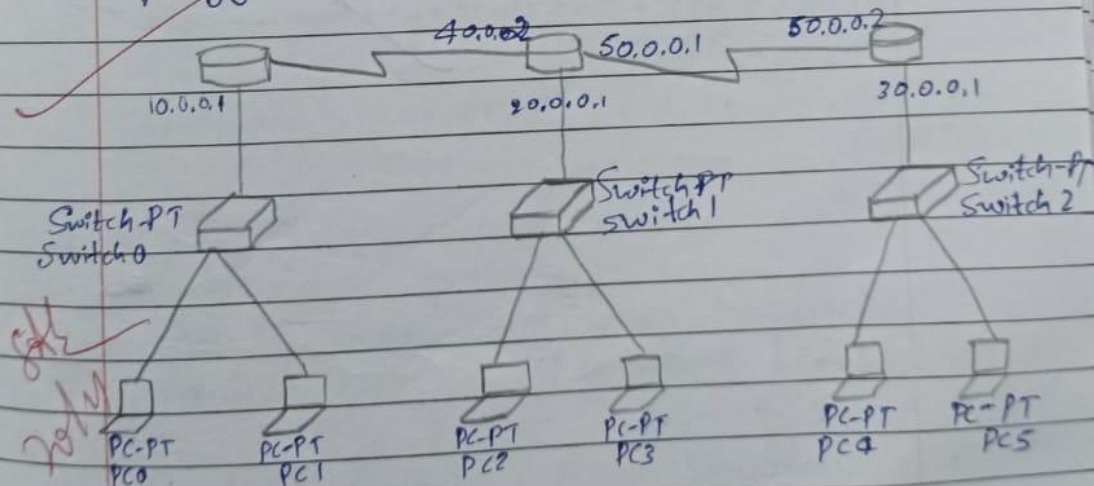
- ① Demonstrate TTL using Same Topology.
- ② Send a Simple PDU for end Devices 10.0.0.2 to 30.0.0.3 in Simulation Mode.
- ③ Create the Topology as Shown in figure before and also configure the Routers before Demonstrating using TTL.

Observations:-

- ① Router 0:
Inbound Details: TTL: 255
Outbound Details: TTL: 254
- ② Router 1:
Inbound Details: TTL: 254
Outbound Details: TTL: 253
- ③ Router 2:
Inbound Details: TTL: 253
Outbound Details: TTL: 252

TTL reduces after passing through every router

Topology:-



PDU Information at Device: Router0

OSI Model Inbound PDU Details Outbound PDU Details

At Device: Router0
Source: PC0
Destination: PC3

In Layers

Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 10.0.0.2, Dest. IP: 20.0.0.3 ICMP Message Type: 8
Layer 2: Ethernet II Header 000A.41E3.E33A >> 0010.11A0.4697
Layer 1: Port FastEthernet0/0

Out Layers

Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 10.0.0.2, Dest. IP: 20.0.0.3 ICMP Message Type: 8
Layer 2: HDLC Frame HDLC
Layer 1: Port(s): Serial2/0

1. FastEthernet0/0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

PDU Information at Device: Router0

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

Ethernet II

0	4	8	14	19	Byt
PREAMBLE: 101010...1011		DEST MAC: 0010.11A0.4697		SRC MAC: 000A.41E3.E33A	
TYPE: 0x800		DATA (VARIABLE LENGTH)		FCS: 0x0	

IP

0	4	8	16	19	31	Bits	
4		IHL		DSCP: 0x0		TL: 28	
ID: 0xa				0x0		0x0	
TTL: 255				PRO: 0x1		CHKSUM	
SRC IP: 10.0.0.2							
DST IP: 20.0.0.3							
OPT: 0x0						0x0	
DATA (VARIABLE LENGTH)							

ICMP

0	8	16	31	Bits
TYPE: 0x8		CODE: 0x0		CHECKSUM

PDU Information at Device: Router0

OSI Model

Inbound PDU Details

Outbound PDU Details

PDU Formats

HDLC

0	8	16	32	32+x	48+x	56+x
FLG: 0111 1110	ADR: 0x8f	CONTROL: 0x0	DATA: (VARIABLE LENGTH)	FCS: 0x0	FLG: 0111 1110	

IP

0	4	8	16	19	31 Bits
4	IHL	DSCP: 0x0	TL: 28		
ID: 0xa			0x0	0x0	
TTL: 254		PRO: 0x1	CHKSUM		
SRC IP: 10.0.0.2					
DST IP: 20.0.0.3					
OPT: 0x0				0x0	
DATA (VARIABLE LENGTH)					

ICMP

0	8	16	31 Bits
TYPE: 0x8	CODE: 0x0	CHECKSUM	
ID: 0x5		SEQ NUMBER: 10	