WEEK 10

Demonstrate the TTL/ Life of a Packet.
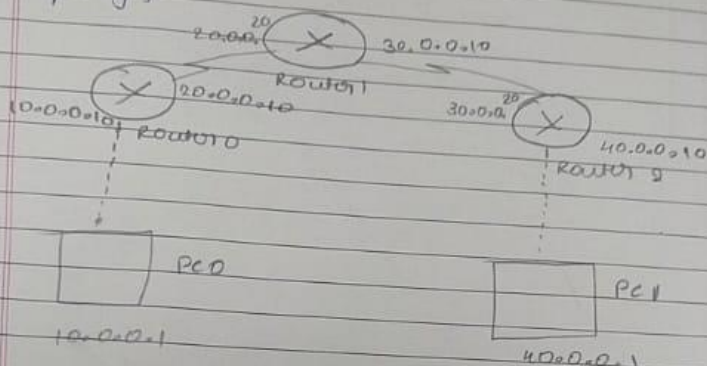
OBSERVATION:

R2(config)-router)# exit

Apm

Demonstrate The TTL /life of a packet

Topology

Procedure:
- create a topology as shown above with two PC's and 3 Routers
- Set the IP address and gateway for both PC's
- configure The router eather Static /default route way
- an simulation mode send a simple PDU from one PC to another
- Use capture button to capture every transfer.
- Click on The PDU during every transfer to see The Inbound & outbound PDU details

output

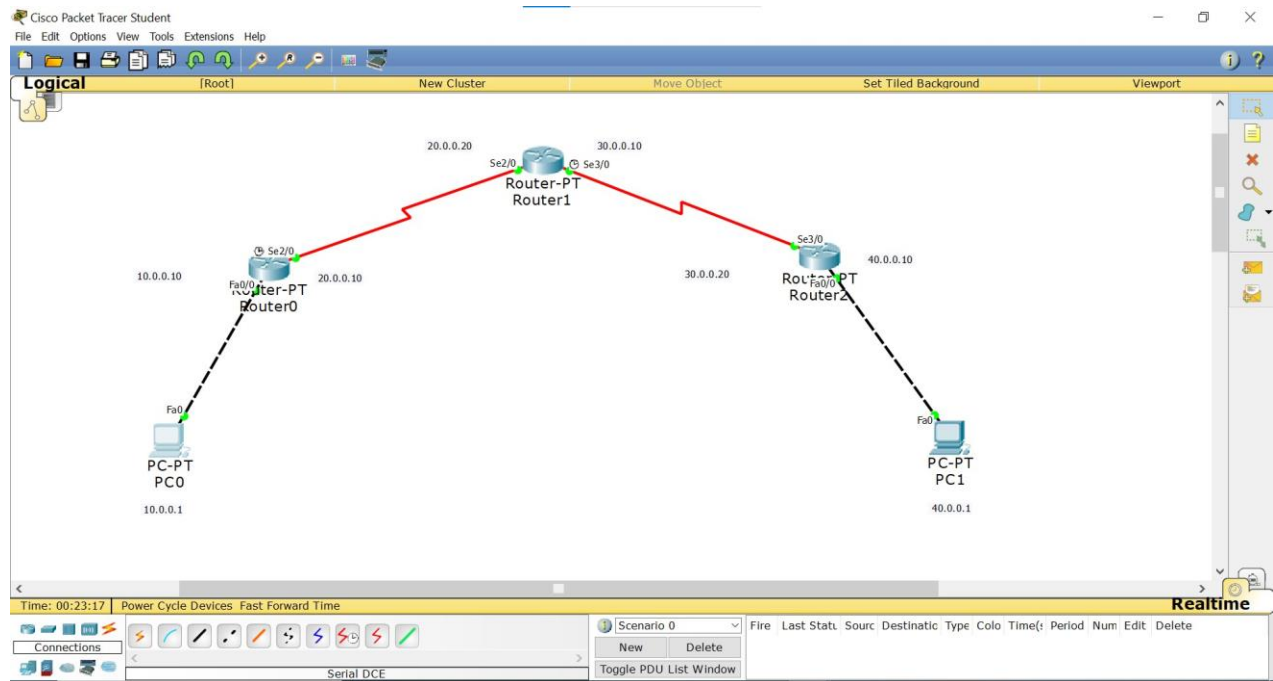|			8	16	19		31
V	IHL	DSCP		TL:28			
	ID:0x6			0x	0x0		
TTL:255		PRO:0x1		CHKSUM			
		SRCIP: 10.0.0.1					
		DST IP : 140.0.0.1					
	OPT 0x0				0x0		
		Data (variable length)					

Observation

The no of hops The packet travel before
being discared as TTI
Datagrams TTL field is set by the sender
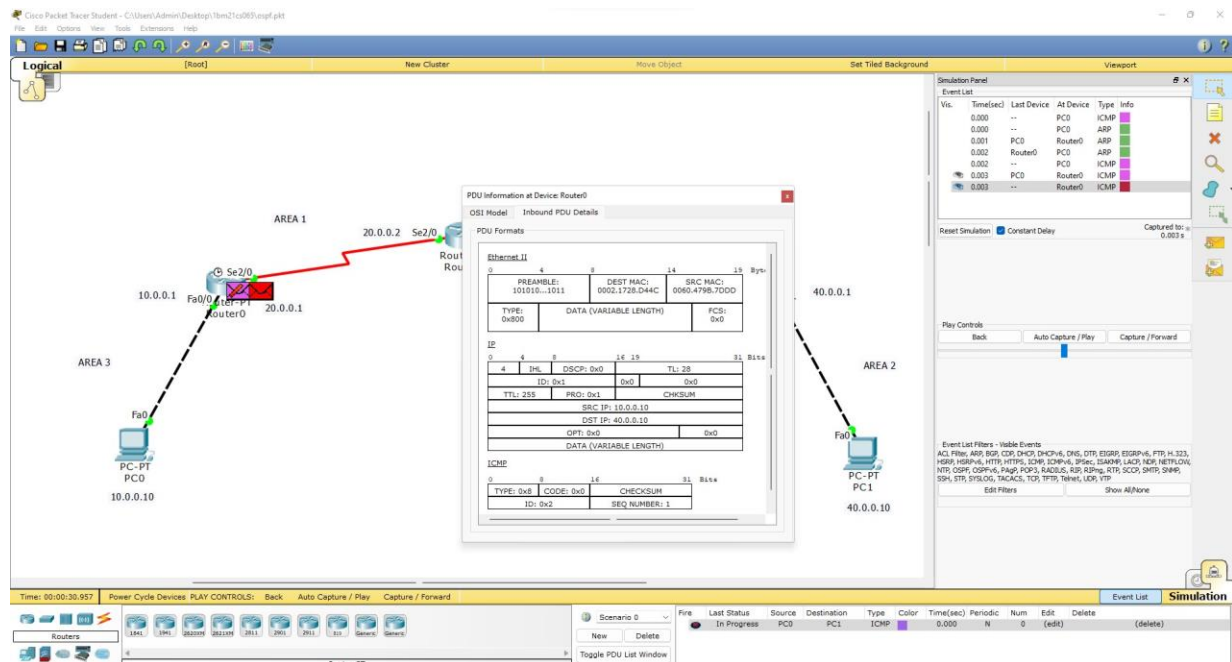& reduced by each router along the path
to its destination

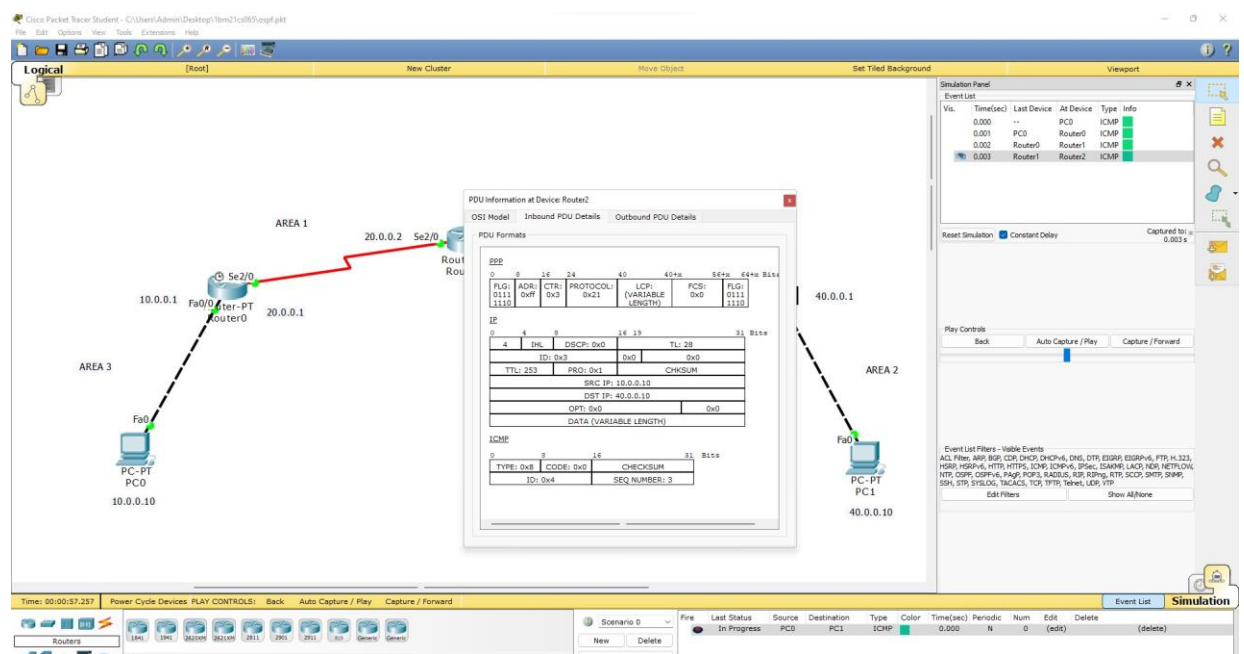The router reduce TTL value by one while
forwarding the packets
when the TTL value is 0, The router discards
it & sends an ICMP message

TOPOLOGY:

OUTPUT:

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

AREA 1

20.0.0.2   Se2/0

Se2/0

Router
Rou

10.0.0.1   Fa0/0 ter-PT
Router0   20.0.0.1

AREA 3

40.0.0.1

AREA 2

Fa0

PC-PT
PC0

10.0.0.10

Fa0

PC-PT
PC1

40.0.0.10

PDU Information at Device: Router1

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats

PPP

| 0 | 8 | 16 | 24 | 40 | 40+n | 56+n | 64+n Bits |
| FLG: 0111 1110 | ADR: 0xff | CTR: 0x3 | PROTOCOL: 0x21 | LCP: (VARIABLE LENGTH) | | FCS: 0x0 | FLG: 0111 1110 |

IP

0	4	8		16	19		31 Bits
4	IHL	DSCP: 0x0			TL: 28		
ID: 0x3			0x0			0x0	
TTL: 254		PRO: 0x1		CHKSUM			
SRC IP: 10.0.0.10							
DST IP: 40.0.0.10							
OPT: 0x0					0x0		
DATA (VARIABLE LENGTH)							

ICMP

0	8	16		31 Bits
TYPE: 0x8	CODE: 0x0	CHECKSUM		
ID: 0x4		SEQ NUMBER: 3		

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type	Info
	0.000	--	PC0	ICMP	
	0.001	PC0	Router0	ICMP	
	0.002	Router0	Router1	ICMP	

Reset Simulation   ☑ Constant Delay   Captured 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, NDR, 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: 00:00:57.256   Power Cycle Devices PLAY CONTROLS: Back   Auto Capture / Play   Capture / Forward

Routers

Scenario 0

| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit | Delete |
| | In Progress | PC0 | PC1 | ICMP | | 0.000 | N | 0 | (edit) | (delete) |

New   Delete

Event List   **Simulation**

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

AREA 1

20.0.0.2   Se2/0

Router
Rou

10.0.0.1   Fa0/0 ter-PT
Router0   20.0.0.1

AREA 3

40.0.0.1

AREA 2

Fa0

PC-PT
PC0

10.0.0.10

Fa0

PC-PT
PC1

40.0.0.10

PDU Information at Device: Router2

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats

PPP

| 0 | 8 | 16 | 24 | 40 | 40+n | 56+n | 64+n Bits |
| FLG: 0111 1110 | ADR: 0xff | CTR: 0x3 | PROTOCOL: 0x21 | LCP: (VARIABLE LENGTH) | | FCS: 0x0 | FLG: 0111 1110 |

IP

0	4	8		16	19		31 Bits
4	IHL	DSCP: 0x0			TL: 28		
ID: 0x3			0x0			0x0	
TTL: 253		PRO: 0x1		CHKSUM			
SRC IP: 10.0.0.10							
DST IP: 40.0.0.10							
OPT: 0x0					0x0		
DATA (VARIABLE LENGTH)							

ICMP

0	8	16		31 Bits
TYPE: 0x8	CODE: 0x0	CHECKSUM		
ID: 0x4		SEQ NUMBER: 3		

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type	Info
	0.000	--	PC0	ICMP	
	0.001	PC0	Router0	ICMP	
	0.002	Router0	Router1	ICMP	
	0.003	Router1	Router2	ICMP	

Reset Simulation   ☑ Constant Delay   Captured to: 0.003 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, NDR, 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: 00:00:57.257   Power Cycle Devices PLAY CONTROLS: Back   Auto Capture / Play   Capture / Forward

Routers

Scenario 0

| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit | Delete |
| | In Progress | PC0 | PC1 | ICMP | | 0.000 | N | 0 | (edit) | (delete) |

New   Delete

Event List   **Simulation**