

WEEK 10

Demonstrate the TTL/ Life of a Packet.

OBSERVATION:

classmate
Date _____
Page _____

10/5/23

LAB-10

AIM-
Demonstrate the TTL / life of a Packet

TOPOLOGY-

Router 0: Fa0/0 (10.0.0.10) connected to PC (10.0.0.1). Se2/0 (20.0.0.20) connected to Router 1 Se3/0 (20.0.0.10).
Router 1: Se2/0 (20.0.0.10) connected to Router 0 Se3/0 (30.0.0.10). Se3/0 (30.0.0.20) connected to Router 2 Fa0/0 (40.0.0.10).
Router 2: Se3/0 (30.0.0.20) connected to Router 1 Fa0/0 (40.0.0.10) connected to PC (40.0.0.1).

PC 1: 10.0.0.1
PC 2: 40.0.0.1

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 routers either static/default routing way.
- In 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:

IP

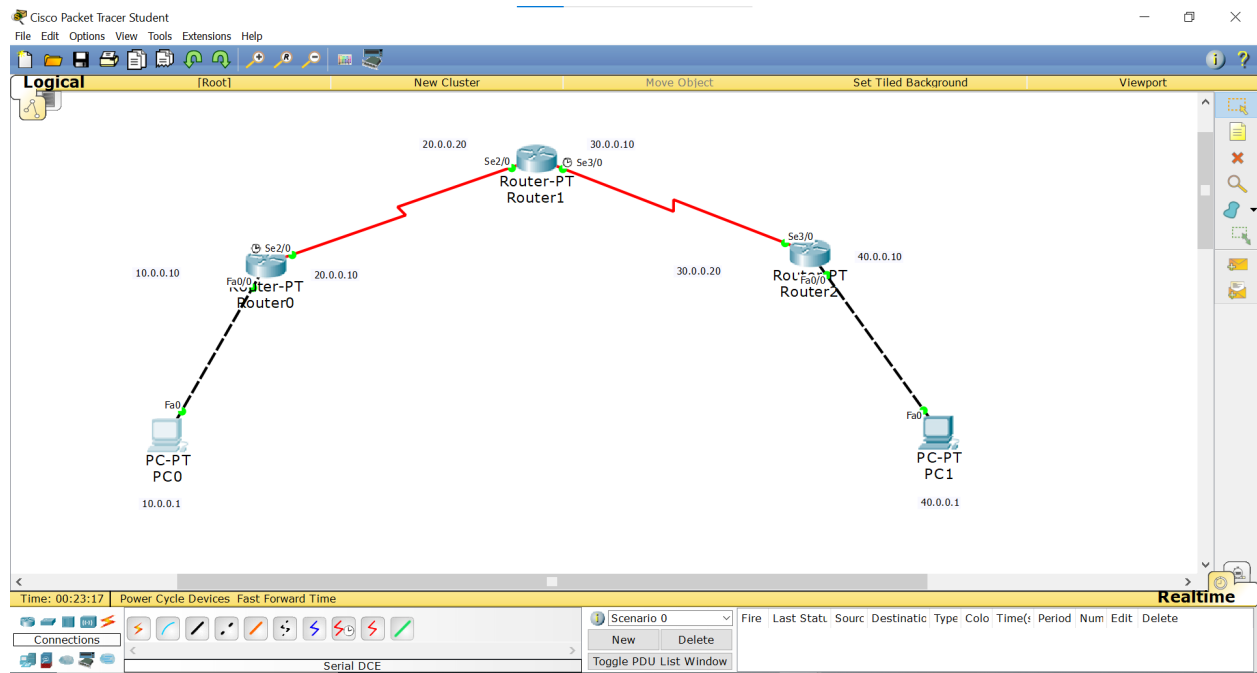
0	4	8	16	19	(TTL) 81
4	IHL: 5	DSO: 0	17	TTL: 28	
	ID: 0x6		0x	0x0	
	TTL: 255	PRO: 0x1		CHKSUM: 0x00000000	
				SRC IP: 10.0.0.1	
				DST IP: 40.0.0.1	
				OPT: 0x0	0x0
					DATA (VARIABLE LENGTH)

OBSERVATION -

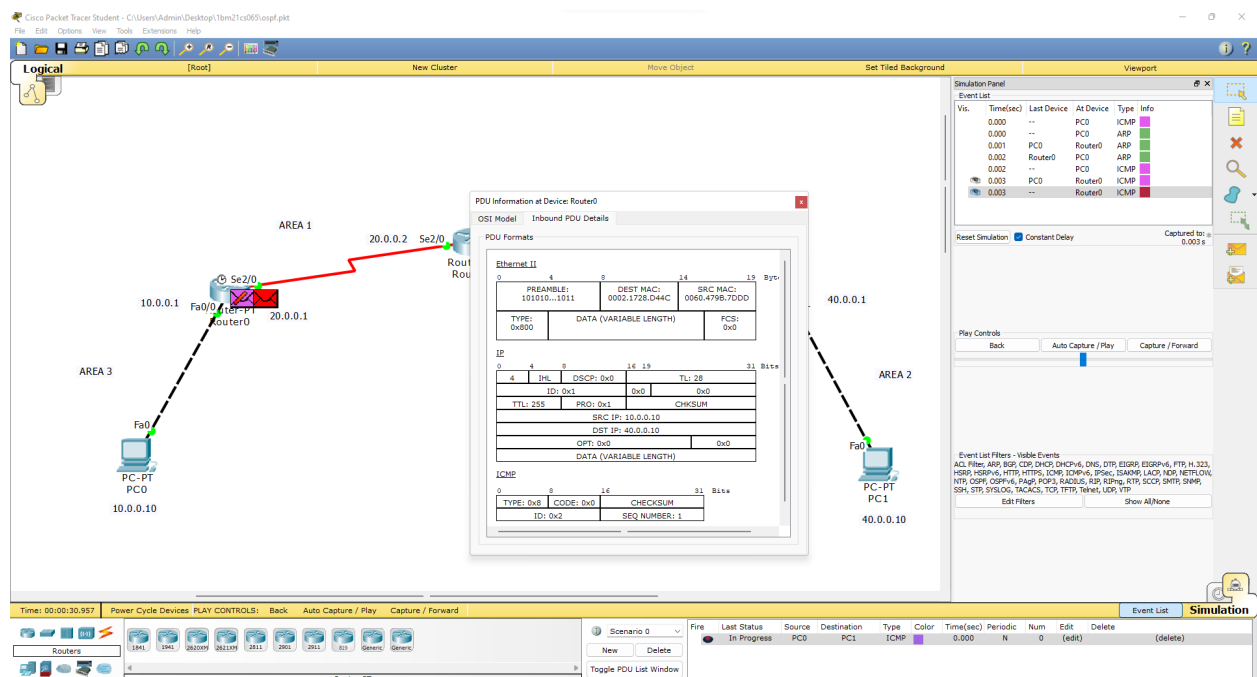
- The no. of hops the packet travel before being discarded as TTL
- Datagrams TTL field is set by the sender & reduced by each router along the path to its destination.
- The router reduces TTL value by one while forwarding the packets.
- When the TTL value is 0, the router discards it & sends an ICMP message.

18/8/2022

TOPOLOGY:



OUTPUT:



Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1bm21cs05\ospf.pkt

File Edit Options View Tools Extensions Help

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	-	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

AQ, Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTLS, EIGRP, EIGRPv6, FTP, H.323, HTTP, HTTPS, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, NTP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RDP, RDPing, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTY

Edit Filters Show All/None

Time: 00:00:37.236 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 New Delete

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete (delete)

In Progress PC0 PC1 ICMP 0.000 N 0 (edit)

Simulation

PDU Information at Device: Router1

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

IP

0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
FLG:	ADR:	CTR:	PROT:	COL:	LCP:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:
0111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

ICMP

0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
TYPE:	CODE:	CHECKSUM:													
00	00	0000													
ID:	00	0000													
SEQ NUMBER:	3														

Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1bm21cs05\ospf.pkt

File Edit Options View Tools Extensions Help

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	-	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

AQ, Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTLS, EIGRP, EIGRPv6, FTP, H.323, HTTP, HTTPS, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, NTP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RDP, RDPing, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTY

Edit Filters Show All/None

Time: 00:00:37.237 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 New Delete

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete (delete)

In Progress PC0 PC1 ICMP 0.000 N 0 (edit)

Simulation

PDU Information at Device: Router2

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

IP

0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
FLG:	ADR:	CTR:	PROT:	COL:	LCP:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:	FC:
0111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

ICMP

0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
TYPE:	CODE:	CHECKSUM:													
00	00	0000													
ID:	00	0000													
SEQ NUMBER:	3														

Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1bm21ca069\ospf.pkt

File Edit Options View Tools Extensions Help

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	-	PC0	ICMP	
-	0.001	PC0	Router0	ICMP	
-	0.002	Router0	Router1	ICMP	
-	0.003	Router1	Router2	ICMP	
-	0.004	Router2	PC1	ICMP	

Reset Simulation Constant Delay Captured to: 8,004s

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, NTP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RDP, RDPing, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VTY

Edit Filters Show All/None

Time: 00:00:57.258 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)

Diagram Description: The diagram shows a network topology with three areas. AREA 1 contains Router0 (Fa0/0: 10.0.0.1, Se2/0: 20.0.0.2) and Router1 (Fa0/0: 20.0.0.1, Se2/0: 20.0.0.2). AREA 2 contains Router2 (Fa0/0: 40.0.0.1, Se2/0: 40.0.0.1) and PC1 (40.0.0.10). AREA 3 contains PC0 (10.0.0.10). The connections are: PC0 to Router0 (Fa0/0), Router0 (Se2/0) to Router1 (Fa0/0), Router1 (Se2/0) to Router2 (Fa0/0), and Router2 (Se2/0) to PC1 (Fa0/0).