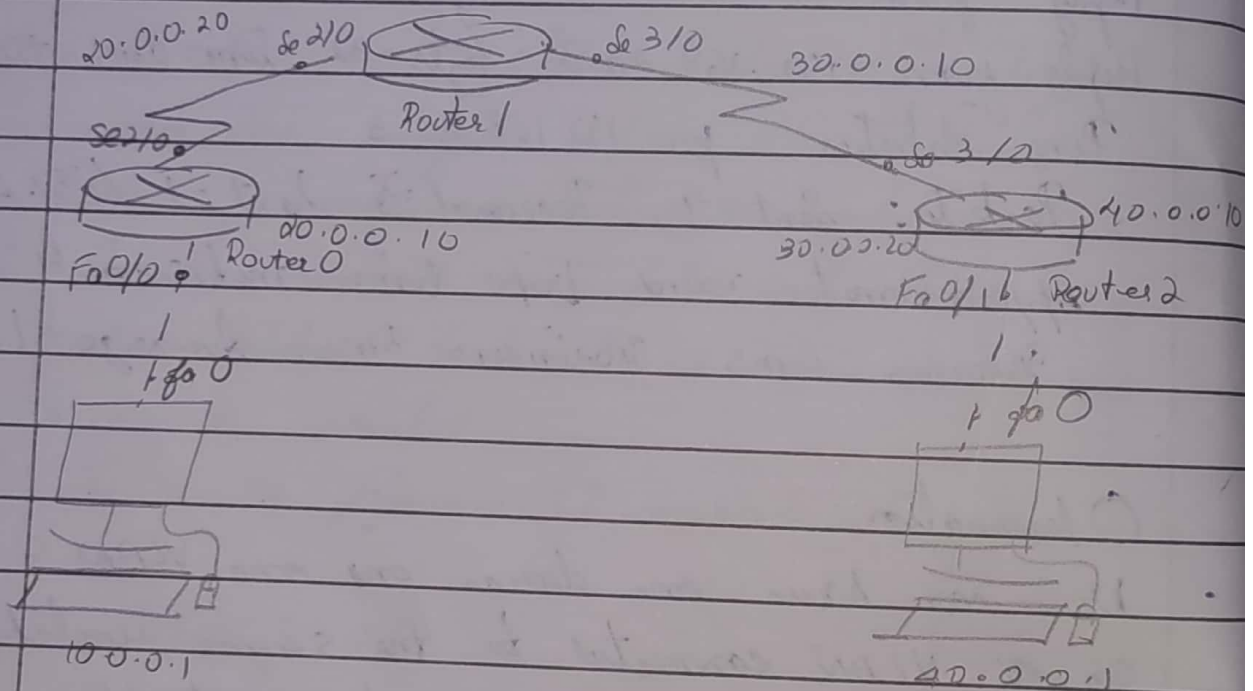


Lab 10

Aim:

Demonstrate TTL / life of a packet



Procedure:

- Create a topology as shown above with two PCs and 3 routers.
- Set the IP address and gateway for both PCs.
- 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:

0	4	8	16	19	31
V ⁴	HL	DS CP	TL: 28		
ID: 0x6			0x	0x0	
TTL: 255		PRO: 0x1	CHKSUM		
SRC IP: 10.0.0.1					
DST IP: 40.0.0.1					
OPT: 0x0					0x0
DATA					

OBSERVATION:

- The no. of hops the packet travel before being discarded as TTL
- Datagram's 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.

File Edit Layout View Tools Extensions Help

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

PDU Information at Device: PC0

OSI Model Outbound PDU Details

PDU Formats

Ethernet II

PREAMBLE:		DEST MAC:		SRC MAC:	
101010...101					
TYP E:		DATA (VARIABLE LENGTH)		FCS :	

IP

ID:		DSCP:		TL:	
0x2		0x1		0x0	
TTL: 255		PRO: 0x1		CHKSUM	
SRC IP: 10.0.0.1		DST IP: 40.0.0.1		OPT: 0x0	
DATA (VARIABLE LENGTH)				0x0	

ICMP

TYPE:		CODE:		CHECKSUM	
ID: 0x3		SEQ NUMBER: 2			

Simulation Panel

Event List

Vis.	Time(sec)	Last De	At Dev	Type	Info
	0.000	--	PC0	ICMP	

Reset Simulation ☒ Constant Delay Captured to: 0.000 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, NTP, NETFLOW, VTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCF, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:00:24.545 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0

New Delete

Fire Last Statu Sourc Destinatic Type Colo Time(Period Num Edit Delete

In Progr... PC0 PC1 IC... 0.000 N 0 (ed... (delete)

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

PDU Information at Device: Router0

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

HDLC

FL	AD	CONTR	DATA:	FCS:	FL
G:	R:	OL:	(VARIABLE)	0x0	G:

IP

4	IHL	DSCP:	TL:
ID:	0x2	0x	0x0
TTL:	254	PRO:	0x1
SRC IP: 10.0.0.1			
DST IP: 40.0.0.1			
OPT: 0x0			
DATA (VARIABLE LENGTH)			

ICMP

TYPE:	CODE:	CHECKSUM
ID:	0x3	SEQ NUMBER: 2

Simulation Panel

Event List

Time(sec)	Last De	At Dev	Type	Info
0.000	--	PC0	ICMP	
0.001	PC0	Rout...	ICMP	

Set Simulation ☒ Constant Delay

Back Auto Capture / Play Capture / For

Event List Filters - Visible Events

Filter: ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FT...

Edit Filters Show All/None

Event List

Source	Destination	Type	Color	Time(s)	Period	Num	Edit	Delete
PC0	PC1	IC...		0.000	N	0	(ed...	

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

PDU Information at Device: Router2

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

Ethernet II

PREAMBLE:		DEST MAC:		SRC MAC:	
101010...		101		19 ytes	

IP

TYP E:		DATA (VARIABLE LENGTH)		FCS :	
E:					

ICMP

TYPE:		CODE:		CHECKSUM	
ID: 0x3		SEQ NUMBER: 2			

Simulation Panel

Event List

Time(sec)	Last De	At Dev	Type	Info
0.000	--	PC0	ICMP	
0.001	PC0	Rout...	ICMP	
0.002	Router0	Rout...	ICMP	
0.003	Router1	Rout...	ICMP	

Set Simulation ☒ Constant Delay Captured to: 0.003 s

Play Controls

Back Auto Capture / Play Capture / Forward

Event List Filters - Visible Events

Filter: ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, IP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, NDP, NETFLOW, OSPF, OSPFv6, PAg, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:00:24.548 Power Cycle Devices PLAY CONTROLS: Back Auto

Routers

New Delete

Simulation Panel

Sourc	Destinatio	Type	Color	Time(s)	Period	Num	Edit	Delete
PC0	PC1	IC...		0.000	N	0	(ed...)	(delete)