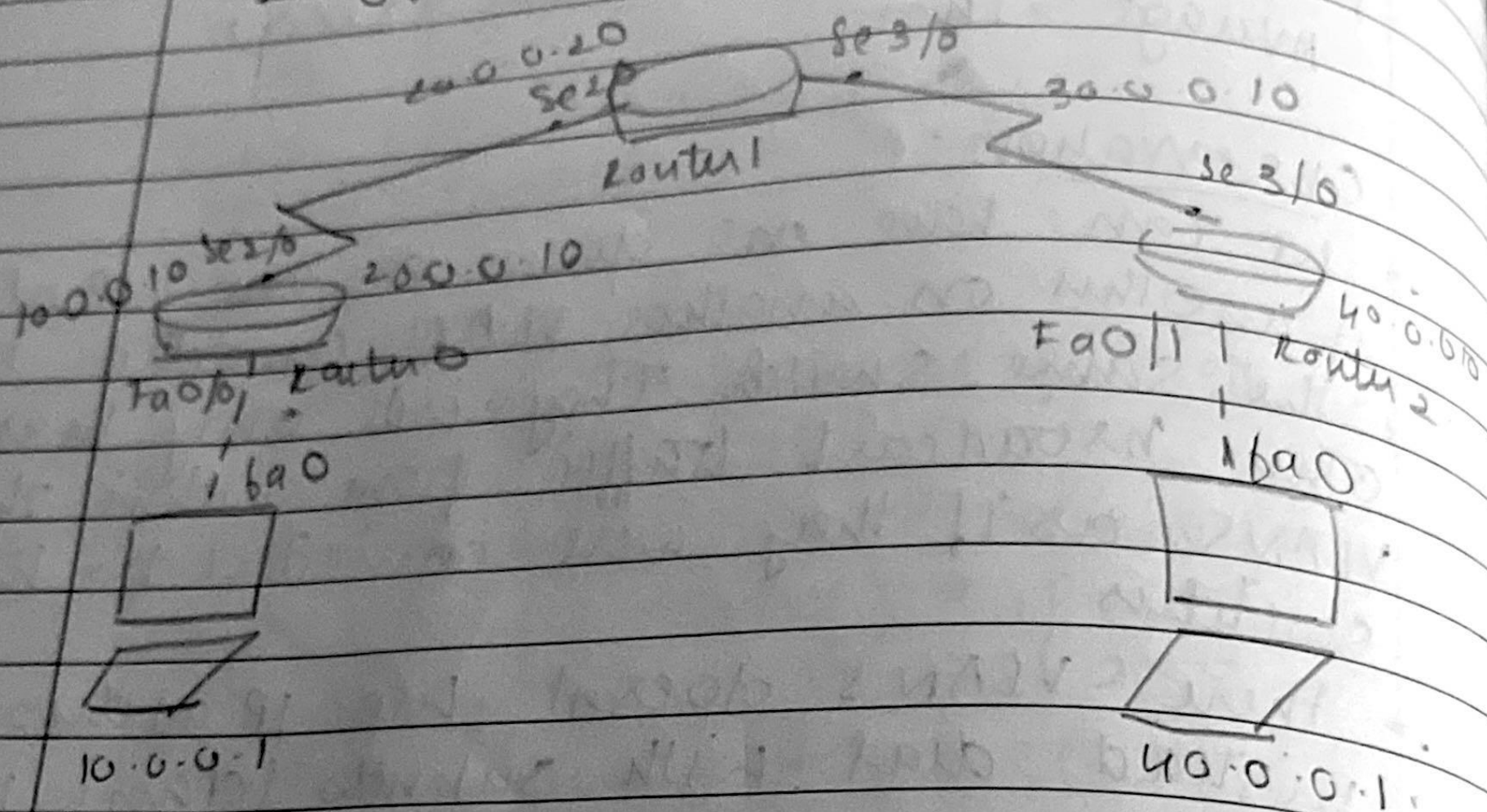10 Am | Demonstrate the TTL / life of a Packet

Topology

Procedure:

1) Create a topology as shown above with 2 PCS and 3 routers

2) Set the IP address and gateway for both PCS configure the routers either static / default routing way.

3) In simulation mode send a simple PDU from one PC to another.

4) Use capture button to capture every transfer

5) Click on the PDU during every transfer to see the inbound and outbound PDU details.

Output

IP

0	4	8		16	19		31
4	IHL	DSCP			TL:28		
ID 0x6			0x		0x0		
TTL:255	PRO:0x1		CHKSUM				
SRC IP: 10.0.0.1							
DSTIP 40.0.0.1							
OPT: 0x0				0x0			
DATA (VARIABLE LENGTH)							

Observation:

1) The no. of hops the packet travel before being discarded as TTL.

2) Datagrams TTL field is set by the sender and reduced by each router along the path to its destination.

3) The router reduces TTL value by one while forwarding the packets

4) When the TTL value is 0, the router discards - and sends ICMP message.

17/8/2023

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

File Edit Options View Tools Extensions Help

Se2/0   Se3/0
Router-PT
Router1

Se2/0
Router-PT
Router2

Se2/0
Rou   Fa0/0
Router0

Fa0

Fa0/0
Fa0

PC-PT
PC0

PC-PT
PC1

PDU Information at Device: PC0

OSI Model   Inbound PDU Details

PDU Formats

Ethernet II
0   4   14   19 3ytes
PREAMBLE: DEST MAC: SRC MAC:
101010...1011 0030.F219.6D6B 00D0.9798.1575
TYPE: DATA (VARIABLE LENGTH)   FCS:
0x800   0x0

IP
0   4   8   16 19   31 Bits
4   IHL   DSCP: 0x0   TL: 56
ID: 0x3   0x0   0x0
TTL: 255   PRO: 0x1   CHKSUM
SRC IP: 10.0.0.10
DST IP: 10.0.0.1
OPT: 0x0   0x0
DATA (VARIABLE LENGTH)

ICMP
0   8   16   31 Bits
TYPE: 0x3   CODE: 0x1   CHECKSUM
ID: 0x4   SEQ NUMBER: 0

IP
0   4   8   16 19   31 Bits
4   IHL   DSCP: 0x0   TL: 28

Simulation Panel
Event List
Vis. Time(sec) Last Devi At Devic Type Info
      0.000   --   PC0   ICMP
      0.001   PC0   Router0   ICMP
      0.001   --   Router0   ICMP
      0.002   Router0   PC0   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, NDP, 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: 00:11:42.071   Power Cycle Devices PLAY CONTROLS: Back   Auto Capture / Play Capture / Forward

Event List   Simulation

Scenario 0

Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete
      Failed   PC0   PC1   ICMP   0.000   N   0   (edit) (delete)