

# Expt. 5 – 20/11/2024

20/11

Expt. 5:

Aim - Configure RIP routing protocol in Routers

Topology -

Router-PT Router 0  
10.0.0.1  
Def Gateway 10.0.0.1  
Switch-PT Switch 1  
10.0.0.2 10.0.0.3  
PC-PT PC0 PC1

Router-PT Router 1  
20.0.0.2  
Def Gateway 20.0.0.1  
Switch-PT Switch 2  
20.0.0.2 20.0.0.3  
PC-PT PC2 PC3

Router-PT Router 2  
30.0.0.1  
Def Gateway 30.0.0.1  
Switch-PT Switch 3  
30.0.0.2 30.0.0.3  
PC-PT PC4 PC5

Procedure:

1. Connect 2 PCs to 3 switches each
2. Connect the 3 switches to 3 routers
3. Configure routers in CLI - Fa ports, Se ports, & configure IPs properly.
4. For RIP routing protocol:

Date / /201

In Router0 CLI:

```
Router> enable
Router# config terminal
Router(config)# router rip
# network 10.0.0.0
# network 40.0.0.0
```

In Router1 CLI:

```
Router(config)# router rip
# network 20.0.0.0
# network 40.0.0.0
# network 50.0.0.0
```

In Router2 CLI:

```
Router(config)# router rip
# network 30.0.0.0
# network 50.0.0.0
```

Test Connectivity:

```
PC0> ping 30.0.0.1
Sent = 4 loss = 0 100%
```

Observation:

The routers communicate with each other & share a common routing table. Once RIP is installed/activated in routers, every router shares its routing protocol with its neighbours. Hence in iterations, every router will know about all info that

UNANA SWEETKAR

their neighbours are connected to.

### Demonstrating TTL:

1. Select Simulation  $\rightarrow$  Simple PDU
2. select Source & Destination PCs
3. Press Auto Capture / Play.
4. ~~to~~ Press the same button repeatedly such that the packet stops at every router & check the Inbound PDU & Outbound PDU for each router. We can notice that initial PDU is 255, i.e., for Router 0.

Router 0 :

Inbound TTL = 255

Outbound TTL = 254

Router 1 :

Inbound TTL = 254

Outbound TTL = 253

Router 2 :

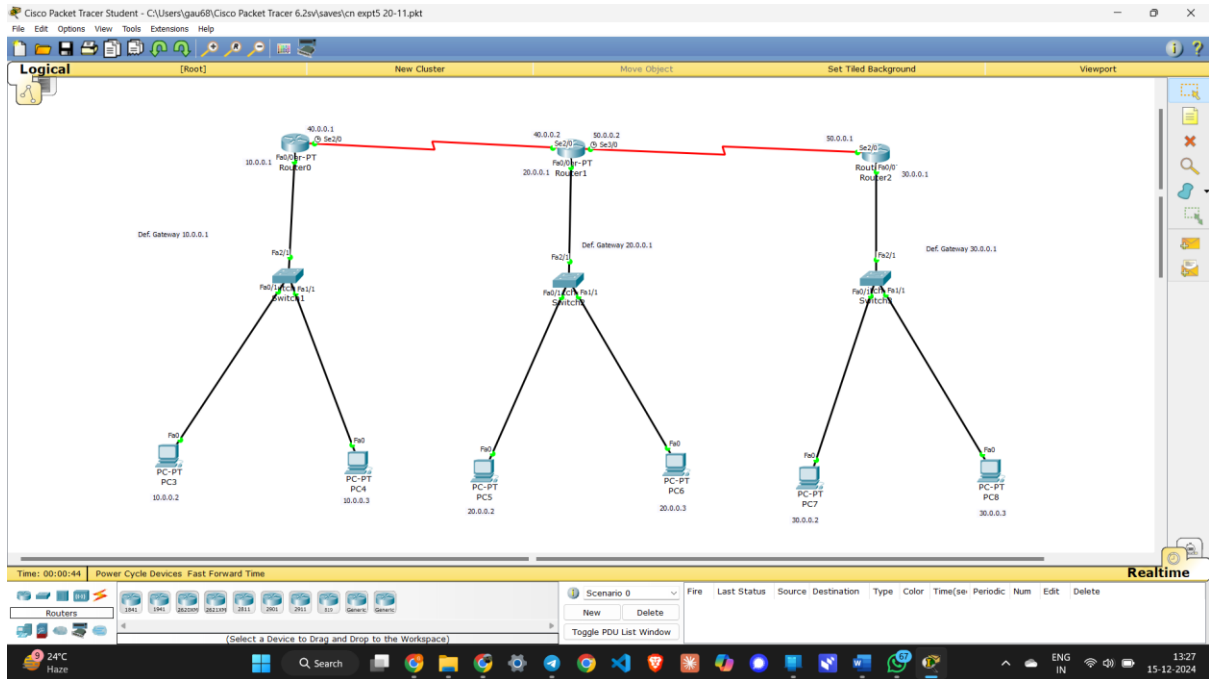
Inbound TTL = 253

Outbound TTL = 252

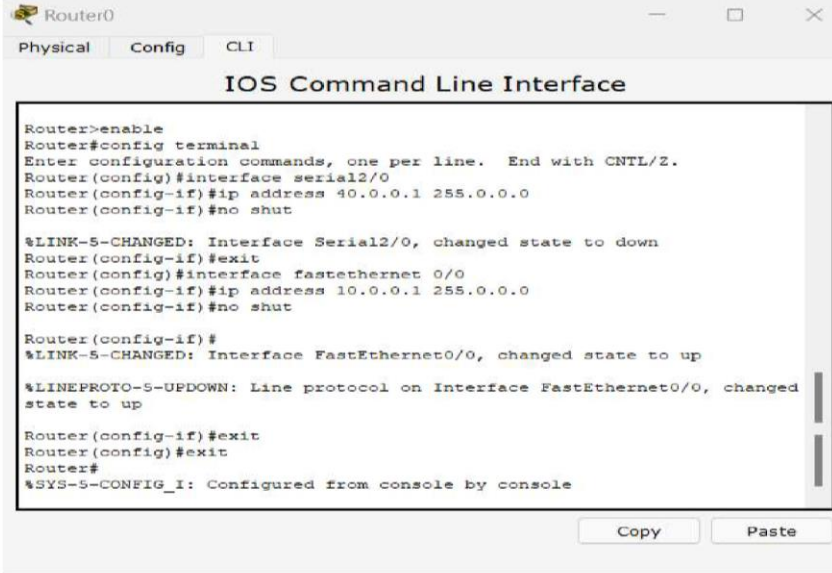
### Observation:

1. TTL of a packet decreases by 1 at each router hop to prevent infinite loops.  
If the TTL becomes 0 (i.e., reaches 0), the router discards the packets & sends an ICMP (Internet Control Message Protocol) "Time Exceeded" msg. back to the sender.
2. TTL value decreases after moving from router to router. But stays constant for PC to Switch & switch to router.

# Topology:



## Configure Network:




The screenshot shows the CLI window for Router0. The 'Config' tab is selected. The command history shows the following sequence of commands and outputs:

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial2/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Buttons for 'Copy' and 'Paste' are visible at the bottom right of the terminal window.



The screenshot shows the CLI window for Router1. The 'Config' tab is selected. The command history shows the following sequence of commands and outputs:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#ip address 40.0.0.2 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#ip address 40.0.0.2 255.0.0.0
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router(config-if)#exit
Router(config)#interface serial 3/0
Router(config-if)#ip address 50.0.0.1 255.0.0.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#interface fastethernet 0/0
```

Buttons for 'Copy' and 'Paste' are visible at the bottom right of the terminal window.



Router1

Physical Config CLI

### IOS Command Line Interface

```

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#interface fastethernet 0/0
^
% Invalid input detected at '^' marker.

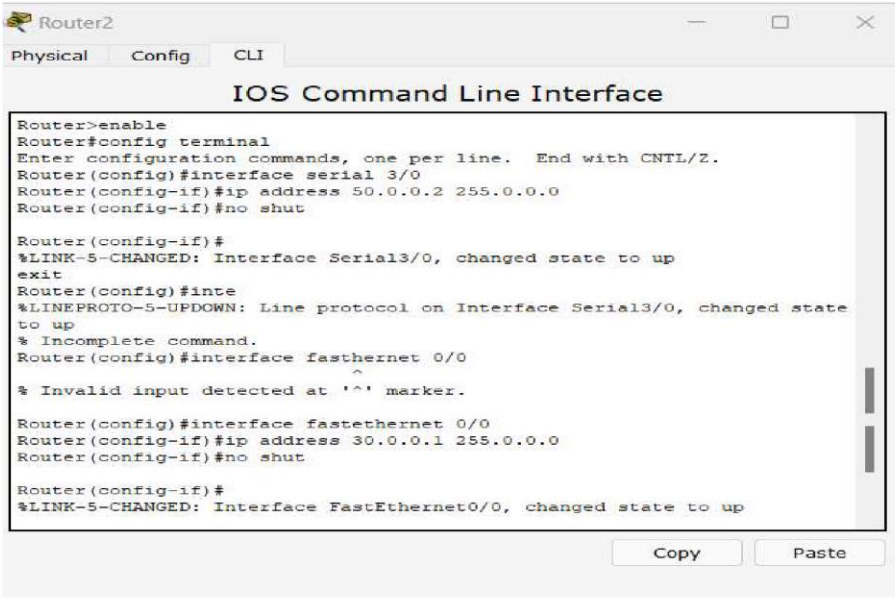
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up
exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#

```

Copy Paste



Router2

Physical Config CLI

### IOS Command Line Interface

```

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 3/0
Router(config-if)#ip address 50.0.0.2 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
exit
Router(config)#inte
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state
to up
% Incomplete command.
Router(config)#interface fastethernet 0/0
^
% Invalid input detected at '^' marker.

Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

```

Copy Paste



# Configure Routing:

## Router 0:

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 40.0.0.0
Router(config-router)#network 10.0.0.0
Router(config-router)#
```

## Router 1:

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 40.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#network 10.0.0.0
Router(config-router)#exit
Router(config)#
```

## Router 2:

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 50.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#
```

# Routing;

Router0

Physical Config CLI

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up

Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       I - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
       inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
R    20.0.0.0/8 [120/1] via 40.0.0.2, 00:00:02, Serial2/0
R    30.0.0.0/8 [120/2] via 40.0.0.2, 00:00:02, Serial2/0
C    40.0.0.0/8 is directly connected, Serial2/0
R    50.0.0.0/8 [120/1] via 40.0.0.2, 00:00:02, Serial2/0
Router>
```

Copy Paste

Router1

Physical Config CLI

IOS Command Line Interface

```
to up

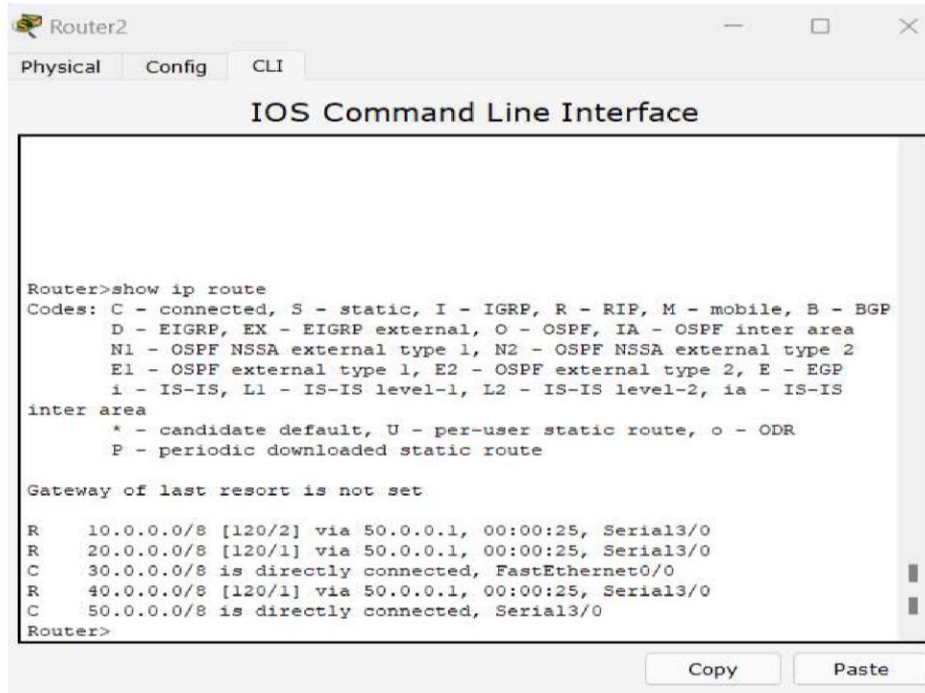
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up

Router>
Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       I - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
       inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/1] via 40.0.0.1, 00:00:12, Serial2/0
C    20.0.0.0/8 is directly connected, FastEthernet0/0
R    30.0.0.0/8 [120/1] via 50.0.0.2, 00:00:16, Serial3/0
C    40.0.0.0/8 is directly connected, Serial2/0
C    50.0.0.0/8 is directly connected, Serial3/0
Router>
```

Copy Paste





# Test Connectivity:

From PC0, ping PC4 –

```
Command Prompt

Pinging 20.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.3: bytes=32 time=12ms TTL=126
Reply from 20.0.0.3: bytes=32 time=6ms TTL=126
Reply from 20.0.0.3: bytes=32 time=3ms TTL=126

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 12ms, Average = 7ms

PC>ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 30.0.0.2: bytes=32 time=2ms TTL=125
Reply from 30.0.0.2: bytes=32 time=2ms TTL=125
Reply from 30.0.0.2: bytes=32 time=11ms TTL=125

Ping statistics for 30.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 11ms, Average = 5ms

PC>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.2: bytes=32 time=9ms TTL=126
Reply from 20.0.0.2: bytes=32 time=6ms TTL=126
Reply from 20.0.0.2: bytes=32 time=7ms TTL=126

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 9ms, Average = 7ms

PC>ping 30.0.0.3

Pinging 30.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 30.0.0.3: bytes=32 time=15ms TTL=125
Reply from 30.0.0.3: bytes=32 time=2ms TTL=125
Reply from 30.0.0.3: bytes=32 time=2ms TTL=125

Ping statistics for 30.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 15ms, Average = 6ms
```

# Demonstrating TTL:

## Switch1:

The screenshot shows a Cisco Packet Tracer workspace with a network topology. Two switches, Switch1 and Switch2, are connected to each other and to several PCs. A packet capture window is open on Switch1, displaying the details of a captured packet. The packet is an ICMP Echo (ping) packet. The Ethernet II header shows a destination MAC address of 0001.C92B.E9B8 and a source MAC address of 0001.C92B.E9B8. The ICMP header shows a sequence number of 5. The TTL field in the Ethernet II header is 255.

**PDU Information at Device: Switch1**

**Ethernet II**

Field	Value
PREAMBLE:	101010...1011
DEST MAC:	0001.C92B.E9B8
SRC MAC:	0001.C92B.E9B8
TYPE:	0x0000
DATA (VARIABLE LENGTH):	
FCS:	0x00

**IP**

Field	Value
ID:	0x0
TTL:	255
PRO:	0x1
CHKSUM:	
SRC IP:	10.0.0.2
DST IP:	30.0.0.2
OPT:	0x0
DATA (VARIABLE LENGTH):	

**ICMP**

Field	Value
TYPE:	0x0
CODE:	0x0
CHECKSUM:	
ID:	0x3
SEQ NUMBER:	5

This screenshot is identical to the one above, showing the same network topology and packet capture details on Switch1. The packet is an ICMP Echo (ping) packet with a TTL of 255 and a sequence number of 5.

**PDU Information at Device: Switch1**

**Ethernet II**

Field	Value
PREAMBLE:	101010...1011
DEST MAC:	0001.C92B.E9B8
SRC MAC:	0001.C92B.E9B8
TYPE:	0x0000
DATA (VARIABLE LENGTH):	
FCS:	0x00

**IP**

Field	Value
ID:	0x0
TTL:	255
PRO:	0x1
CHKSUM:	
SRC IP:	10.0.0.2
DST IP:	30.0.0.2
OPT:	0x0
DATA (VARIABLE LENGTH):	

**ICMP**

Field	Value
TYPE:	0x0
CODE:	0x0
CHECKSUM:	
ID:	0x3
SEQ NUMBER:	5

## Router0:

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\saaves\cn\expt5 20-11.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 Devi	At Devi	Type	Info
0.000	--	PC3		ICMP	
0.001		PC3	Switch1	ICMP	
0.002		Switch1	Router0	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, DTLS, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDP, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VDP

Edit Filters Show All/None

PDU Information at Device: Router0

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

Ethernet II

PREAMBLE:		DEST MAC:	SRC MAC:
101010...1011		0001.9604.D47E	0001.C92B.E9B8

TYPE: 0x000 DATA (VARIABLE LENGTH) FCS: 0x0

IP

DSCP:		TL:
0x0		28

ID: 0x5 PRO: 0x1 CHKSUM

SRC IP: 10.0.0.2

DEST IP: 30.0.0.2

OPT: 0x0 DATA (VARIABLE LENGTH)

ICMP

TYPE:		CODE:	CHECKSUM
0x3		0x0	0x0

ID: 0x3 SEQ NUMBER: 5

Time: 00:15:22.844 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

New Delete

Toggle PDU List Window

24°C Haze

13:45 15-12-2024

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\saaves\cn\expt5 20-11.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 Devi	At Devi	Type	Info
0.000	--	PC3		ICMP	
0.001		PC3	Switch1	ICMP	
0.002		Switch1	Router0	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, DTLS, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDP, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VDP

Edit Filters Show All/None

PDU Information at Device: Router0

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

HDL

FLG:		ADR:	CONTROL:	DATA (VARIABLE LENGTH)	FCS:	FLG:
0x1		0x0	0x0		0x0	0x1

ID: 0x5 PRO: 0x1 CHKSUM

SRC IP: 10.0.0.2

DEST IP: 30.0.0.2

OPT: 0x0 DATA (VARIABLE LENGTH)

ICMP

TYPE:		CODE:	CHECKSUM
0x3		0x0	0x0

ID: 0x3 SEQ NUMBER: 5

Time: 00:15:22.844 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

New Delete

Toggle PDU List Window

24°C Haze

13:45 15-12-2024

## Router1:

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\save\cn exp5 20-11.pkt

File Edit Options View Tools Extensions Help

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

OSI Model Inbound PDU Details Outbound PDU Details

PDU Information at Device: Router1

OSI Model

Inbound PDU Details

Outbound PDU Details

PDU Formats

HOLC

0	8	16	32	32-x	48-x	56-x	Bits
FLG: 011	ADR: 1	CONTROL: 0x0	DATA: (VARIABLE LENGTH)	FCS: 0x0	FLG: 011		

ID: 0x5

0	4	8	16	19	31	Bits
4	0x5	DISC: 0x0	0x0	TL: 28		

PRO: 0x1

0	8	16	31	Bits
0x5	0x1	CHECKSUM		

SRC IP: 10.0.0.2

DST IP: 20.0.0.2

OPT: 0x0

DATA (VARIABLE LENGTH)

ICMP

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

ID: 0x3

SEQ NUMBER: 5

Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devi	Type	Info
	0.000		PC3	ICMP	
	0.001	PC3	Switch1	ICMP	
	0.002	Switch1	Router0	ICMP	
	0.003	Router0	Router1	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, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDX, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:15:22.845 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0

New Delete

Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

In Progress PC3 PC7 ICMP 0.000 N 0 (edit) (delete)

Toggle PDU List Window

(Select a Device to Drag and Drop to the Workspace)

24°C Haze

ENG IN 13:45 15-12-2024

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\save\cn exp5 20-11.pkt

File Edit Options View Tools Extensions Help

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

OSI Model Inbound PDU Details Outbound PDU Details

PDU Information at Device: Router1

OSI Model

Inbound PDU Details

Outbound PDU Details

PDU Formats

HOLC

0	8	16	32	32-x	48-x	56-x	Bits
FLG: 011	ADR: 1	CONTROL: 0x0	DATA: (VARIABLE LENGTH)	FCS: 0x0	FLG: 011		

ID: 0x5

0	4	8	16	19	31	Bits
4	0x5	DISC: 0x0	0x0	TL: 28		

PRO: 0x1

0	8	16	31	Bits
0x5	0x1	CHECKSUM		

SRC IP: 10.0.0.2

DST IP: 20.0.0.2

OPT: 0x0

DATA (VARIABLE LENGTH)

ICMP

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

ID: 0x3

SEQ NUMBER: 5

Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devi	Type	Info
	0.000		PC3	ICMP	
	0.001	PC3	Switch1	ICMP	
	0.002	Switch1	Router0	ICMP	
	0.003	Router0	Router1	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, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDX, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:15:22.845 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0

New Delete

Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

In Progress PC3 PC7 ICMP 0.000 N 0 (edit) (delete)

Toggle PDU List Window

(Select a Device to Drag and Drop to the Workspace)

24°C Haze

ENG IN 13:46 15-12-2024

## Router2:

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\save\cn\exp5 20-11.pkt

File Edit Options View Tools Extensions Help

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

Gateway 10.0.0.1

Router0 (10.0.0.1) (S2/20) 10.0.0.1

Router1 (10.0.0.1) (S2/20) 10.0.0.1

Router2 (10.0.0.1) (S2/20) 10.0.0.1

PC-PT PC3 10.0.0.2

PC-PT PC4 10.0.0.3

PC-PT PC5 10.0.0.2

PC-PT PC6 10.0.0.2

PC-PT PC7 10.0.0.2

PC-PT PC8 10.0.0.2

PDU Information at Device: Router2

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

HOLC

FLG	ADR	CONTROL	DATA (VARIABLE LENGTH)	FCB	FLG
011	011	011	011	011	011

IP

0	4	8	12	16	20	24	28	32
ID: 0x5								
PRO: 0x1								
SRC IP: 10.0.0.2								
DST IP: 30.0.0.2								
OPT: 0x0								
DATA (VARIABLE LENGTH)								

ICMP

0	4	8	12	16	20	24	28	32
TYPE: 0x8								
CODE: 0x0								
CHECKSUM								
ID: 0x3								
SEQ NUMBER: 5								

Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devi	Type	Info
0.000	0.001	PC3	Switch1	ICMP	
0.001	0.002	Switch1	Router0	ICMP	
0.002	0.003	Router0	Router1	ICMP	
0.003	0.004	Router1	Router2	ICMP	

Reset Simulation Constant Delay Captured to: 0.004 s

Play Controls Back Auto Capture / Play Capture / Forward

Event List Filters - Visible Events

ACL Filter, ARP, BGP, CDP, DHCP, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDX, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:15:22.846 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

In Progress PC3 PC7 ICMP 0.000 N 0 (edit) (delete)

Toggle PDU List Window

24°C Haze

13:46 15-12-2024

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.20\save\cn\exp5 20-11.pkt

File Edit Options View Tools Extensions Help

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

Gateway 10.0.0.1

Router0 (10.0.0.1) (S2/20) 10.0.0.1

Router1 (10.0.0.1) (S2/20) 10.0.0.1

Router2 (10.0.0.1) (S2/20) 10.0.0.1

PC-PT PC3 10.0.0.2

PC-PT PC4 10.0.0.3

PC-PT PC5 10.0.0.2

PC-PT PC6 10.0.0.2

PC-PT PC7 10.0.0.2

PC-PT PC8 10.0.0.2

PDU Information at Device: Router2

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

Ethernet II

PREAMBLE	DEST MAC	SRC MAC
10101010...1011	0000-B0E7-2514	0001-9010-1099

TYPE: 0x800 DATA (VARIABLE LENGTH) FCB: 0x0

IP

0	4	8	12	16	20	24	28	32
ID: 0x5								
PRO: 0x1								
SRC IP: 10.0.0.2								
DST IP: 30.0.0.2								
OPT: 0x0								
DATA (VARIABLE LENGTH)								

ICMP

0	4	8	12	16	20	24	28	32
TYPE: 0x8								
CODE: 0x0								
CHECKSUM								
ID: 0x3								
SEQ NUMBER: 5								

Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devi	Type	Info
0.000	0.001	PC3	Switch1	ICMP	
0.001	0.002	Switch1	Router0	ICMP	
0.002	0.003	Router0	Router1	ICMP	
0.003	0.004	Router1	Router2	ICMP	

Reset Simulation Constant Delay Captured to: 0.004 s

Play Controls Back Auto Capture / Play Capture / Forward

Event List Filters - Visible Events

ACL Filter, ARP, BGP, CDP, DHCP, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, MDX, NETFLOW, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RIP, RIPv2, RTSP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:15:22.846 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0 Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete

In Progress PC3 PC7 ICMP 0.000 N 0 (edit) (delete)

Toggle PDU List Window

24°C Haze

13:46 15-12-2024



The screenshot displays the Cisco Packet Tracer software interface. The main workspace shows a network topology with three routers (R1, R2, R3) and several PCs (PC1, PC2, PC3, PC4). A red line indicates a path from PC3 to PC4. A window titled "PDU Information at Device: Switch3" is open, showing details for an Ethernet II frame and an ICMP packet. The Ethernet II frame has a destination MAC of 000D.B0E7.E254 and a source MAC of 0001.9610.5799. The ICMP packet has a destination IP of 10.0.0.2 and a source IP of 30.0.0.2. The packet is being sent from PC3 to PC4. The interface also shows a "Simulation" panel on the right with a list of visible events and a "Simulation" button at the bottom right.

**PDU Information at Device: Switch3**

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

**Ethernet II**

0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120	124	128	132	136	140	144	148	152	156	160	164	168	172	176	180	184	188	192	196	200	204	208	212	216	220	224	228	232	236	240	244	248	252	256	260	264	268	272	276	280	284	288	292	296	300	304	308	312	316	320	324	328	332	336	340	344	348	352	356	360	364	368	372	376	380	384	388	392	396	400	404	408	412	416	420	424	428	432	436	440	444	448	452	456	460	464	468	472	476	480	484	488	492	496	500	504	508	512	516	520	524	528	532	536	540	544	548	552	556	560	564	568	572	576	580	584	588	592	596	600	604	608	612	616	620	624	628	632	636	640	644	648	652	656	660	664	668	672	676	680	684	688	692	696	700	704	708	712	716	720	724	728	732	736	740	744	748	752	756	760	764	768	772	776	780	784	788	792	796	800	804	808	812	816	820	824	828	832	836	840	844	848	852	856	860	864	868	872	876	880	884	888	892	896	900	904	908	912	916	920	924	928	932	936	940	944	948	952	956	960	964	968	972	976	980	984	988	992	996	1000
PREAMBLE: 101010...1011																DEST MAC: 000D.B0E7.E254																SRC MAC: 0001.9610.5799																																																																																																																																																																																																																										
TYPE: 0x000																DATA (VARIABLE LENGTH)																FCS: 0x0																																																																																																																																																																																																																										

**ICMP**

0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120	124	128	132	136	140	144	148	152	156	160	164	168	172	176	180	184	188	192	196	200	204	208	212	216	220	224	228	232	236	240	244	248	252	256	260	264	268	272	276	280	284	288	292	296	300	304	308	312	316	320	324	328	332	336	340	344	348	352	356	360	364	368	372	376	380	384	388	392	396	400	404	408	412	416	420	424	428	432	436	440	444	448	452	456	460	464	468	472	476	480	484	488	492	496	500	504	508	512	516	520	524	528	532	536	540	544	548	552	556
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