

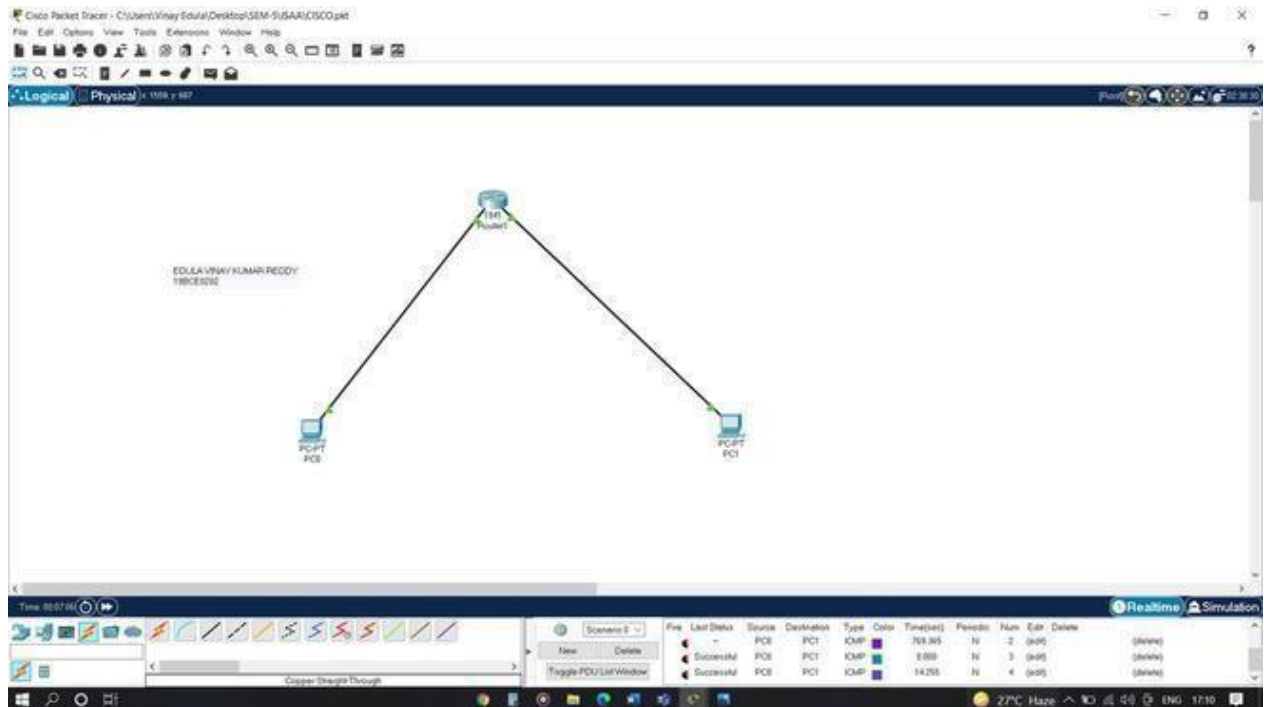
# CS19541-COMPUTER NETWORKS-LAB MANUAL

## Practical-10

**AIM:-a) Internetworking with routers in CISCO PACKET TRACER simulator.**

**d) Design and configure a simple internetwork using a router.**

In this network, a router and 2 PCs are used. Computers are connected with routers using a copper straight-through cable. After forming the network, to check network connectivity a simple PDU is transferred from PC0 to PC1.



### **Procedure:**

#### **Step-1(Configuring Router1):**

1. Select the router and Open CLI.
2. Press ENTER to start configuring Router1.
3. Type enable to activate the privileged mode.

#### **Router1 Command Line Interface:**

*Router>enable*

*Router#config t*

*Enter configuration commands, one per line. End with CNTL/Z.*

*Router(config)#interface FastEthernet0/0*

*Router(config-if)#ip address 192.168.10.1 255.255.255.0*

*Router(config-if)#no shutdown*

*Router(config-if)#*

*%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up*

*Router(config-if)#interface FastEthernet0/1*

*Router(config-if)#ip address 192.168.20.1 255.255.255.0*

*Router(config-if)#no shutdown*

#### **Step-2(Configuring PCs):**

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1. Assign IP Addresses to every PC in the network.
2. Select the PC, Go to the desktop and select IP Configuration and assign an IP address, Default gateway, Subnet Mask
3. Assign the default gateway of PC0 as 192.168.10.1.
4. Assign the default gateway of PC1 as 192.168.20.1.

### **Step-3(Connecting PCs with Router):**

1. Connect FastEthernet0 port of PC0 with FastEthernet0/0 port of Router1 using a copper straight-through cable.
2. Connect FastEthernet0 port of PC1 with FastEthernet0/1 port of Router1 using a copper straight-through cable.

### **Router Configuration Table:**

<b>Device Name</b>	<b>IP address FastEthernet0 /0</b>	<b>Subnet Mask</b>	<b>IP Address FastEthernet0/1</b>	<b>Subnet Mask</b>
Router1	192.168.10.1	255.255.255.0	192.168.20.1	255.255.255.0

### **PC Configuration Table:**

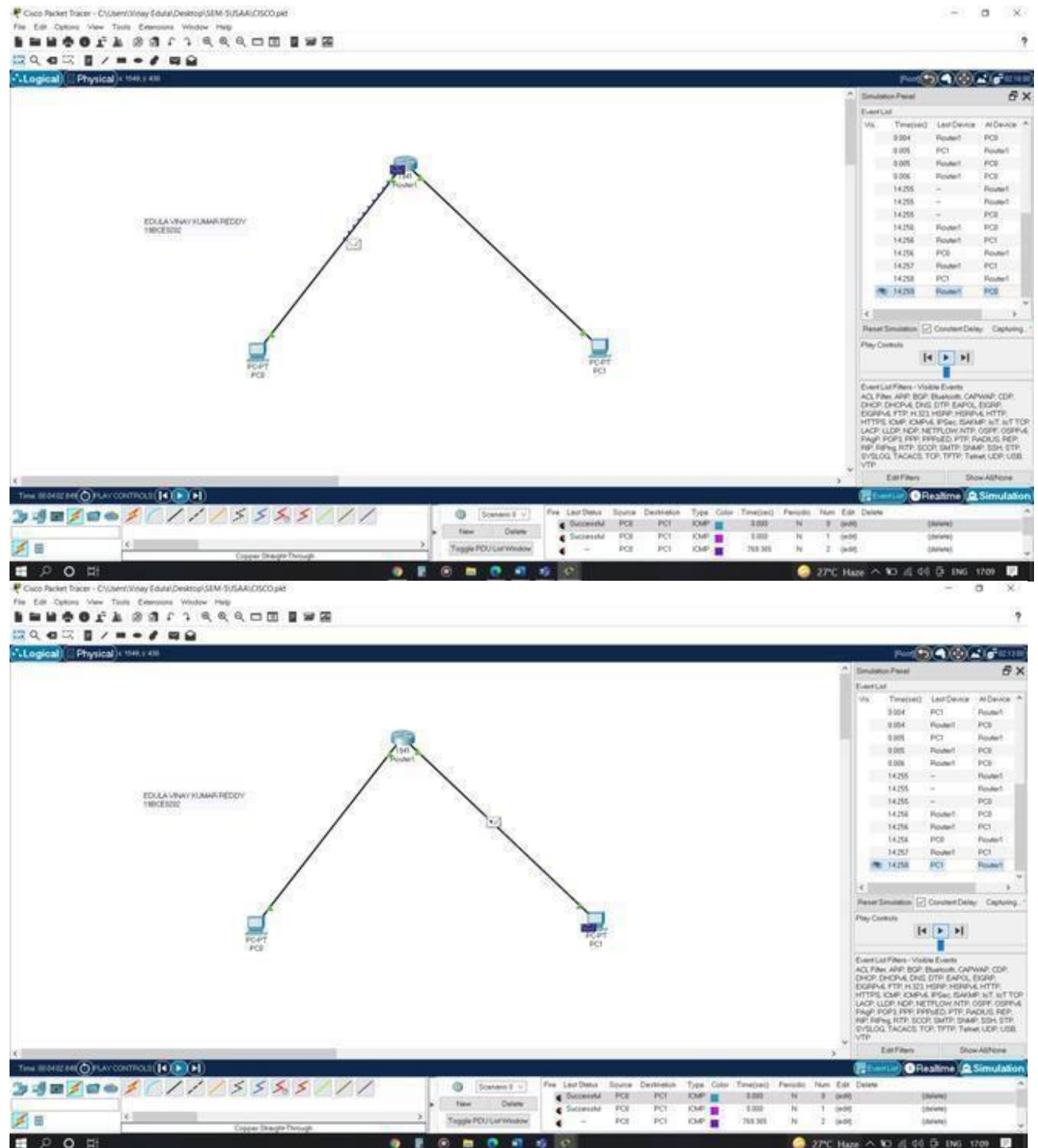
<b>Device Name</b>	<b>IP address</b>	<b>Subnet Mask</b>	<b>Gateway</b>
PC 0	192.168.10.2	255.255.255.0	192.168.10.1
PC 1	192.168.20.2	255.255.255.0	192.168.20.1

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## Designed Network topology:

Simulation of Designed Network Topology:

## Sending a PDU From PC0 to PC1:



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## Acknowledgment From PC1 to PC0:

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File Edit Options View Tools Extensions Window Help

Logical Physical 1:1046 v.4.00

EDLLAVINAY KUMAR REDDY  
TINCE2002

Router1

PC-PT  
PCB

PC-PT  
PCB

Simulation Panel

Event List

Time (sec)	Last Device	All Device
0.004	Router1	PC1
0.004	PC1	Router1
0.004	Router1	PCB
0.005	PC1	Router1
0.005	Router1	PCB
0.006	Router1	PCB
14.255	Router1	Router1
14.255	Router1	Router1
14.255	Router1	PCB
14.256	Router1	PC1
14.256	Router1	Router1
14.256	PCB	Router1
14.257	Router1	PC1

Reset Simulation Constant Delay Capturing

Play Controls

Event List Filters - Visible Events

ACL Filter: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, OSPFv3, FTP, H.323, HSRP, HSRPv3, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISMMP, IUT, IUT TOP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv3, PAgg, POP3, PPP, PPPoE, PTP, RADIUS, RDP, RFP, Rfping, RTP, SCCP, SMTP, SNMP, SSH, STP, Syslog, TACACS, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All None

Time: 00:04:02.844 PLAY CONTROLS

Successful PCB PC1 ICMP 0.000 N 3 (0:00) (delete)

Successful PCB PC1 ICMP 0.000 N 1 (0:00) (delete)

PCB PC1 ICMP 769.365 N 2 (0:00) (delete)

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Router1

PC-PT  
PCB

PC-PT  
PCB

Simulation Panel

Event List

Time (sec)	Last Device	All Device
0.004	Router1	PCB
0.005	PC1	Router1
0.005	Router1	PCB
0.006	Router1	PCB
14.255	Router1	Router1
14.255	Router1	Router1
14.255	Router1	PCB
14.256	Router1	PC1
14.256	Router1	Router1
14.256	PCB	Router1
14.257	Router1	PC1
14.258	PC1	Router1
14.258	Router1	PCB

Reset Simulation Constant Delay Captured to: 14.258 s

Play Controls

Event List Filters - Visible Events

ACL Filter: ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, OSPFv3, FTP, H.323, HSRP, HSRPv3, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISMMP, IUT, IUT TOP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv3, PAgg, POP3, PPP, PPPoE, PTP, RADIUS, RDP, RFP, Rfping, RTP, SCCP, SMTP, SNMP, SSH, STP, Syslog, TACACS, TFTP, Telnet, UDP, USB, VTP

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14.255	Router1	PCB
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14.255	Router1	PCB
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PCB

PC-PT  
PCB

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14.255	Router1	PCB
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