

Week #6**Designing and Simulation of Network Topology using Cisco Packet Tracer**

NAME: H M Mythreya	SRN:PES2UG20CS130	SECTION:C
	1/2/22	WEEK:2

Objectives:

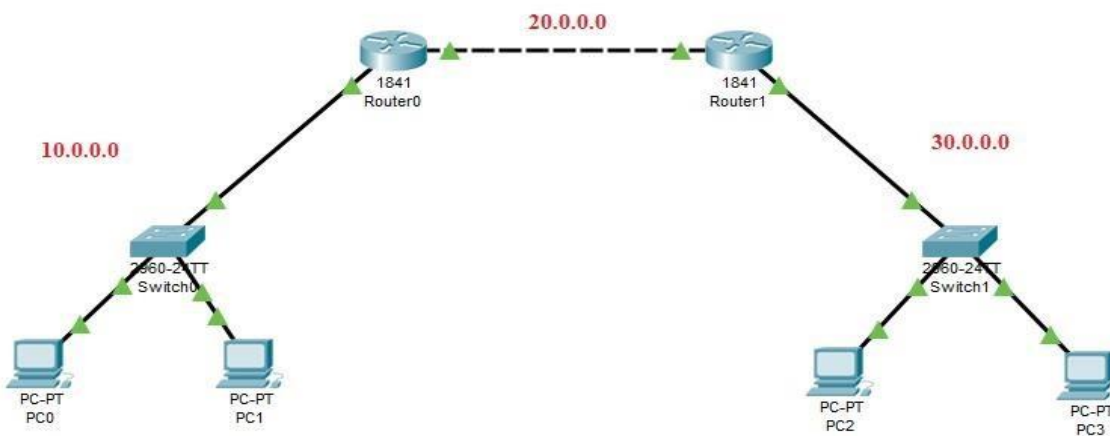
- To understand the purpose of Cisco Packet Tracer.
- To navigate, choose network and end devices and customize them.
- To interconnect devices and configure them using simple interface.
- To become familiar with building topologies in Packet Tracer.
- To simulate data interactions traveling through a network.

Prerequisites:

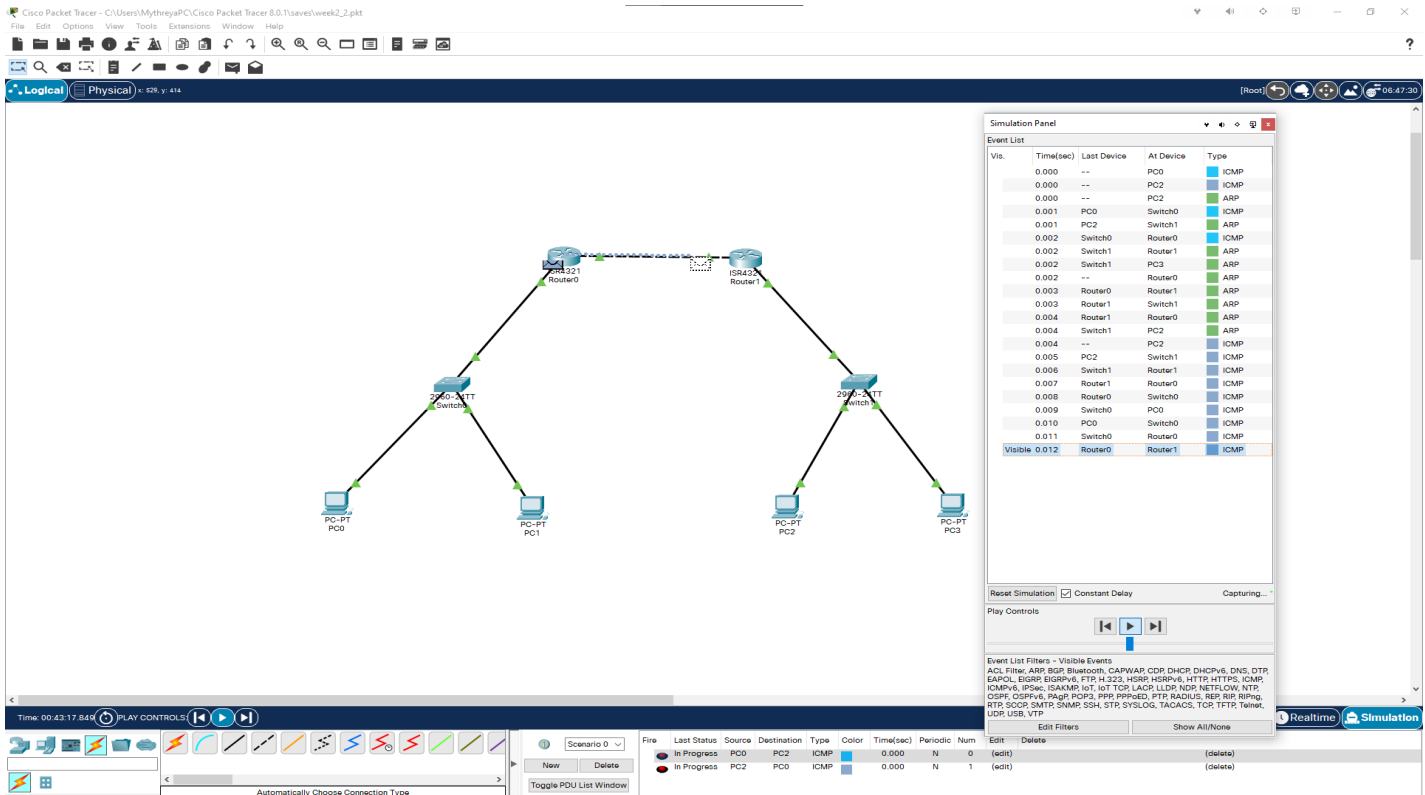
This lab assumes some understanding of the building blocks of communication networks and internet. At this point, we haven't discussed other protocols but you may use Packet Tracer in later labs to discuss those as well. Several types of devices and network connections can be used. For this experiment we will keep it simple by using end devices, switches, routers, and connections.

Task 1 (Demo)**Network Topology:**

To replicate given scenario, create a topology in packet tracer, as shown in following image.



TASK 1 CISCO PACKET TRACER SCREENSHOT:



PC & Router Configuration Details:

PC0:

IP Address ---> 10.0.0.1

Gateway ---> 10.0.0.3

PC1:

IP Address ---> 10.0.0.2

Gateway ---> 10.0.0.3

Router 0:

FastEthernet0/0 ---> 10.0.0.3

FastEthernet0/1 ---> 20.0.0.1

Router 1:

FastEthernet0/0 ---> 20.0.0.2

FastEthernet0/1 ---> 30.0.0.1

PC2:

IP Address ---> 30.0.0.2

Gateway ---> 30.0.0.1

PC3:

IP Address ---> 30.0.0.3

Gateway ---> 30.0.0.1

Routing Table Entries:

Router	Network	Next Hop
Router 0	30.0.0.0	20.0.0.2
Router 1	10.0.0.0	20.0.0.1

Execution Procedure:

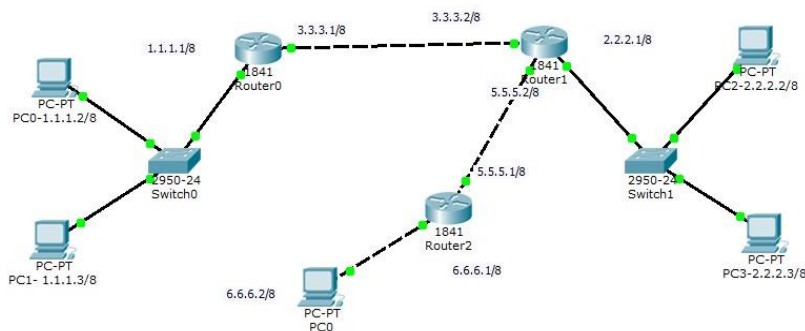
Task 1: Design a network topology with desktops, switches and routers similar to the network depicted in the above diagram.

Task 2: Configure the PCs and routers with the details provided above.

Task 3: Send a simple PDU from any PC on network 10.0.1.0 to any other PC on other network 10.0.3.0 and vice-versa.

Task 4: Simulate the network and observe the packet flow from one network to other.

Task 2 (Mandatory for Week-6)



COMPUTER NETWORKS LAB WEEK 2

TASK 2 CISCO PACKET TRACER SCREENSHOT:

Cisco Packet Tracer - C:\Users\MythreyaPC\Cisco Packet Tracer 8.0.1\saves\week2-halfdone.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical v. 805, y. 0 [Root] 20:25:30

Time: 00:24:05.096 PLAY CONTROLS

Scenario 0

Toggle PDU List Window

File	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC4	PC1	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC1	PC4	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC1	PC4	ICMP		0.000	N	3	(edit)	(delete)

Cisco Packet Tracer - C:\Users\MythreyaPC\Cisco Packet Tracer 8.0.1\saves\week2-halfdone.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical v. 716, y. 487 [Root] 20:48:30

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.000	--	PC4	ICMP
	0.000	--	PC1	ICMP
	0.000	--	PC1	ICMP
	0.001	PC0	Switch0	ICMP
	0.001	PC4	Router2	ICMP
	0.001	PC1	Switch0	ICMP
	0.001	--	PC1	ICMP
	0.002	PC1	Switch0	ICMP
	0.002	Switch0	Router0	ICMP
	0.002	Router2	Router1	ICMP
	0.002	--	Switch0	ICMP
Visible	0.003	Switch0	Router0	ICMP
Visible	0.003	Router0	Router1	ICMP
Visible	0.003	Router1	Router0	ICMP
Visible	0.003	--	Switch0	ICMP

Reset Simulation [x] Constant Delay Capturing...

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.223, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NTP, NETFLOW, NTPS, OSPF, OSPFv6, PaqP, POP3, PPP, PPPoE, PTP, RADIUS, RER, RIP, RIPng, RTP, SGP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Scenario 0

Toggle PDU List Window

File	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	In Progress	PC0	PC3	ICMP		0.000	N	0	(edit)	(delete)
	In Progress	PC4	PC1	ICMP		0.000	N	1	(edit)	(delete)
	In Progress	PC1	PC4	ICMP		0.000	N	2	(edit)	(delete)

COMPUTER NETWORKS LAB WEEK 2

PC:

END SYSTEM	INTERFACE	IP ADDRESS	SUBNET MASK	GATEWAY
PC0: 1.1.1.2/8	Fastethernet0	1.1.1.2	255.0.0.0	1.1.1.1
PC1: 1.1.1.3/8	Fastethernet0	1.1.1.3	255.0.0.0	1.1.1.1
PC2: 2.2.2.2/8	Fastethernet0	2.2.2.2	255.0.0.0	2.2.2.1
PC3: 2.2.2.3/8	Fastethernet0	2.2.2.3	255.0.0.0	2.2.2.1
PC4: 6.6.6.2/8	Fastethernet0	6.6.6.2	255.0.0.0	6.6.6.1

ROUTERS:

ROUTER	INTERFACE	IP ADDRESS	SUBNET MASK
Router0	Fastethernet0/0	1.1.1.1	255.0.0.0
Router0	Fastethernet0/1	3.3.3.1	255.0.0.0
Router1	Fastethernet0/0	3.3.3.2	255.0.0.0
Router1	Fastethernet0/1	5.5.5.2	255.0.0.0
Router1	Ethernet0/1/0	2.2.2.1	255.0.0.0
Router2	Fastethernet0/0	5.5.5.1	255.0.0.0
Router2	Fastethernet0/1	6.6.6.1	255.0.0.0

Routing:

Router0

Router0

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

2.2.2.0/24 via 3.3.3.2

6.6.6.0/24 via 3.3.3.2

5.5.5.0/24 via 3.3.3.2

Router1

Router1

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Ethernet0/1/0

Static Routes

Network

Mask

Next Hop

Add

Network Address

1.1.1.0/24 via 3.3.3.1

6.6.6.0/24 via 5.5.5.1

Router2

Router2

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

1.1.1.0/24 via 5.5.5.2

2.2.2.0/24 via 5.5.5.2

3.3.3.0/24 via 5.5.5.2