COMPUTER NETWORKS

NAME : NAGAVENI L G
SRN: PES2UG21CS315
SEM :4 SEC:F

Week #2

Designing and Simulation of Network Topology using Cisco Packet Tracer

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.

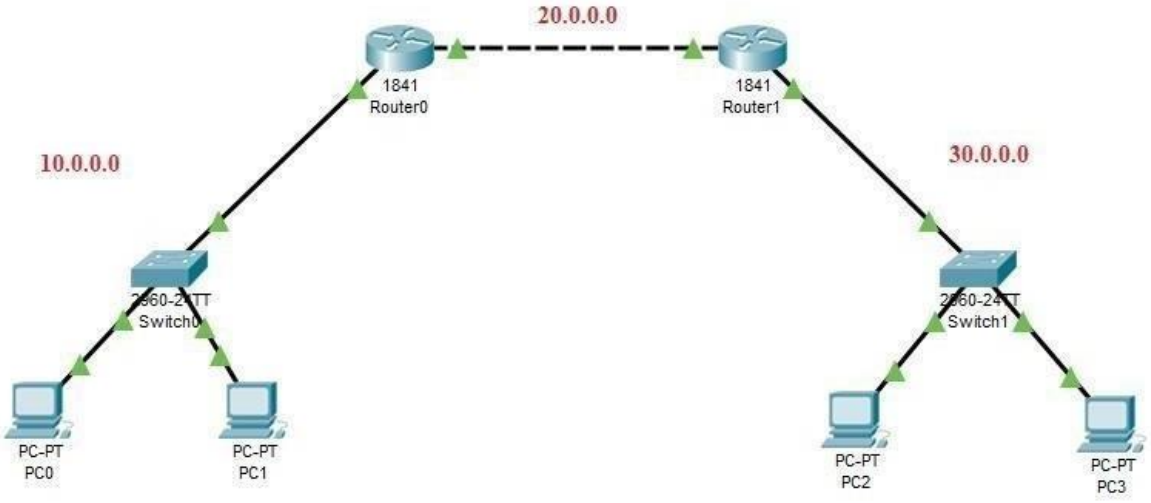
Prerequisites:

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.



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

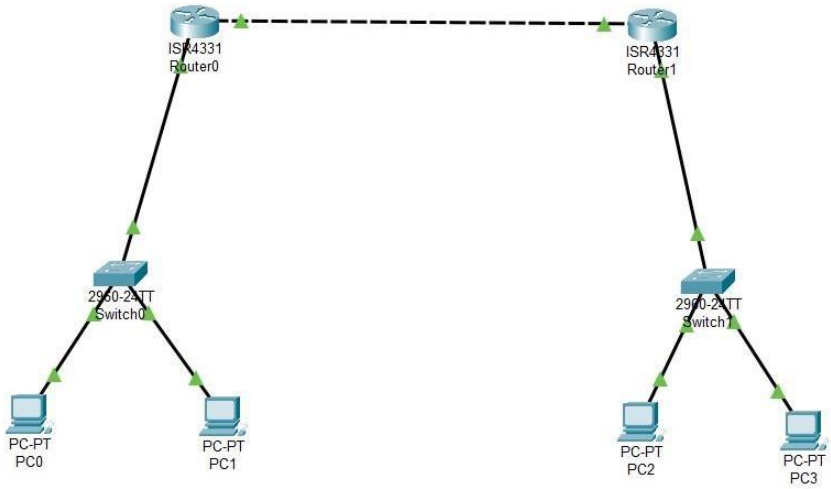
Execution Procedure:

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.



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC1	ICMP		0.000	N	0	(edit)	
	Successful	PC1	PC0	ICMP		0.000	N	1	(edit)	
	Successful	PC2	PC3	ICMP		0.000	N	2	(edit)	
	Successful	PC3	PC2	ICMP		0.000	N	3	(edit)	

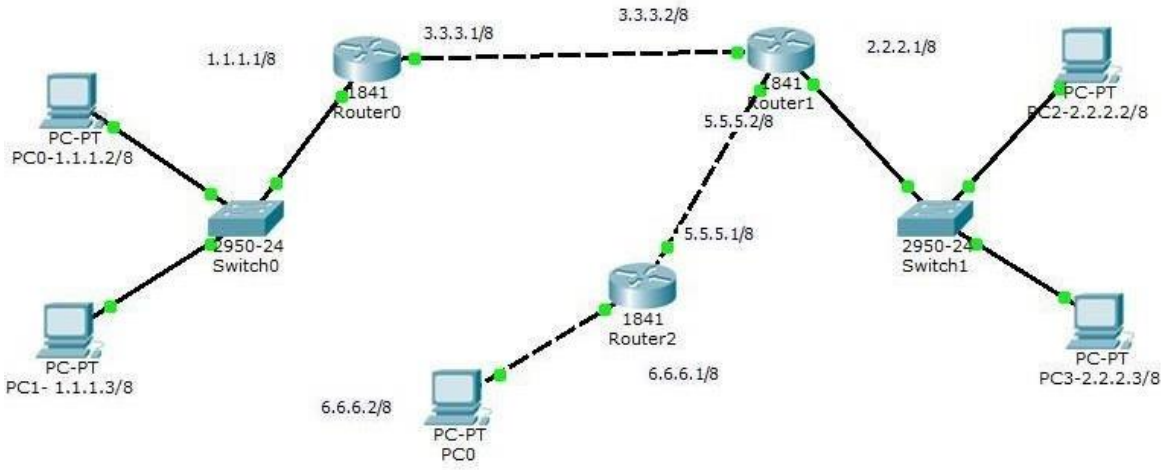
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC2	ICMP		0.000	N	0	(edit)	
	Successful	PC0	PC3	ICMP		0.000	N	1	(edit)	
	Successful	PC1	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC1	PC3	ICMP		0.000	N	3	(edit)	

Time: 00:28:04

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC2	PC1	ICMP		0.000	N	0	(edit)	
	Successful	PC2	PC0	ICMP		0.000	N	1	(edit)	
	Successful	PC3	PC1	ICMP		0.000	N	2	(edit)	
	Successful	PC3	PC0	ICMP		0.000	N	3	(edit)	

Time: 00:28:31

Task 2 (Mandatory for Week-6)



PC & Router Configuration Details:

PC0:

IP Address ---> 11.0.0.2

Gateway ---> 11.0.0.1

PC1:

IP Address ---> 11.0.0.3

Gateway ---> 11.0.0.1

PC2:

IP Address ---> 10.0.0.2

Gateway ---> 10.0.0.1 **PC3:**

IP Address ---> 10.0.0.3

Gateway ---> 10.0.0.1 **PC4:**

IP Address ---> 12.0.0.2

Gateway ---> 12.0.0.1

Router 0:

FastEthernet0/0 ---> 11.0.0.1

FastEthernet0/1 ---> 3.3.3.1

Router 3:

FastEthernet0/0 ---> 5.5.5.1

FastEthernet0/1 ---> 12.0.0.1 **Router 4 :**

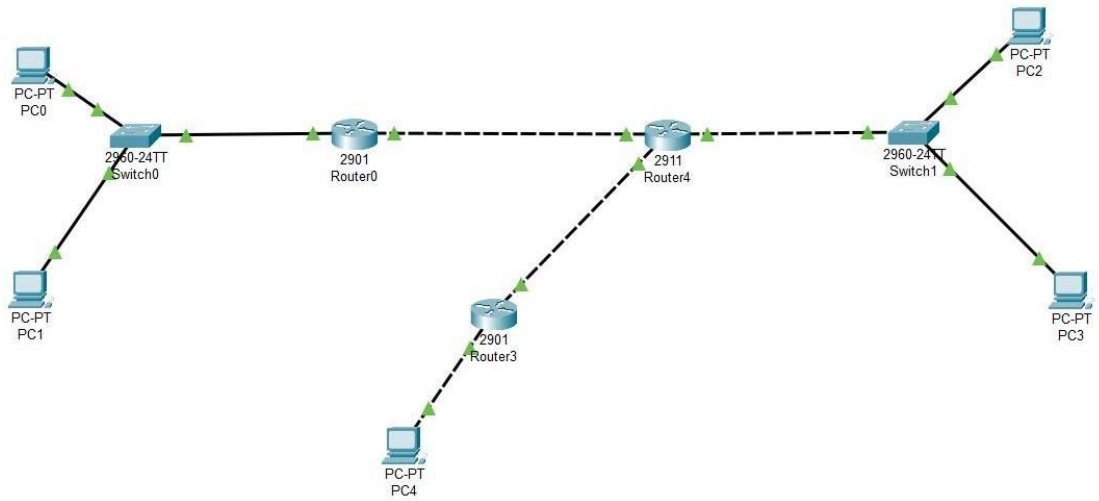
FastEthernet0/0 ---> 3.3.3.2

FastEthernet0/1 ---> 10.0.0.1

FastEthernet0/2 ---> 5.5.5.2

Routing Table Entries:

Router	Network	Next Hop
Router 0	10.0.0.0	3.3.3.2
	12.0.0.0	3.3.3.2
12.0.0.0	5.5.5.1	
Router 3	11.0.0.0	5.5.5.2
	11.0.0.0	5.5.5.2
Router 4	11.0.0.0	3.3.3.1
	12.0.0.0	5.5.5.1



PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC1	ICMP		0.000	N	0	(edit)	
	Successful	PC1	PC0	ICMP		0.000	N	1	(edit)	
	Successful	PC0	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC0	PC3	ICMP		0.000	N	3	(edit)	
	Successful	PC0	PC4	ICMP		0.000	N	4	(edit)	
	Successful	PC1	PC4	ICMP		0.000	N	5	(edit)	
	Successful	PC1	PC3	ICMP		0.000	N	6	(edit)	
	Successful	PC1	PC2	ICMP		0.000	N	7	(edit)	

PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC4	PC1	ICMP		0.000	N	0	(edit)	
	Successful	PC4	PC0	ICMP		0.000	N	1	(edit)	
	Successful	PC4	PC3	ICMP		0.000	N	2	(edit)	
	Successful	PC4	PC2	ICMP		0.000	N	3	(edit)	

PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC3	PC4	ICMP		0.000	N	0	(edit)	
	Successful	PC3	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC3	PC0	ICMP		0.000	N	2	(edit)	
	Successful	PC3	PC2	ICMP		0.000	N	3	(edit)	
	Successful	PC2	PC3	ICMP		0.000	N	4	(edit)	
	Successful	PC2	PC0	ICMP		0.000	N	5	(edit)	
	Successful	PC2	PC1	ICMP		0.000	N	6	(edit)	
	Successful	PC2	PC4	ICMP		0.000	N	7	(edit)	