

Computers Network Laboratory Week #6

Name – B.Pravena

SEC - B

SRN – PES2UG19CS076

Designing and Simulation of Network Topology using Cisco Packet Tracer

Objectives:

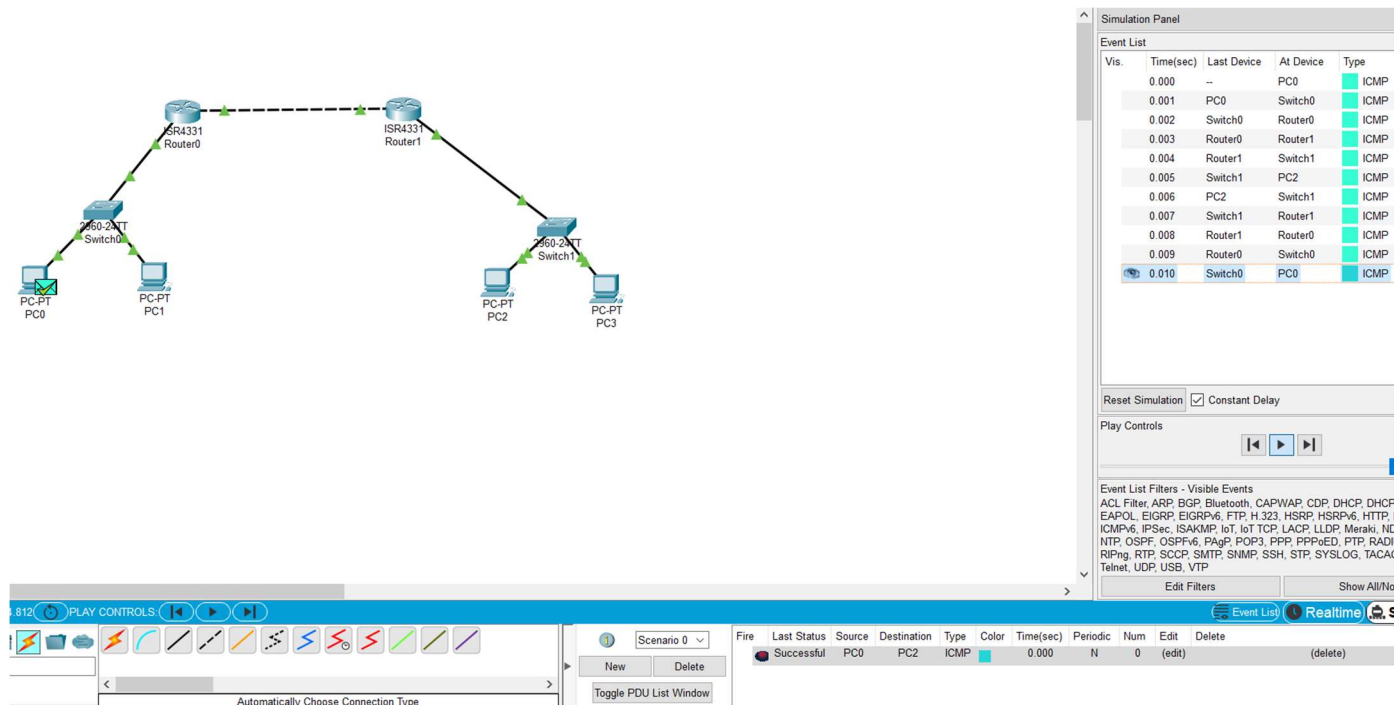
- To understand the purpose of Cisco Packet Tracer.
- To navigate, choose network and end devices and customize them.
- To interconnect devices and configure them using simple interface.
- To become familiar with building topologies in Packet Tracer.
- To simulate data interactions traveling through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

Network Topology:



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.

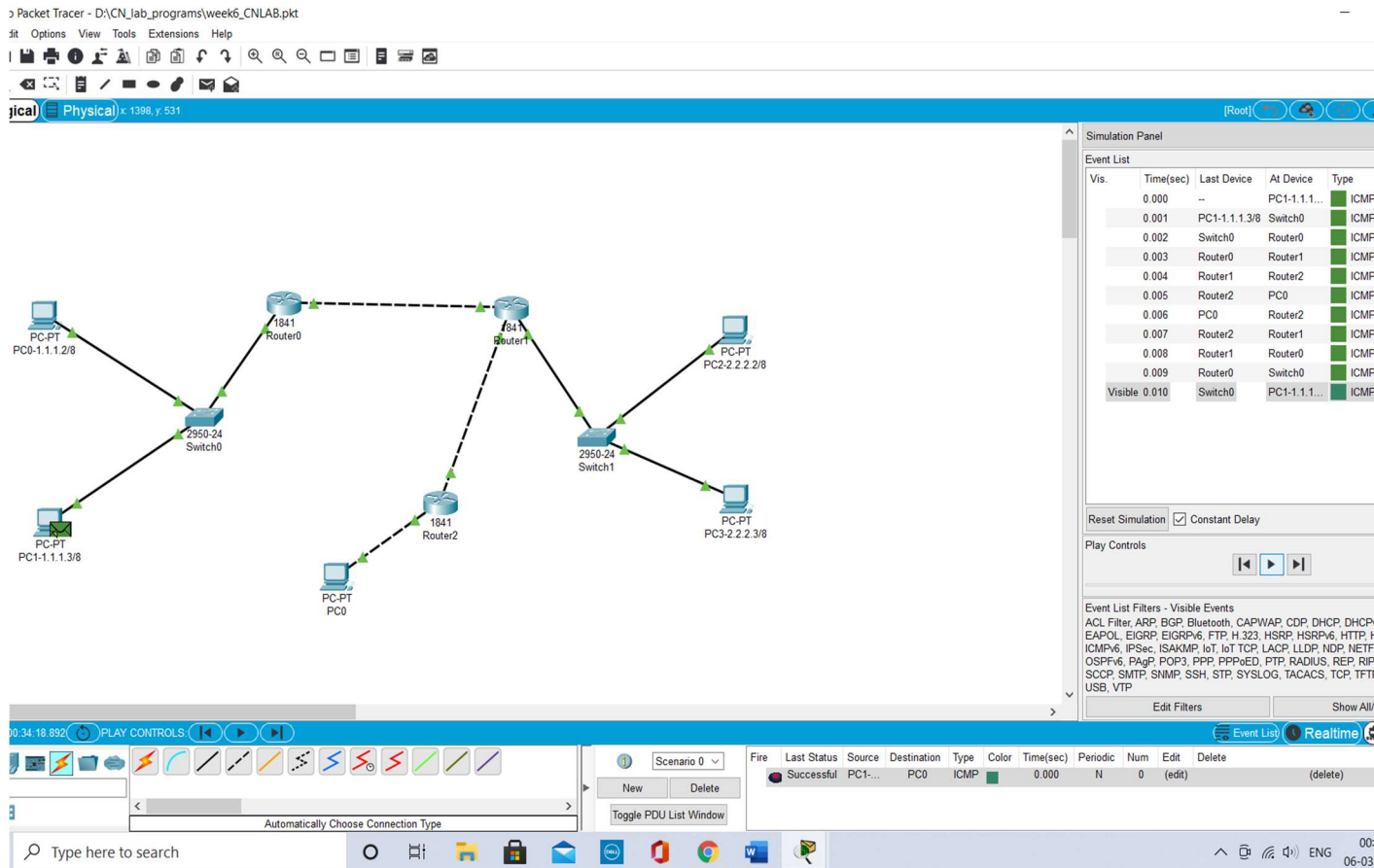
Task 2: Configure the PCs and routers with the details provided above.

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)



From simulation panel, we can see that packet was sent from the PC1- 1.1.1.3/8 to the end system PC0. As we can see at the bottom, the transmission was successful. The packet was initially transmitted from PC1- 1.1.1.3/8 to Switch0 which in turn went to Router0, then to Router1, then to Router2 and then reached PC0.

End Systems -:

End System	Interface Name	IP Address	Subnet Mask	Gateway
PC0-1.1.1.2/8	FastEthernet()	1.1.1.2	255.0.0.0	1.1.1.1
PC1-1.1.1.3/8	FastEthernet()	1.1.1.3	255.0.0.0	1.1.1.1
PC0	FastEthernet()	6.6.6.2	255.0.0.0	6.6.6.1
PC2-2.2.2.2/8	FastEthernet()	2.2.2.2	255.0.0.0	2.2.2.1
PC3-2.2.2.3/8	FastEthernet()	2.2.2.3	255.0.0.0	2.2.2.1

Routers -:

Router	Interface Name	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	Ethernet0/0/0	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 Table -:

Router	Destination Network	Next Hop
Router0	2.0.0.0	3.3.3.2
Router0	6.0.0.0	3.3.3.2
Router0	5.0.0.0	3.3.3.2
Router1	1.0.0.0	3.3.3.1
Router1	6.0.0.0	5.5.5.1
Router2	2.0.0.0	5.5.5.2
Router2	1.0.0.0	5.5.5.2
Router2	3.0.0.0	5.5.5.2