

VIT-AP UNIVERSITY, ANDHRA PRADESH

Lab Sheet 4: Design a MAN network using a Single Router and Configure Router with CLI Mode.

Academic year: 2020-2021

Semester: Winter

Faculty Name: Dr. HUSSAIN SYED

Student name: Hariprasad K K

Branch/ Class: B.Tech/M.Tech

Date: 06/03/21

School: SCOPE

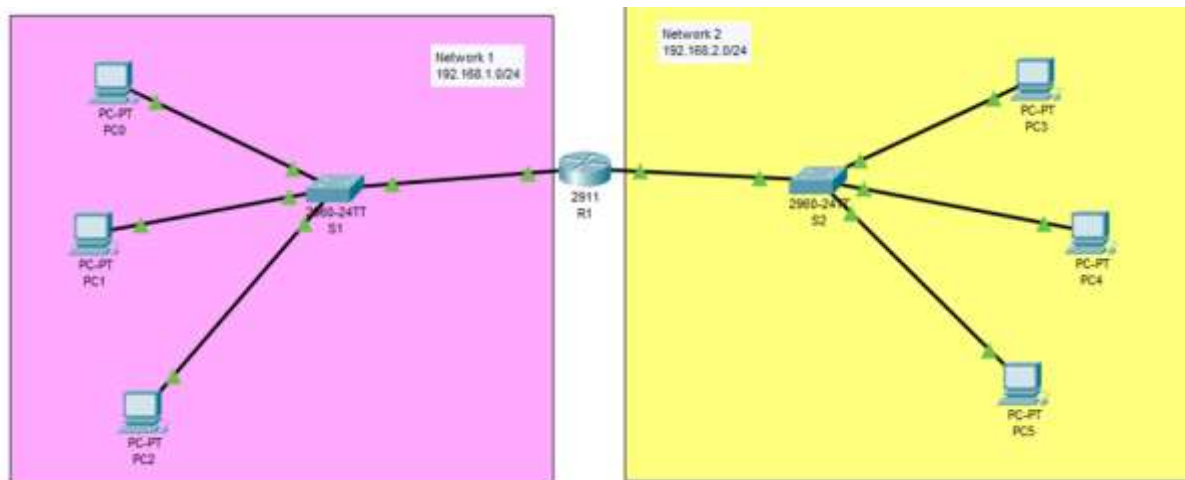
Reg. no.: 19BCE7079

AIM:

Design a MAN network using a Single Router and Configure Router with CLI Mode using CISCO packet tracer.

1. Design two LAN using two switches with three PCs each.
2. Add one Router to connect two LAN networks
3. Verify the connectivity.

Observation: Min of 6-7 points of observation



Addressing Table:

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Device	Interface	IP Address	Subnet Mask
PC1	NIC	192.168.1.5	255.255.255.0
PC2	NIC	192.168.1.6	255.255.255.0
PC3	NIC	192.168.1.7	255.255.255.0
PC4	NIC	192.168.2.5	255.255.255.0
PC5	NIC	192.168.2.6	255.255.255.0
PC6	NIC	192.168.2.7	255.255.255.0
Router 1	NIC	192.168.1.1	255.255.255.0
Router 1 2 nd int	NIC	192.168.2.1	255.255.255.0
LAN 1		192.168.1.0	255.255.255.0
LAN 2		192.168.2.0	255.255.255.0

1. For

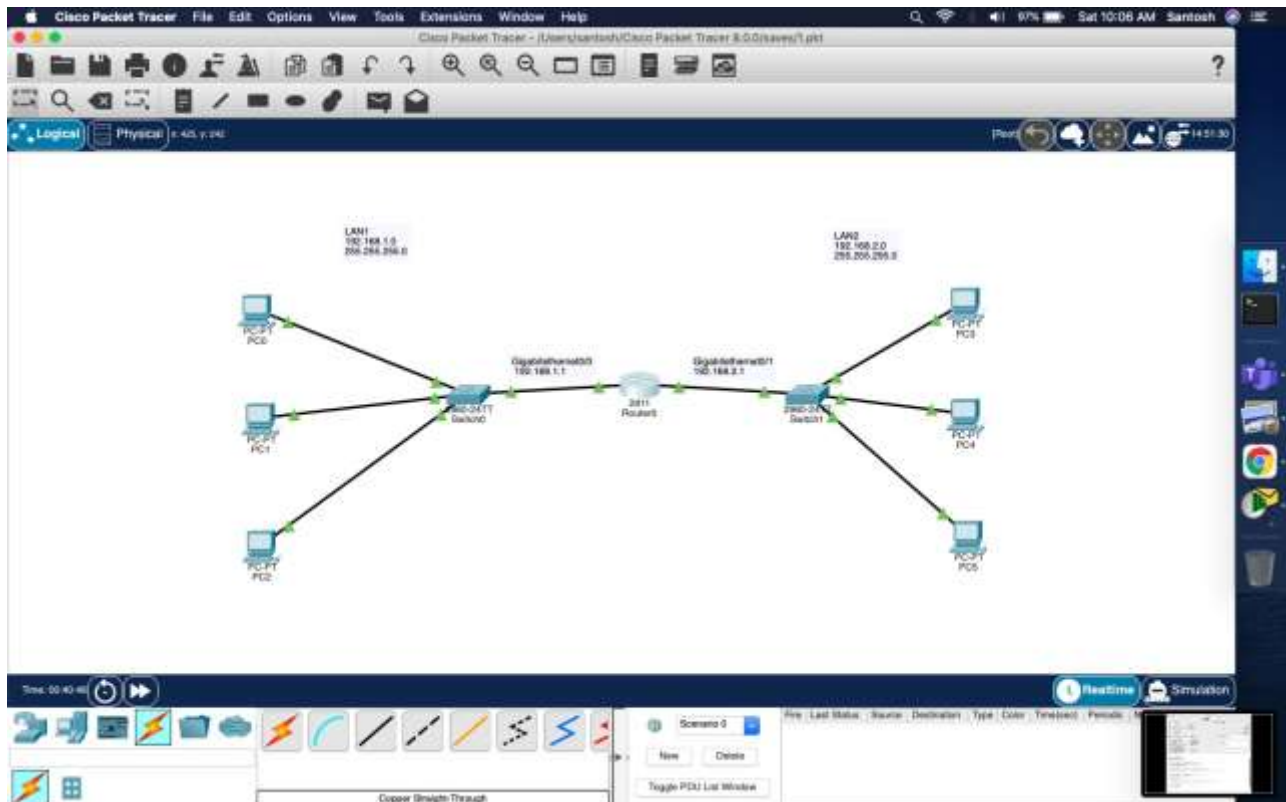
creating a network, we used 6 pc,2 switches and 1 router.

2. First connect each Switch is connected to three pc's to create two local area networks.
3. For connecting the pc with the switch, we used copper straight through cable as they are two different devices.
4. Add ip address to all pc's with unique ip address.
5. Check if ip is set perfectly by using ping command to ping other pc's. Do this to both local area networks.
6. now place the 2911 router to complete the network.
7. Connect the gigabitethernet0/0 port of router with gigabitethernet port of switch1 with ethernet straight through cable and gigabitethernet0/1 port of router with gigabitethernet port of switch2.
8. Assign the ip address to gigabitethernet ports of router and turn the ports on.
9. Wait till the whole setup gets configured. Or fast forward time.
10. Set the default gateway for all the pc's.
11. Now ping from LAN1 pc to LAN2 pc to check if configuration is done properly.
12. Simulate by sending a package from LAN1 to LAN2.

Lab Sheet 4: Design a MAN network using a Single Router and Configure

Snapshot: Practice exercise snapshot from CPT.

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PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.5

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::20D:BDFF:FE86:DB7E

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top

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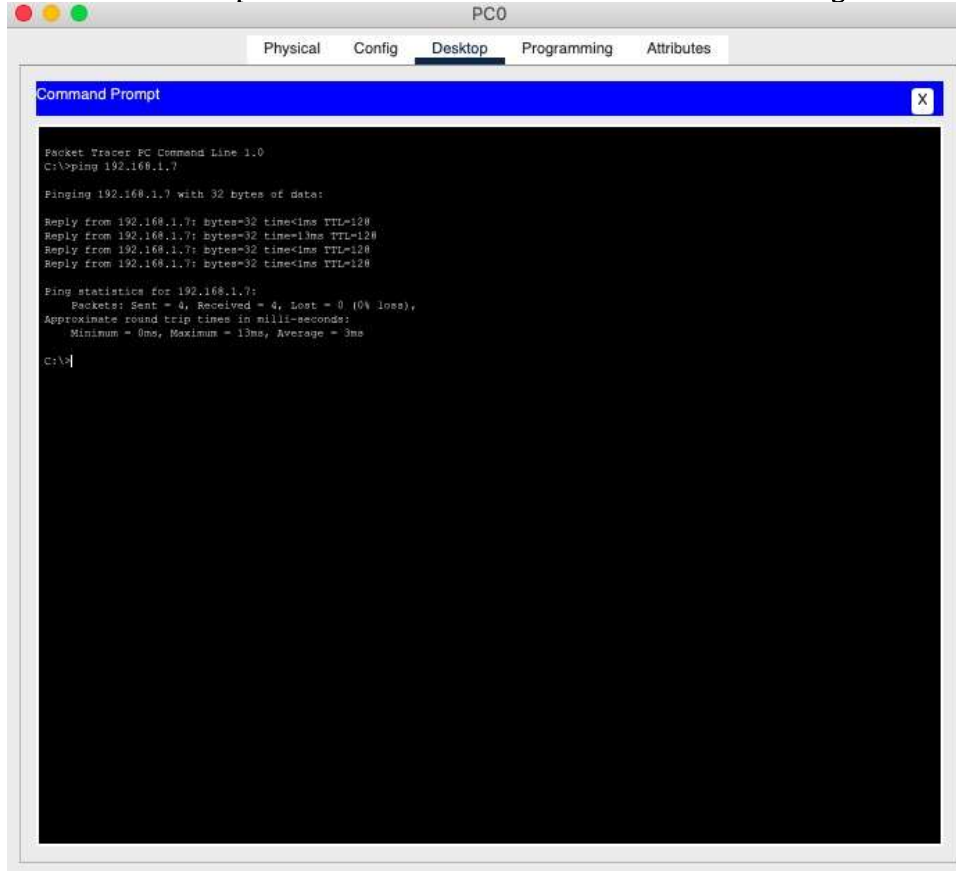
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The screenshot shows a Packet Tracer PC Command Line window for a PC named 'PC0'. The window has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes', with 'Desktop' currently selected. The Command Prompt displays the following text:

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.7

Pinging 192.168.1.7 with 32 bytes of data:

Reply from 192.168.1.7: bytes=32 time=1ms TTL=128
Reply from 192.168.1.7: bytes=32 time=1ms TTL=128
Reply from 192.168.1.7: bytes=32 time=1ms TTL=128
Reply from 192.168.1.7: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 3ms

C:\>
```

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Router0

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/0

Port Status ☒ On

Bandwidth ☒ 1000 Mbps ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0009.7CAB.0301

IP Configuration

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Router>configure terminal
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
```

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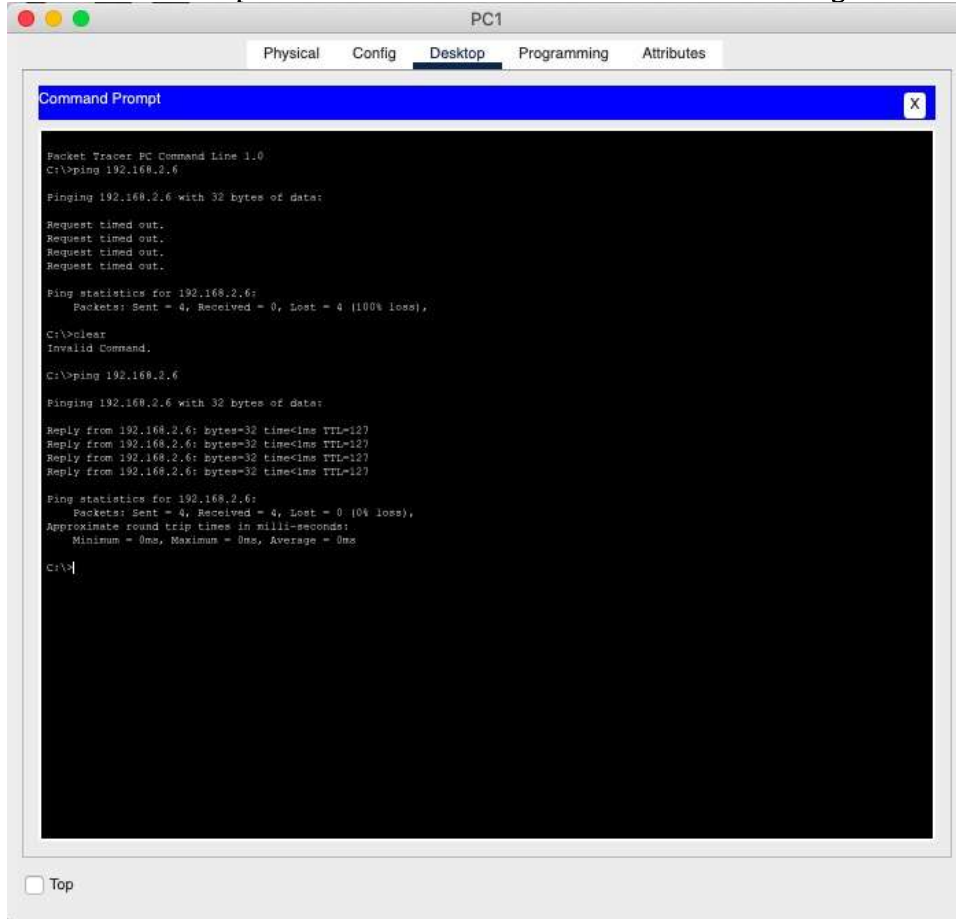
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Sending of package in simulation:

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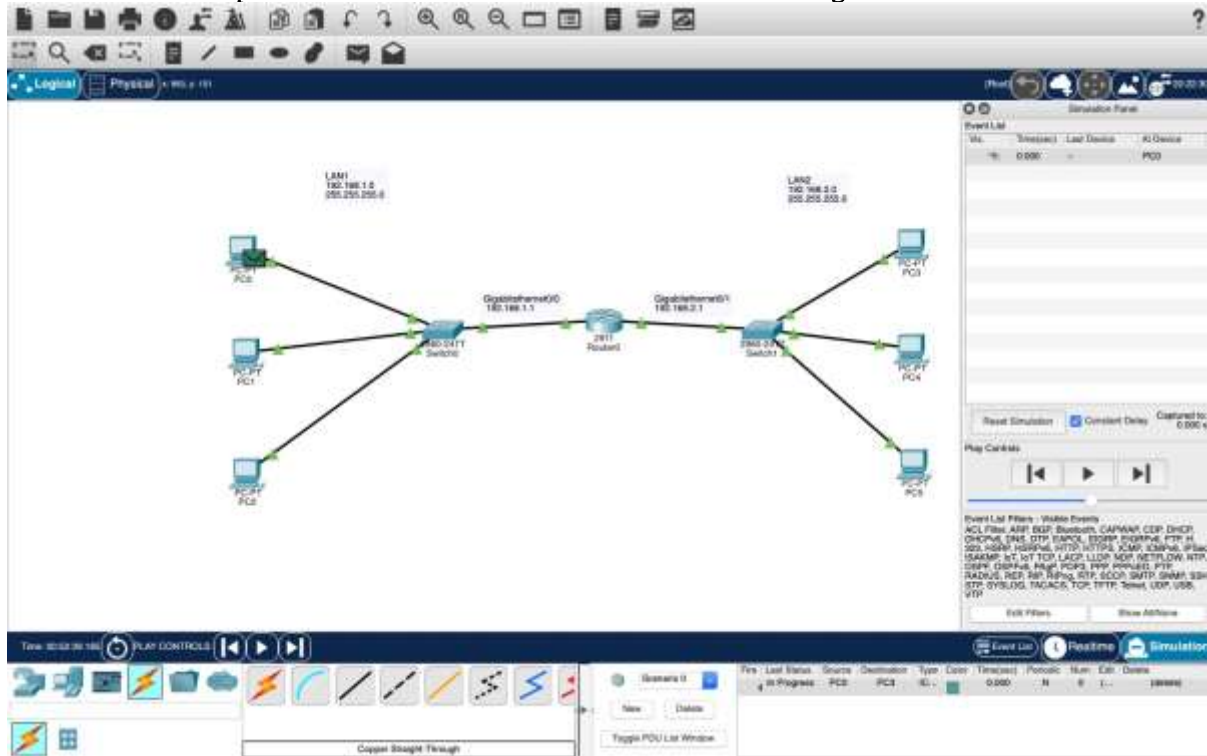
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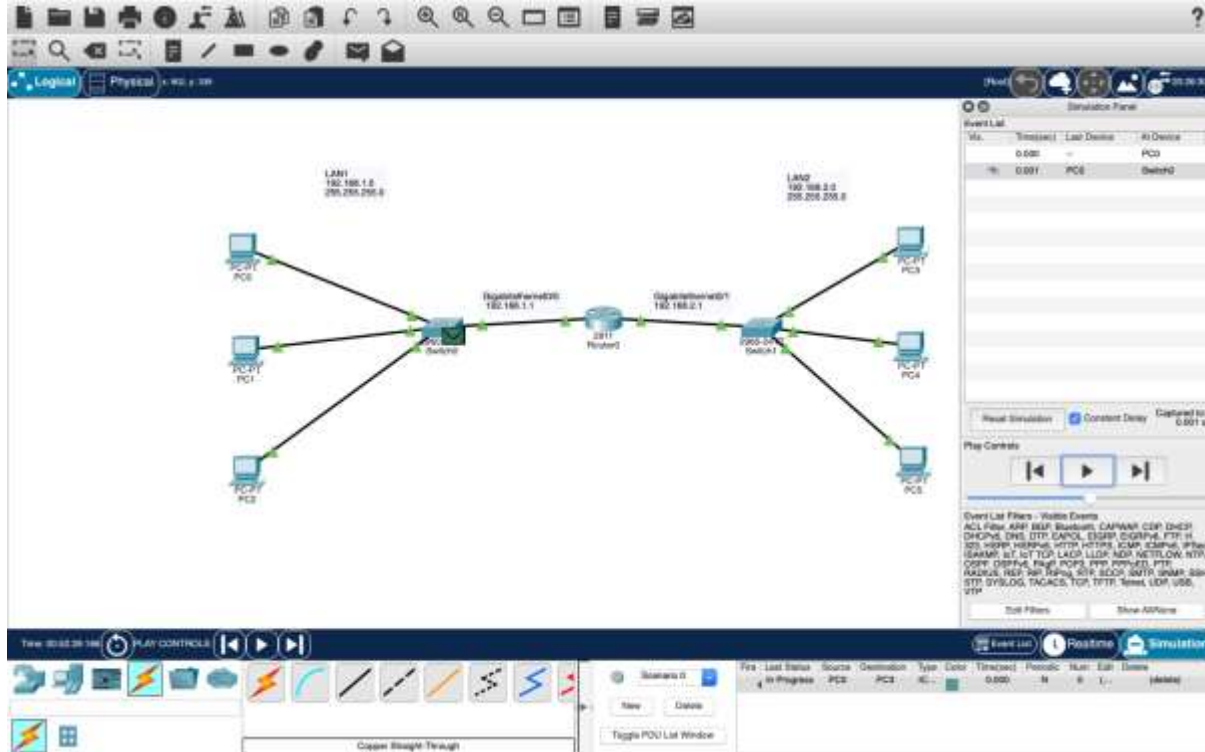
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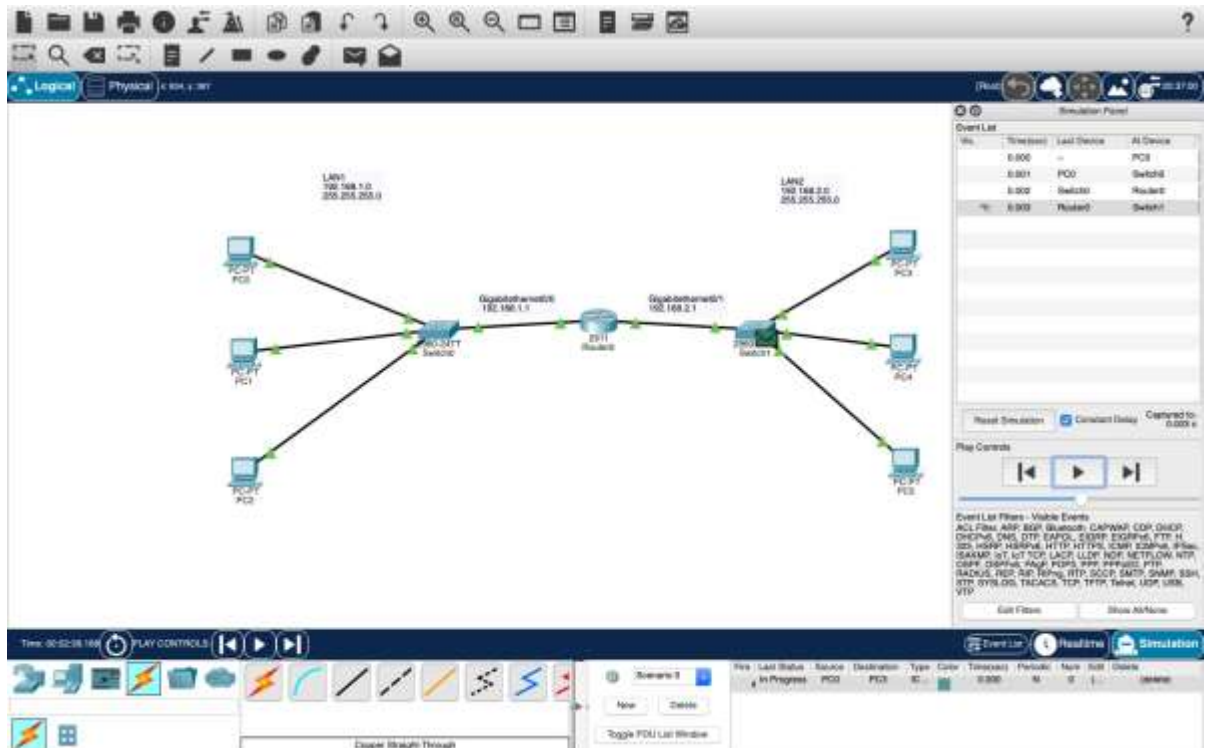
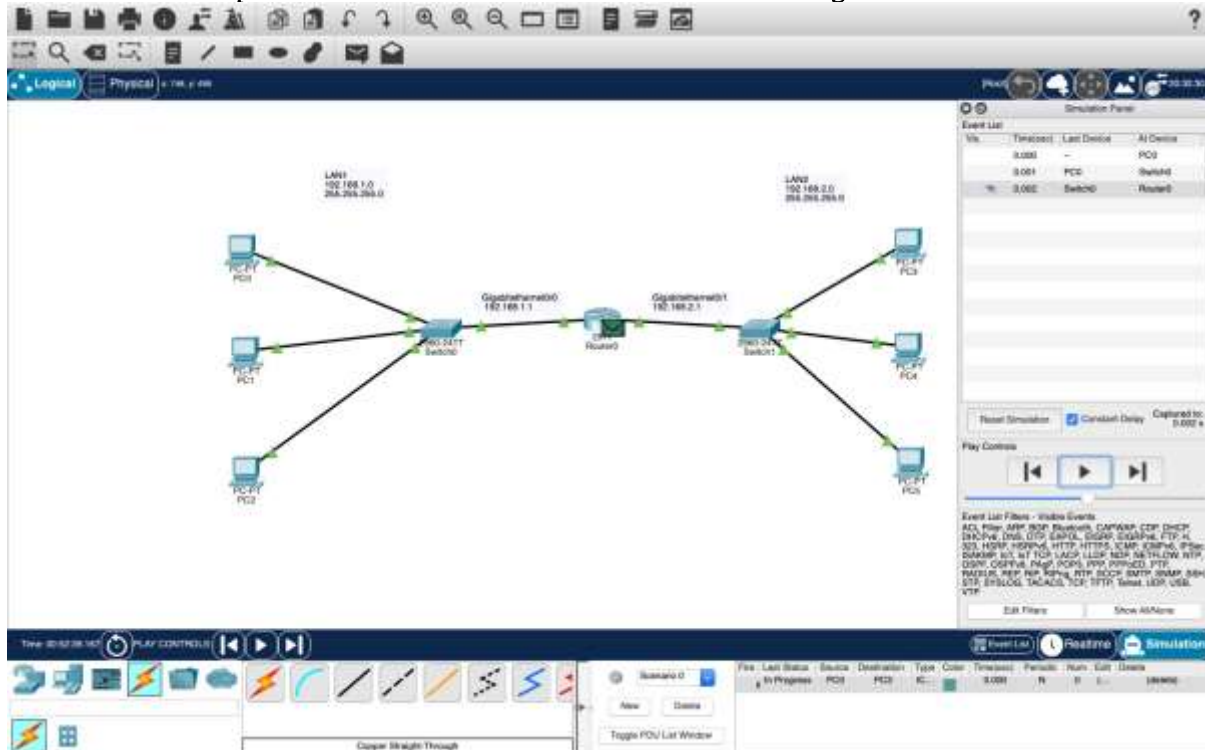
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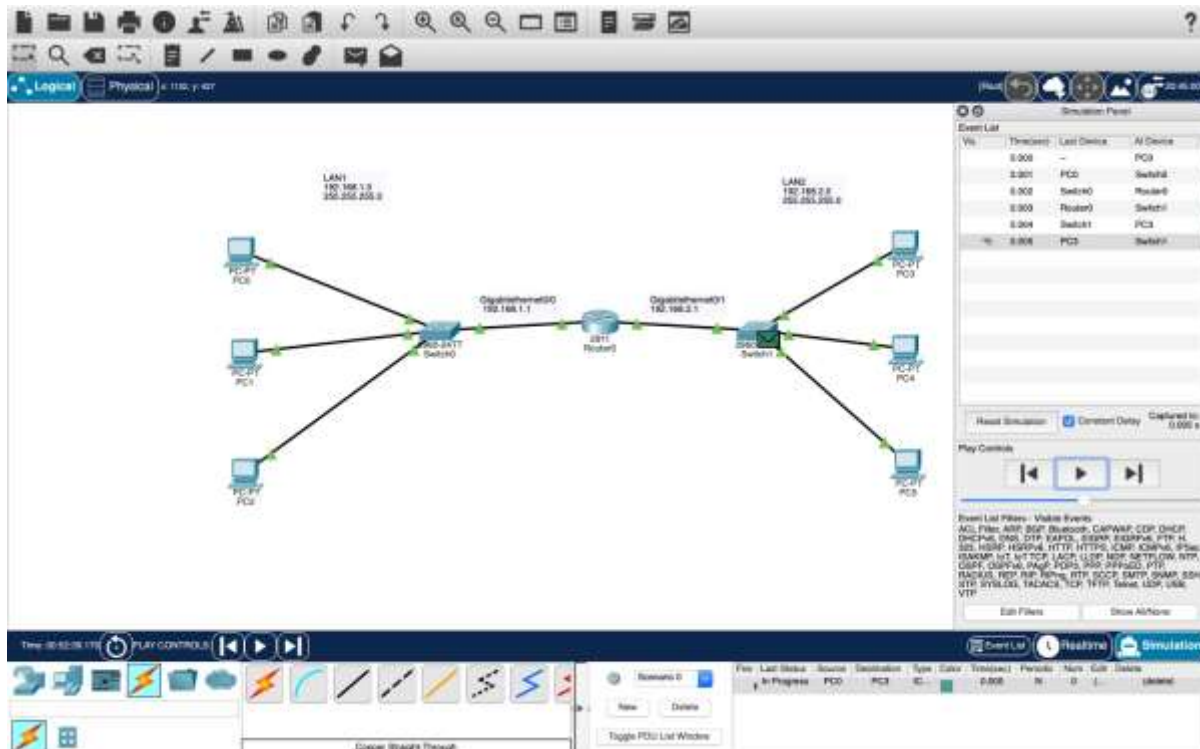
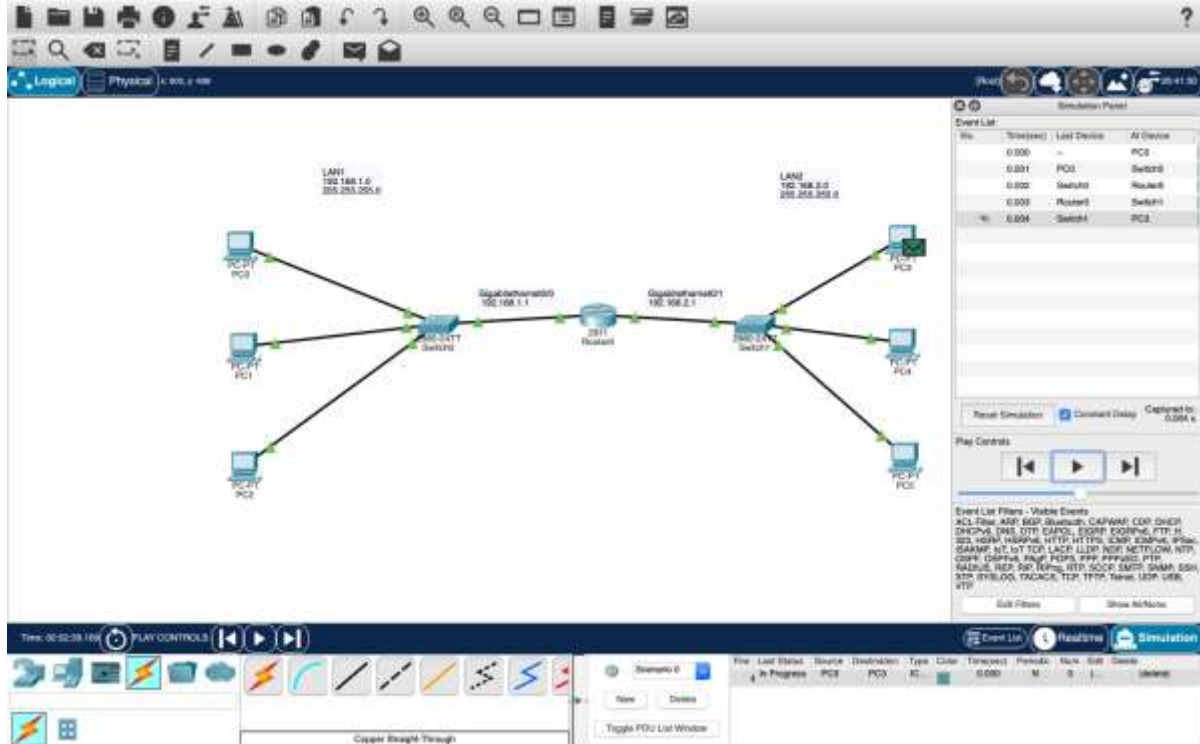
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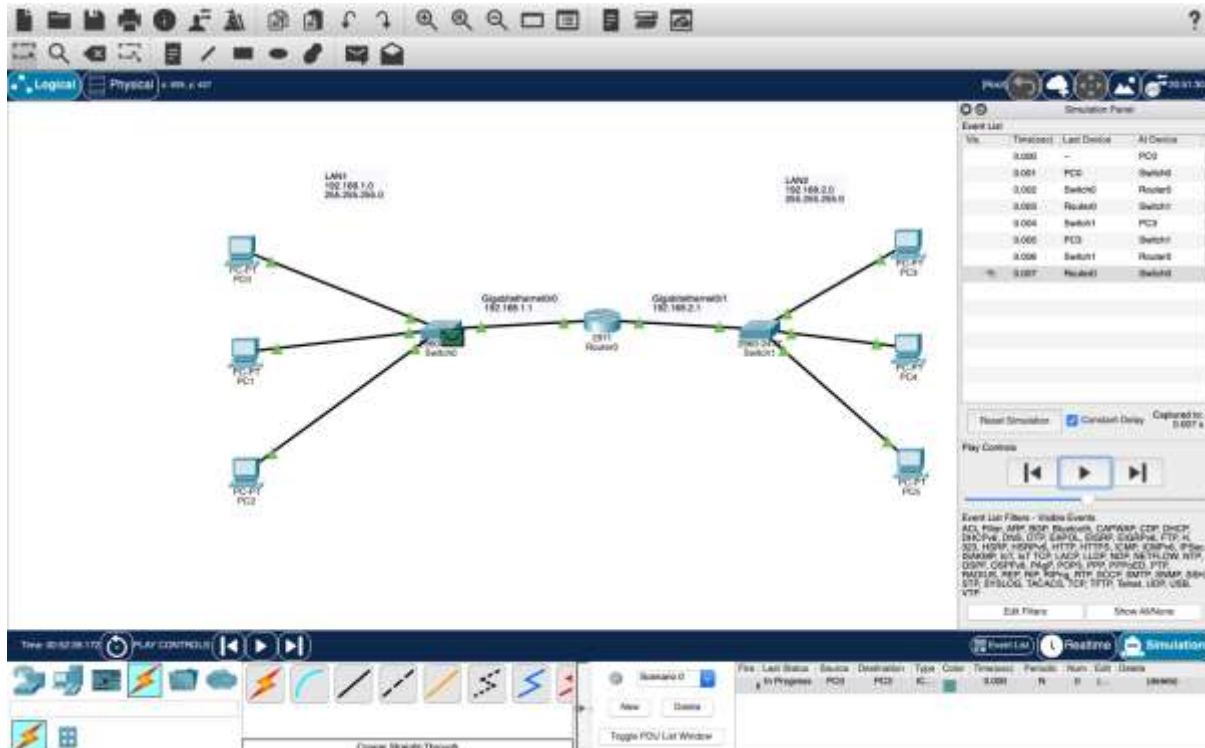
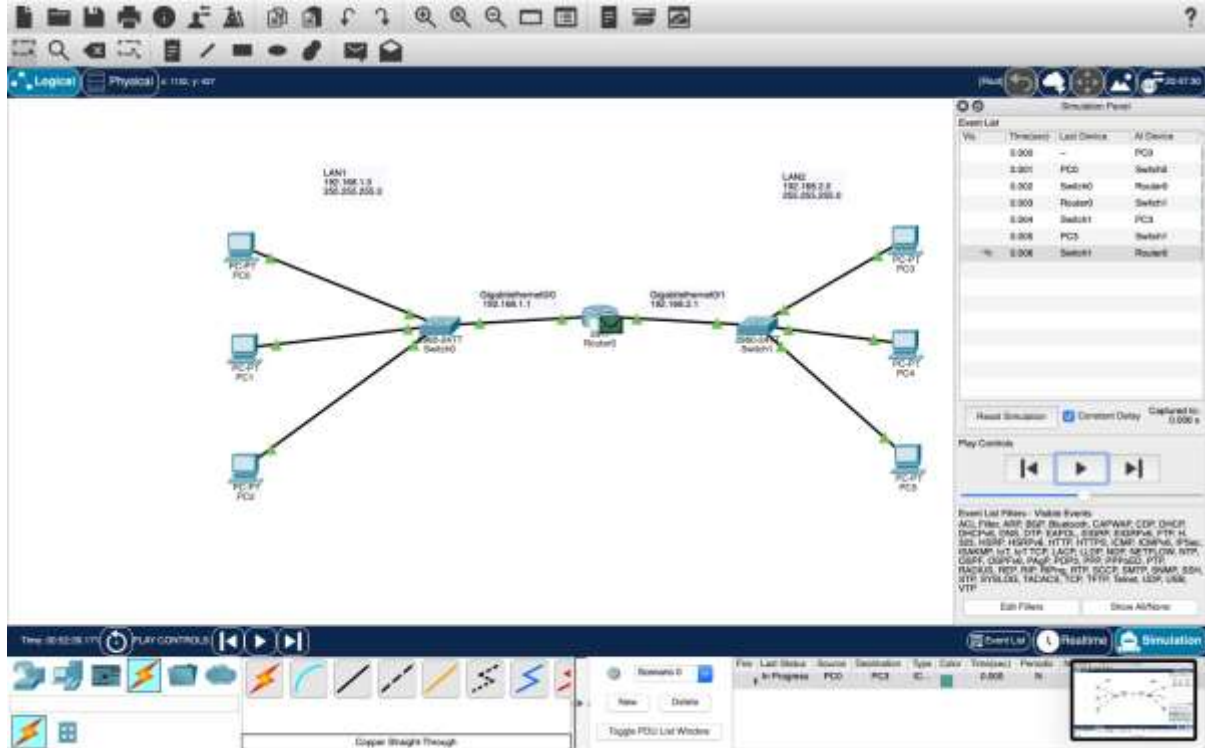
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