

Computer Networks Lab Assignment 4

Objective

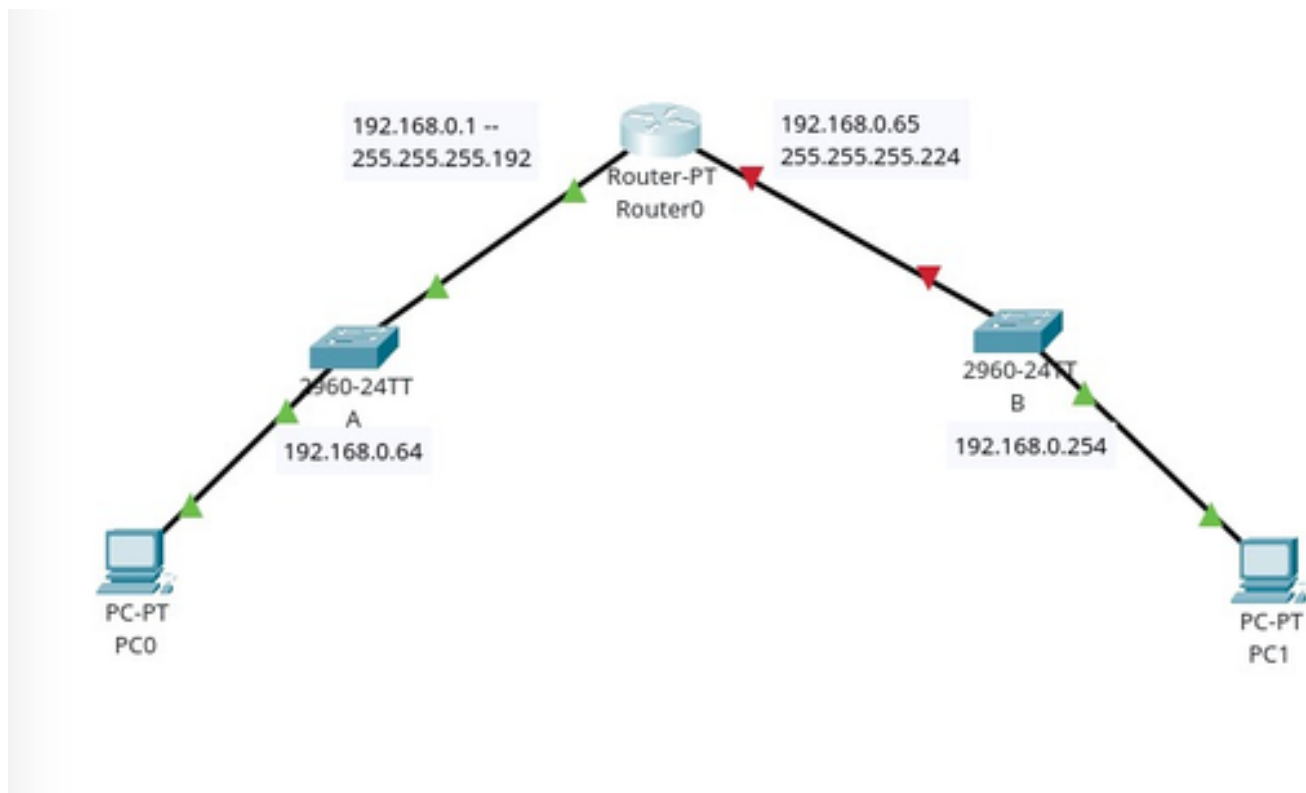
- To configure static and default routing on routers to enable communication between different network segments.
- To use Cisco Packet Tracer to create a network with multiple routers and PCs and configure routing to ensure proper data transfer between devices.

Steps taken to set up the network

STEP 1: Set up the network by dragging required end devices (PC0 and PC1), and network devices (Router PT, 2 Switch 2960-24TT's) and connect them using straight through copper cables.

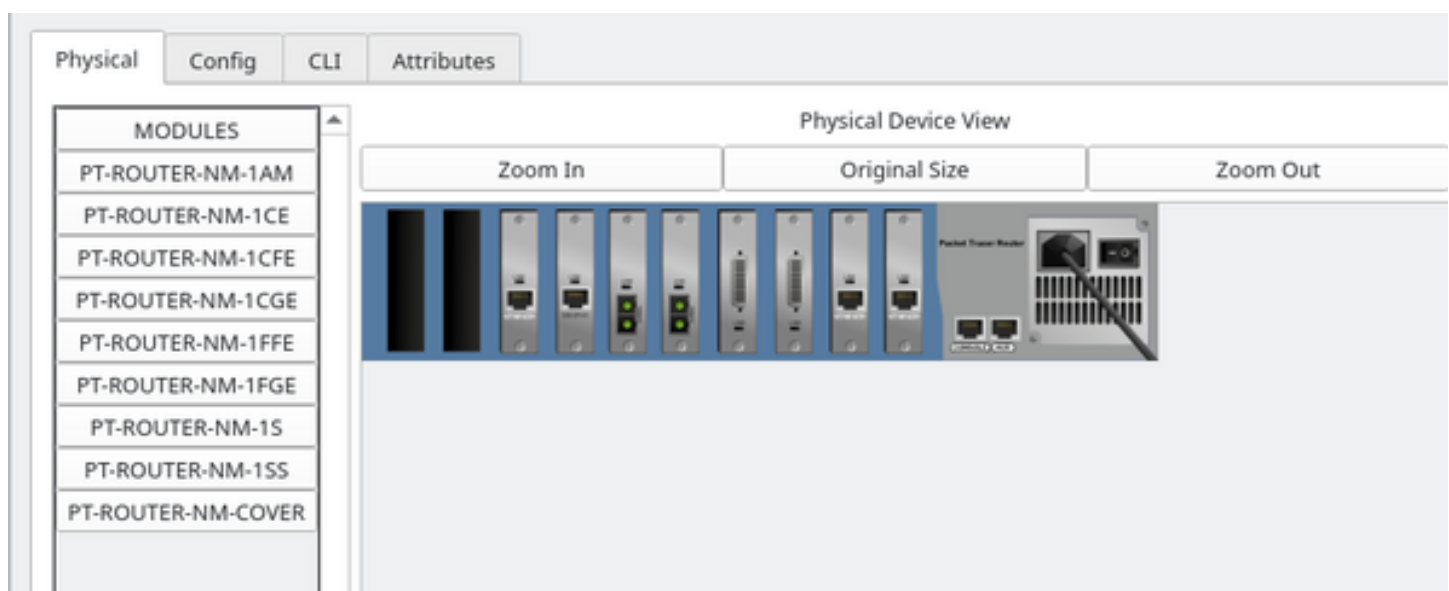
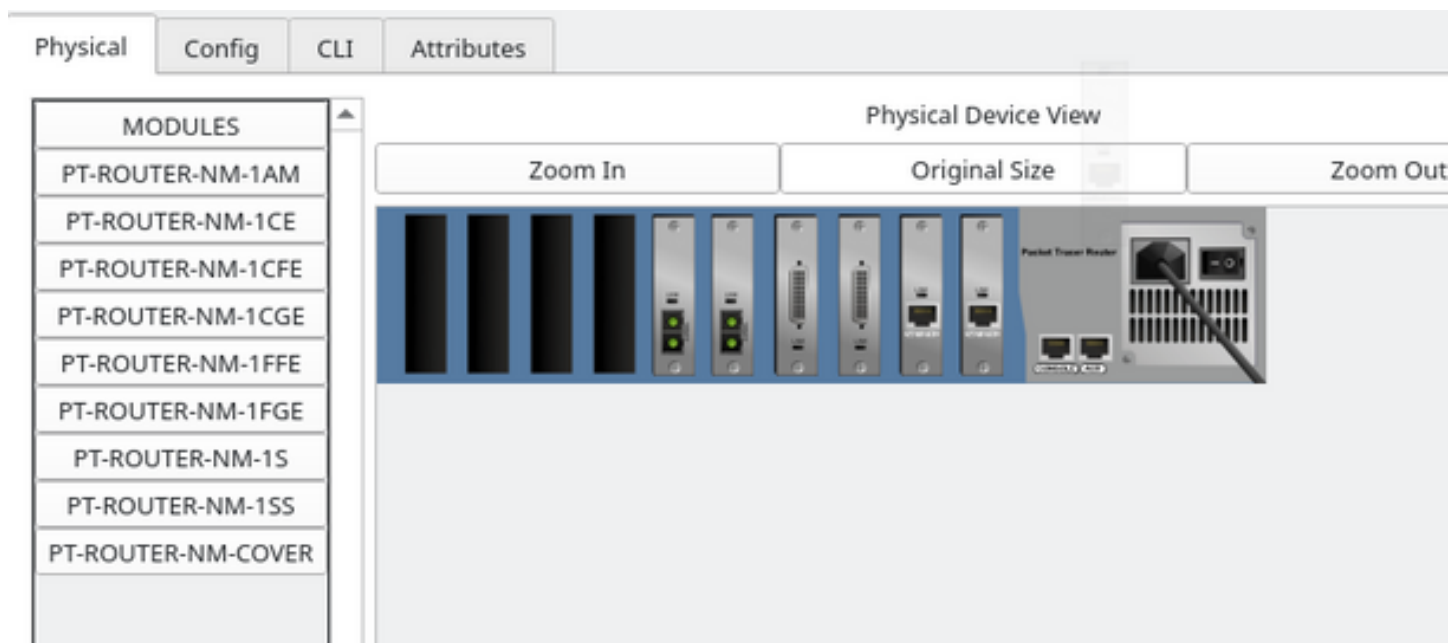
STEP 2:

Using the config table given, just label the devices with a text box with ip address and subnet mask to ease it up



STEP 3:

Tap on Router-PT and navigate to the physical tab, add PT-ROUTER-NM-1CGE Module to the router after turning the power off, and turn on the power after adding at least two of those modules.



STEP 4:

Now connect the Switches via Straight through the cable to the router PT on GigabitEthernet 6/0 and 7/0 respectively.

STEP 5:

Open the Router PT and open the CLI tab;

On CLI tab follow up with these commands below;

Press RETURN to get started!

```
Router>
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int GigabitEthernet 6/0
Router(config-if)#ip address 192.168.0.65 255.255.255.224
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet6/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet6/0, changed state to up

Router(config-if)#exit
Router(config)#int GigabitEthernet 7/0
Router(config-if)#ip address 192.168.0.1 255.255.255.192
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet7/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet7/0, changed state to up

Router(config-if)#exit
Router(config)#
```

STEP 6:

Open switches and open the CLI and use the commands as shown

```
Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int vlan 1
Switch(config-if)#ip address 192.168.0.64 255.255.255.192
Bad mask /26 for address 192.168.0.64
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#
%LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Switch(config-if)#
Switch(config-if)#
Switch(config-if)#
```

STEP 7:

Open the PC0 and PC1 and configure IP addresses

The screenshot shows the configuration window for PC0. The 'Desktop' tab is selected, displaying the 'IP Configuration' and 'IPv6 Configuration' sections. The 'IP Configuration' section is set to 'Static' with the following values: IPv4 Address: 192.168.0.2, Subnet Mask: 255.255.255.192, Default Gateway: 192.168.0.1, and DNS Server: 0.0.0.0. The 'IPv6 Configuration' section is also set to 'Static' with the following values: IPv6 Address: (empty), Link Local Address: FE80::2D0:58FF:FEEC:E25, Default Gateway: (empty), and DNS Server: (empty). The '802.1X' section is expanded, showing 'Use 802.1X Security' as unchecked, 'Authentication' as MD5, and 'Username' and 'Password' fields as empty. A 'Top' button is located at the bottom left of the window.

PC0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.0.2

Subnet Mask 255.255.255.192

Default Gateway 192.168.0.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:58FF:FEEC:E25

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface FastEthernet0

IP Configuration

☐ DHCP☒ Static

IPv4 Address

192.168.0.66

Subnet Mask

255.255.255.224

Default Gateway

192.168.0.65

DNS Server

0.0.0.0

IPv6 Configuration

☐ Automatic☒ Static

IPv6 Address

Link Local Address

FE80::2E0:A3FF:FED7:19A2

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

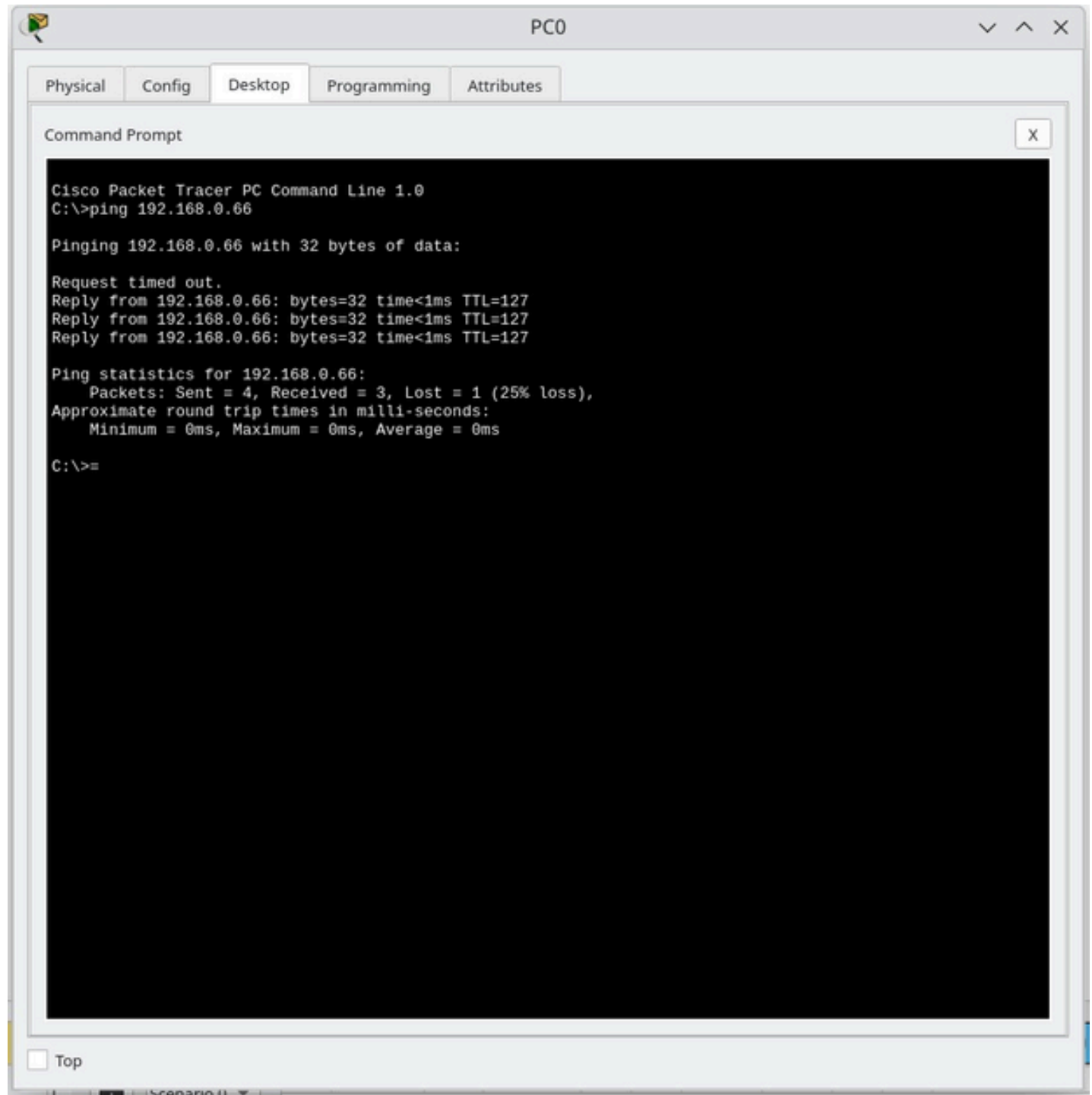
Username

Password

☐ Top

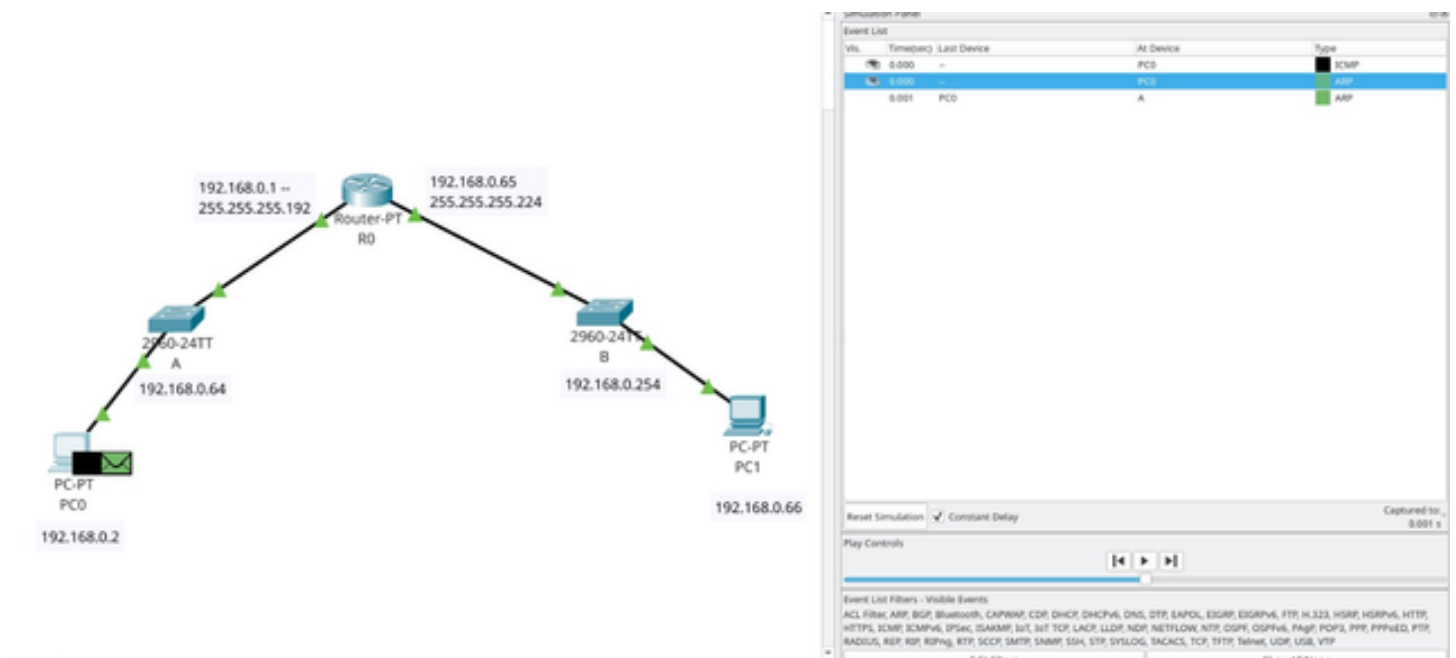
STEP 8:

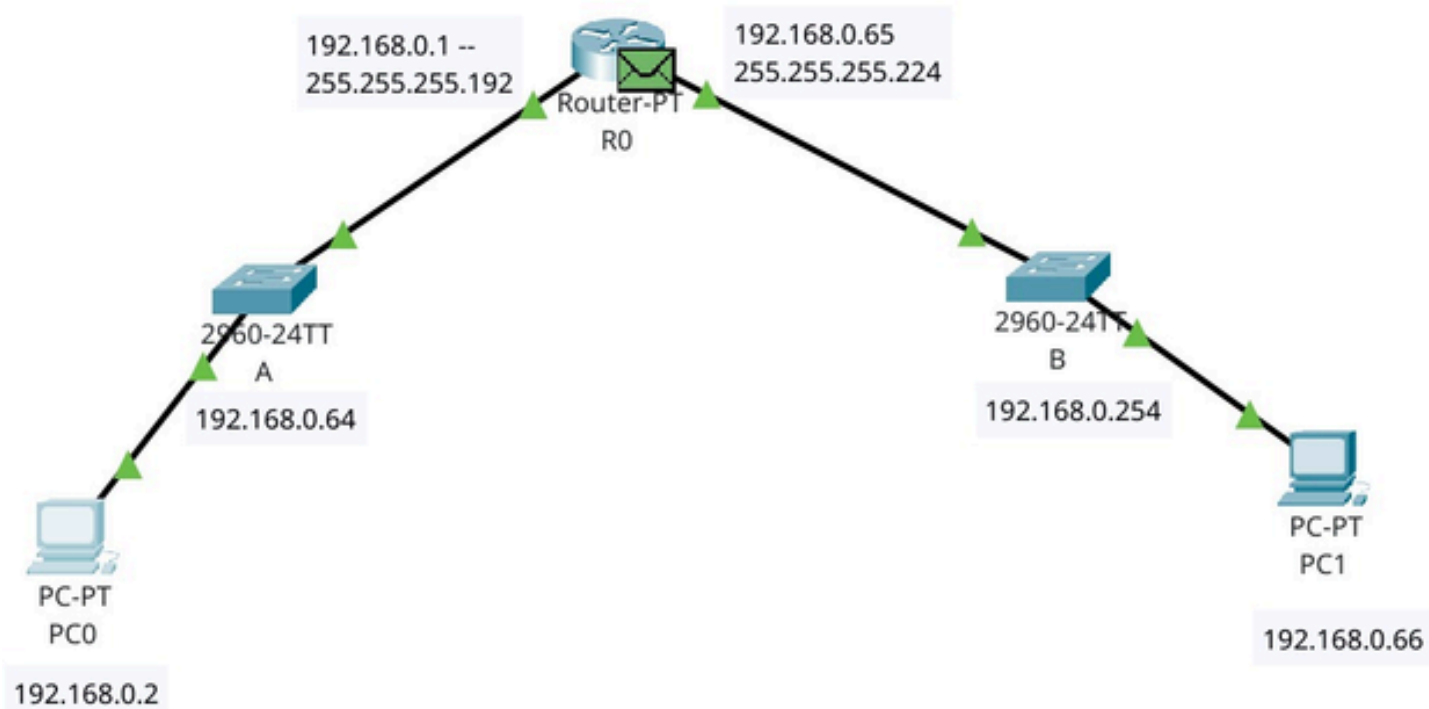
Ping PC1 from PC0



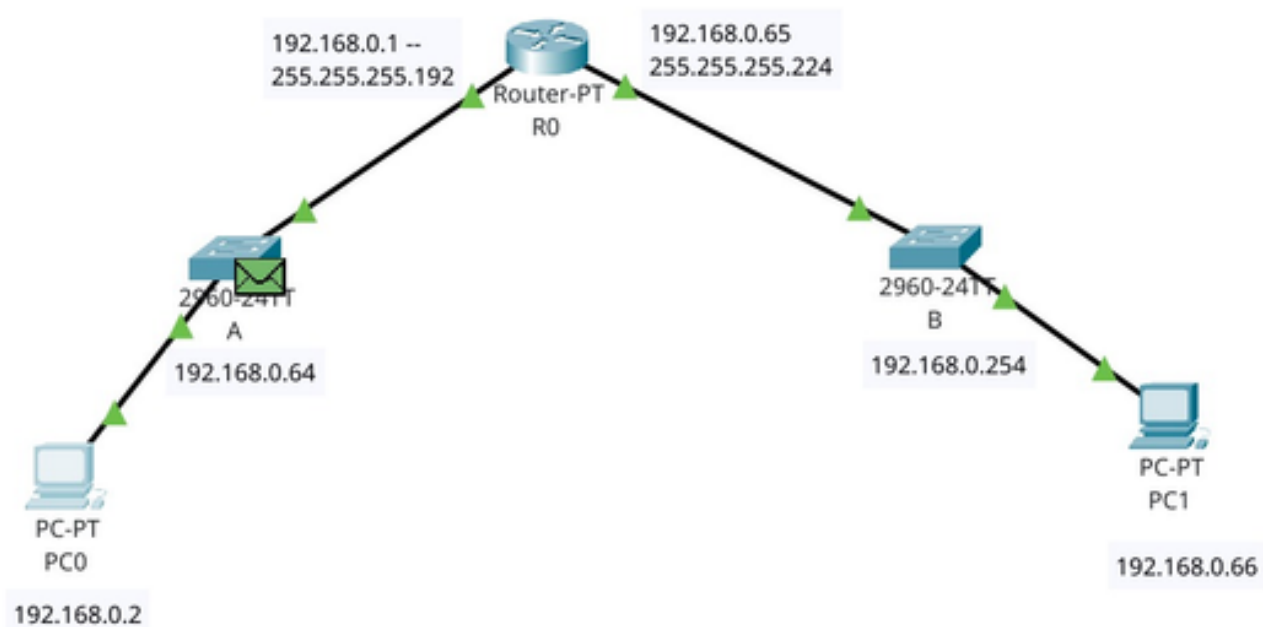
Simulation ping PC1 from PC0:

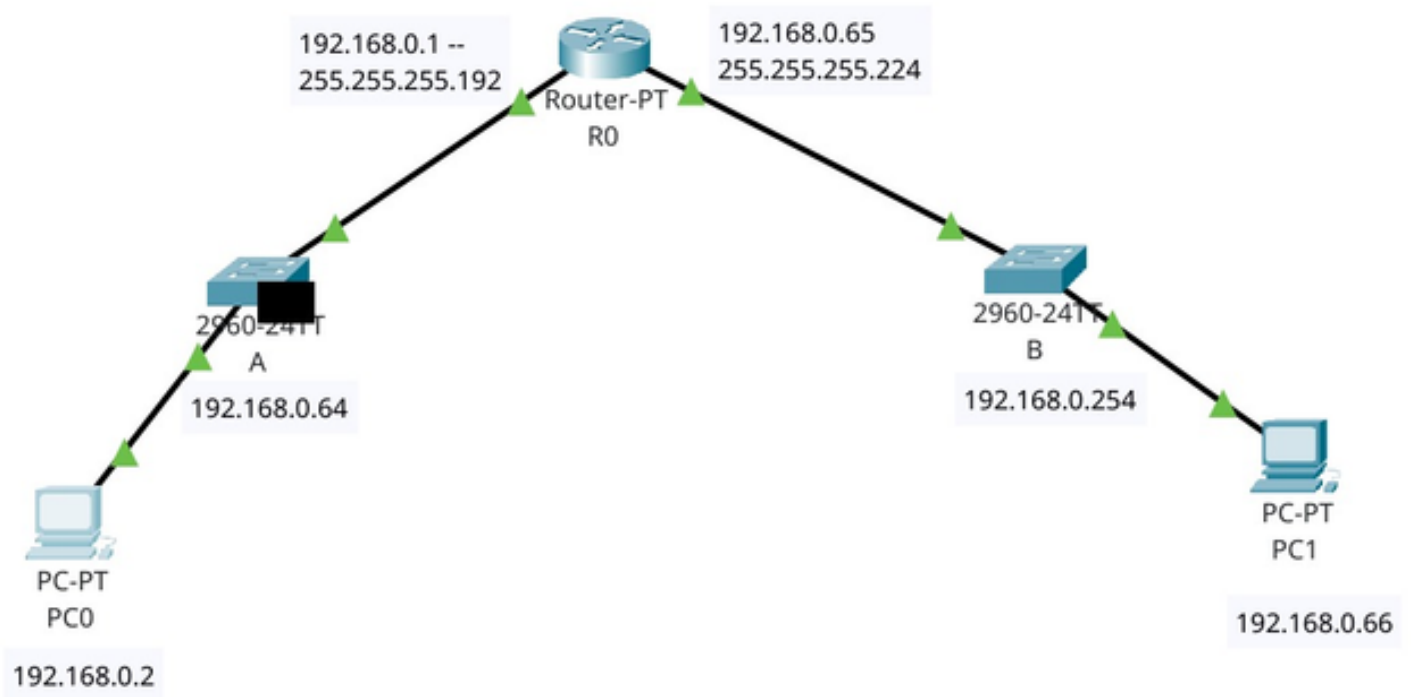
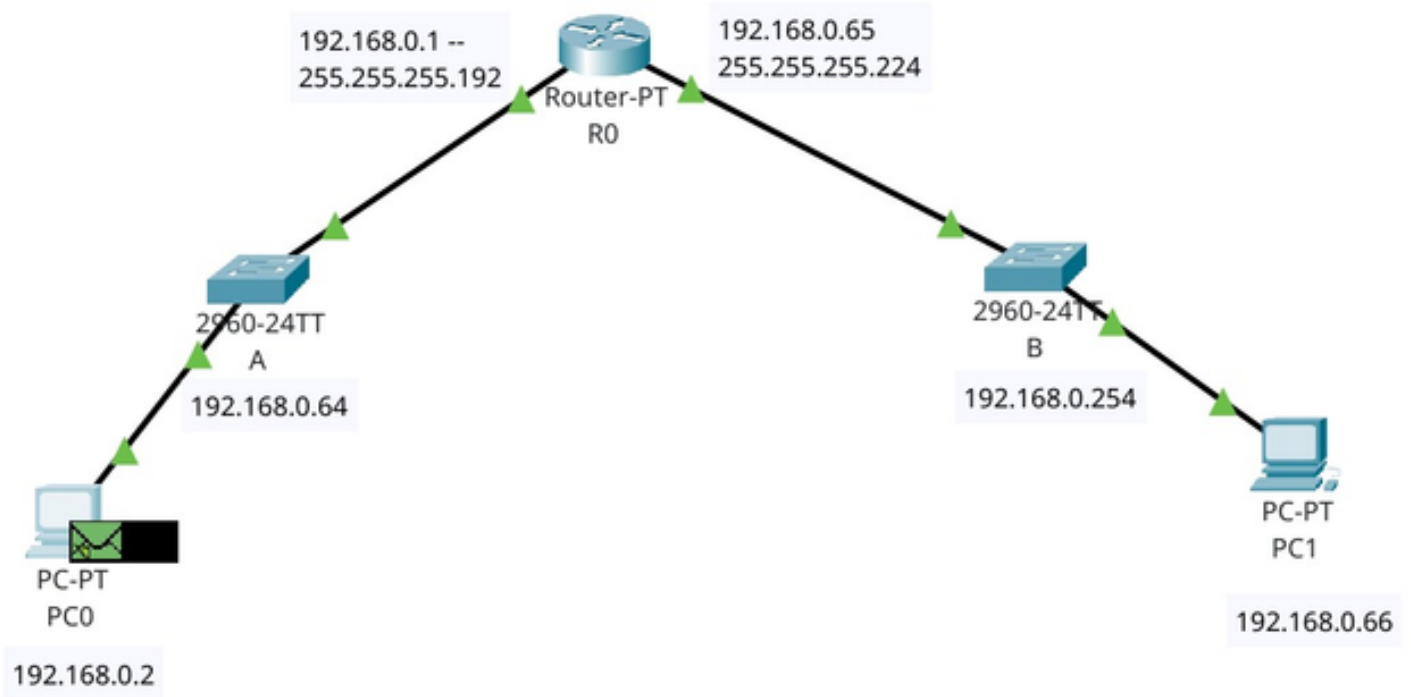
ARP REQUEST:

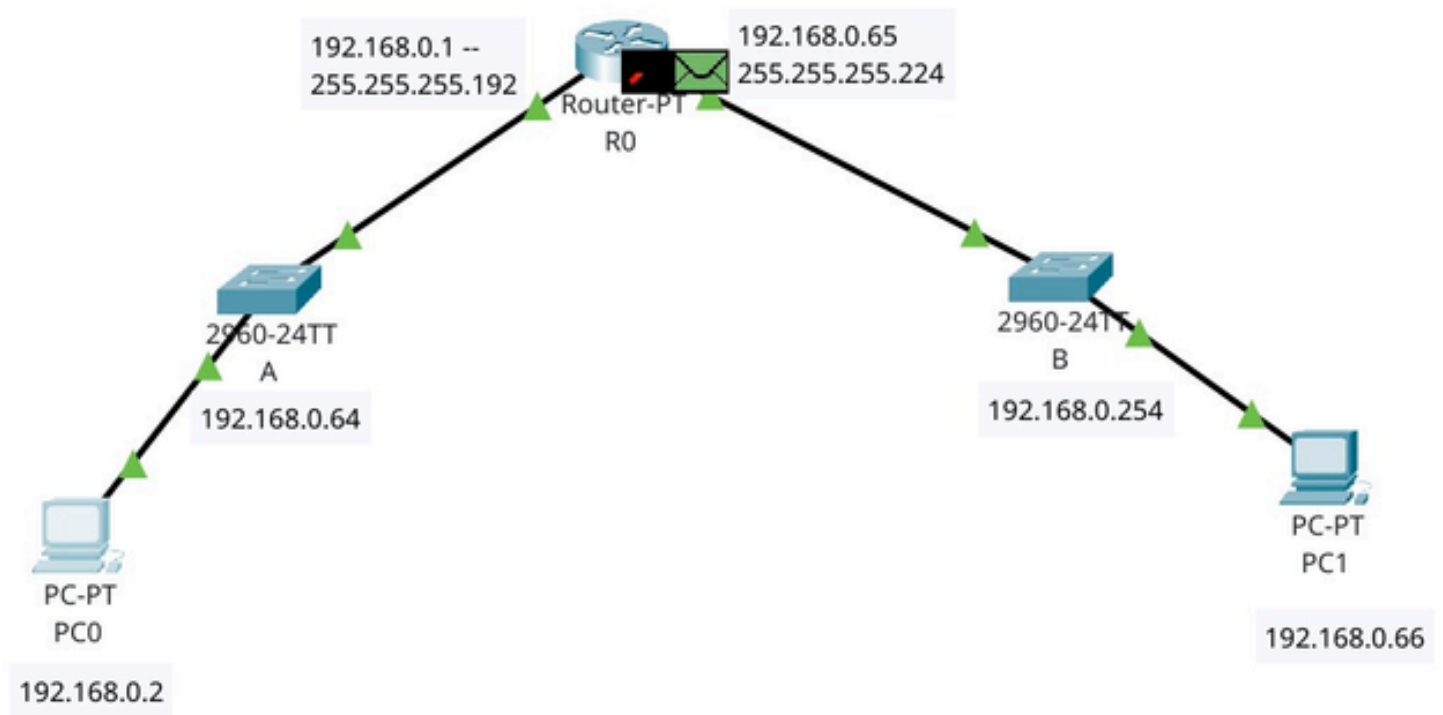




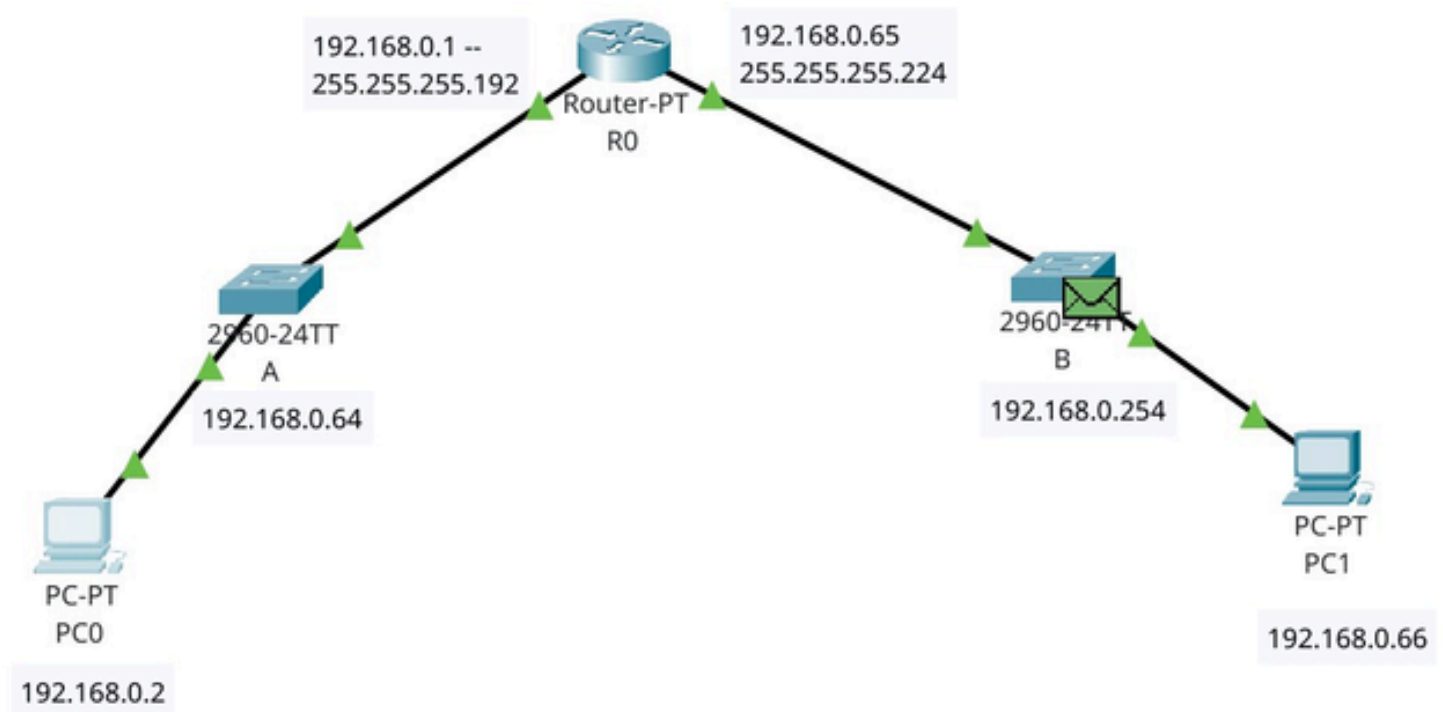
ARP REPLY:

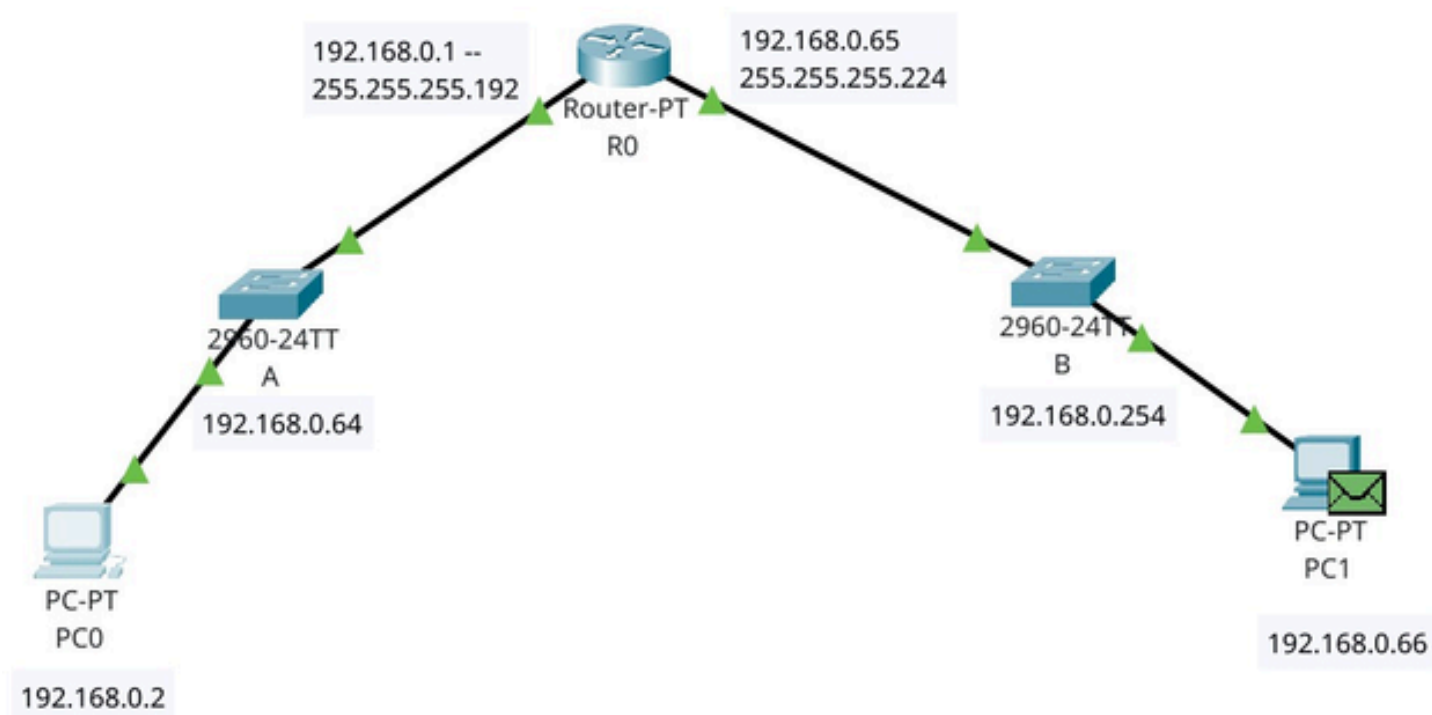




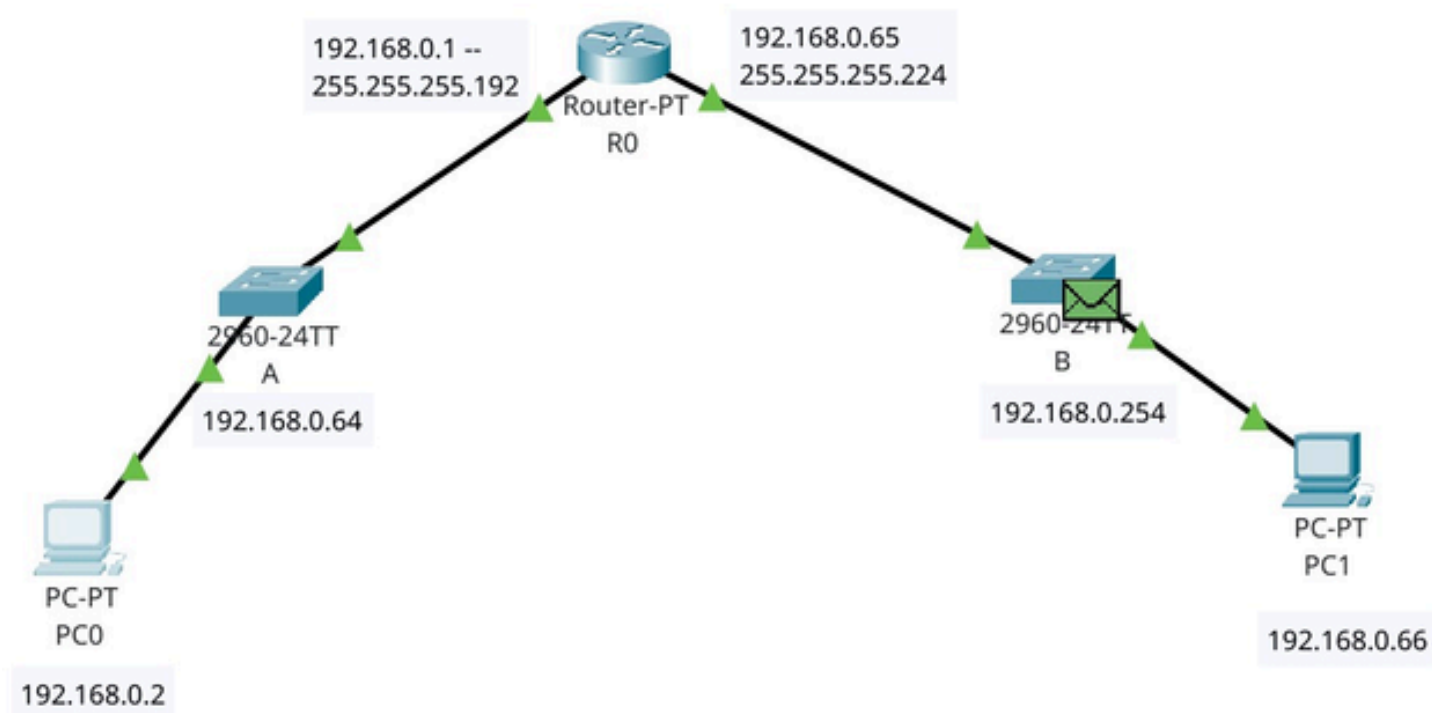


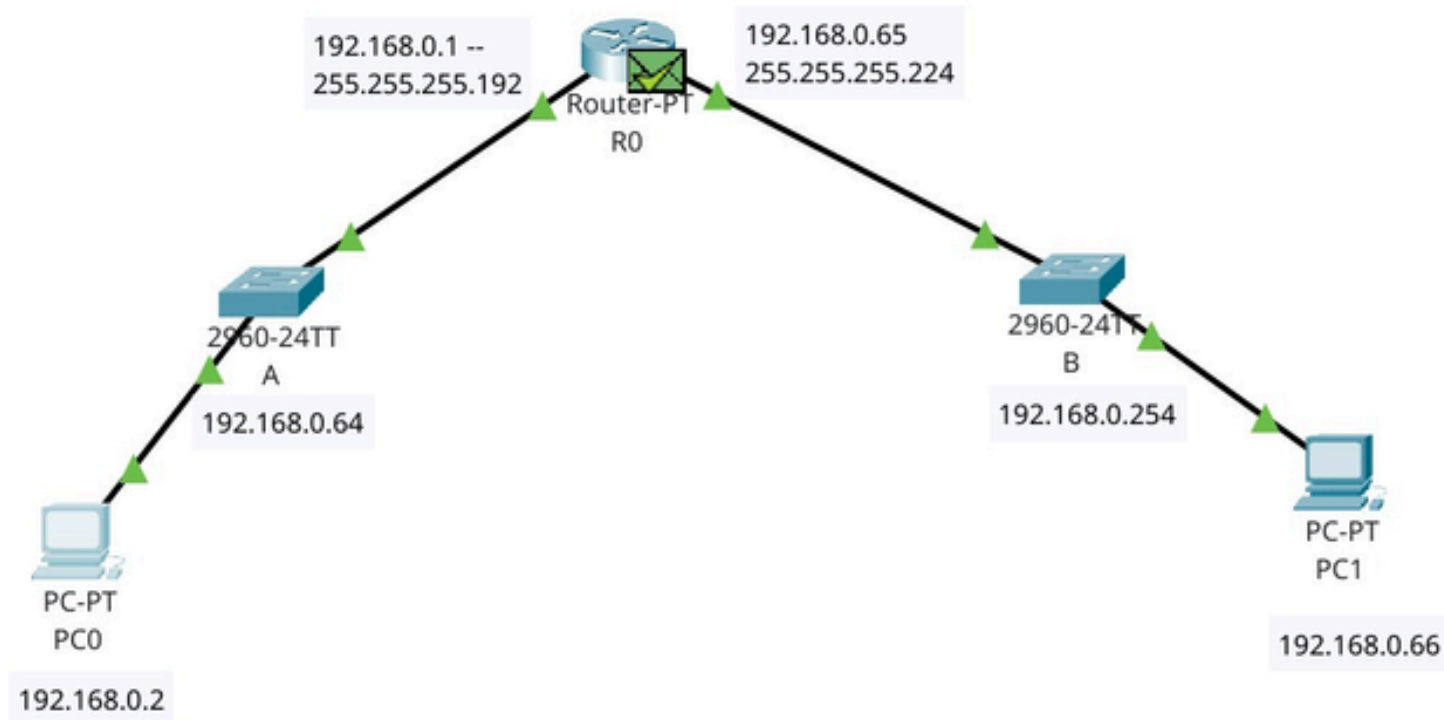
ARP REQUEST:



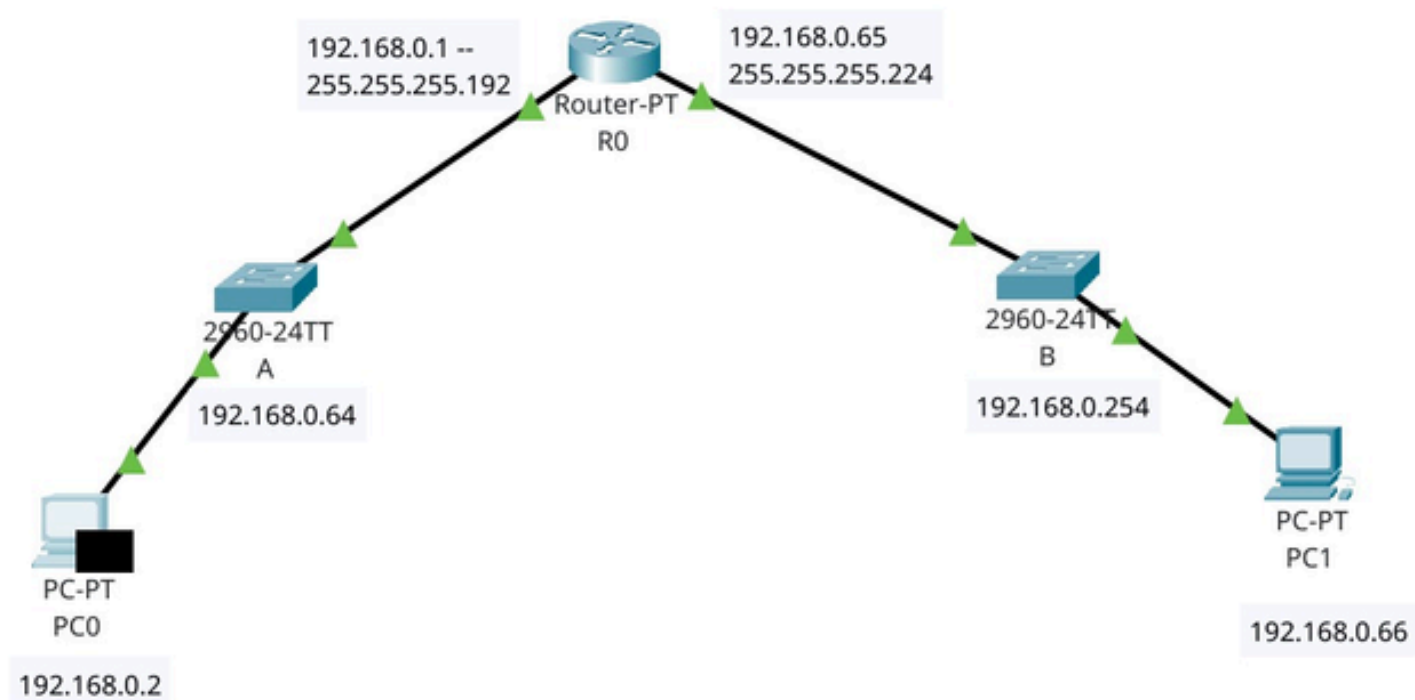


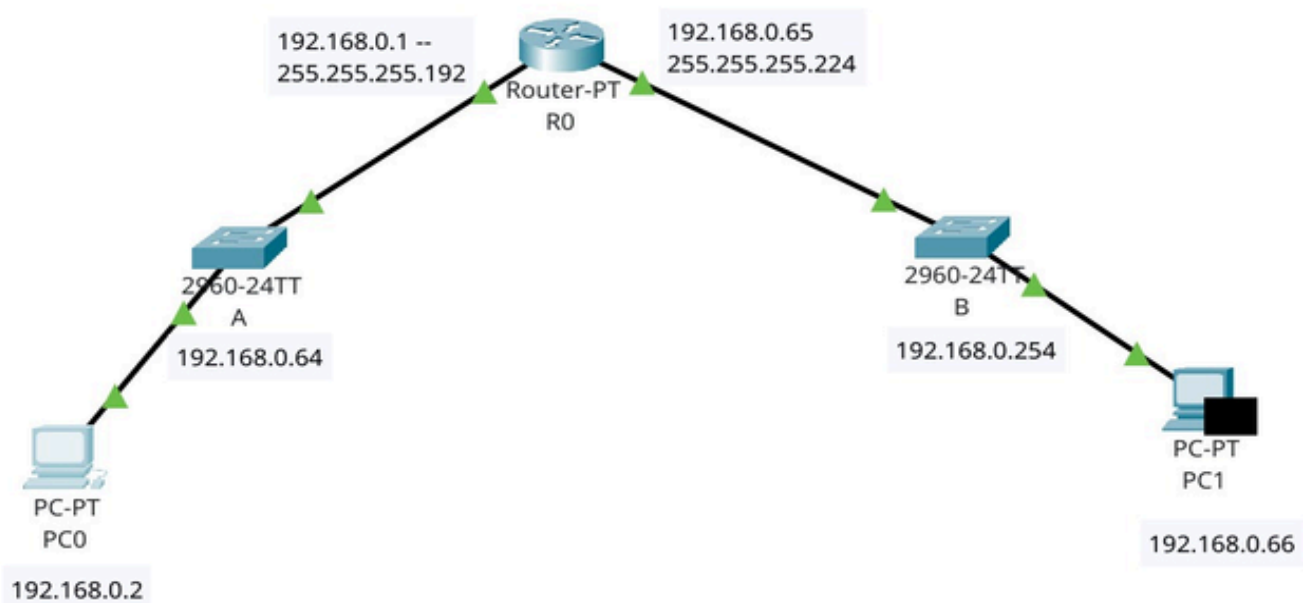
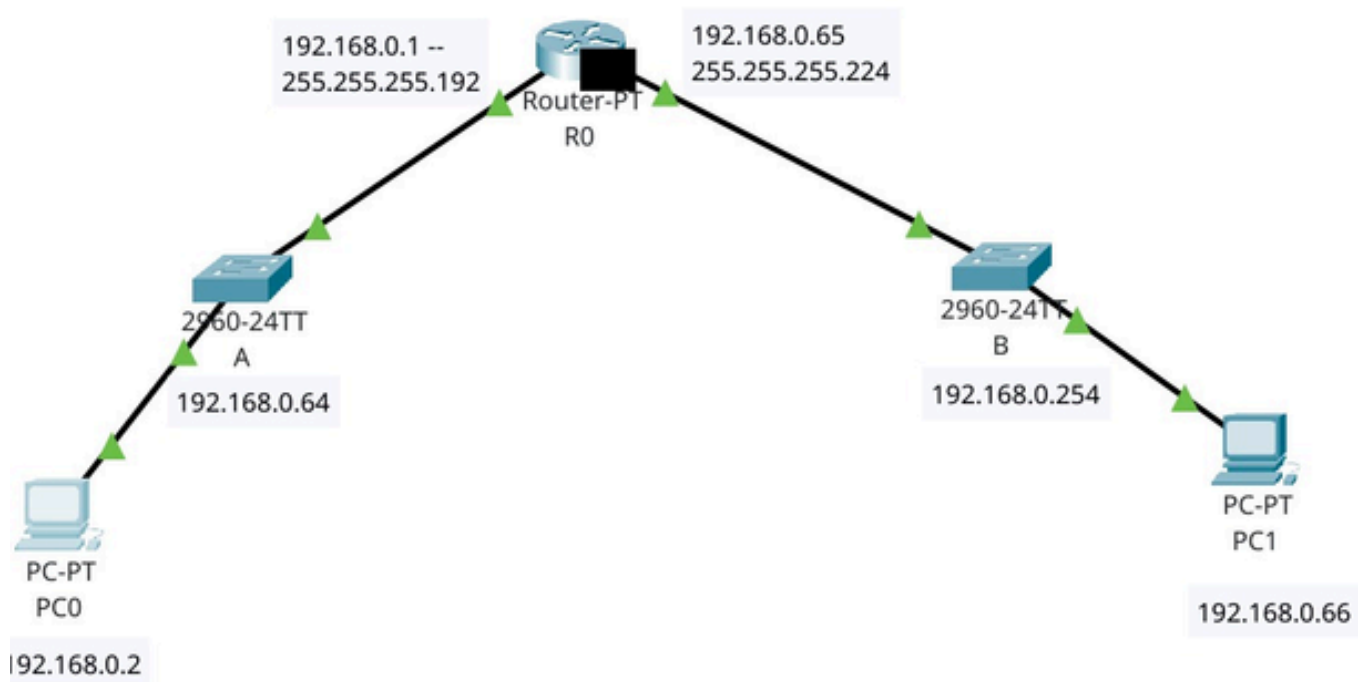
ARP REPLY:





ICMP ECHO REQUEST:





ICMP ECHO REPLY:

