Computer Networks Lab Assignment 4

Lab 4: IP Addressing and Subnetting (VLSM) with Cisco Packet Tracer

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.

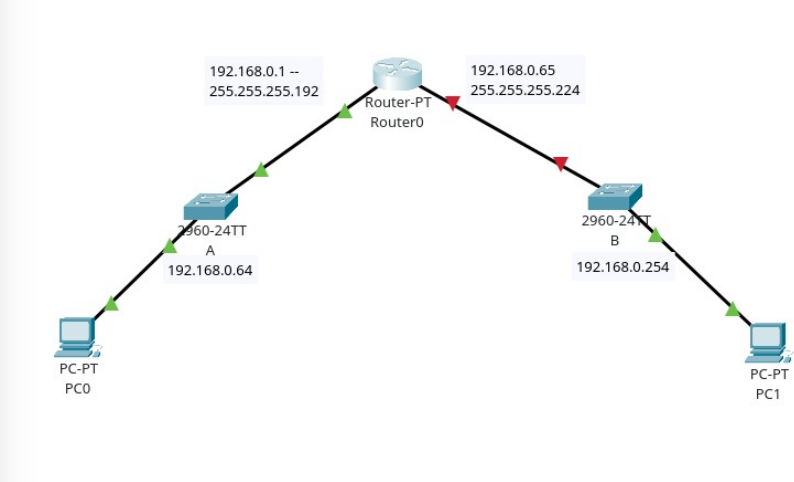
Steps taken to set up the network

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.

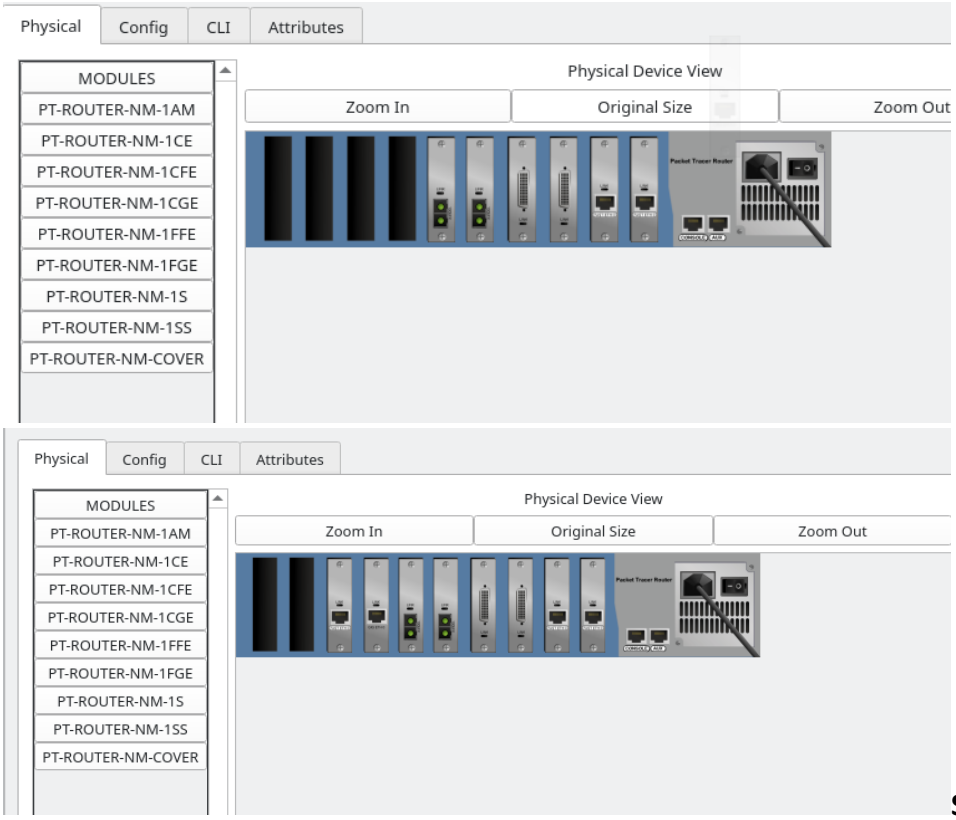
STEP 2:

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)#
```

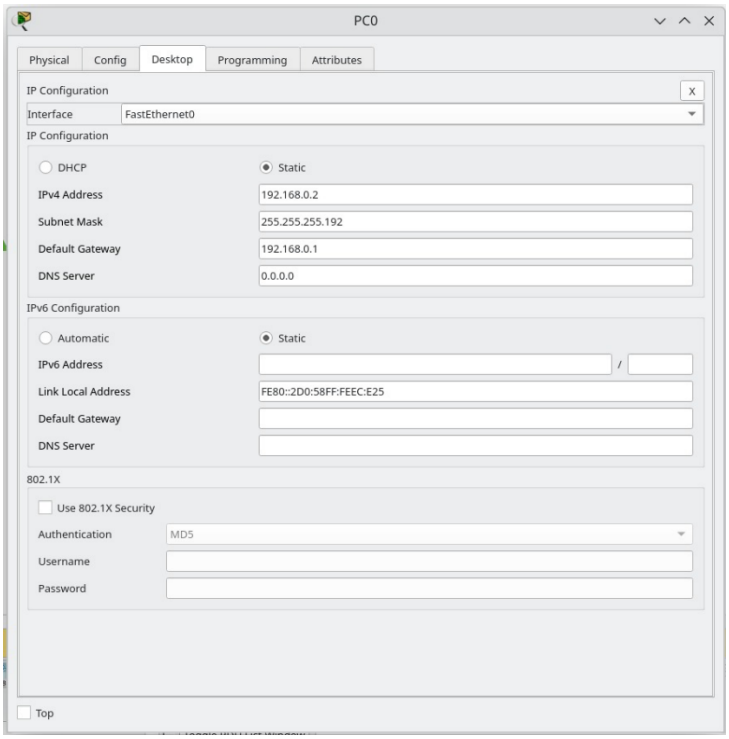
STEP 6:

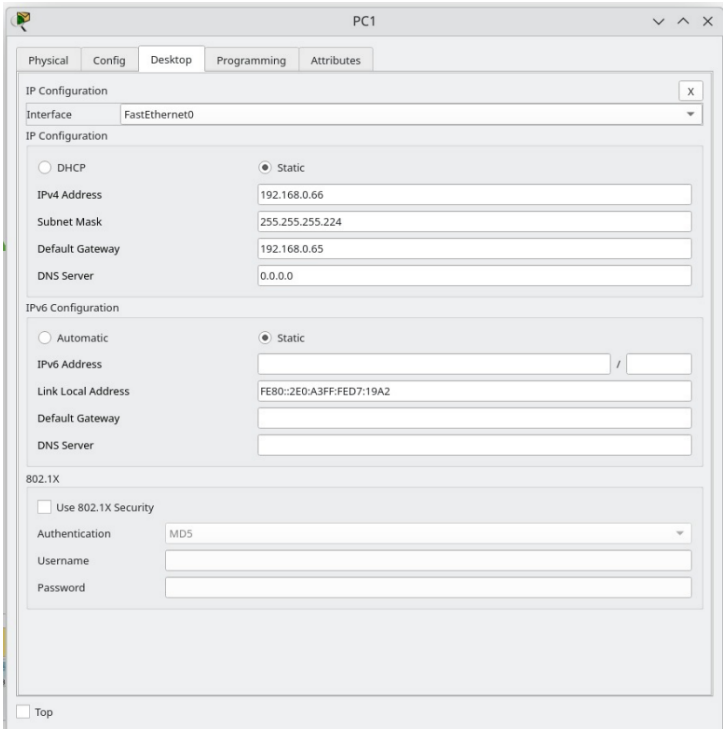
Open switches and open the CLI and use the commands as shown

```
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:

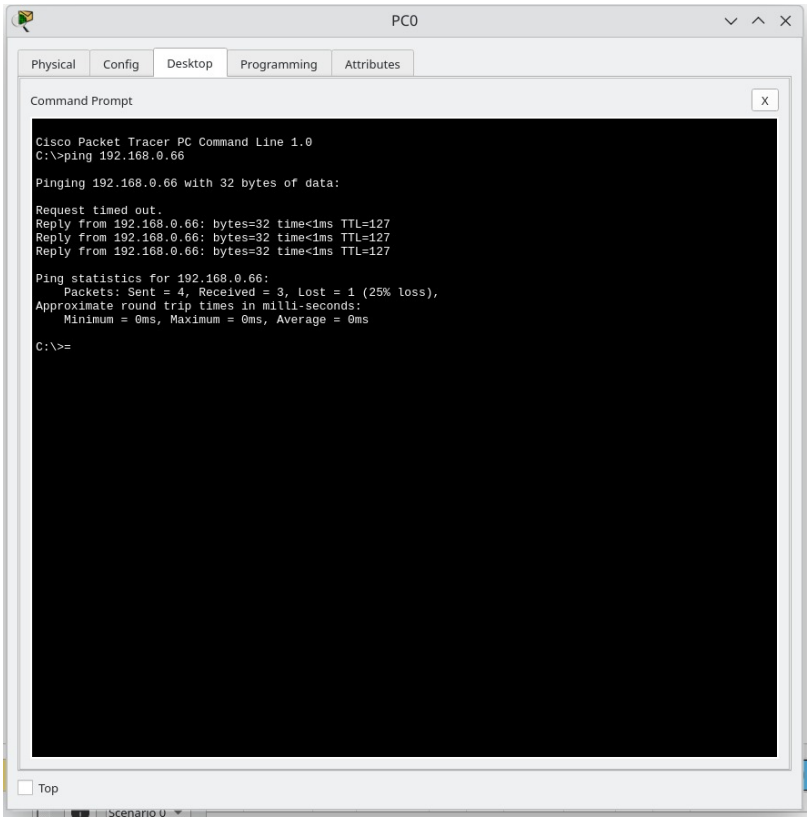
Open the PC0 and PC1 and configure IP addresses





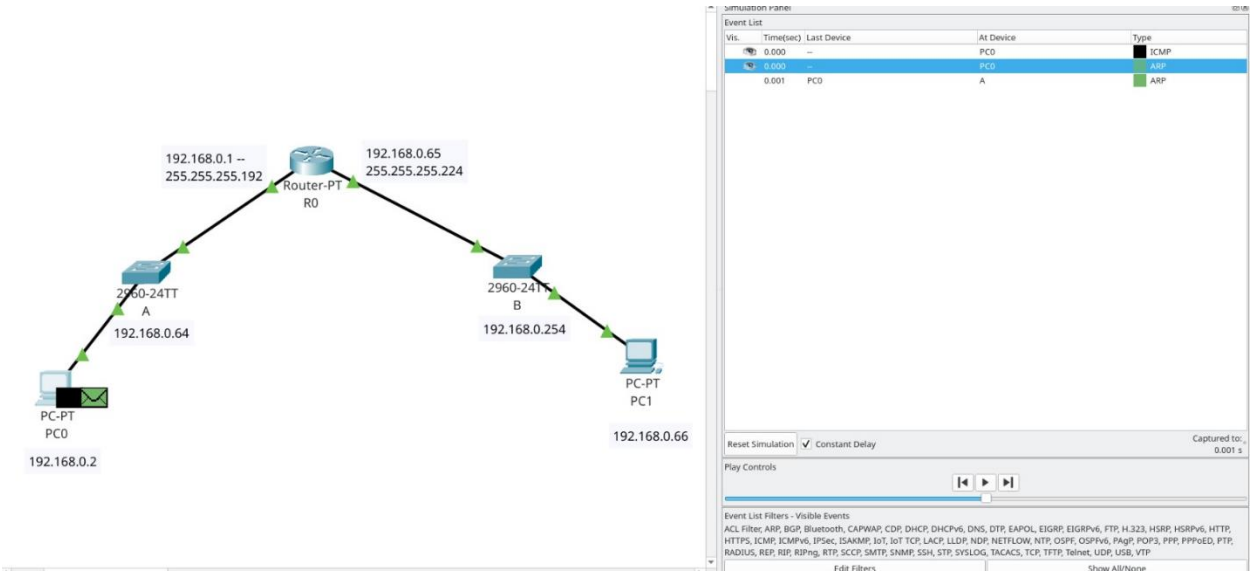
STEP 8:

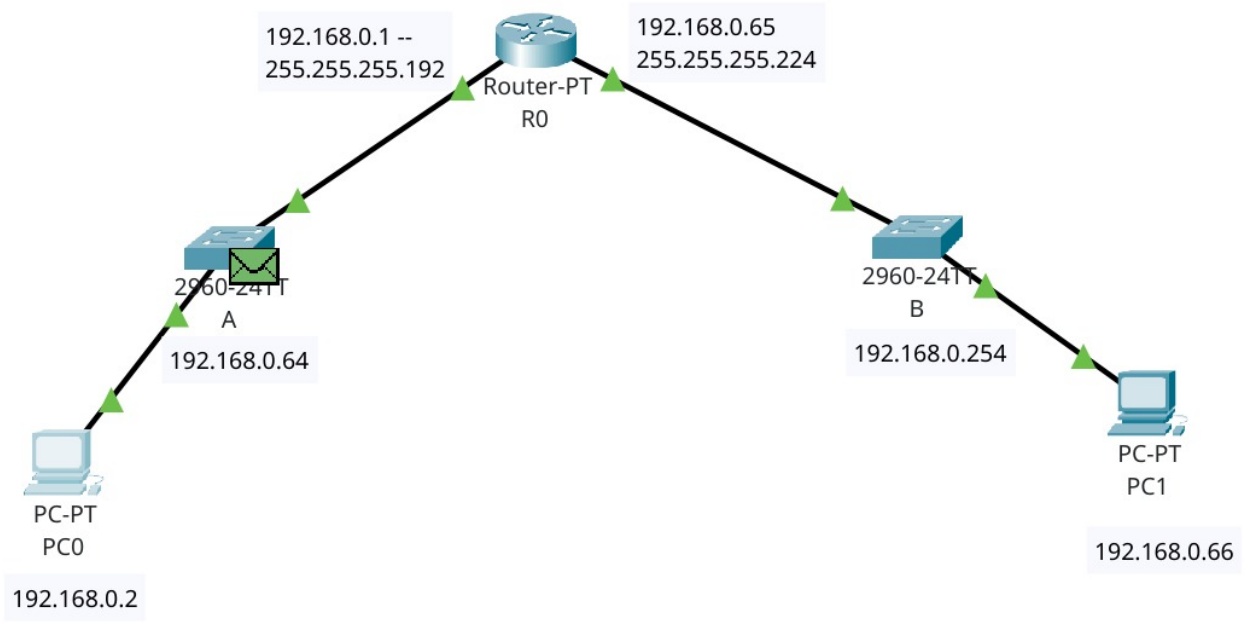
Ping PC1 from PC0

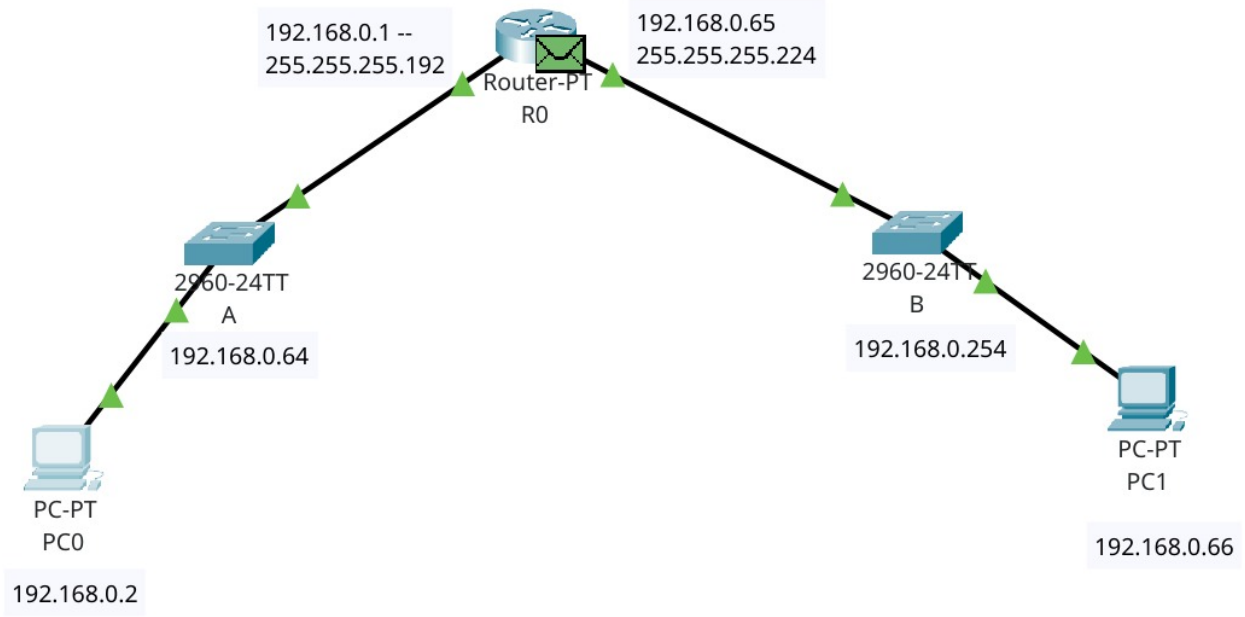


Simulation ping PC1 from PC0:

ARP REQUEST:






192.168.0.1 --
255.255.255.192
Router-PT
R0
192.168.0.65
255.255.255.224
2960-24TT
A
192.168.0.64
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192.168.0.254
PC-PT
PC0
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PC-PT
PC1
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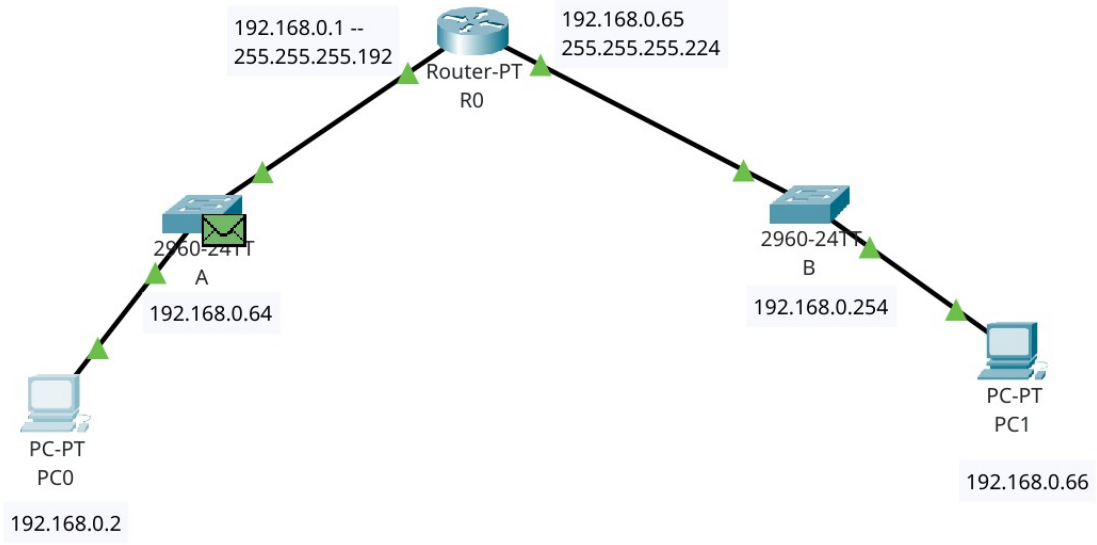
ARP REPLY: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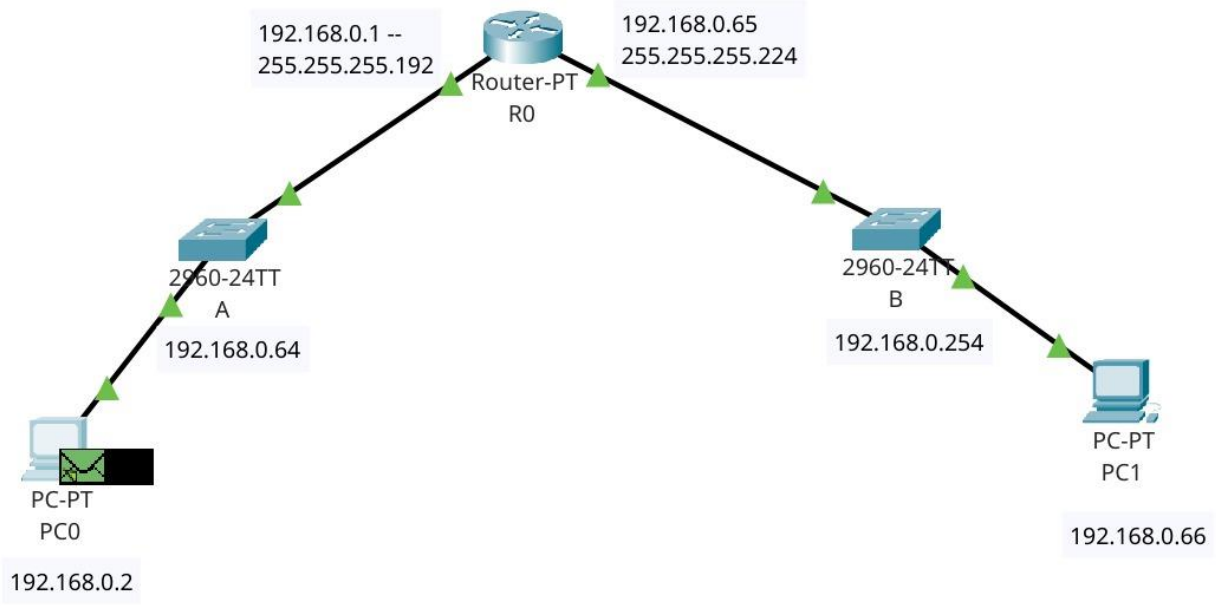
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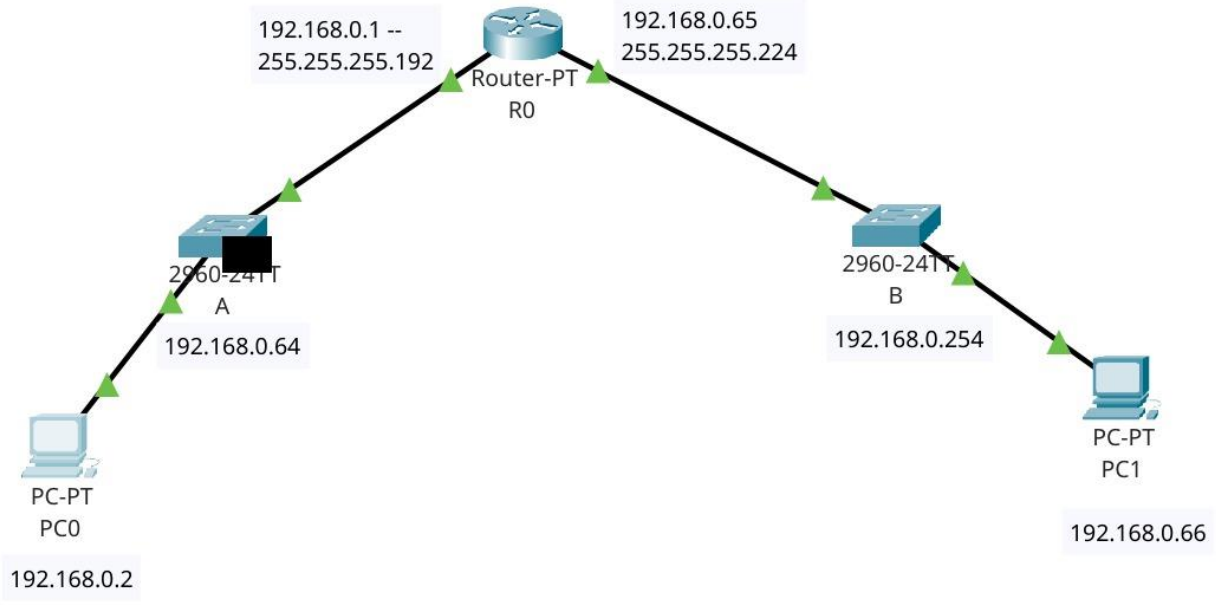
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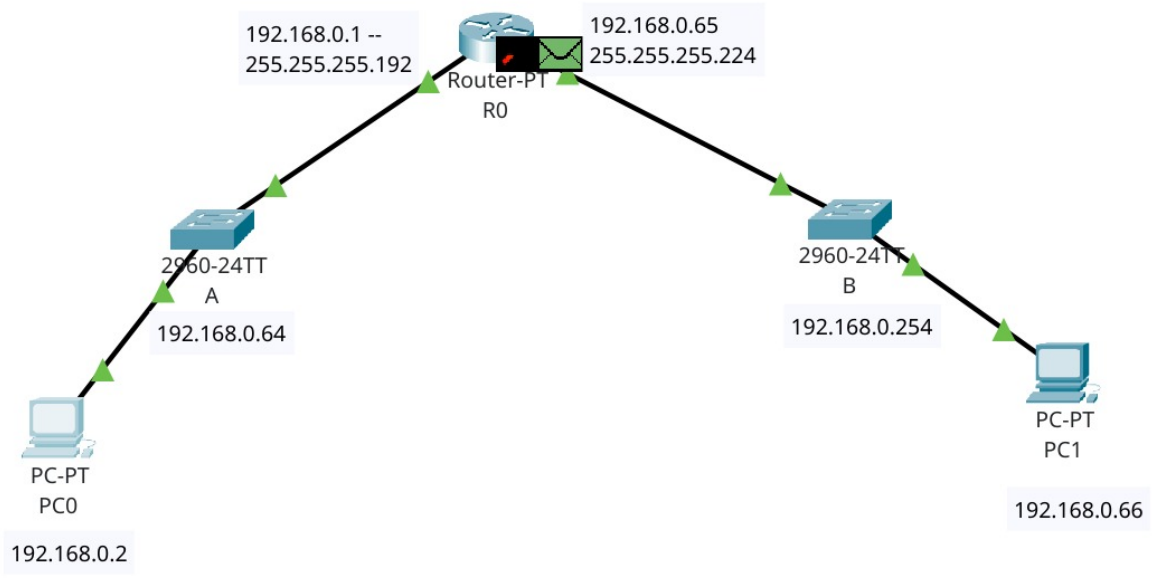
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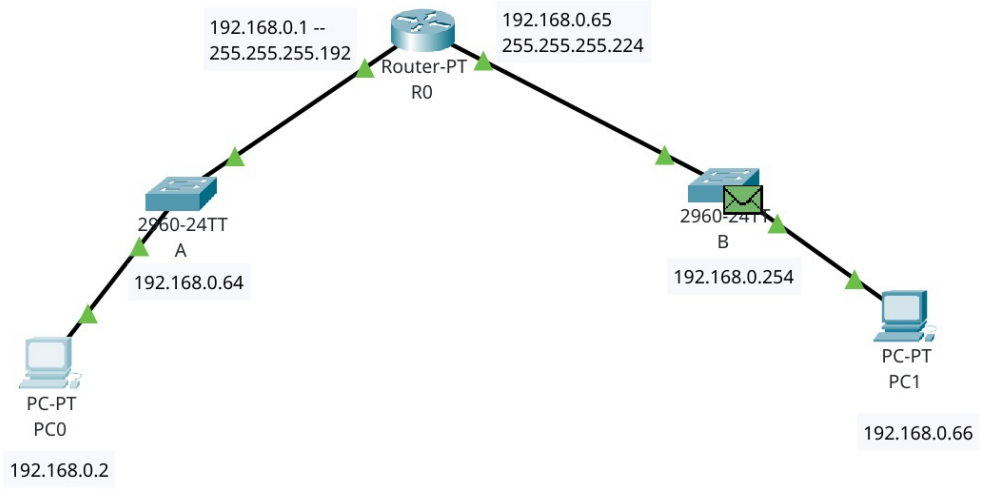
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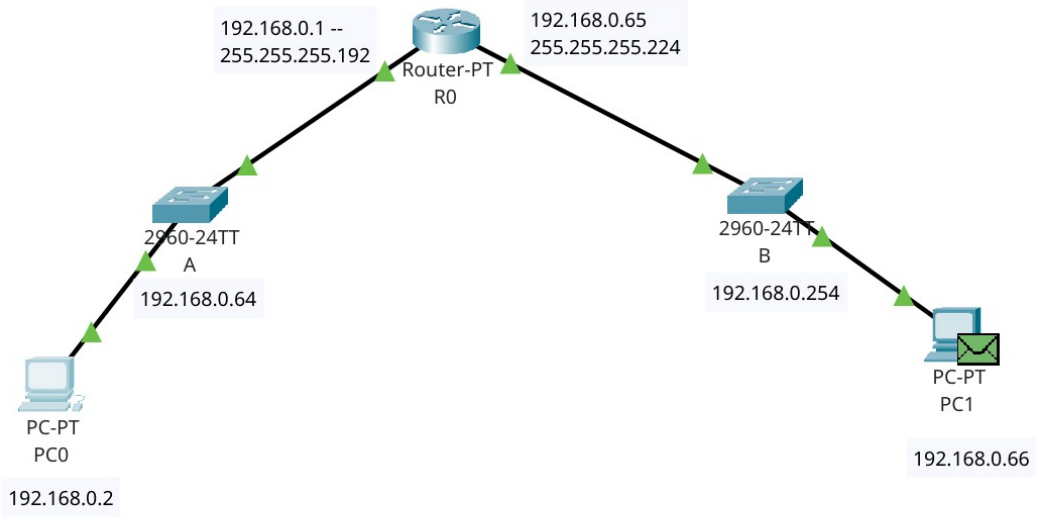
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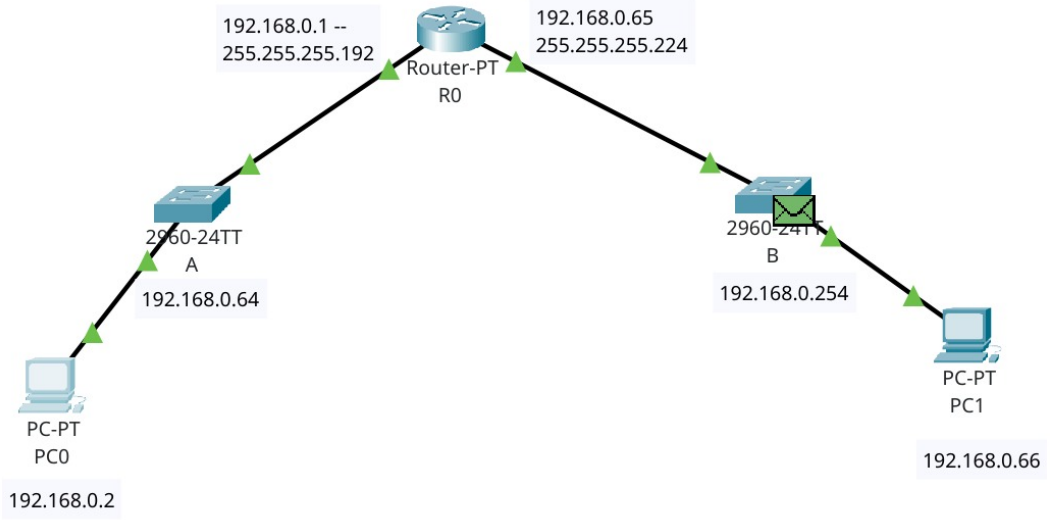
ARP REPLY: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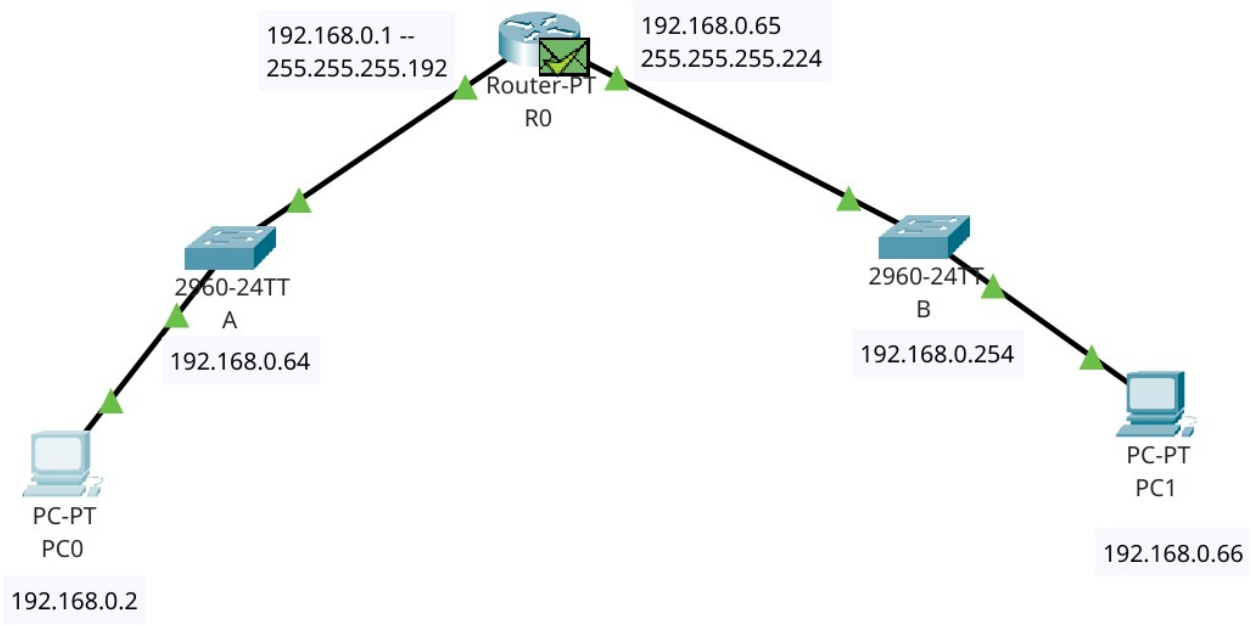
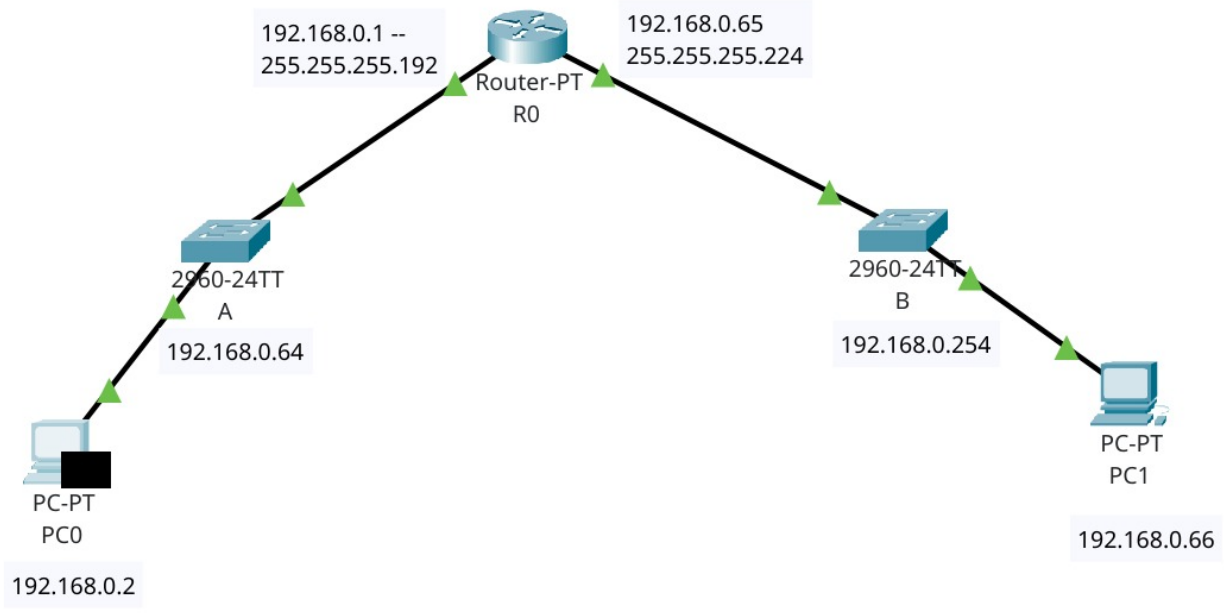
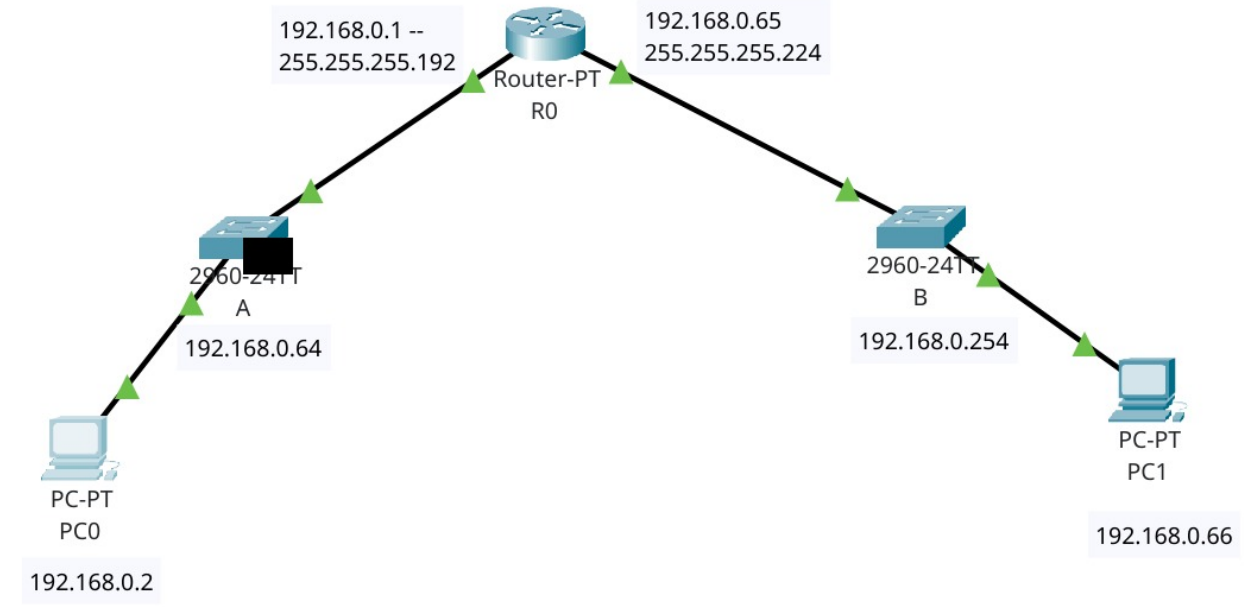


ICMP ECHO REQUEST:

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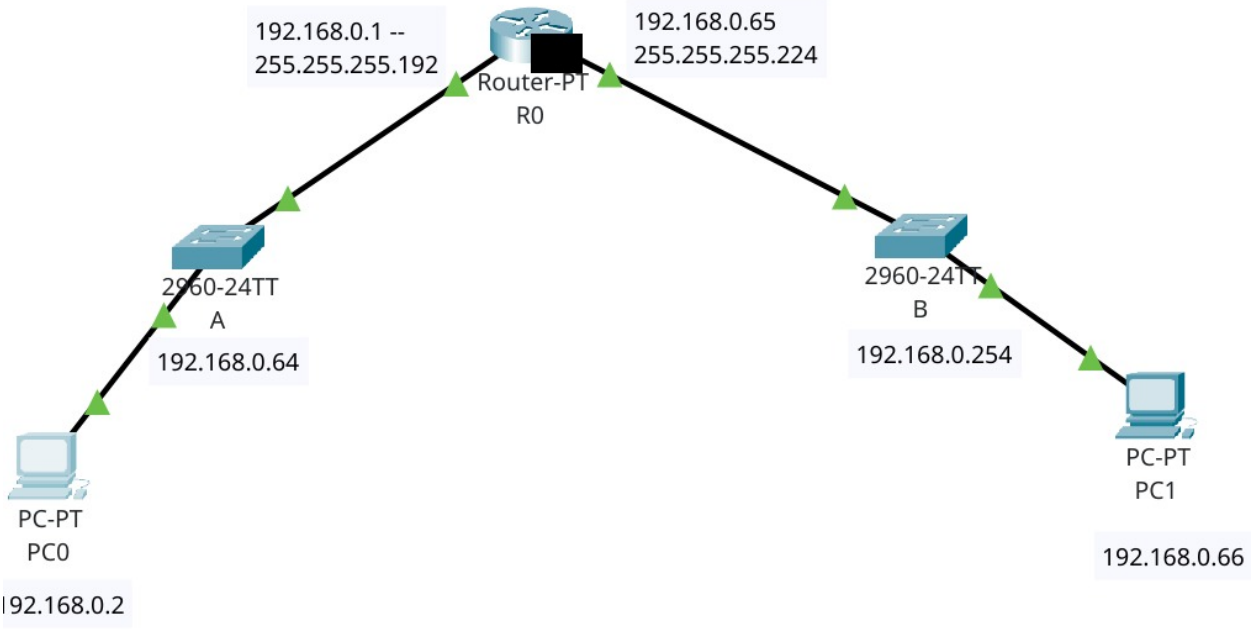
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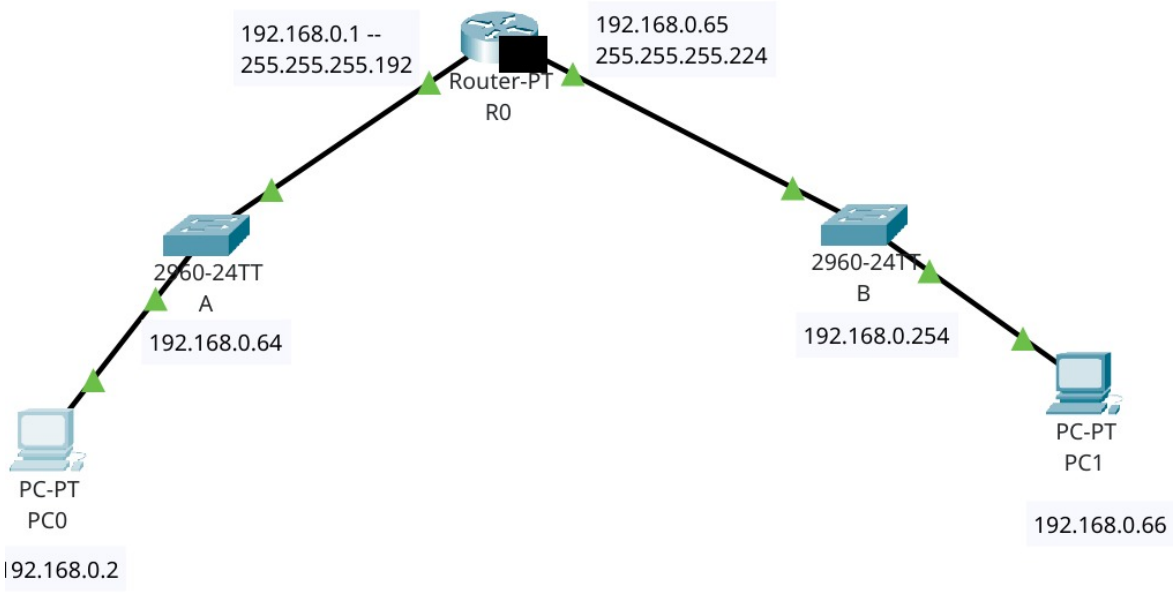
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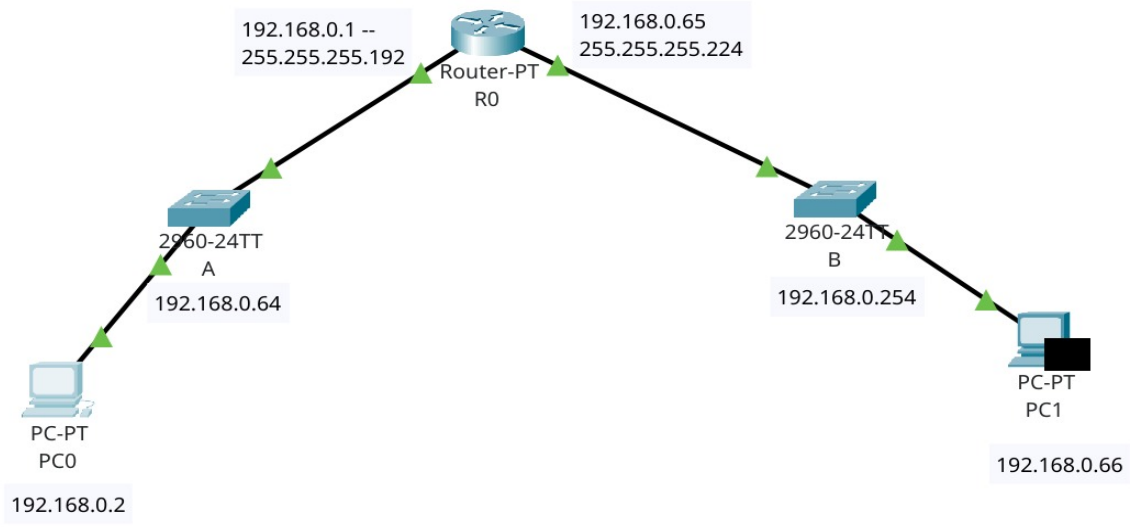
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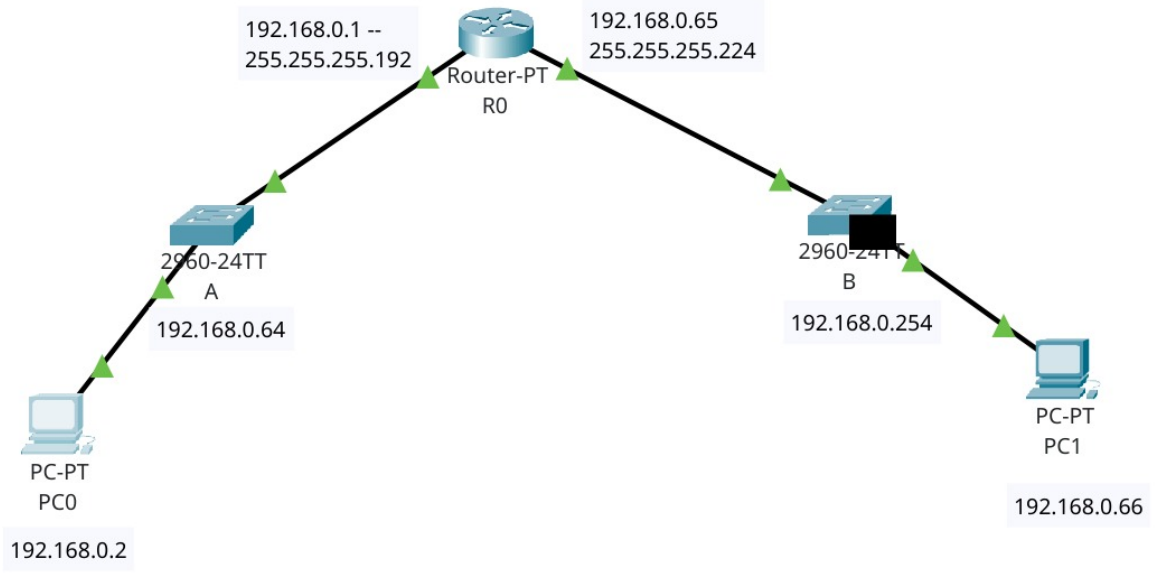
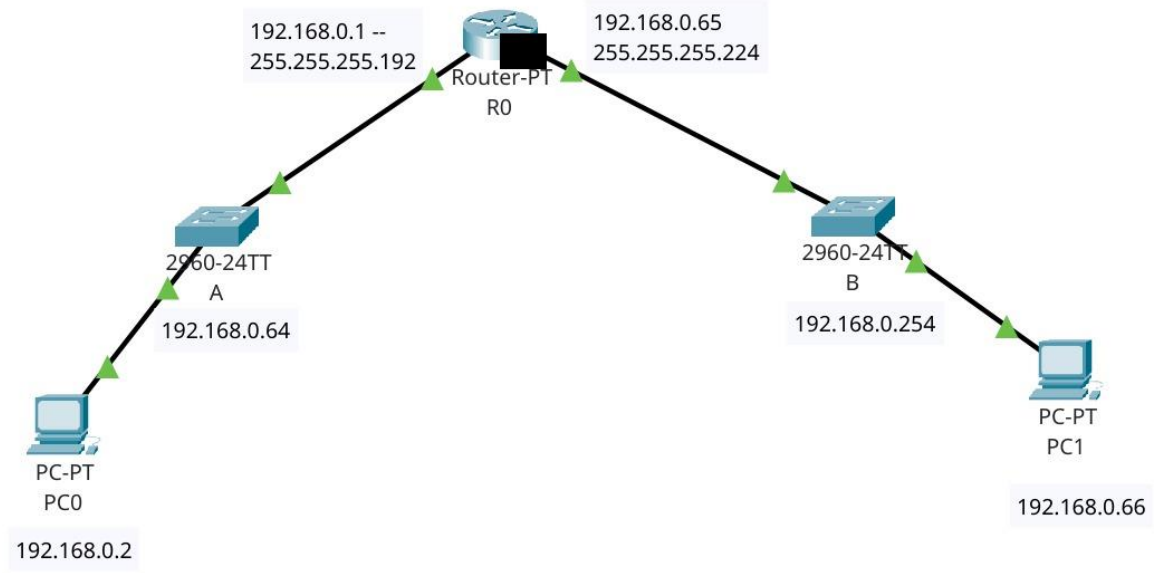
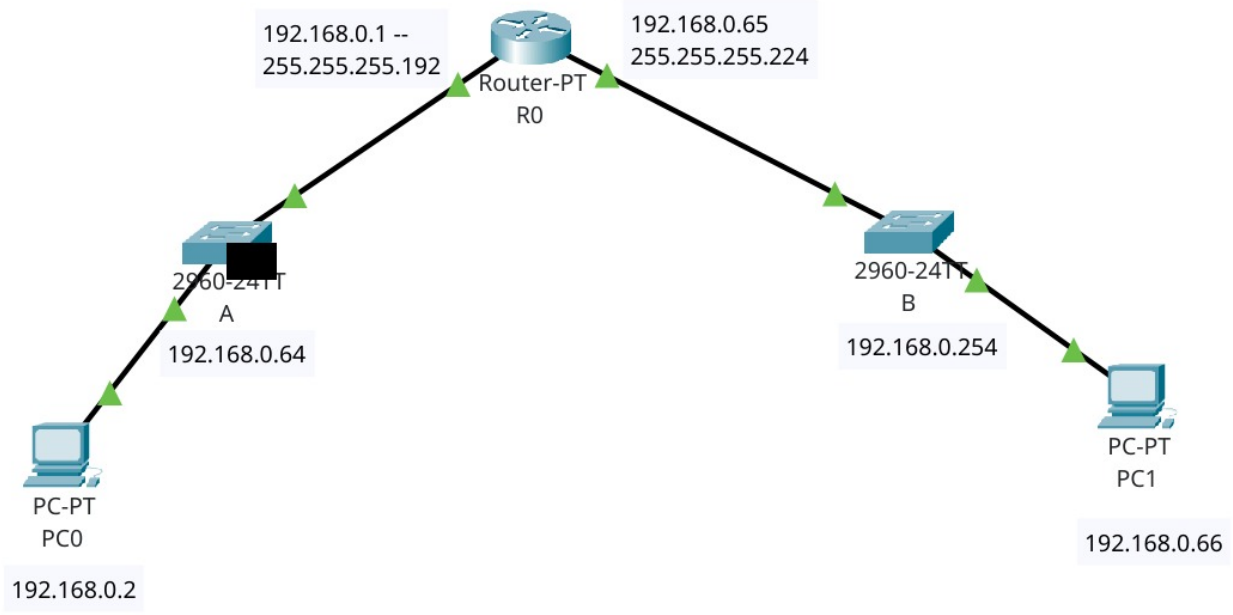
ICMP ECHO REPLY:



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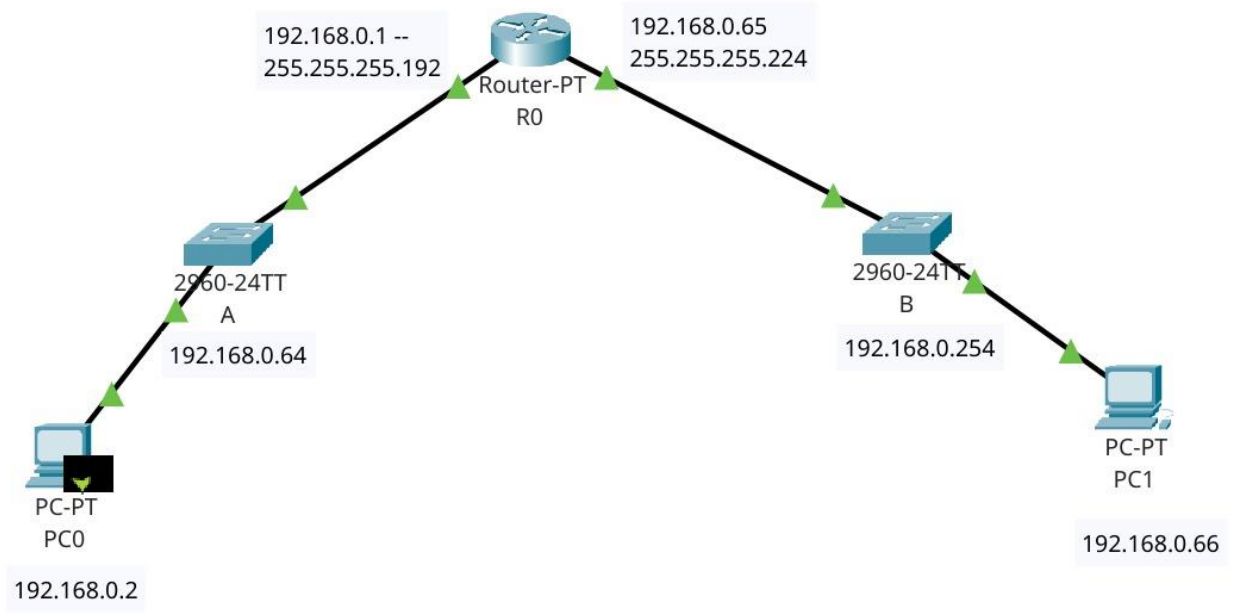
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