THADOMAL SHAHANI TSEC ENGINEERING COLLEGE

EXPERIMENT NO. 6

Aim :- Design VPN and configure the RIP using Cisco Packet tracer.

Theory :-

Routing Information Protocol (RIP) :-

RIP is a dynamic routing protocol that uses hop count as a routing metric to find the best path between the source and the destination network. It is a distance-vector routing protocol that has been working on Network layer of the OSI model. It is majorly used for small to medium-sized networks.

Steps to configure RIP routing in Cisco Packet Tracer :

1. Create a Network Topology :
   Launch Cisco Packet Tracer and create a network topology. You can add routers and switches to workspace and connect them using appropriate cables.

2. Configure device interfaces :
   Setup IP addresses, networks and gateway addresses for the devices present in the workspace.

3. Configure Router Interfaces :

Access the router's CLI and configure the interfaces of the router. For example, if you have two routers connected through their Fast Ethernet interfaces, configure them with IP addresses.

4. Enable RIP Routing:
Enable RIP Routing after entering the configuration mode and repeat the same on Router 2.

5. Test Connectivity:
After configuring RIP on both routers, you should be able to ping devices on remote networks. Test connectivity between devices connected to different routers:

6. Save the configuration and test:
Test the networks in the workspace (both the realtime and simulation mode).

VLAN :-

Configuring Virtual LANs (VLANs) in Cisco Packet Tracer and create a network topology that includes switches and devices. You can use the physical workspace to drag and drop switches and connect them using appropriate cables.

Steps to configure VLANs in CPT:

1. Create a Network Topology :
Launch Cisco Packet Tracer and create a network topology that includes switches and devices, and connect them using appropriate cables.

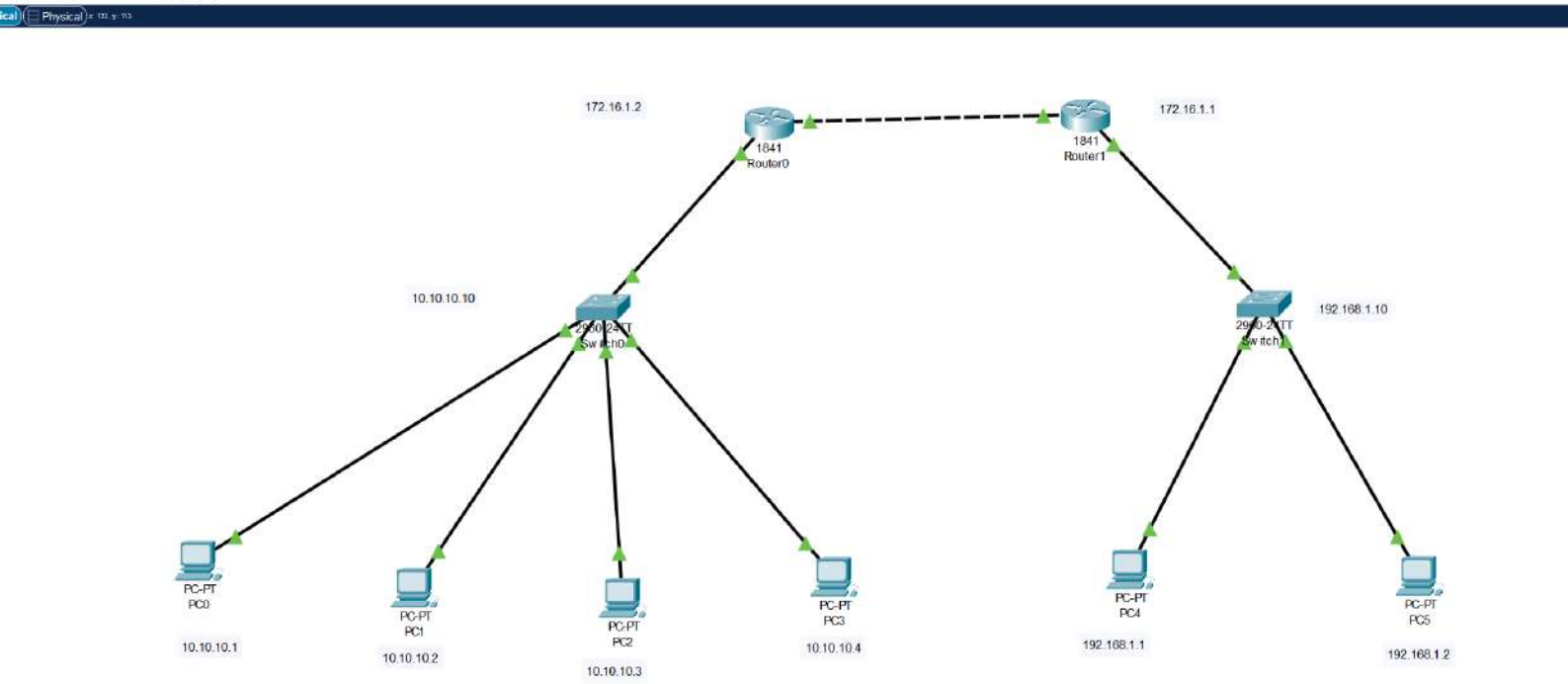
2. Configure Switch Interfaces and IP addresses :
After configuring IP, access CLI of each switch in your topology by clicking on it and selecting CLI. Then use the following commands,
vlan 10 : Creates VLAN 10
switchport access vlan 10 : Assigns the interface to the VLAN 10.
exit : Used to exit.
Repeat the above steps for all switches and VLANs as needed.

3. Test VLAN configuration :
Connect devices to the switch ports and verify that devices in the same VLAN can communicate, while devices in the different VLANs cannot communicate directly.

4. Save configuration (Optional) :
Save your workspace configurations to ensure they persist after a reboot.

Conclusion :- Thus, we have designed and implemented RIP and VLANs using the Cisco Packet Tracer.

AF
29/9/23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1841
Router0
172.16.1.1
1841
Router1
10.10.10.10
192.168.1.10
PC-PT
PC0
10.10.10.1
PC-PT
PC1
10.10.10.2
PC-PT
PC2
10.10.10.3
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PC-PT
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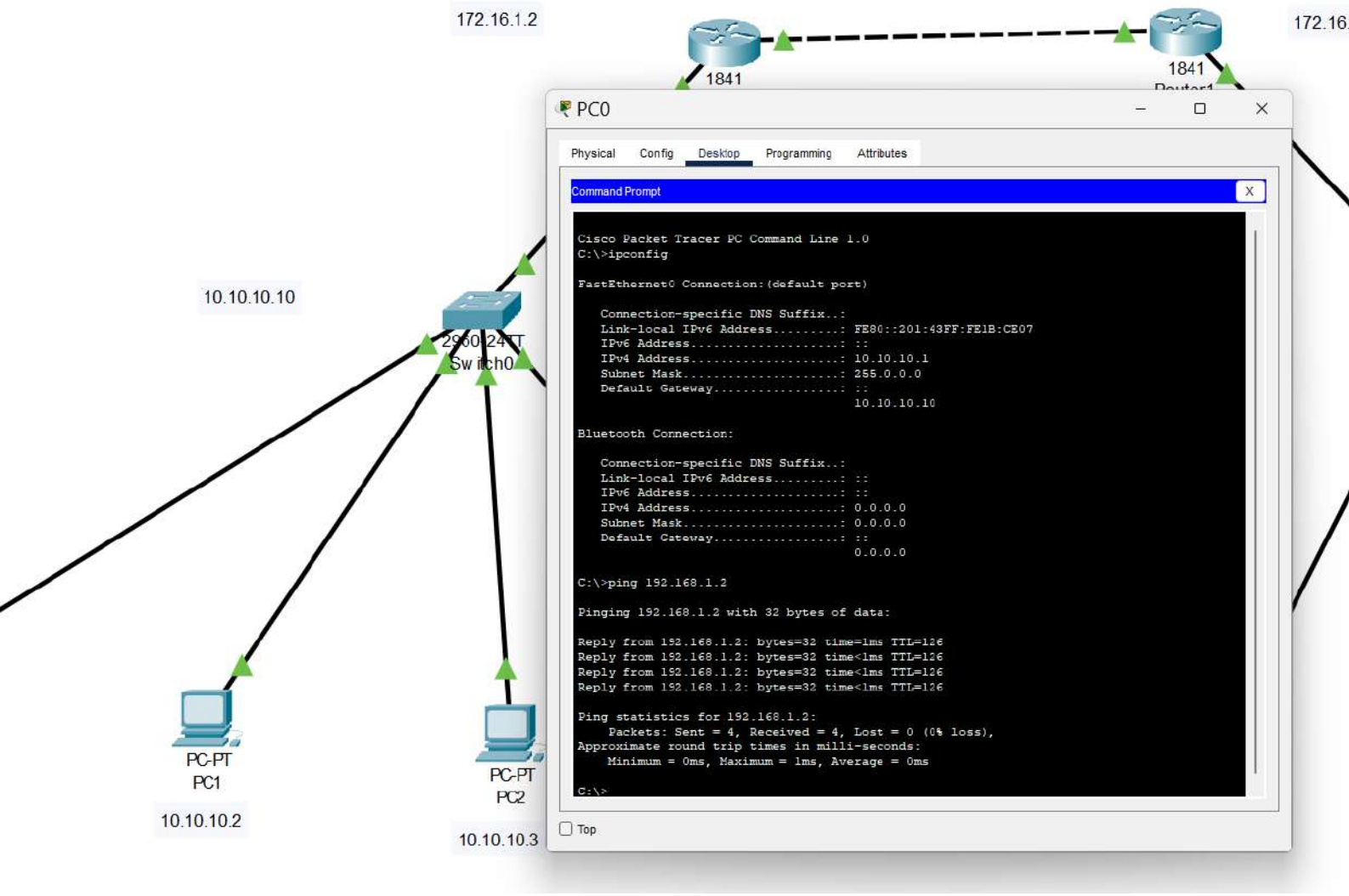
PC-PT
PC5
192.168.1.2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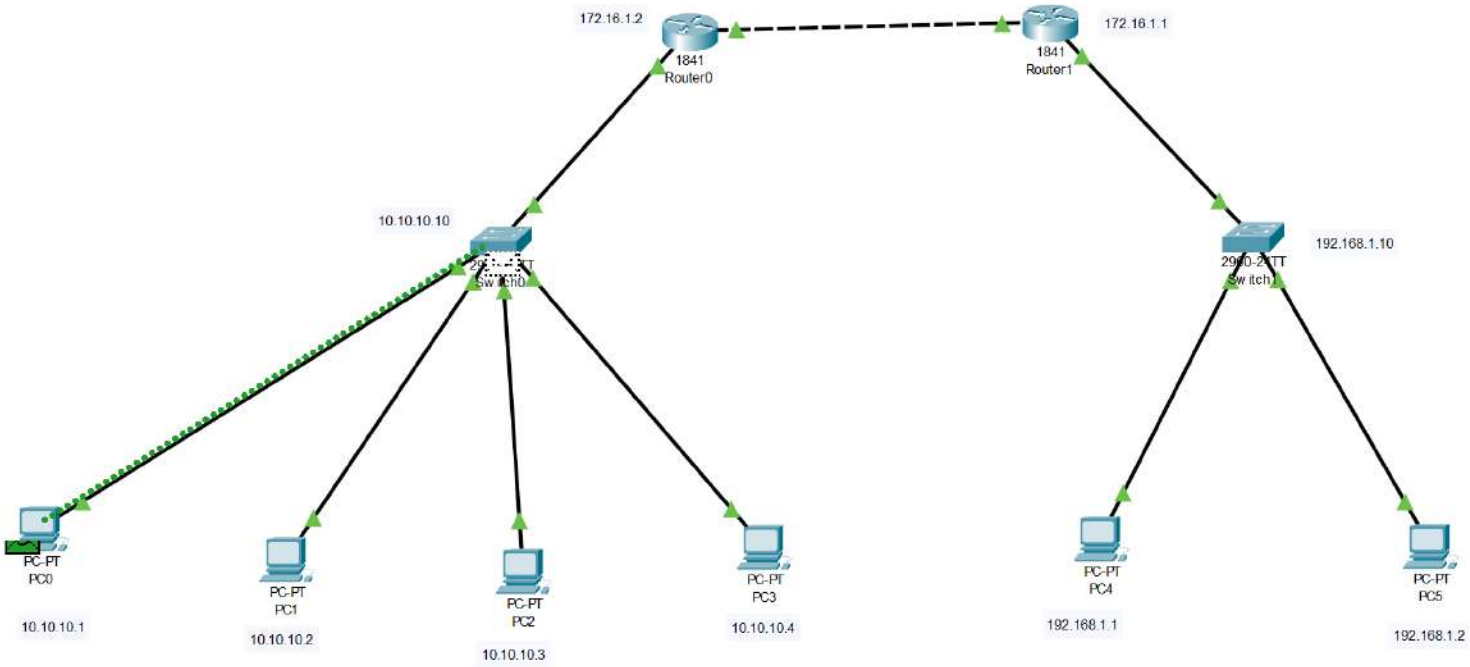
1841
PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::201:43FF:FE1B:CE07
IPv6 Address.....: ::
IPv4 Address.....: 10.10.10.1
Subnet Mask.....: 255.0.0.0
Default Gateway.....: ::
10.10.10.10
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>ping 192.168.1.2
Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time=1ms TTL=126
Reply from 192.168.1.2: bytes=32 time<1ms TTL=126
Reply from 192.168.1.2: bytes=32 time<1ms TTL=126
Reply from 192.168.1.2: bytes=32 time<1ms TTL=126
Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top
10.10.10.10
2960-24TT
Switch0
PC-PT
PC1
10.10.10.2
PC-PT
PC2
10.10.10.3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PC1
10.10.10.2
PC-PT
PC2
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PC4
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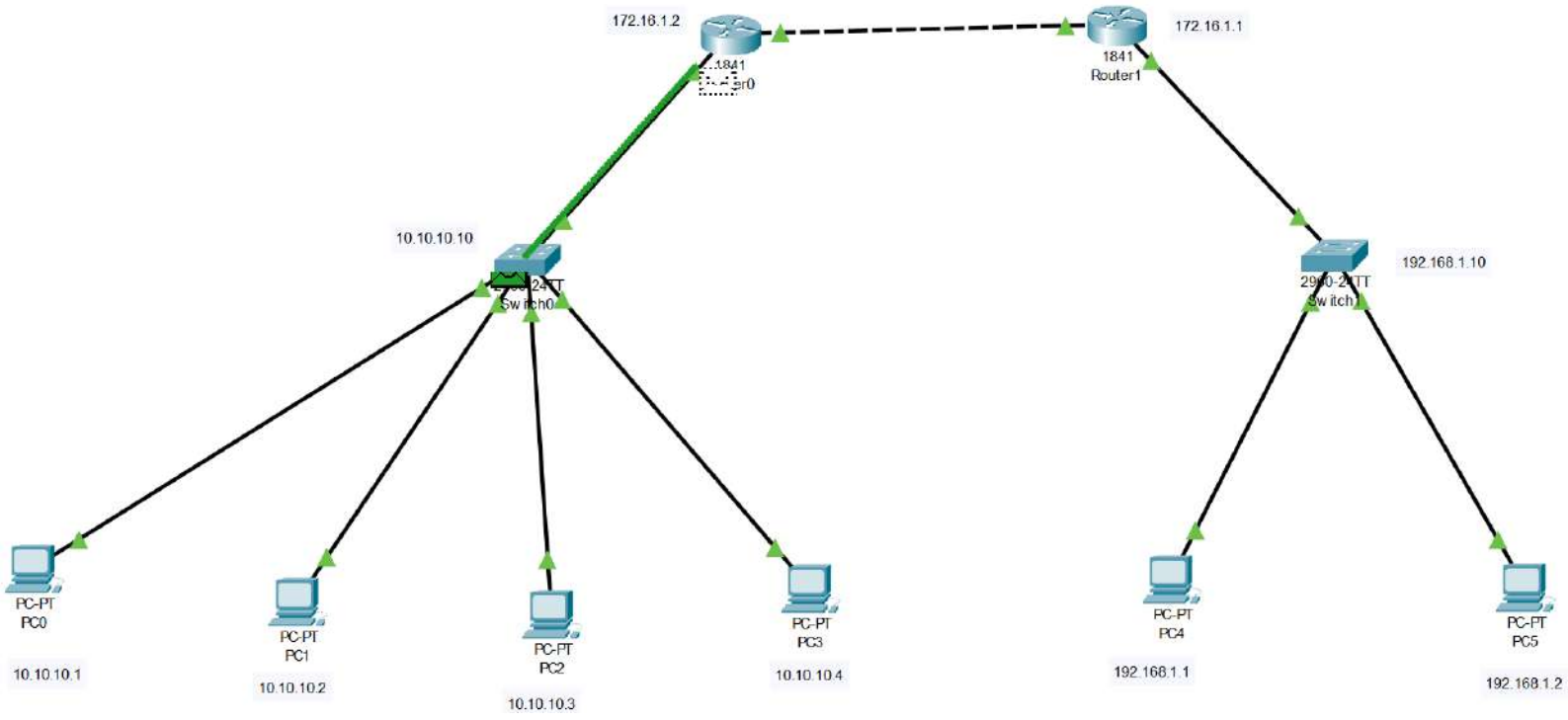
PC5
192.168.1.2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192.168.1.10
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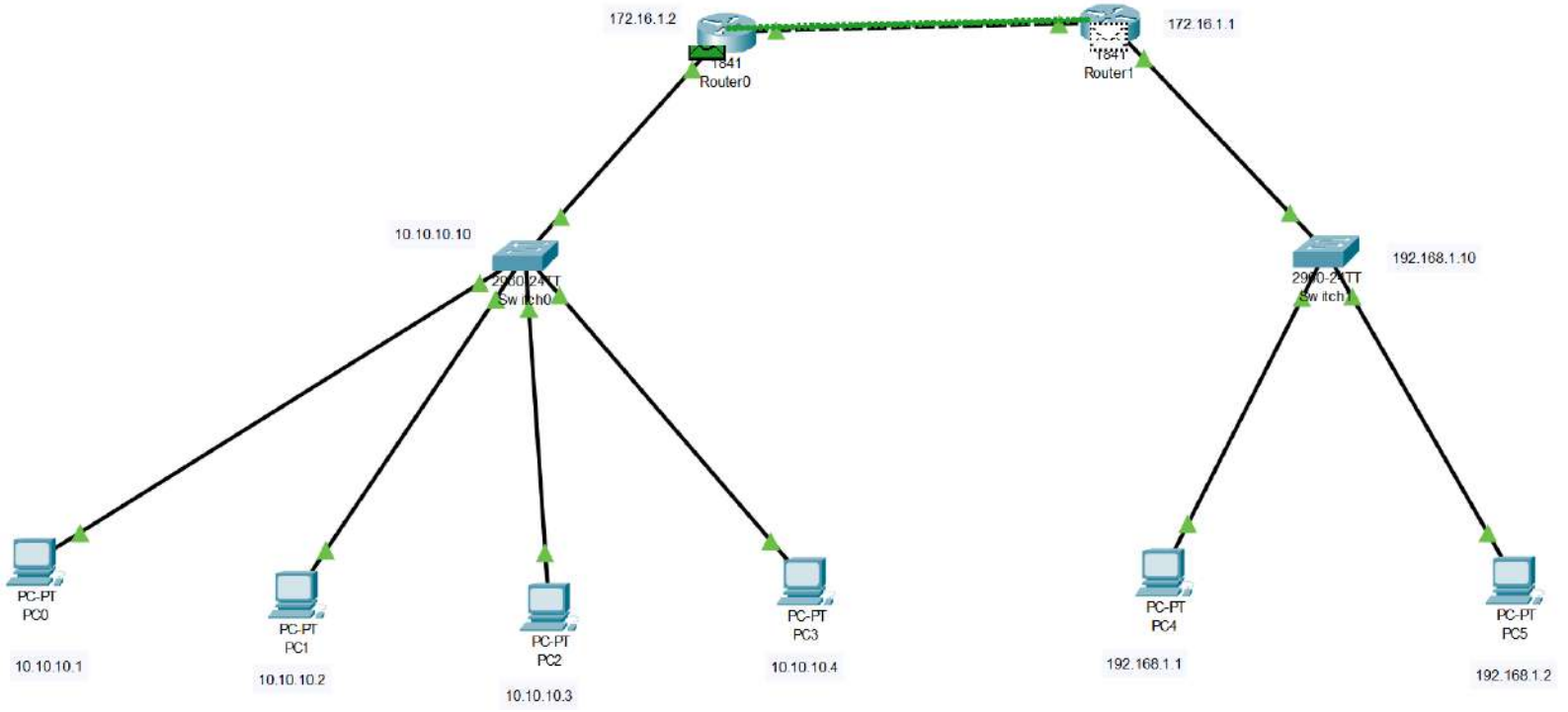
PC1
10.10.10.2
PC-PT
PC2
10.10.10.3
PC-PT
PC3
10.10.10.4
PC-PT
PC4
192.168.1.1
PC-PT
PC5
192.168.1.2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192.168.1.10
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PC-PT
PC1
10.10.10.2
PC-PT
PC2
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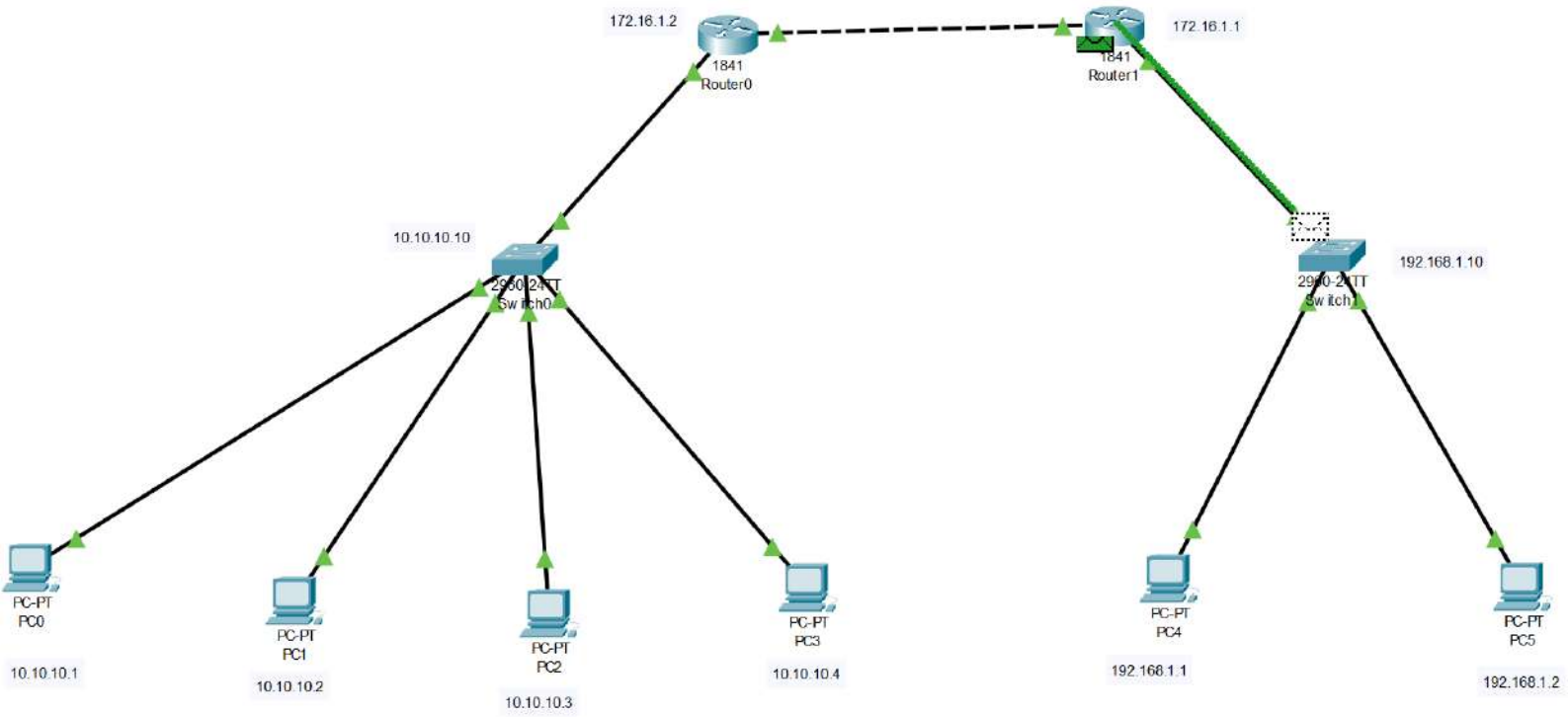
PC5
192.168.1.2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Router0
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Router1
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Switch0
192.168.1.10
2950-24TT
Switch1
PC-PT
PC0
10.10.10.1
PC-PT
PC1
10.10.10.2
PC-PT
PC2
10.10.10.3
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PC3
10.10.10.4
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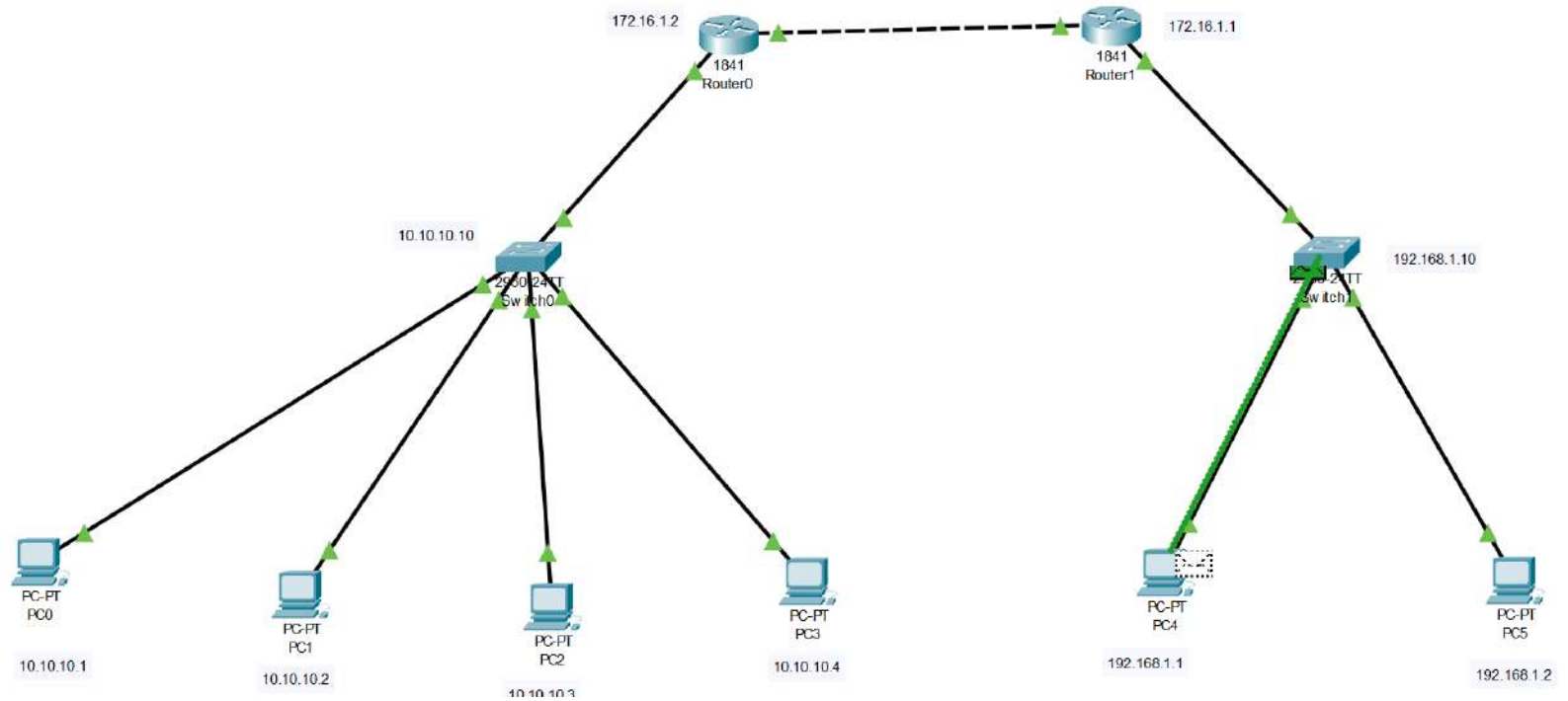
PC4
192.168.1.1
PC-PT
PC5
192.168.1.2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PC-PT
PC0
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PC-PT
PC1
10.10.10.2
PC-PT
PC2
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PC4
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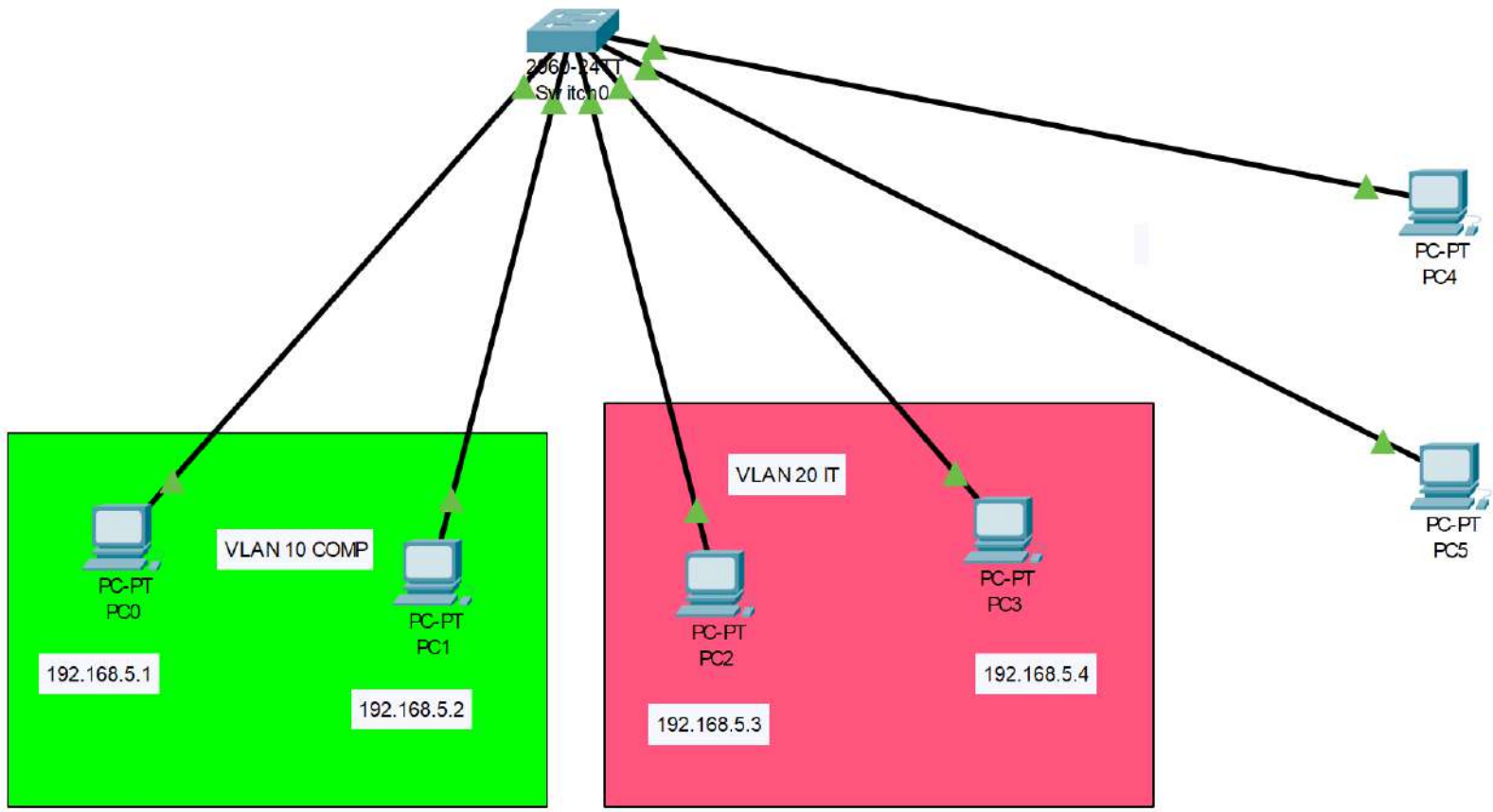
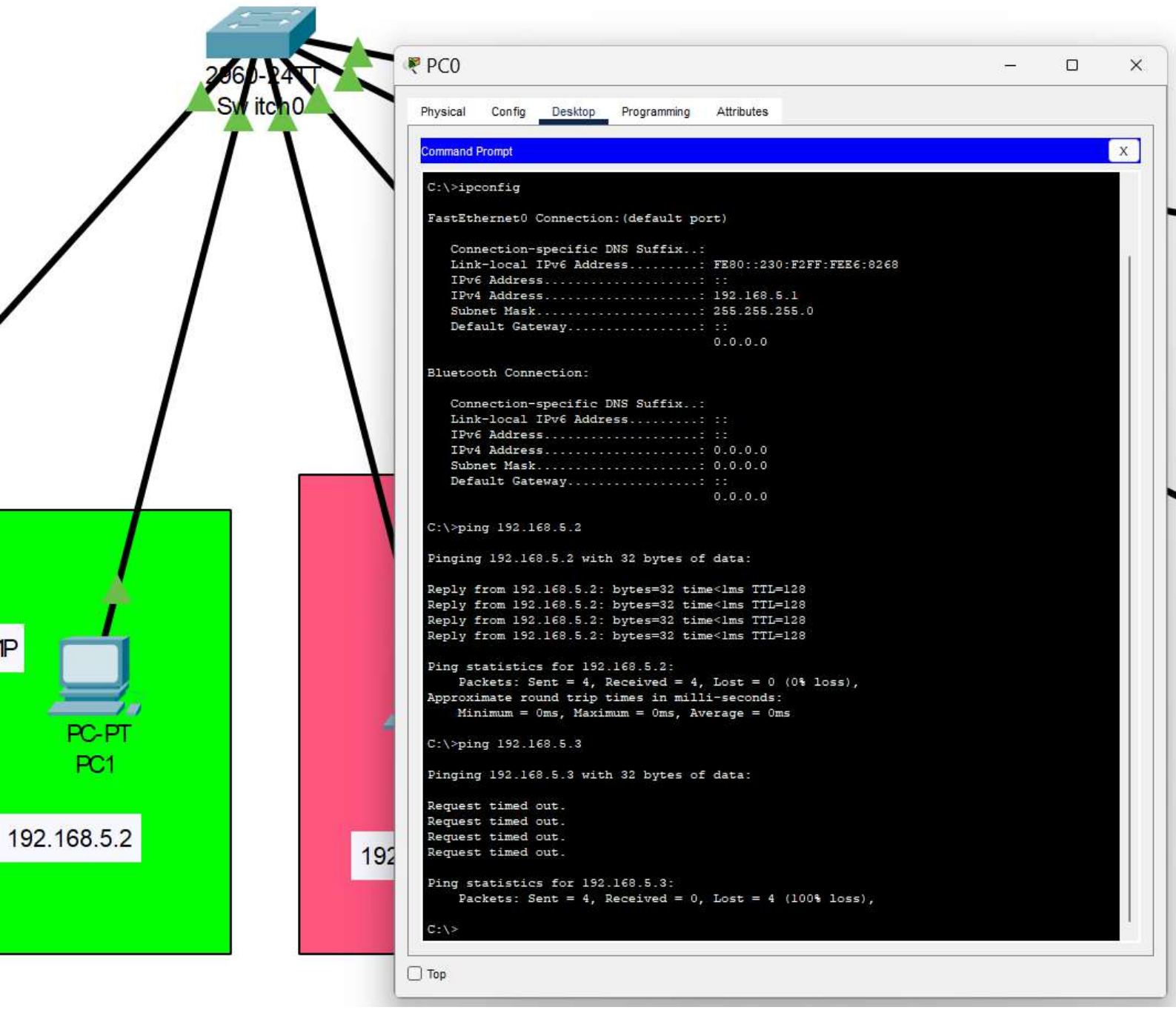
PC5
192.168.1.2


2960-24TT
Switch0
PC-PT
PC4
PC-PT
PC5
VLAN 10 COMP
PC-PT
PC0
PC-PT
PC1
192.168.5.1
192.168.5.2
VLAN 20 IT
PC-PT
PC2
PC-PT
PC3
192.168.5.3
192.168.5.4


2960-24TT
Switch0
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192.168.5.2
192
PC0
Physical
Config
Desktop
Programming
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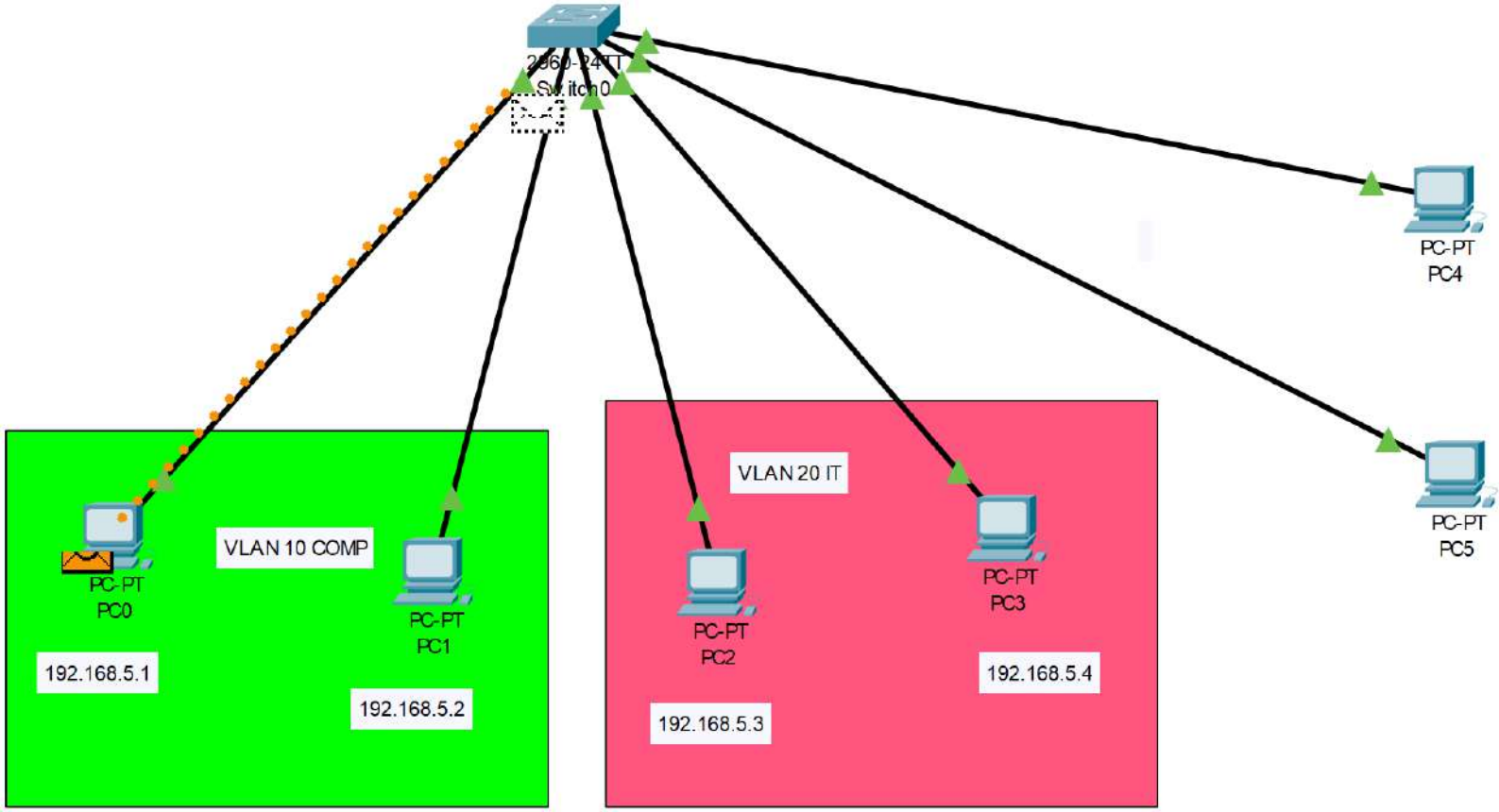
Command Prompt
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::230:F2FF:FEE6:8268
IPv6 Address.....: ::
IPv4 Address.....: 192.168.5.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
0.0.0.0
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>ping 192.168.5.2
Pinging 192.168.5.2 with 32 bytes of data:
Reply from 192.168.5.2: bytes=32 time<1ms TTL=128
Reply from 192.168.5.2: bytes=32 time<1ms TTL=128
Reply from 192.168.5.2: bytes=32 time<1ms TTL=128
Reply from 192.168.5.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.5.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.5.3
Pinging 192.168.5.3 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.5.3:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
Top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PC5
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PC-PT
PC0
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PC1
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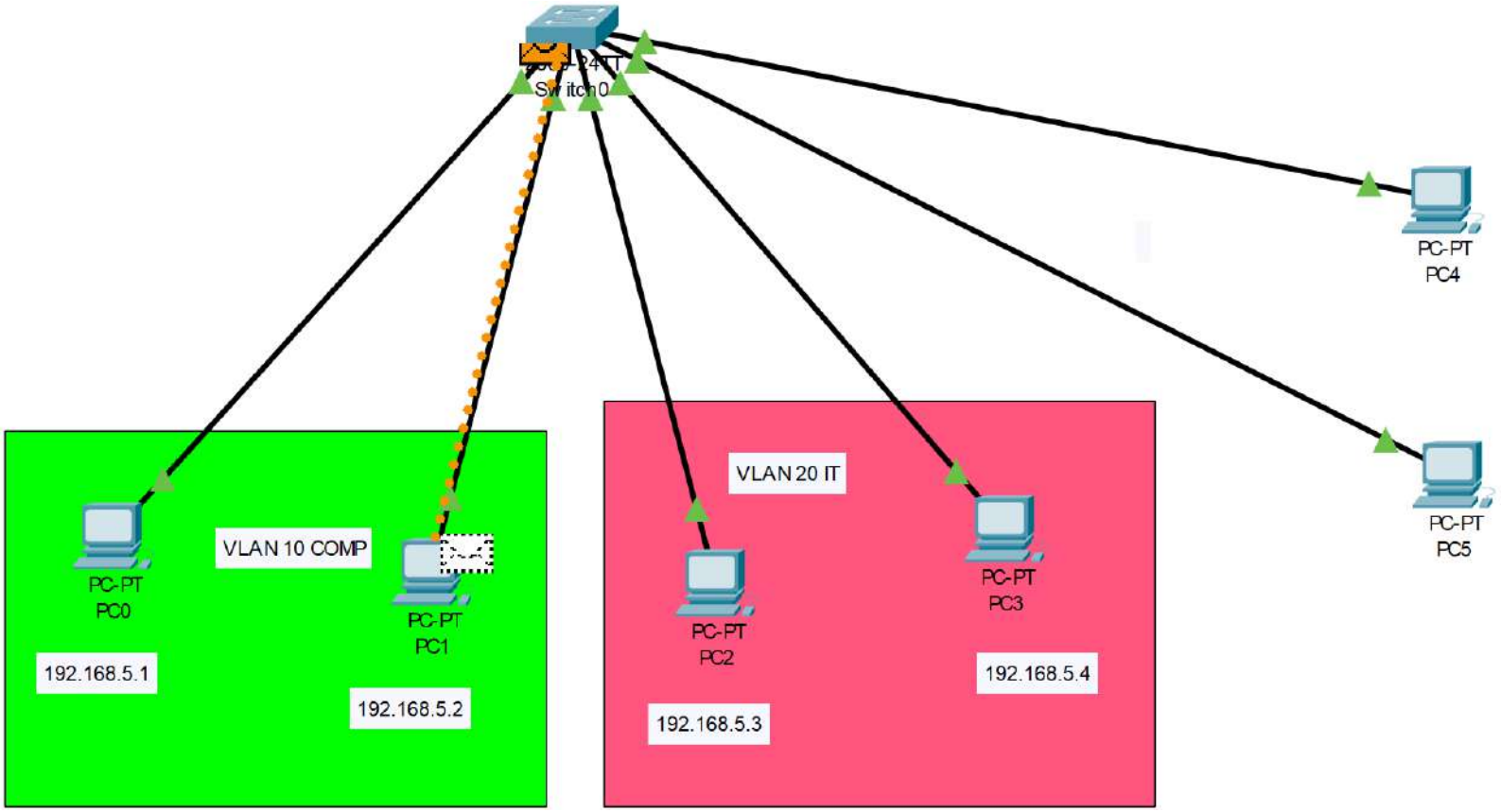
PC3
192.168.5.3
192.168.5.4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PC-PT
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192.168.5.1
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VLAN 20 IT
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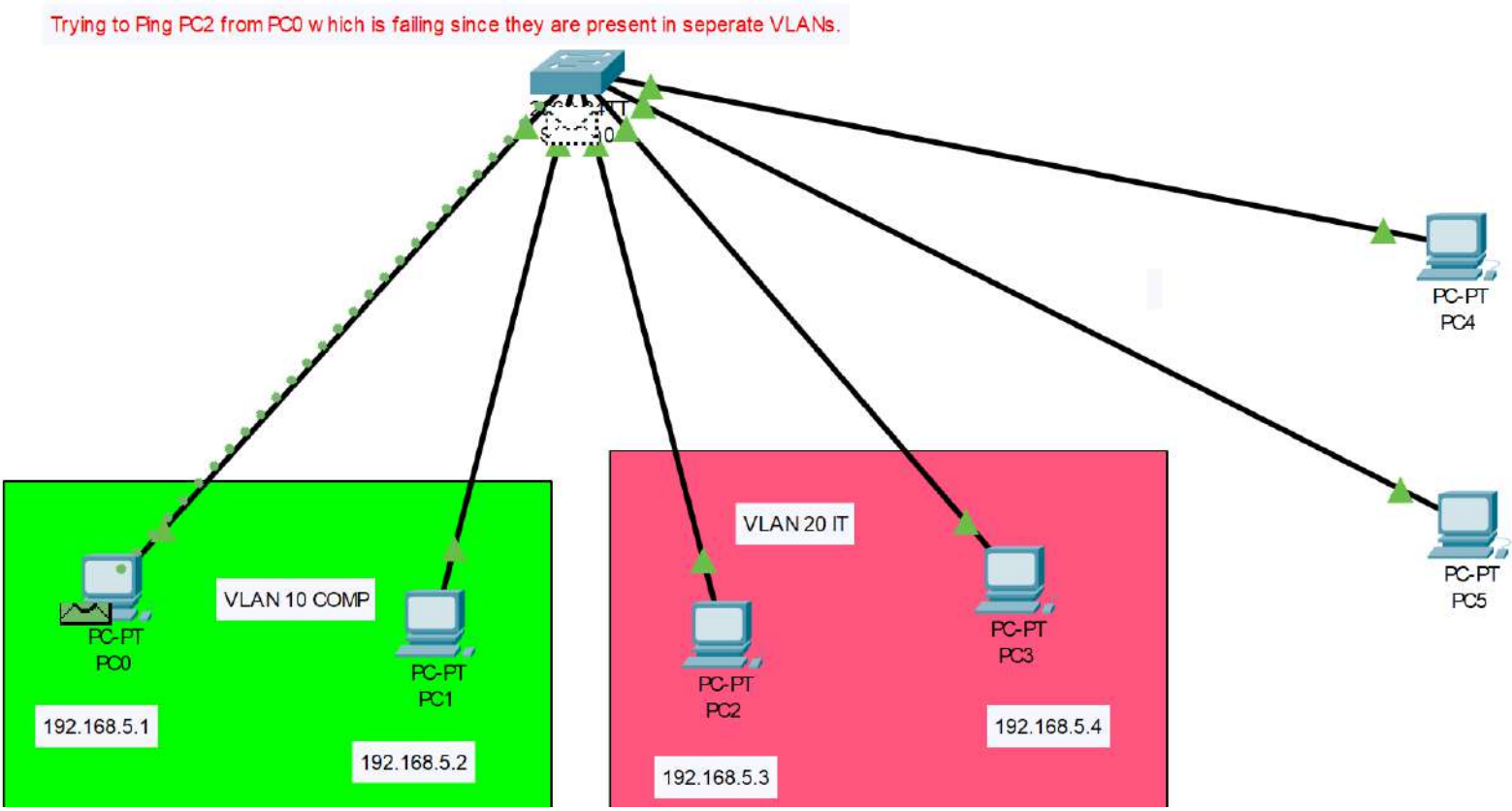
PC-PT
PC3
192.168.5.3
192.168.5.4


Trying to Ping PC2 from PC0 w hich is failing since they are present in seperate VLANs.
PC-PT
PC4
PC-PT
PC5
VLAN 10 COMP
PC-PT
PC0
PC-PT
PC1
192.168.5.1
192.168.5.2
VLAN 20 IT
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PC2
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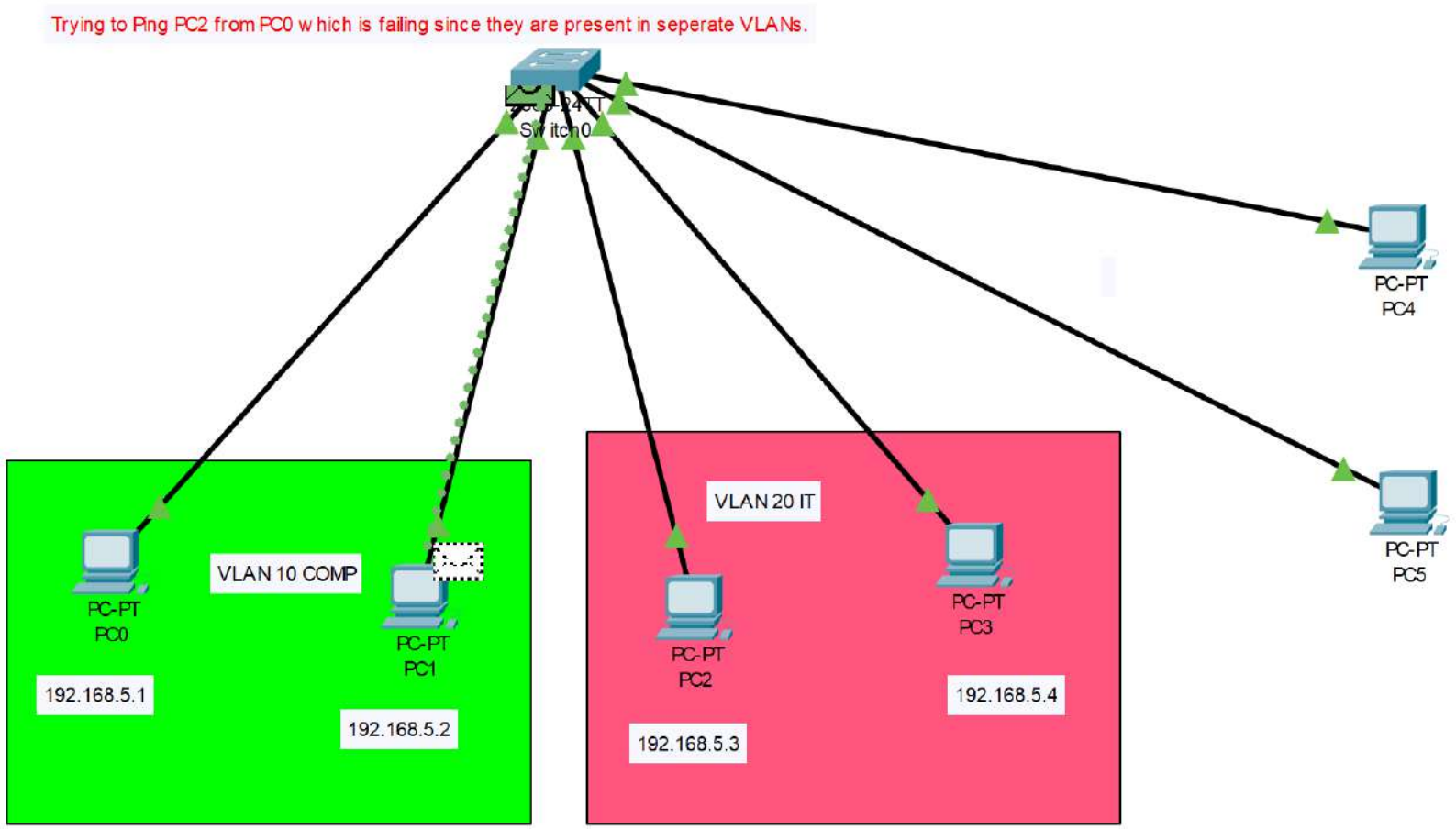
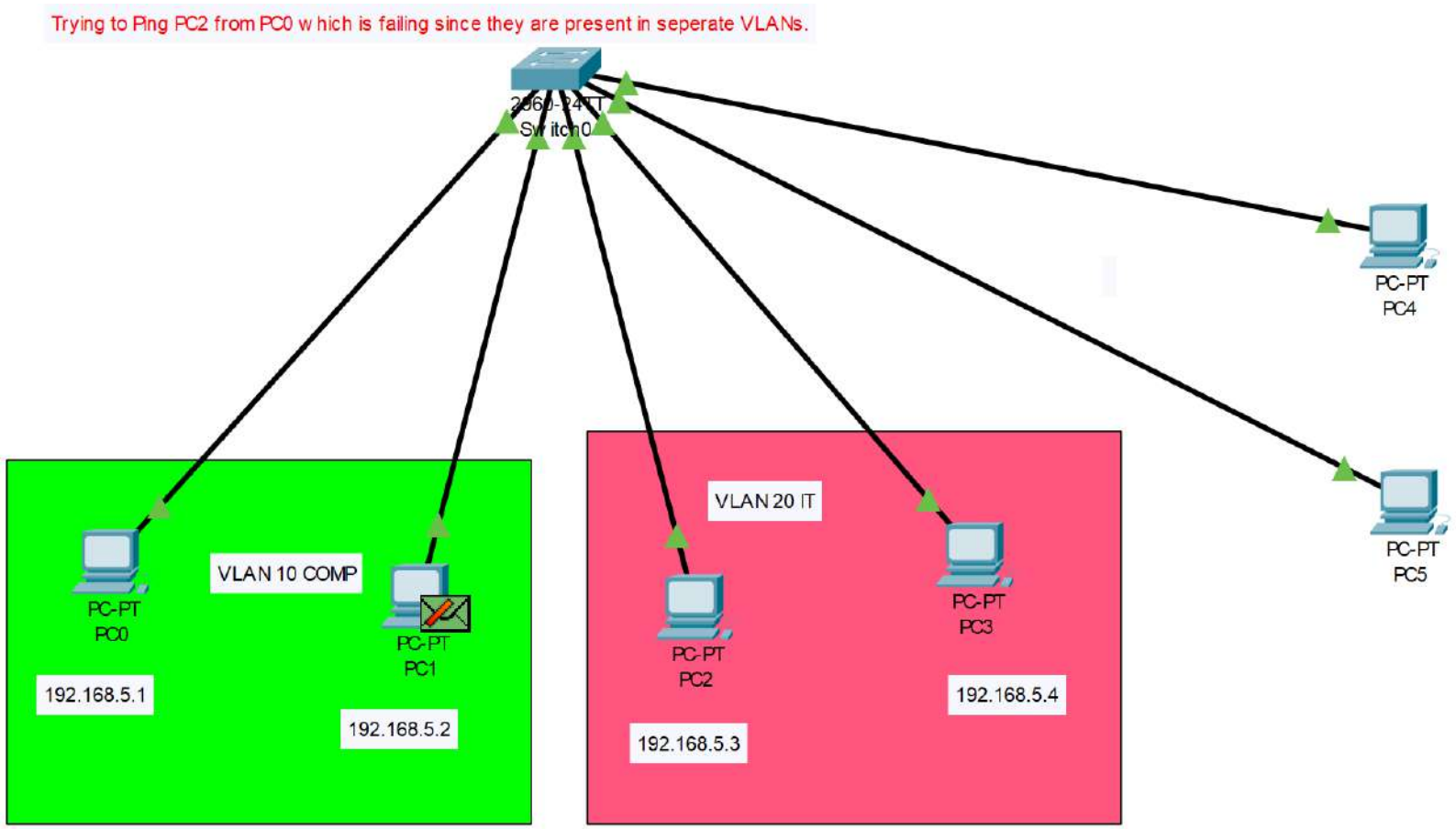
192.168.5.4


Trying to Ping PC2 from PC0 which is failing since they are present in seperate VLANs.
Switch0
PC-PT
PC4
PC-PT
PC5
VLAN 10 COMP
PC-PT
PC0
PC-PT
PC1
192.168.5.1
192.168.5.2
VLAN 20 IT
PC-PT
PC2
PC-PT
PC3
192.168.5.3
192.168.5.4


Trying to Ping PC2 from PC0 w hich is failing since they are present in seperate VLANs.
2960-24TT
Switch0
PC-PT
PC4
PC-PT
PC5
VLAN 10 COMP
PC-PT
PC0
PC-PT
PC1
192.168.5.1
192.168.5.2
VLAN 20 IT
PC-PT
PC2
PC-PT
PC3
192.168.5.3
192.168.5.4