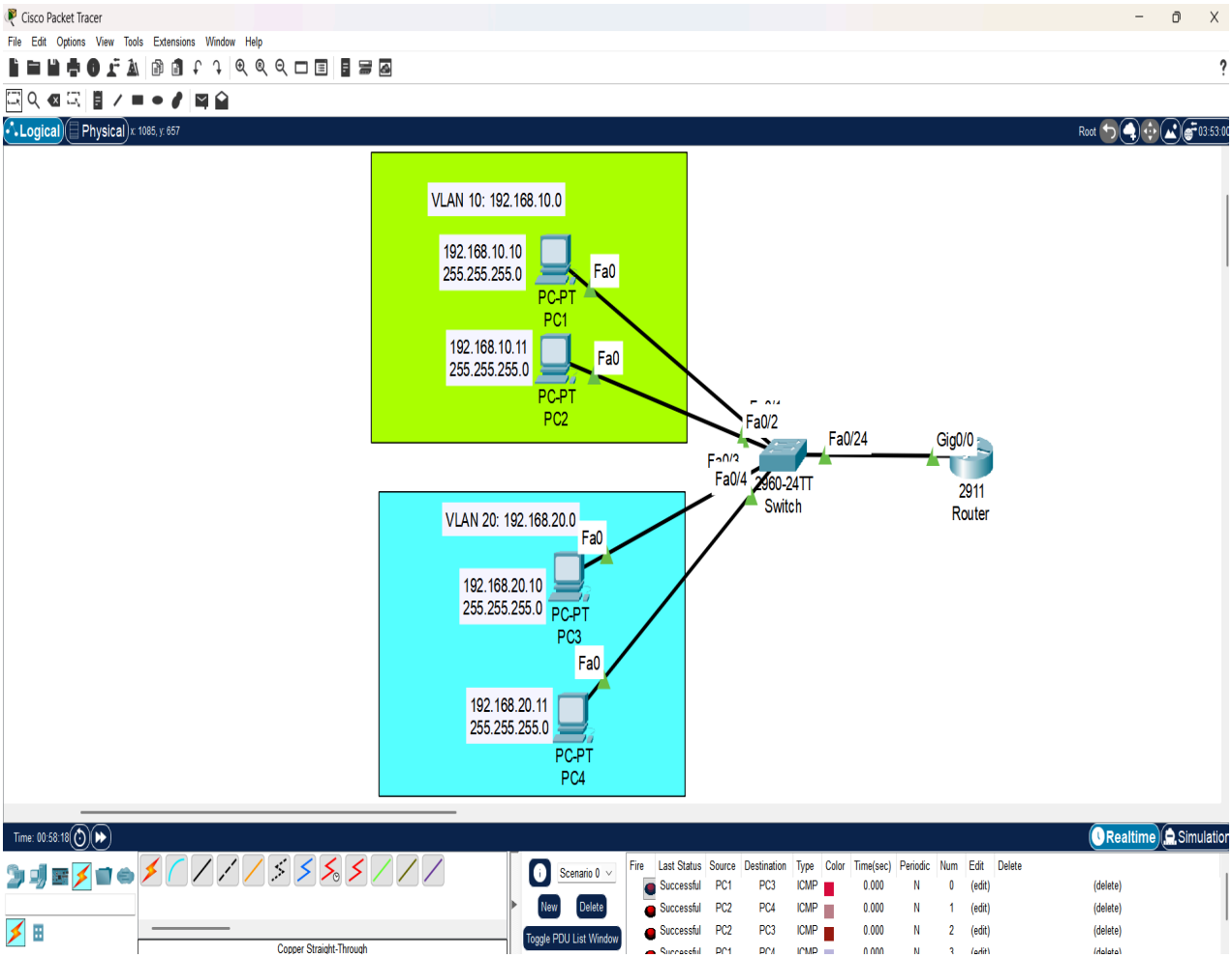
Objective:

Enable communication between VLANs using router-on-a-stick.

Topology:

One router connected to a switch using a trunk port. Two VLANs on the switch.



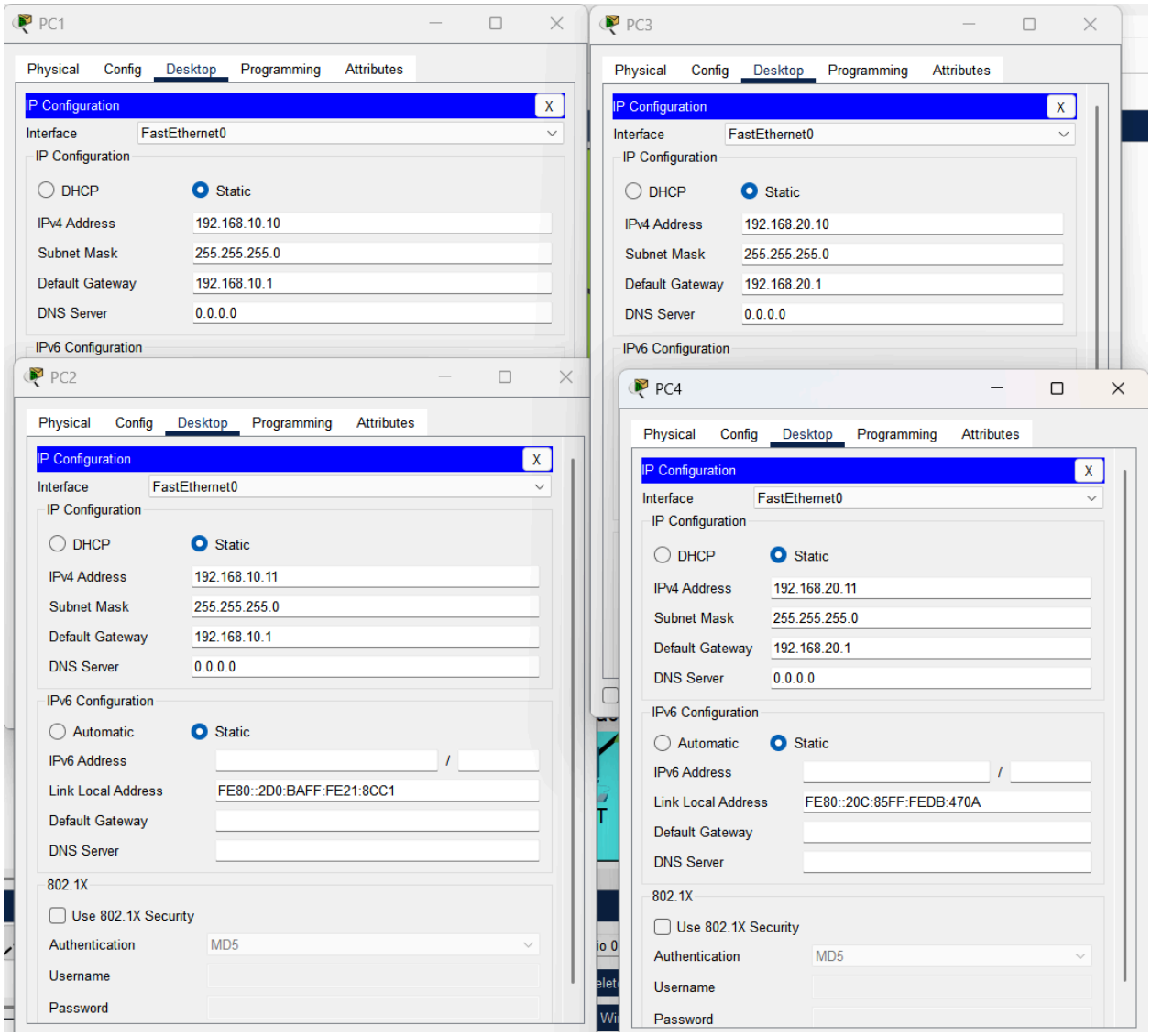
VLAN Design:

VLAN 10 (SALES)
VLAN 20 (IT)

IP Addressing:

VLAN 10 Gateway: 192.168.10.1

VLAN 20 Gateway: 192.168.20.1

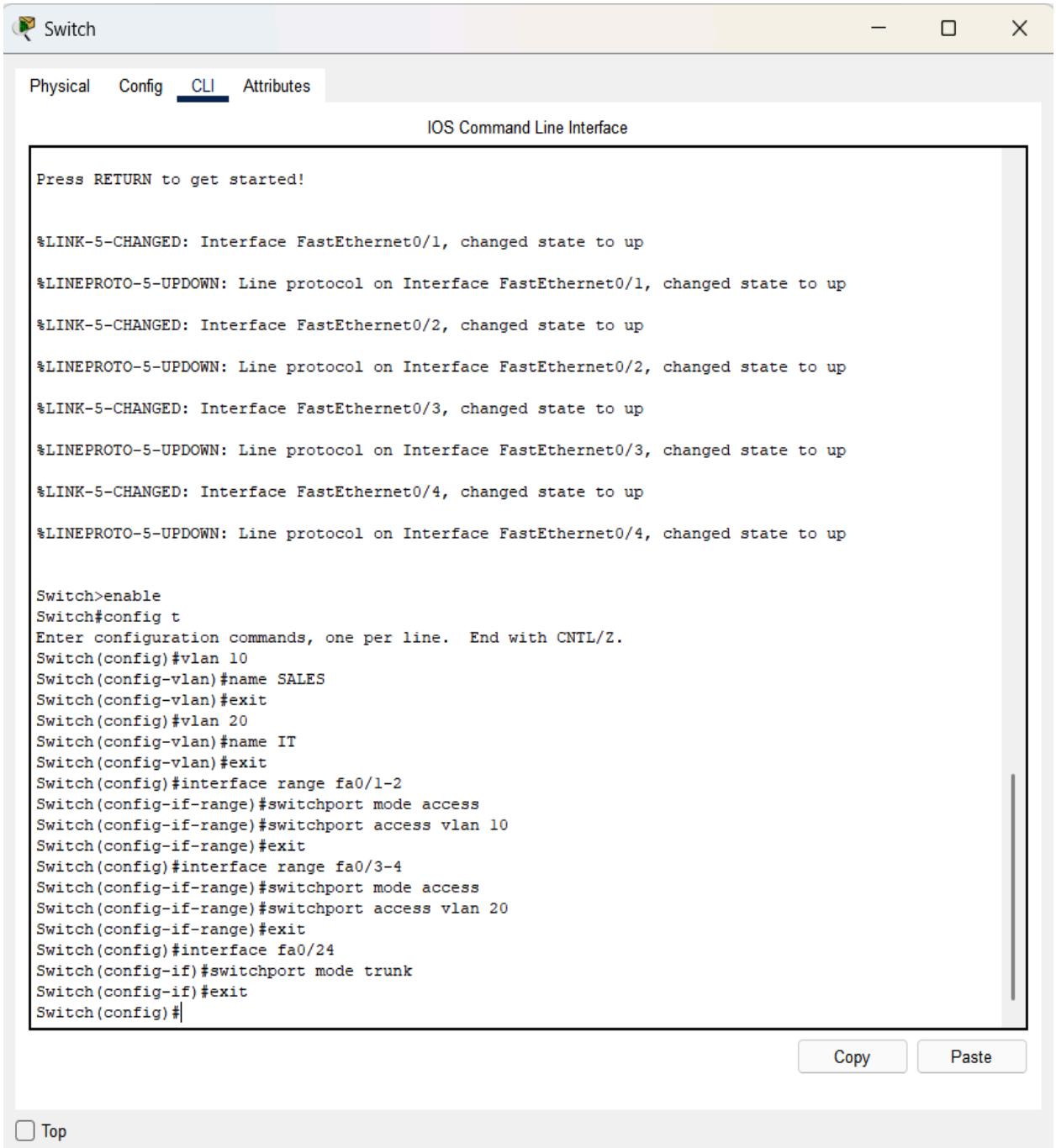


PC Addresses:

VLAN 10: 192.168.10.10, 192.168.10.11

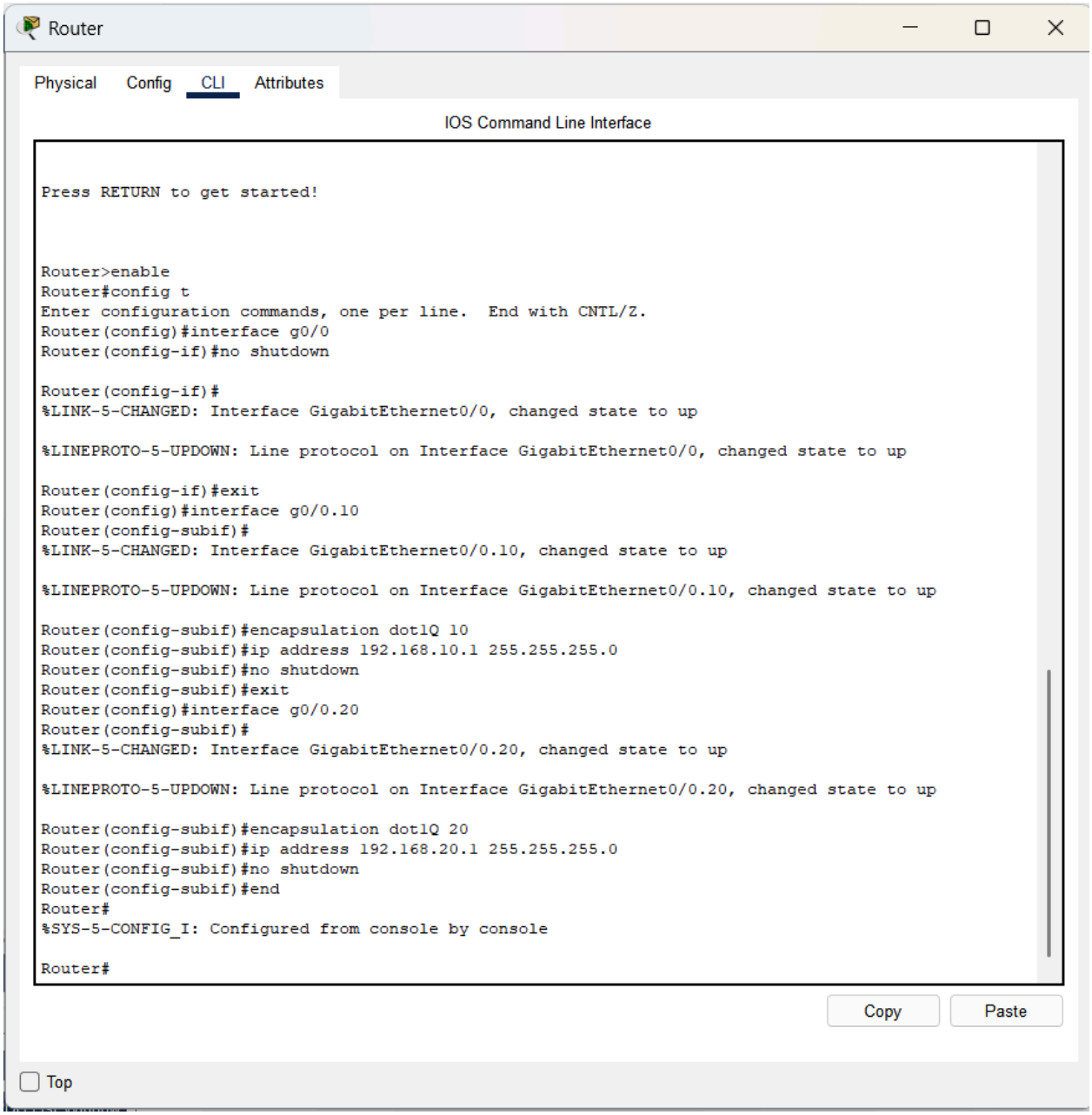
VLAN 20: 192.168.20.10, 192.168.20.11

Switch Config:
- VLAN 10 and VLAN 20 created
- Access ports assigned
- Trunk port configured to router



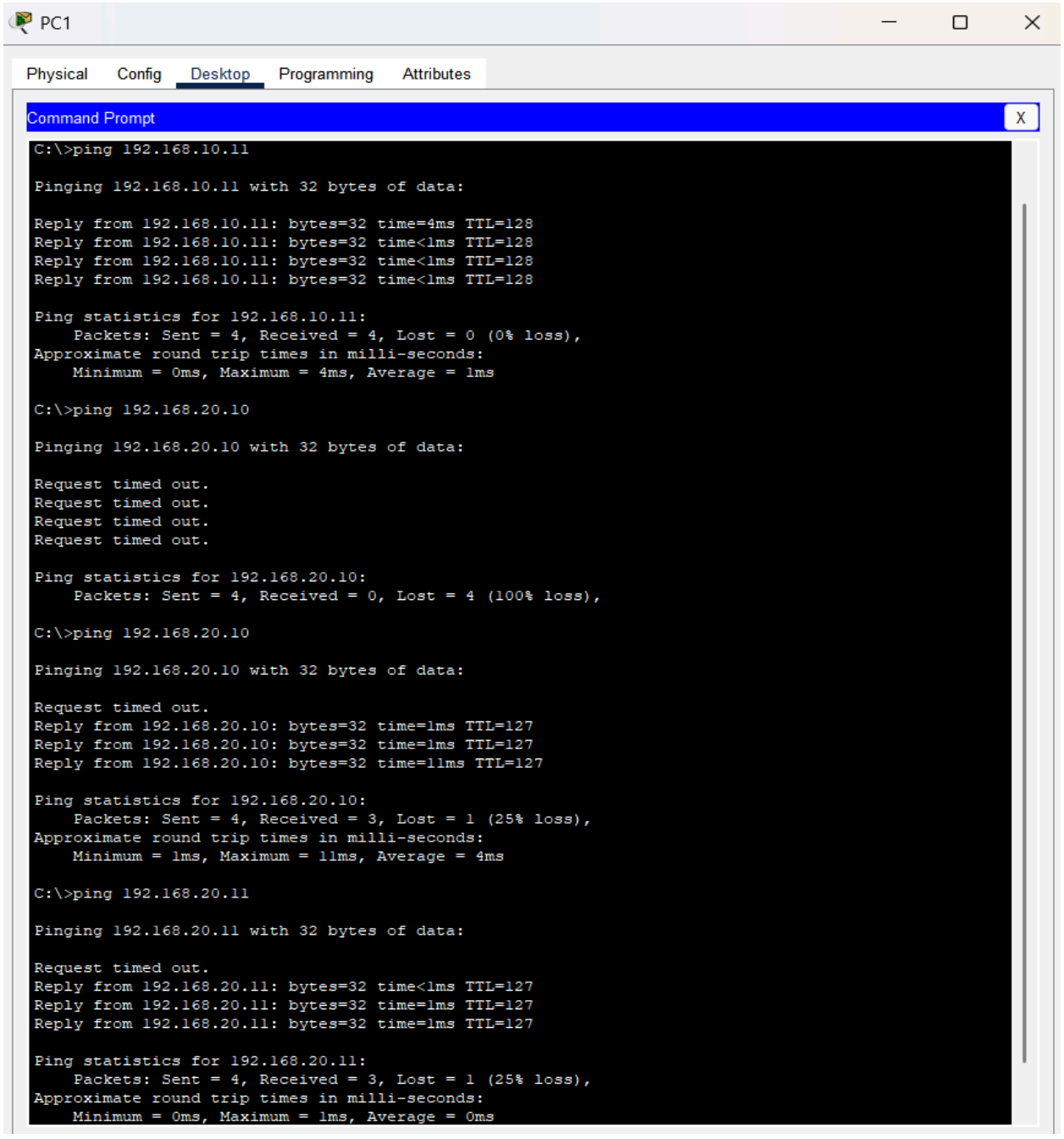
Router Config:

- Subinterfaces g0/0.10 and g0/0.20 created
- Dot1Q encapsulation enabled
- IP addresses assigned



Verification:

- Successful ping between VLAN 10 and VLAN 20 devices



Lessons Learned:

- Routers perform inter-VLAN routing
- Trunk links carry multiple VLANs
- Subinterfaces represent VLAN gateways