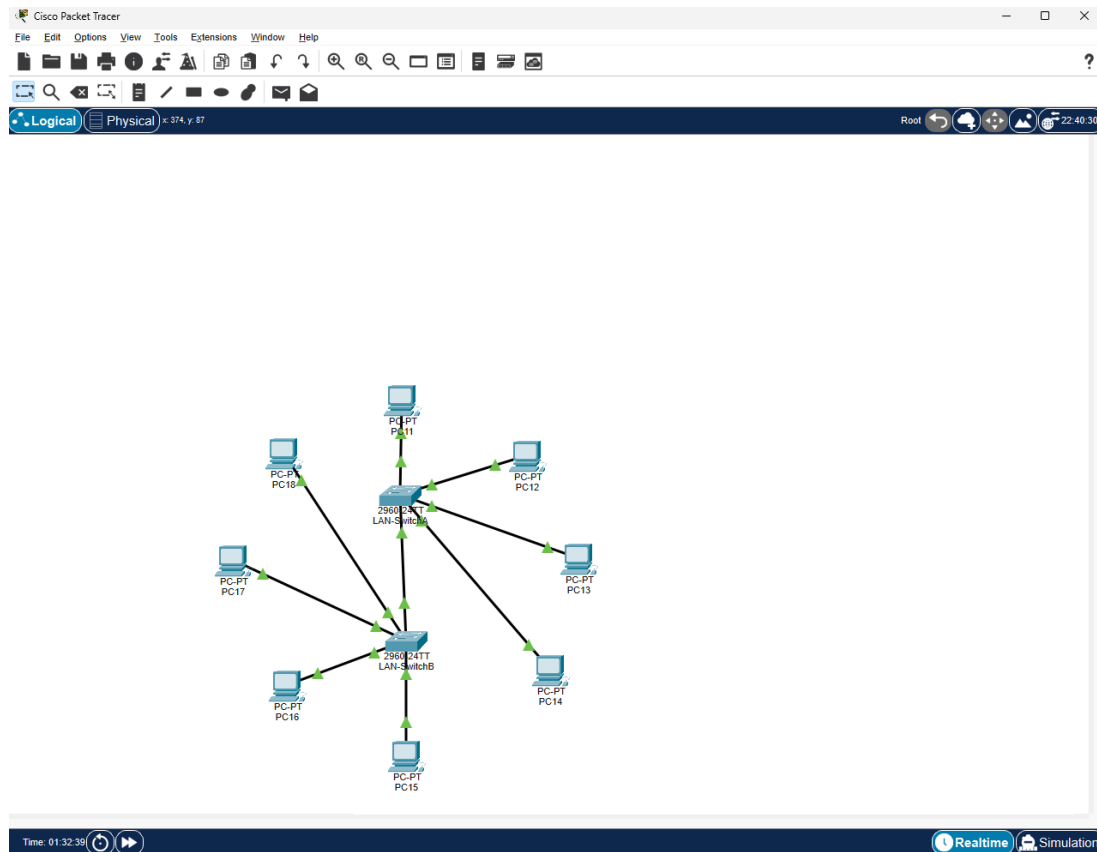


LAB COMPLETED REMOTELY

Network Topology:



Successful Pings pc – pc same vlan

```
PC11
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.21.12

Pinging 192.168.21.12 with 32 bytes of data:

Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.21.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.21.13

Pinging 192.168.21.13 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.21.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

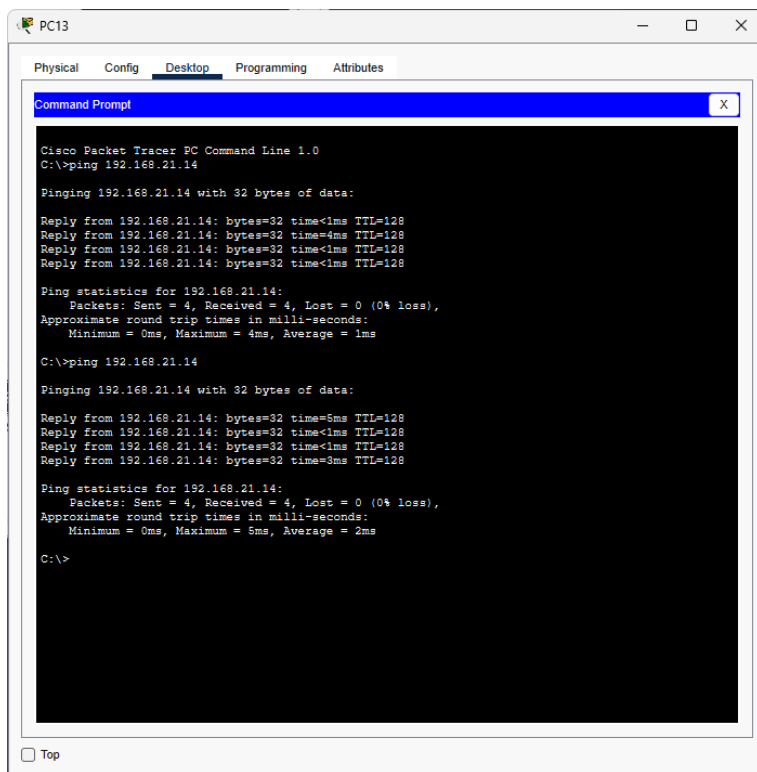
C:\>ping 192.168.21.12

Pinging 192.168.21.12 with 32 bytes of data:

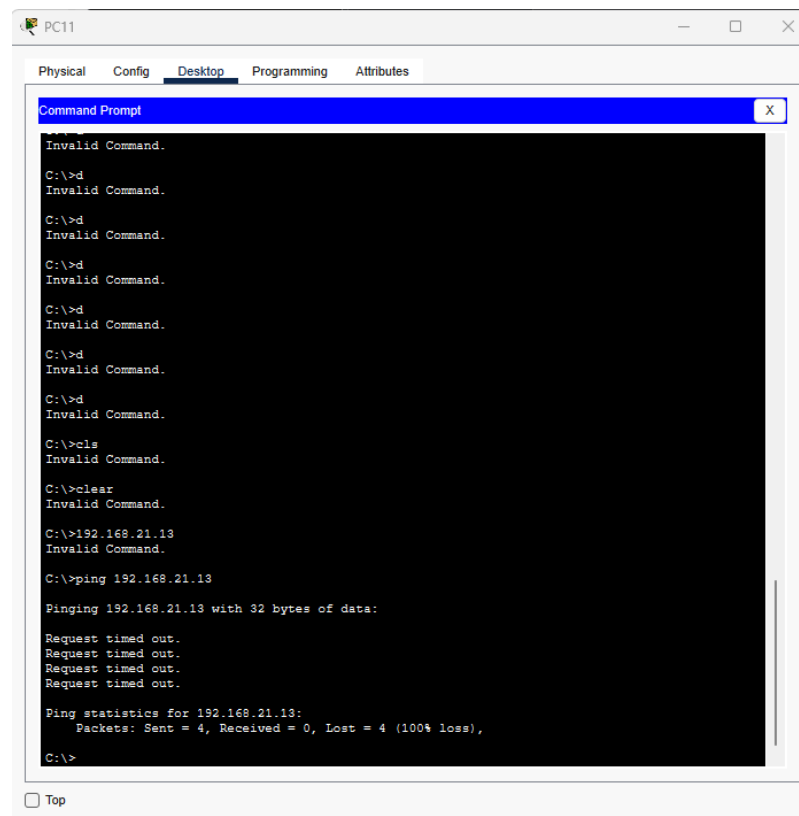
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128
Reply from 192.168.21.12: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.21.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```



Unsuccessful pc – pc different vlan



Switch Command Results

LAN-SwitchA

Physical

Config

CLI

Attributes

IOS Command Line Interface

Press RETURN to get started.

Switch>show vlan brief

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Gig0/1 Gig0/2
10	zone10	active	Fa0/1, Fa0/2
20	zone20	active	Fa0/3, Fa0/4
1002	fdi-default	active	
1003	token-ring-default	active	
1004	fdinnet-default	active	
1005	trnet-default	active	

Switch>show ip interface

Vlan1 is administratively down, line protocol is down
Internet protocol processing disabled

Switch>

Copy

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☐ Top

LAN-SwitchB

Physical

Config

CLI

Attributes

IOS Command Line Interface

Switch>show ip interface

Vlan1 is administratively down, line protocol is down
Internet protocol processing disabled

Switch>show vlan

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Gig0/1 Gig0/2
10	zone10	active	Fa0/1, Fa0/2
20	zone20	active	Fa0/3, Fa0/4
1002	fdi-default	active	
1003	token-ring-default	active	
1004	fdinnet-default	active	
1005	trnet-default	active	

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	-	0	0
10	enet	100010	1500	-	-	-	-	-	0	0
20	enet	100020	1500	-	-	-	-	-	0	0
1002	fdi	101002	1500	-	-	-	-	-	0	0

--More--

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Ip Configuration

PC11

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.21.11

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::2E0:8FFF:FEAD:8104

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

PC13

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.21.13

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::2E0:A3FF:FE19:A4E

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

LAB 4 Questions:

- 1) What VLAN number value is assigned to the default VLAN?

The default VLAN is **VLAN 1**

all unused ports on the switches were assigned to **VLAN 1** by default

- 2) What is the term used to describe a port that can access multiple VLANs?

Trunk Port

- a. Why is this type of port necessary?

A trunk port is necessary to allow communication between devices in different VLANs across multiple switches.

- 3) What does IEEE stand for?

IEEE stands for the **Institute of Electrical and Electronics Engineers**.

This organization develops standards for networking, electronics, and telecommunications.

- a. What IEEE standard covers VLANs?

The IEEE standard that covers VLANs is **IEEE 802.1Q**

- 4) What layer of the OSI Model does VLAN tagging take place?

VLAN tagging takes place at **Layer 2 (Data Link Layer)** of the OSI Model.

- 5) How and why would this technology be useful in a networking scenario?

VLANs are useful for logically segmenting a network, improving security, performance, and manageability. In the lab, we created **VLAN 10** and **VLAN 20** to isolate traffic, ensuring PCs in different VLANs couldn't communicate. This reduces broadcast traffic, enhances security, and allows flexible device grouping regardless of physical location. VLANs also simplify network management by making troubleshooting easier. This makes VLANs essential for scalable, secure, and efficient networks.