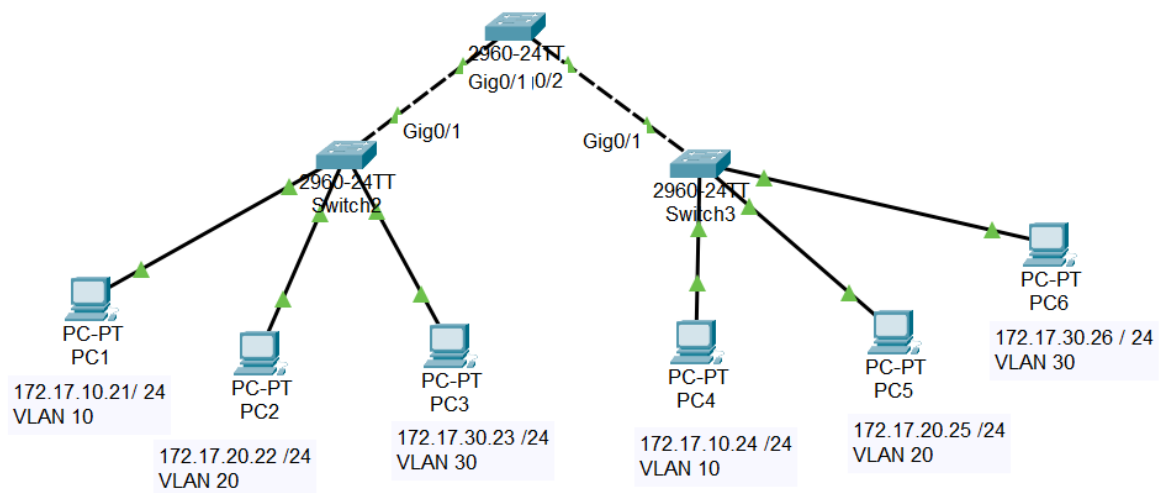


Addressing Table

Device	Interface	IP Address	Subnet Mask	Switch Port	VLAN
PC1	NIC	172.17.10.21	255.255.255.0	S2 F0/11	10
PC2	NIC	172.17.20.22	255.255.255.0	S2 F0/18	20
PC3	NIC	172.17.30.23	255.255.255.0	S2 F0/6	30
PC4	NIC	172.17.10.24	255.255.255.0	S3 F0/11	10
PC5	NIC	172.17.20.25	255.255.255.0	S3 F0/18	20
PC6	NIC	172.17.30.26	255.255.255.0	S3 F0/6	30



PC-1 (172.17.10.21/ 24)

(VLAN 10)

PC1

Physical
Config
Desktop
Programming
Attributes

IP Configuration
X

Interface
FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IPv4 Address
172.17.10.21

Subnet Mask
255.255.255.0

Default Gateway
0.0.0.0

DNS Server
0.0.0.0

PC-2 (172.17.20.22 /24)

(VLAN 20)

The screenshot shows the configuration window for PC2. The 'Desktop' tab is selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' radio button is selected for the IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input checked="" type="radio"/> Static
IPv4 Address	172.17.20.22
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

PC-3 (172.17.30.23 /24)

(VLAN 30)

The screenshot shows the configuration window for PC3. The 'Desktop' tab is selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' radio button is selected for the IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input checked="" type="radio"/> Static
IPv4 Address	172.17.30.23
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

PC-4 (172.17.10.24 /24)

(VLAN 10)

The screenshot shows the configuration window for PC4. The 'Desktop' tab is selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' radio button is selected for the IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input checked="" type="radio"/> Static
IPv4 Address	172.17.10.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

PC-5 (172.17.20.25 /24)

(VLAN 20)

The screenshot shows the configuration window for PC5. The 'Desktop' tab is selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' radio button is selected for IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input checked="" type="radio"/> Static
IPv4 Address	172.17.20.25
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

PC-6 (172.17.30.26 / 24)

(VLAN 30)

The screenshot shows the configuration window for PC6. The 'Desktop' tab is selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' radio button is selected for IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input checked="" type="radio"/> Static
IPv4 Address	172.17.30.26
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

S1 Switch – CLI

Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4, Fa0/7, Fa0/8, Fa0/9, Fa0/10, Fa0/11, Fa0/12, Fa0/15, Fa0/16, Fa0/17, Fa0/18, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24
10	v_10	active	
20	v_20	active	
30	v_30	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode
1	enet	100001	1500	-	-	-	-	0
10	enet	100010	1500	-	-	-	-	0

Copy Paste

S2 Switch – CLI

Switch2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch#
Switch#
Switch#
Switch#show vlan
```

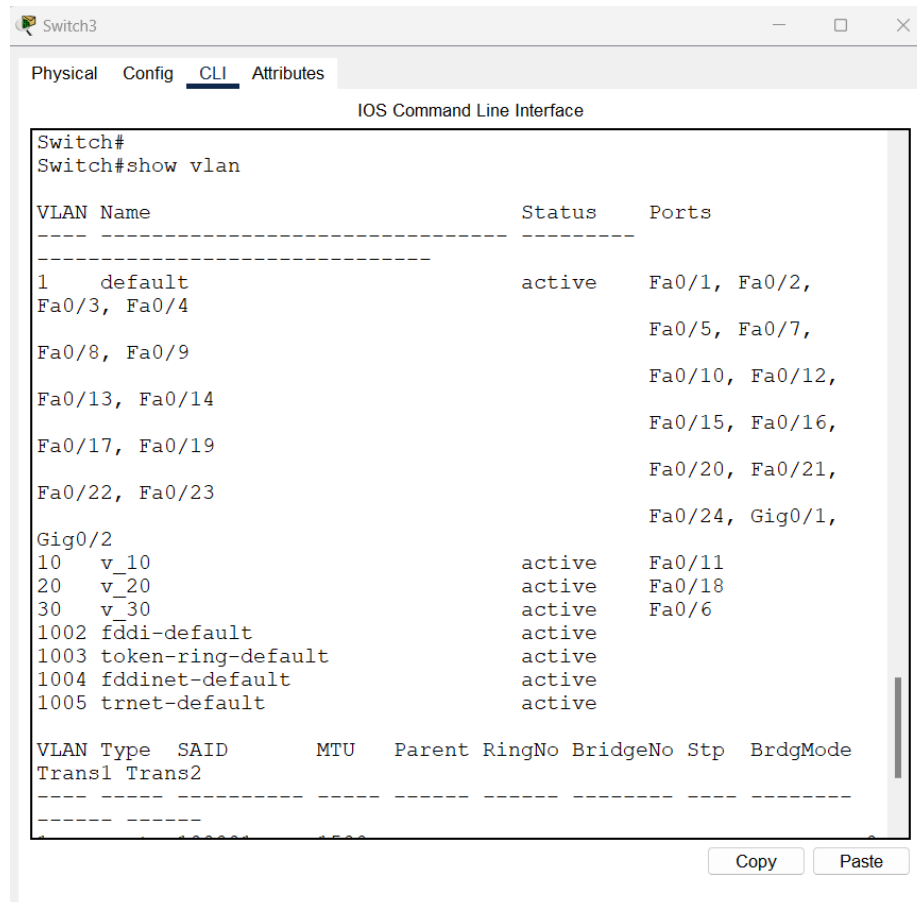
VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4, Fa0/5, Fa0/7, Fa0/8, Fa0/9, Fa0/10, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24, Gig0/1, Gig0/2
10	v_10	active	Fa0/11
20	v_20	active	Fa0/18
30	v_30	active	Fa0/6
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-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

--More--

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S3 Switch – CLI



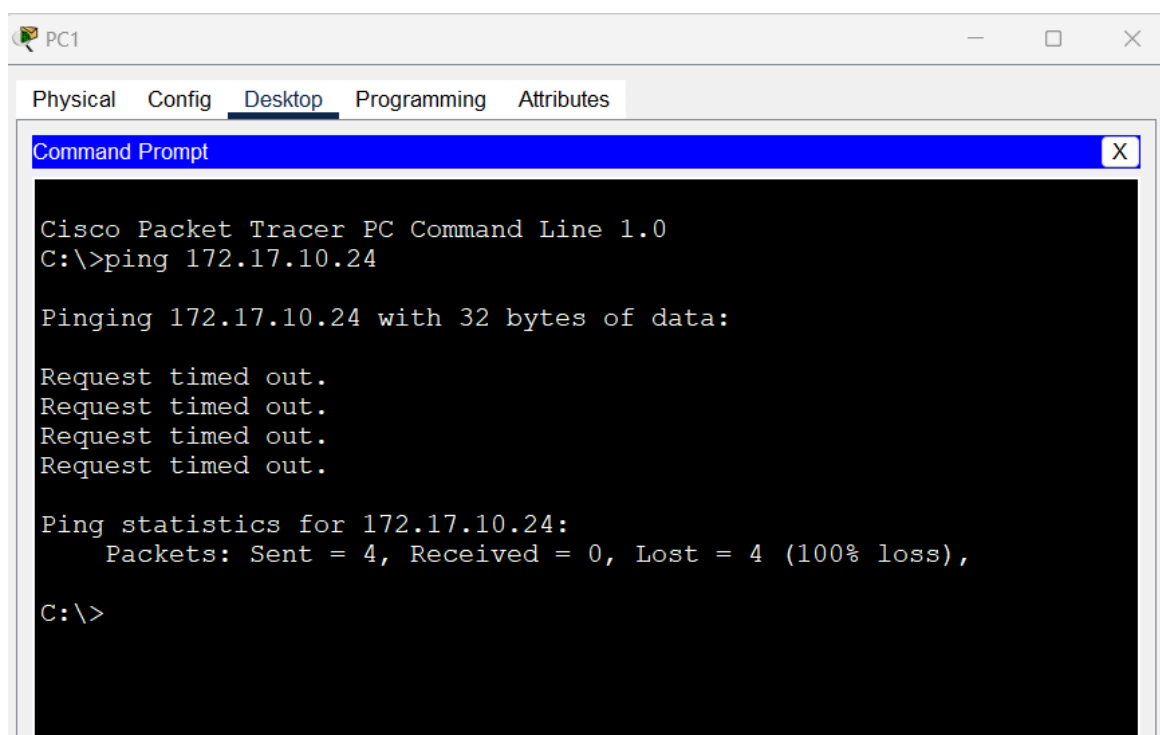
The screenshot shows the S3 Switch CLI window with the 'CLI' tab selected. The command 'Switch# show vlan' has been entered, and the output is displayed in a table format. The table has columns for VLAN Name, Status, and Ports. The output shows VLAN 1 (default) is active and includes ports Fa0/1, Fa0/2, Fa0/3, Fa0/4, Fa0/5, Fa0/7, Fa0/8, Fa0/9, Fa0/10, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24, and Gig0/1. Other VLANs shown include v_10, v_20, v_30, fddi-default, token-ring-default, fddinet-default, and trnet-default, all of which are active. A second table with columns for VLAN Type, SAID, MTU, Parent, RingNo, BridgeNo, Stp, and BrdgMode is also visible but mostly obscured by a scrollbar.

```
Switch#
Switch#show vlan

VLAN Name                Status    Ports
-----
1      default              active    Fa0/1, Fa0/2,
Fa0/3, Fa0/4              Fa0/5, Fa0/7,
Fa0/8, Fa0/9              Fa0/10, Fa0/12,
Fa0/13, Fa0/14            Fa0/15, Fa0/16,
Fa0/17, Fa0/19            Fa0/20, Fa0/21,
Fa0/22, Fa0/23            Fa0/24, Gig0/1,
Gig0/2
10     v_10                  active    Fa0/11
20     v_20                  active    Fa0/18
30     v_30                  active    Fa0/6
1002   fddi-default          active
1003   token-ring-default    active
1004   fddinet-default        active
1005   trnet-default          active

VLAN Type  SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode
Trans1 Trans2
-----
```

- 🚩 Ping between hosts in the same VLAN on different switches. Even though PC1 and PC4 are in the same VLAN, they cannot ping each other.



The screenshot shows the PC1 Command Prompt window. The command 'C:\>ping 172.17.10.24' has been entered, and the output shows that the ping failed. The output indicates that 4 packets were sent, 0 were received, and 4 were lost (100% loss).

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.17.10.24

Pinging 172.17.10.24 with 32 bytes of data:

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

Ping statistics for 172.17.10.24:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

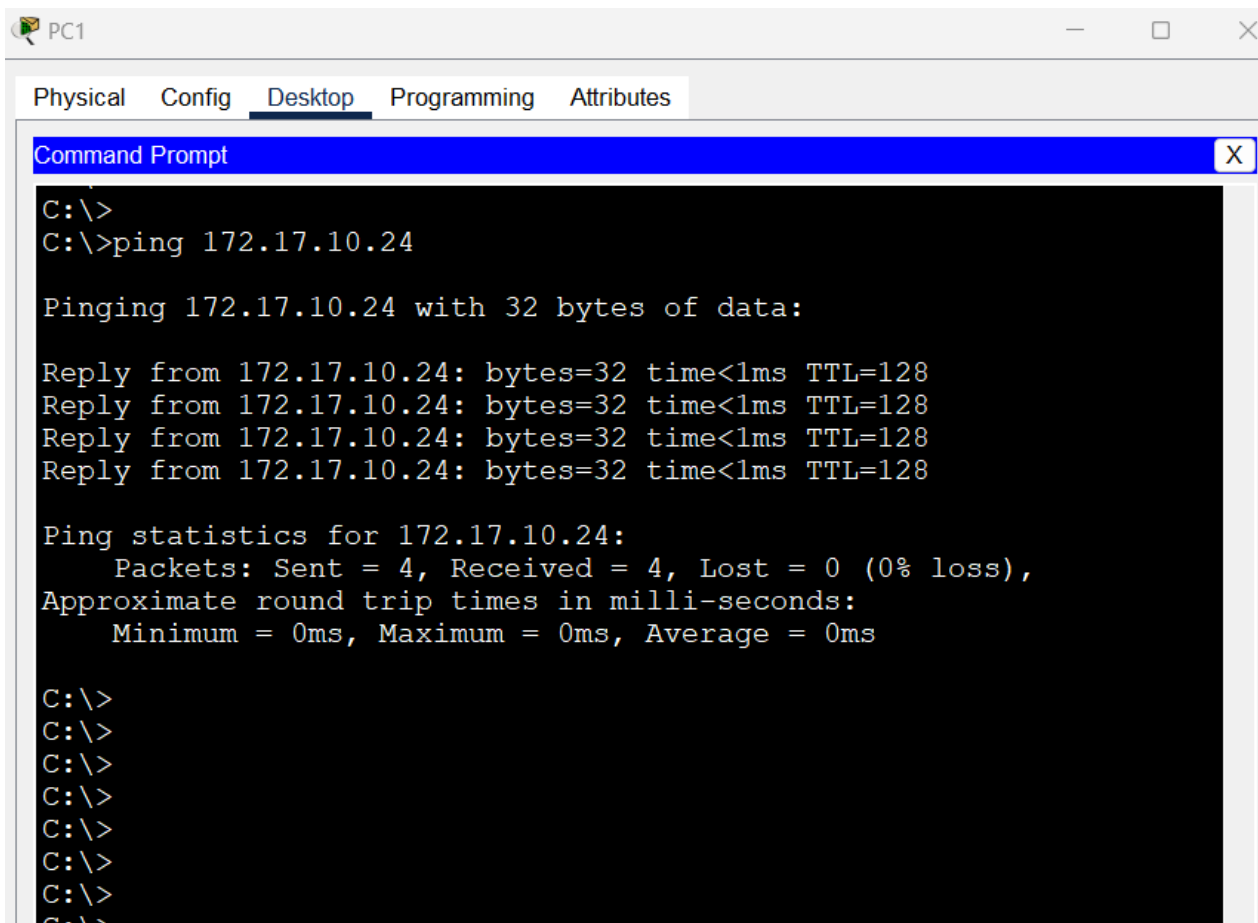
C:\>
```

🔧 On switch S1, trunking is enabled on interfaces G0/1 and G0/2.

```
Switch(config-if)#  
%LINEPROTO-5-UPDOWN: Line protocol on Interface  
GigabitEthernet0/1, changed state to down  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface  
GigabitEthernet0/1, changed state to up
```

Dynamic Trunking Protocol (DTP), is a Cisco proprietary protocol used to control and automate trunking between switches connected via a link. When enabled on a switch port, DTP negotiates with the other end of the link to create a trunk link that allows multiple VLAN traffic over a single physical link. In this scenario, DTP on S1 negotiated a trunk with S2 and S3 and automatically configured their S1-connected ports as trunk ports.

🔧 As a result of this process, it was possible to ping between PC1 and PC4 devices.



```
PC1  
Physical Config Desktop Programming Attributes  
Command Prompt  
C:\>  
C:\>ping 172.17.10.24  
  
Pinging 172.17.10.24 with 32 bytes of data:  
  
Reply from 172.17.10.24: bytes=32 time<1ms TTL=128  
Reply from 172.17.10.24: bytes=32 time<1ms TTL=128  
Reply from 172.17.10.24: bytes=32 time<1ms TTL=128  
Reply from 172.17.10.24: bytes=32 time<1ms TTL=128  
  
Ping statistics for 172.17.10.24:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 0ms, Maximum = 0ms, Average = 0ms  
  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>
```