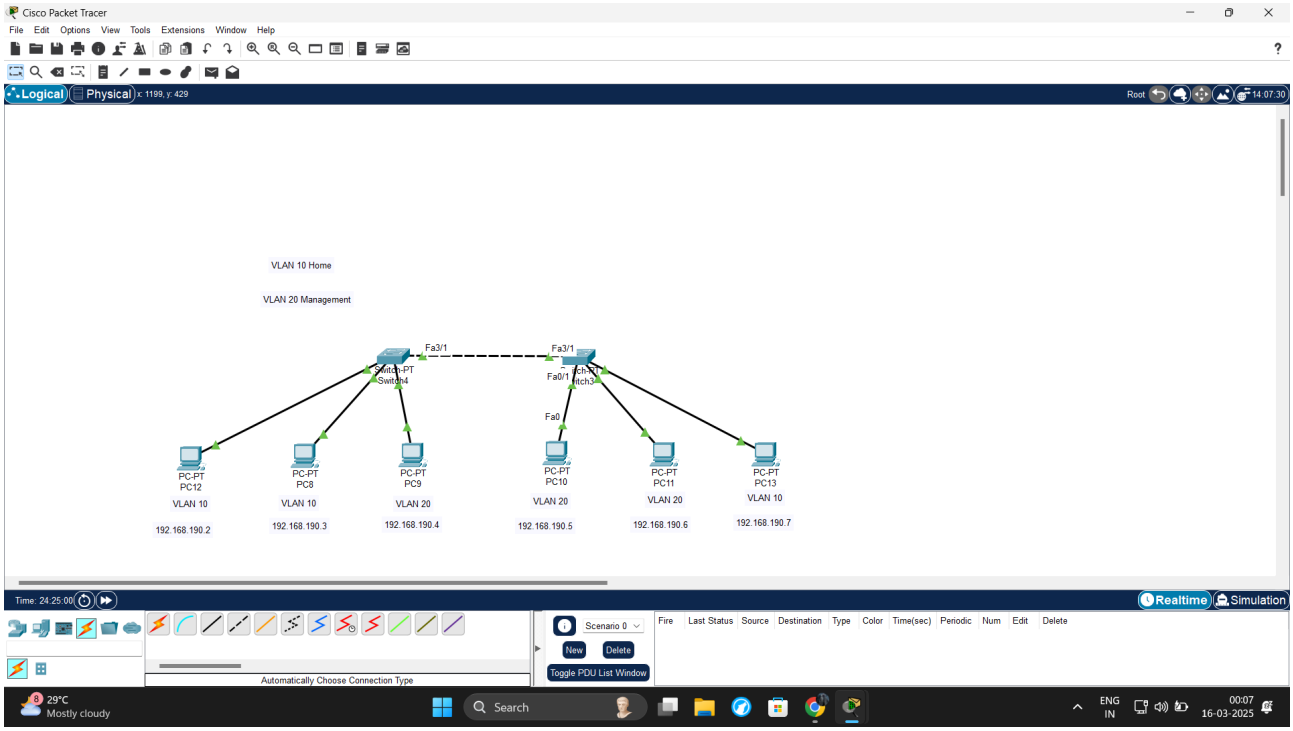
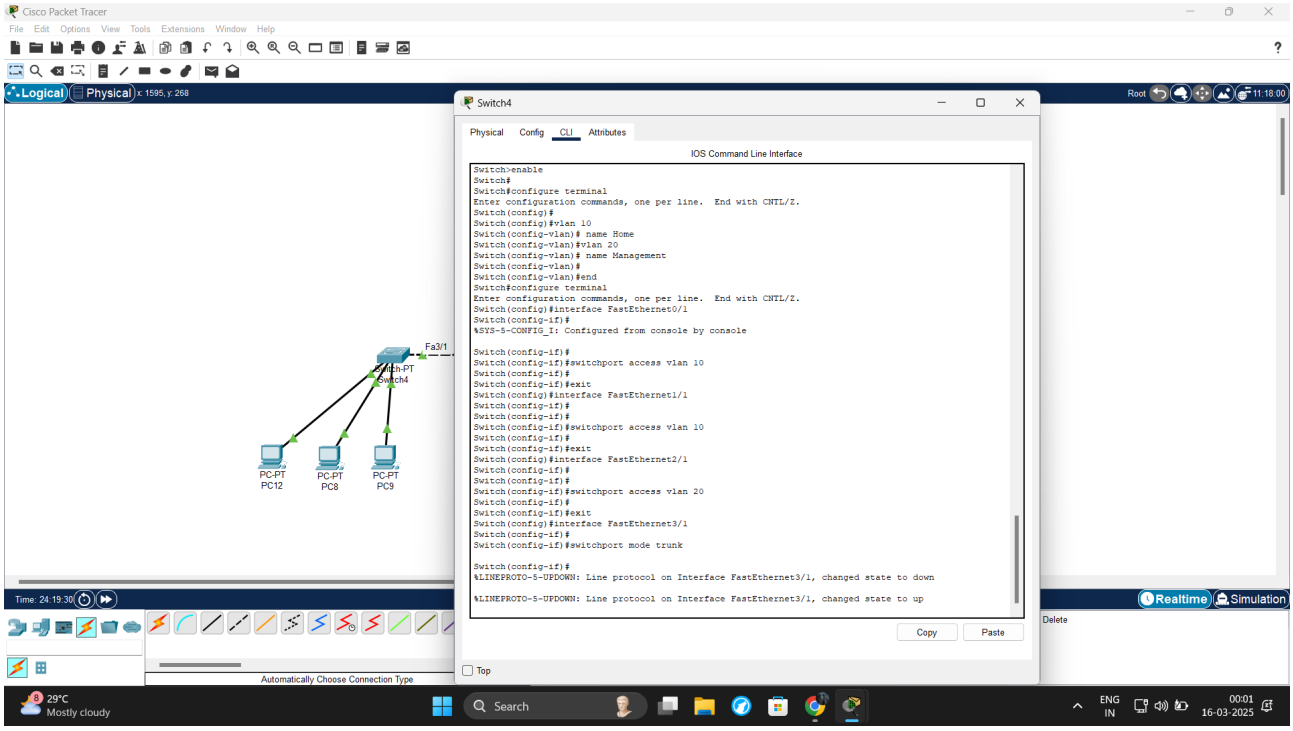
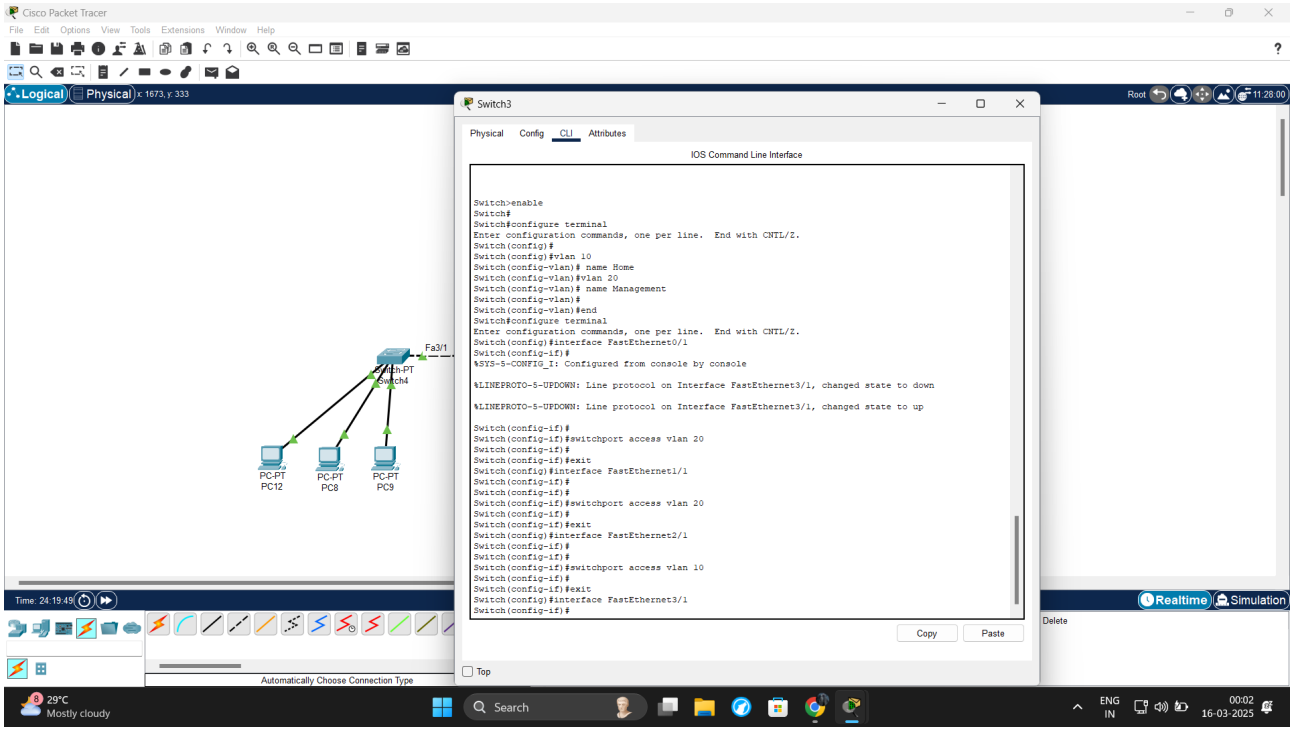
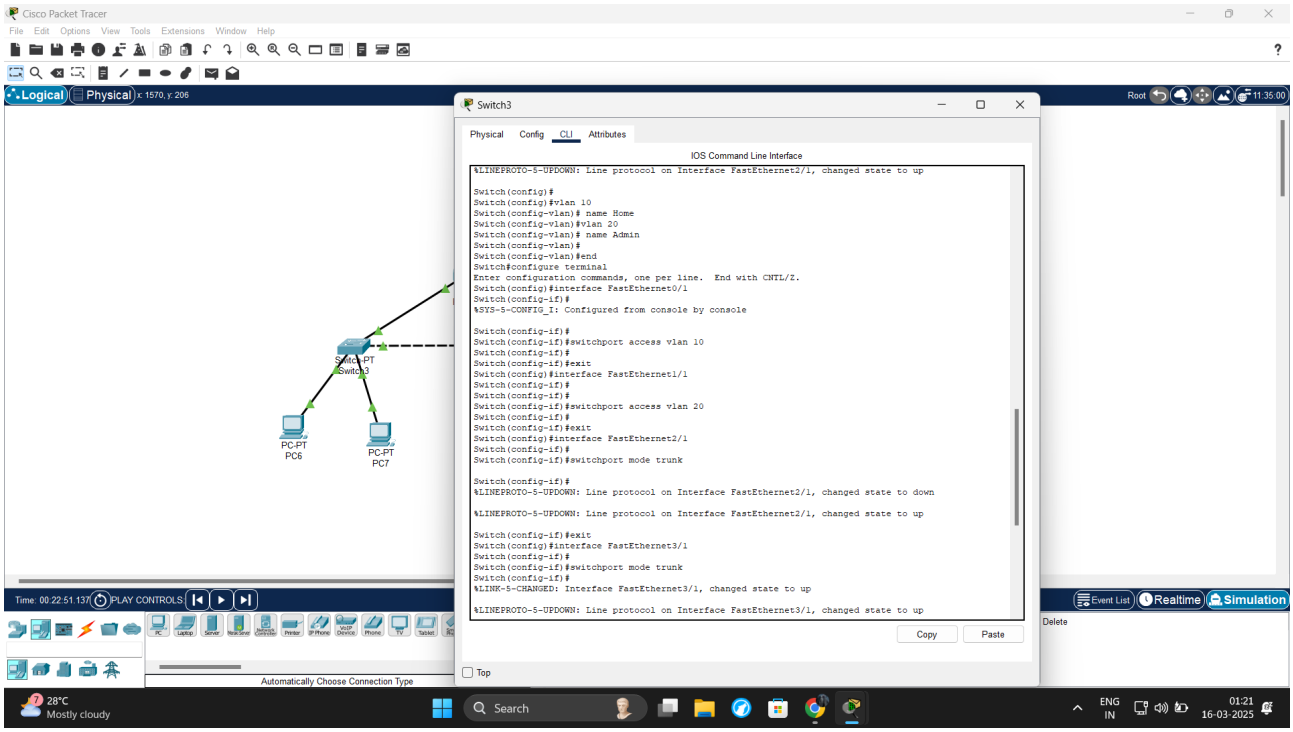
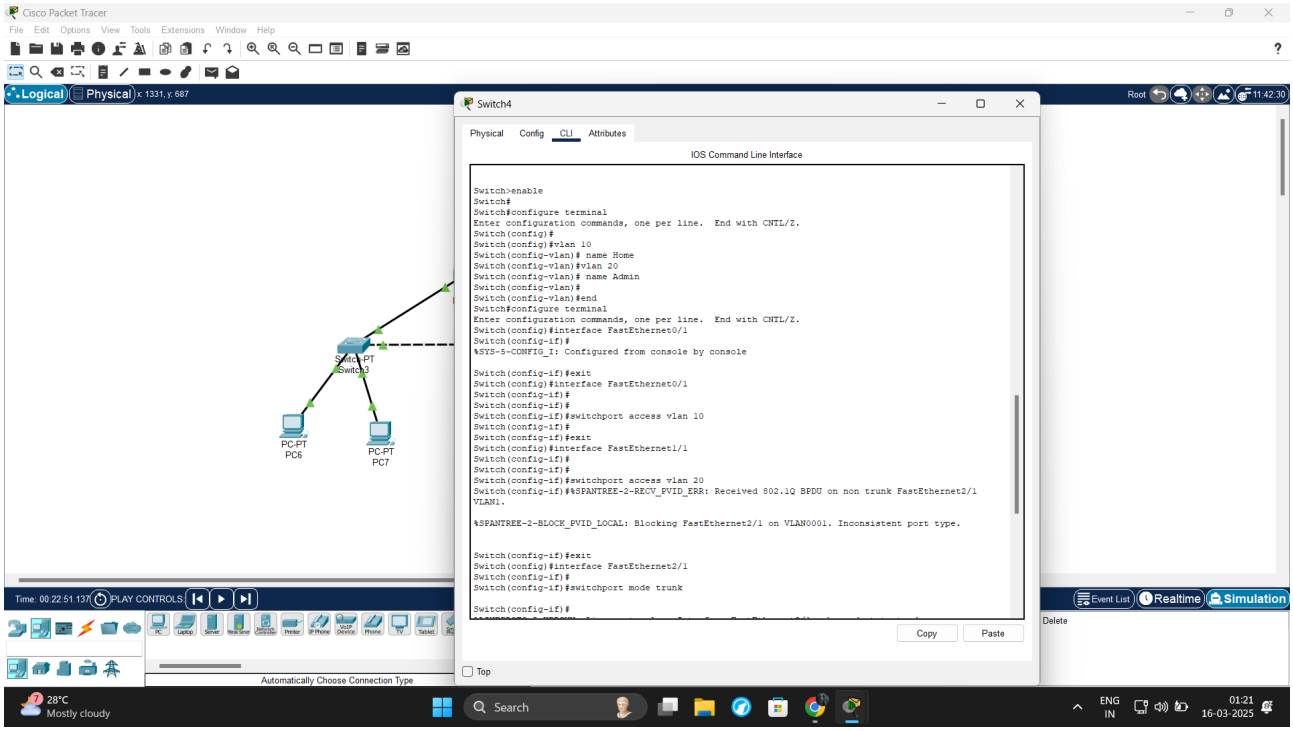

Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 1199, y: 429
Root 14:07:30
VLAN 10 Home
VLAN 20 Management
Switch-PT Switch4
Switch-PT Switch3
Fa3/1
Fa3/1
Fa0/1
Fa0
PC-PT PC12
VLAN 10
192.168.190.2
PC-PT PC8
VLAN 10
192.168.190.3
PC-PT PC9
VLAN 20
192.168.190.4
PC-PT PC10
VLAN 20
192.168.190.5
PC-PT PC11
VLAN 20
192.168.190.6
PC-PT PC13
VLAN 10
192.168.190.7
Time: 24:25:00
Realtime Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Automatically Choose Connection Type
29°C Mostly cloudy
Search
ENG IN
00:07 16-03-2025

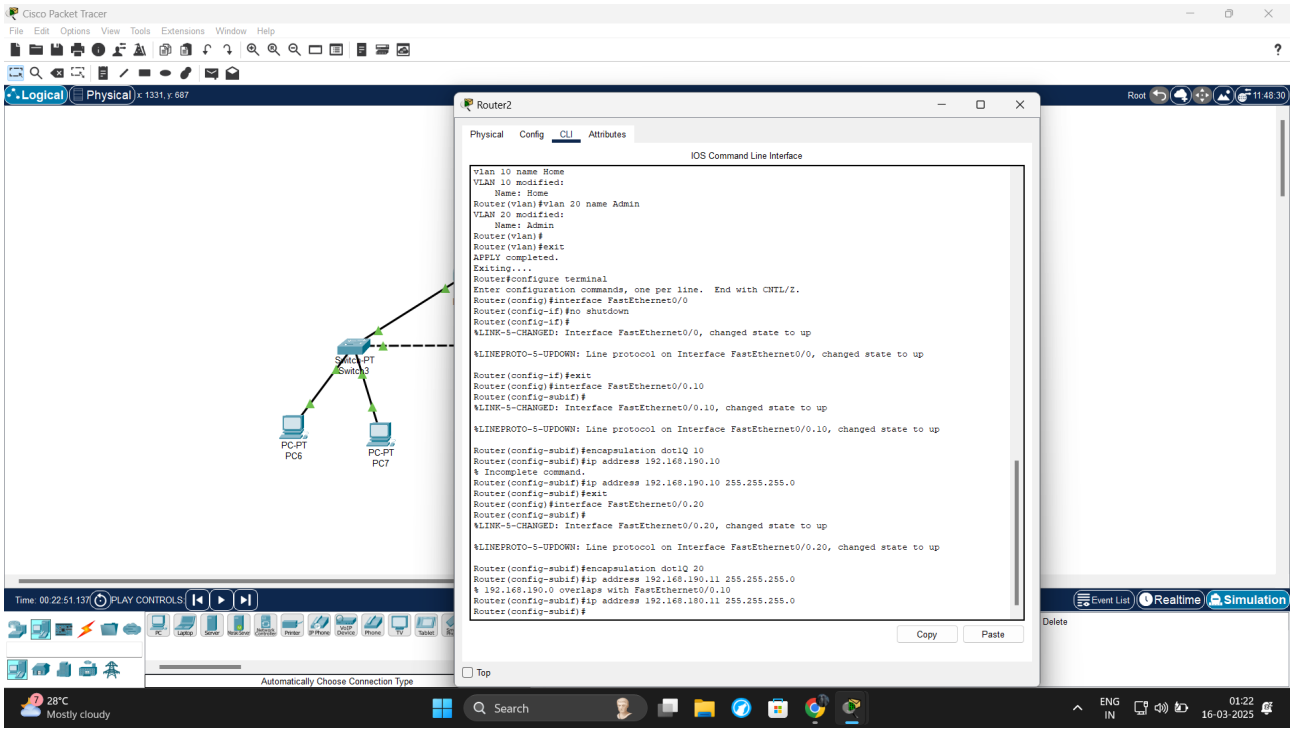

Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 1595, y: 268
Root 11:18:00
Switch4
Physical Config CLI Attributes
IOS Command Line Interface
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#vlan 10
Switch(config-vlan)# name Home
Switch(config-vlan)#vlan 20
Switch(config-vlan)# name Management
Switch(config-vlan)#
Switch(config-vlan)#end
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
%SYS-5-CONFIG_I: Configured from console by console
Switch(config-if)#
Switch(config-if)#switchport access vlan 10
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet1/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 10
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet2/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 20
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet3/1
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet3/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet3/1, changed state to up
Copy
Paste
Top
Switch-PT Switch4
Fa3/1
PC-PT PC12
PC-PT PC8
PC-PT PC9
Time: 24:19:30
Realtime Simulation
Delete
Automatically Choose Connection Type
29°C Mostly cloudy
Search
ENG IN
00:01 16-03-2025

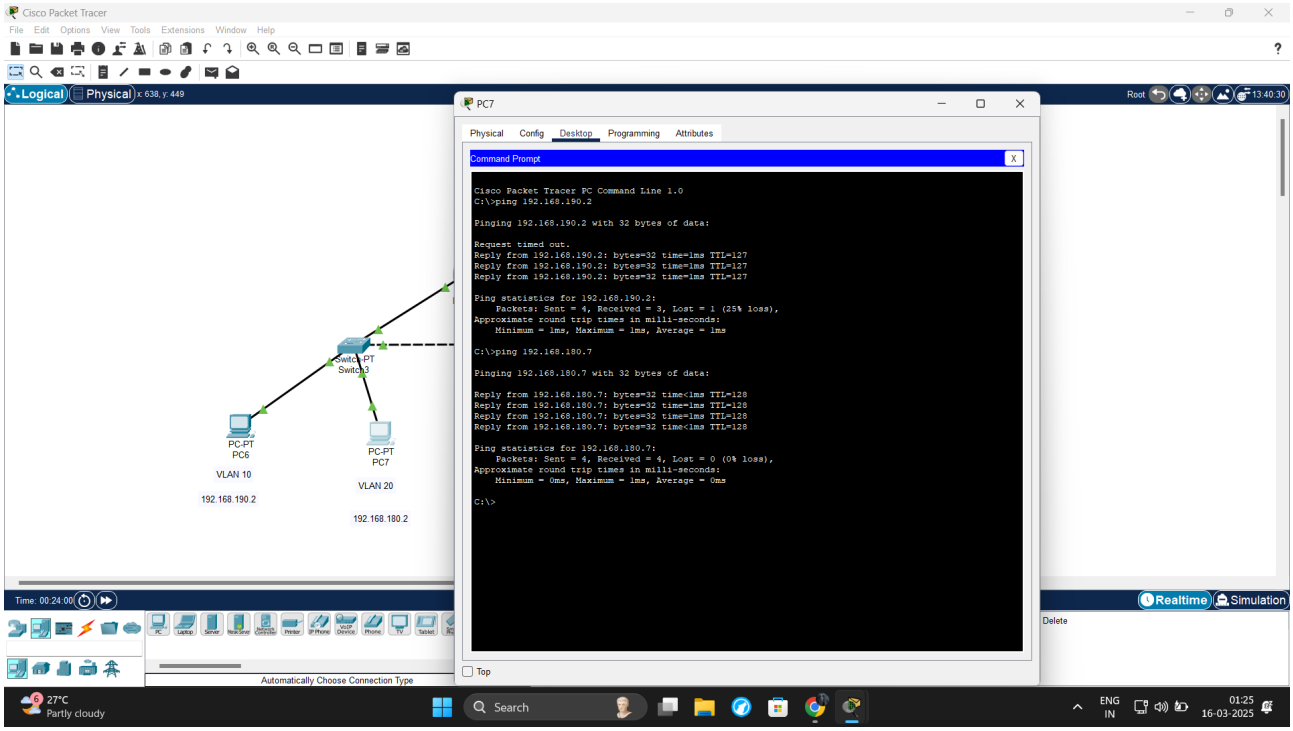


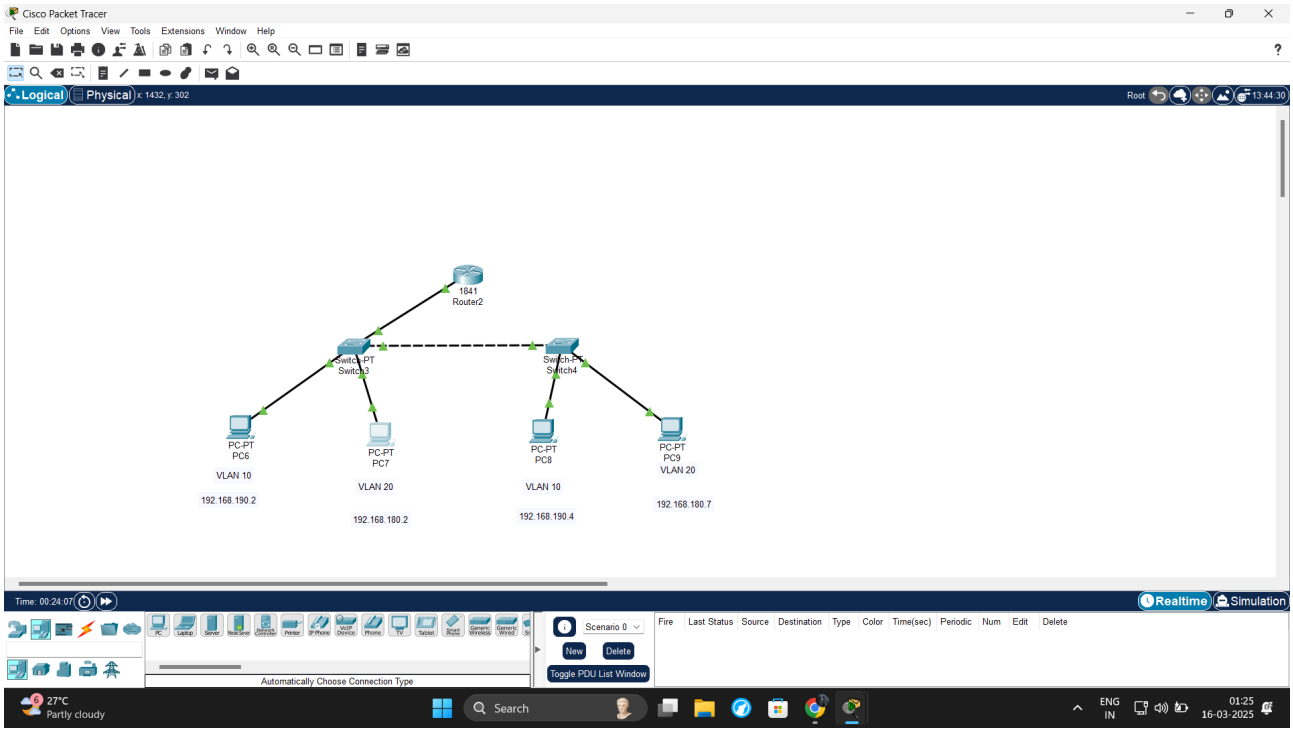
The devices in VLAN 10 and VLAN 20 cannot communicate with each other because the switch ensures the traffic of each VLAN is isolated from each other. To allow communication between each VLAN , Inter VLAN routing needs to done which can done by setting up a router to allow communication between the VLANS.

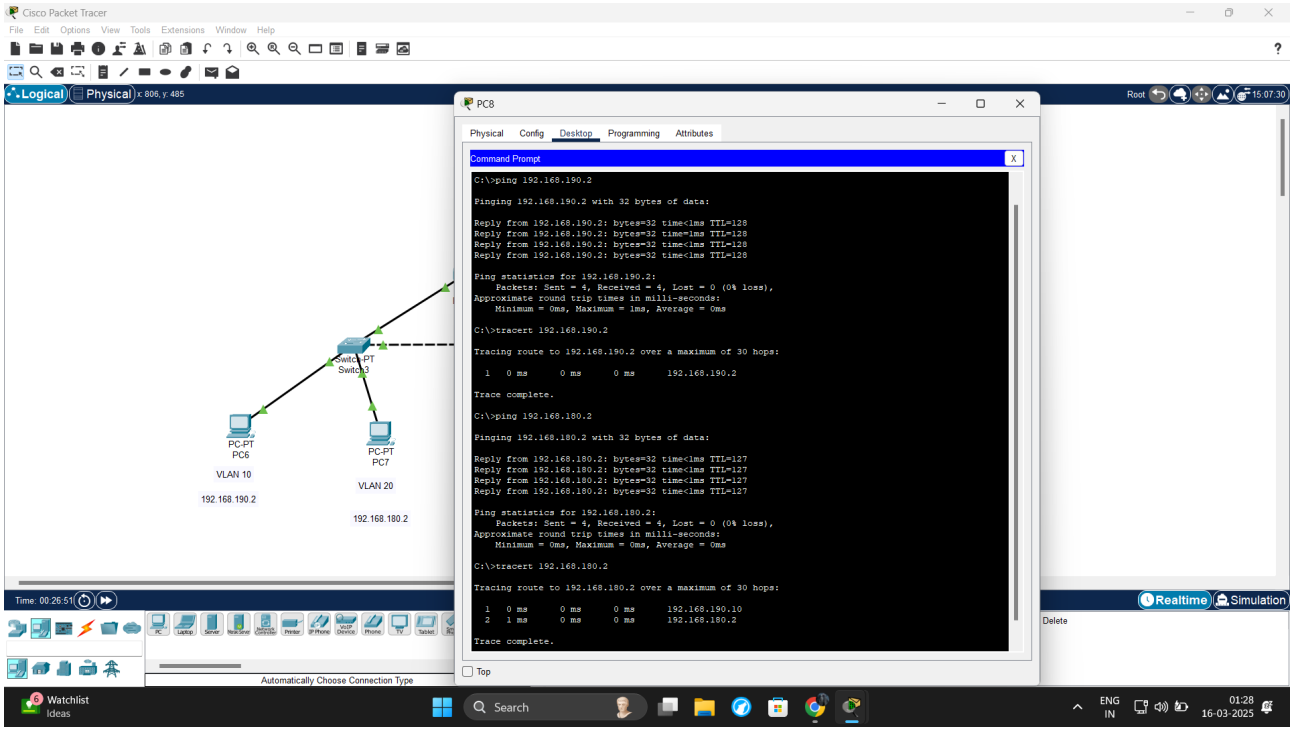



Cisco Packet Tracer
Switch4
Physical
Config
CLI
Attributes
IOS Command Line Interface
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#vlan 10
Switch(config-vlan)# name Home
Switch(config-vlan)#vlan 20
Switch(config-vlan)# name Admin
Switch(config-vlan)#
Switch(config-vlan)#end
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
%SYS-5-CONFIG_I: Configured from console by console
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 10
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet1/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 20
Switch(config-if)#%SPANTREE-2-RECV_PVID_ERR: Received 802.1Q BPDU on non trunk FastEthernet2/1
VLAN1.
%SPANTREE-2-BLOCK_PVID_LOCAL: Blocking FastEthernet2/1 on VLAN0001. Inconsistent port type.
Switch(config-if)#exit
Switch(config)#interface FastEthernet2/1
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
Copy
Paste
Top
Switch-PT
Switch3
PC-PT
PC6
PC-PT
PC7
Logical
Physical
Root
Time: 00:22:51.137
PLAY CONTROLS
Event List
Realtime
Simulation
Delete
Automatically Choose Connection Type
28°C
Mostly cloudy
Search
ENG
IN
01:21
16-03-2025


Cisco Packet Tracer
Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
vlan 10 name Home
VLAN 10 modified:
Name: Home
Router(vlan)#vlan 20 name Admin
VLAN 20 modified:
Name: Admin
Router(vlan)#
Router(vlan)#exit
APPLY completed.
Exiting....
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#interface FastEthernet0/0.10
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.10, changed state to up
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.190.10
% Incomplete command.
Router(config-subif)#ip address 192.168.190.10 255.255.255.0
Router(config-subif)#exit
Router(config)#interface FastEthernet0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.190.11 255.255.255.0
% 192.168.190.0 overlaps with FastEthernet0/0.10
Router(config-subif)#ip address 192.168.180.11 255.255.255.0
Router(config-subif)#
Copy
Paste
Top
Switch-PT
Switch3
PC-PT
PC6
PC-PT
PC7
Logical
Physical
Root
Time: 00:22:51.137
PLAY CONTROLS
Event List
Realtime
Simulation
Delete
Automatically Choose Connection Type
28°C
Mostly cloudy
Search
ENG
IN
01:22
16-03-2025


Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 638, y: 449
Root 13:40:30
PC7
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.190.2
Pinging 192.168.190.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.190.2: bytes=32 time=1ms TTL=127
Reply from 192.168.190.2: bytes=32 time=1ms TTL=127
Reply from 192.168.190.2: bytes=32 time=1ms TTL=127
Ping statistics for 192.168.190.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 1ms, Average = 1ms
C:\>ping 192.168.180.7
Pinging 192.168.180.7 with 32 bytes of data:
Reply from 192.168.180.7: bytes=32 time<1ms TTL=128
Reply from 192.168.180.7: bytes=32 time<1ms TTL=128
Reply from 192.168.180.7: bytes=32 time=1ms TTL=128
Reply from 192.168.180.7: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.180.7:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top
Switch-PT Switch3
PC-PT PC6
VLAN 10
192.168.190.2
PC-PT PC7
VLAN 20
192.168.180.2
Time: 00:24:00
Realtime Simulation
Delete
Automatically Choose Connection Type
27°C Partly cloudy
Search
ENG IN
01:25 16-03-2025


Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 1432, y: 302
Root 13:44:30
1841 Router2
Switch-PT Switch3
Switch-PT Switch4
PC-PT PC6
VLAN 10
192.168.190.2
PC-PT PC7
VLAN 20
192.168.180.2
PC-PT PC8
VLAN 10
192.168.190.4
PC-PT PC9
VLAN 20
192.168.180.7
Time: 00:24:07
Realtime Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Automatically Choose Connection Type
27°C Partly cloudy
Search
ENG IN
01:25 16-03-2025


Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 806, y: 485
Root 15:07:30
PC8
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 192.168.190.2
Pinging 192.168.190.2 with 32 bytes of data:
Reply from 192.168.190.2: bytes=32 time<1ms TTL=128
Reply from 192.168.190.2: bytes=32 time=1ms TTL=128
Reply from 192.168.190.2: bytes=32 time<1ms TTL=128
Reply from 192.168.190.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.190.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>tracert 192.168.190.2
Tracing route to 192.168.190.2 over a maximum of 30 hops:
1 0 ms 0 ms 0 ms 192.168.190.2
Trace complete.
C:\>ping 192.168.180.2
Pinging 192.168.180.2 with 32 bytes of data:
Reply from 192.168.180.2: bytes=32 time<1ms TTL=127
Reply from 192.168.180.2: bytes=32 time<1ms TTL=127
Reply from 192.168.180.2: bytes=32 time<1ms TTL=127
Reply from 192.168.180.2: bytes=32 time<1ms TTL=127
Ping statistics for 192.168.180.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>tracert 192.168.180.2
Tracing route to 192.168.180.2 over a maximum of 30 hops:
1 0 ms 0 ms 0 ms 192.168.190.10
2 1 ms 0 ms 0 ms 192.168.180.2
Trace complete.
Top
Switch-PT
Switch3
PC-PT
PC6
VLAN 10
192.168.190.2
PC-PT
PC7
VLAN 20
192.168.180.2
Time: 00:26:51
Realtime Simulation
Delete
Automatically Choose Connection Type
Watchlist
Ideas
Search
ENG
IN
01:28
16-03-2025