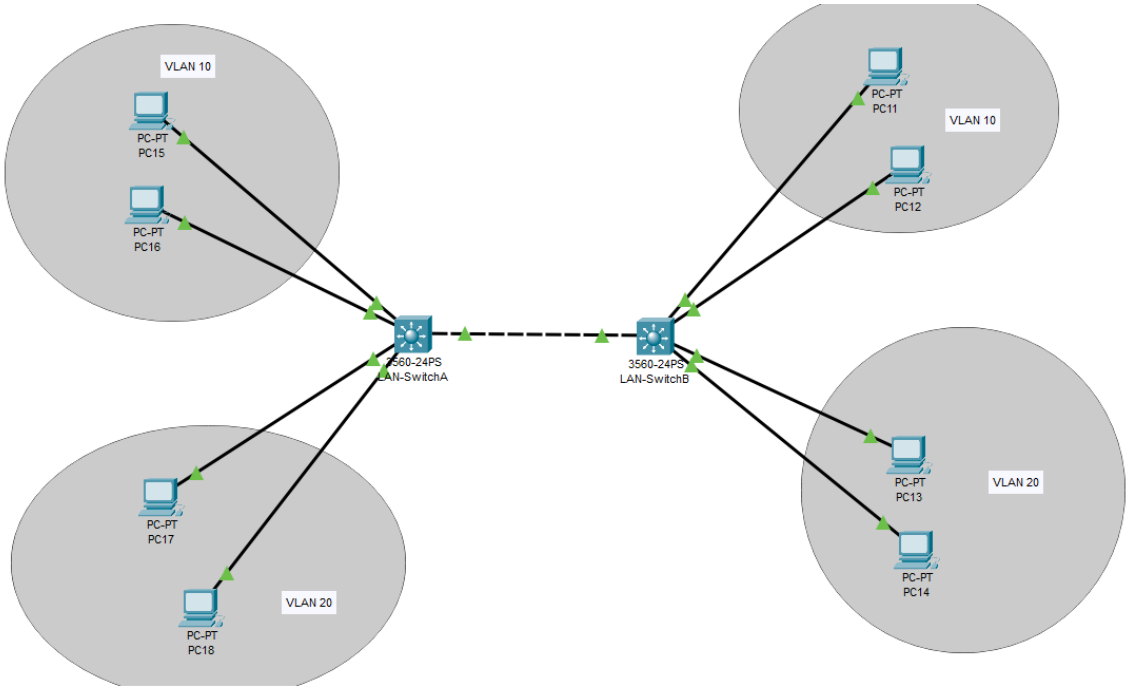
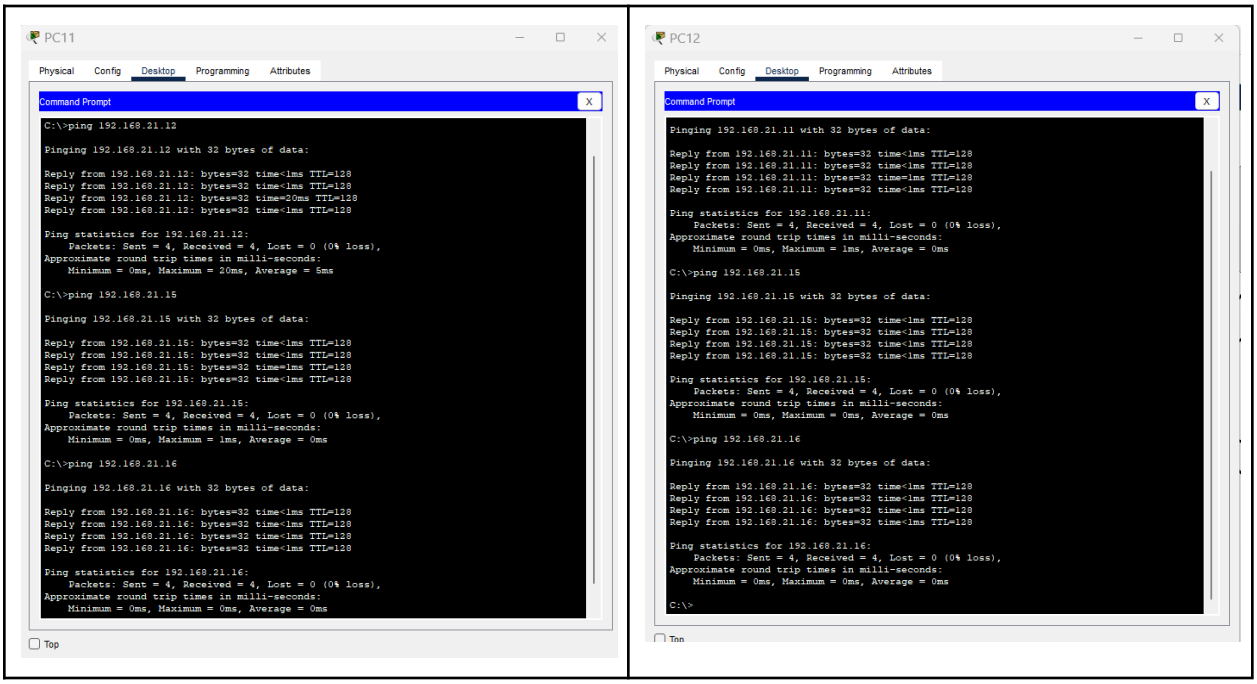
DONE REMOTELY

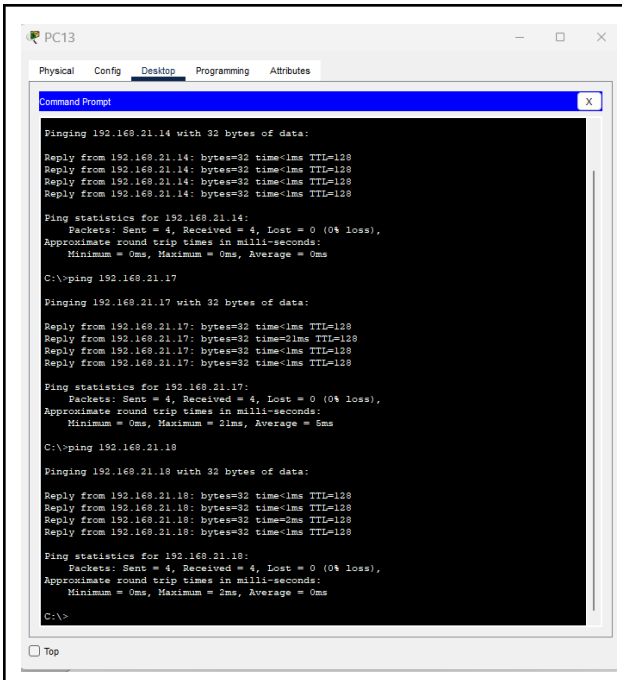
Screenshots of Packet Tracer Model

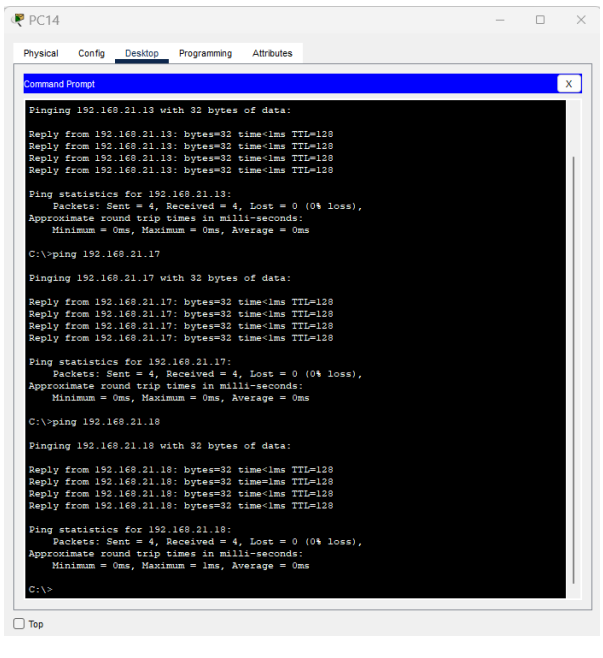
- **Network Topology**

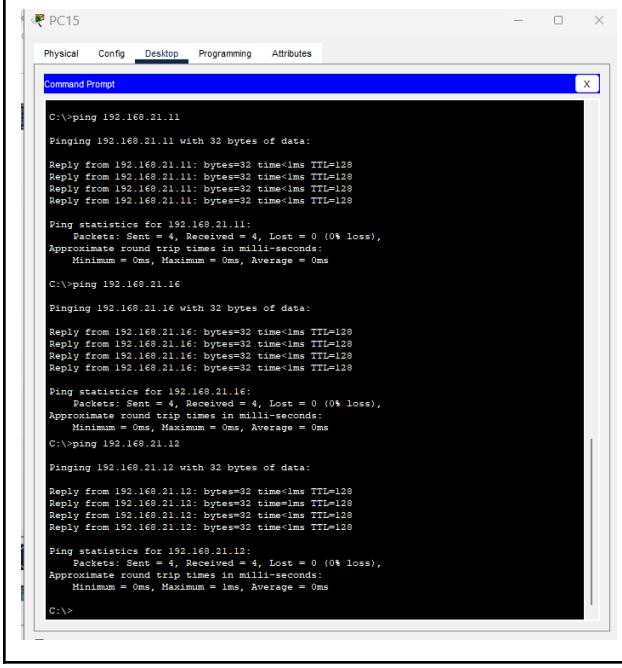


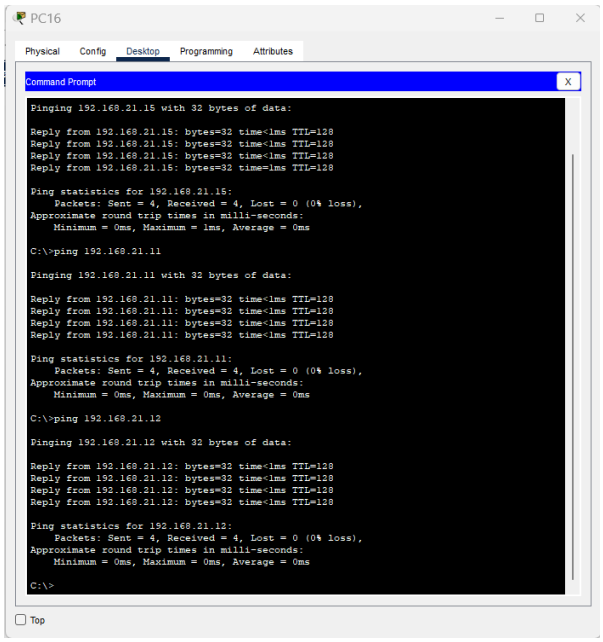
- **Successful Pings from PC to PC**

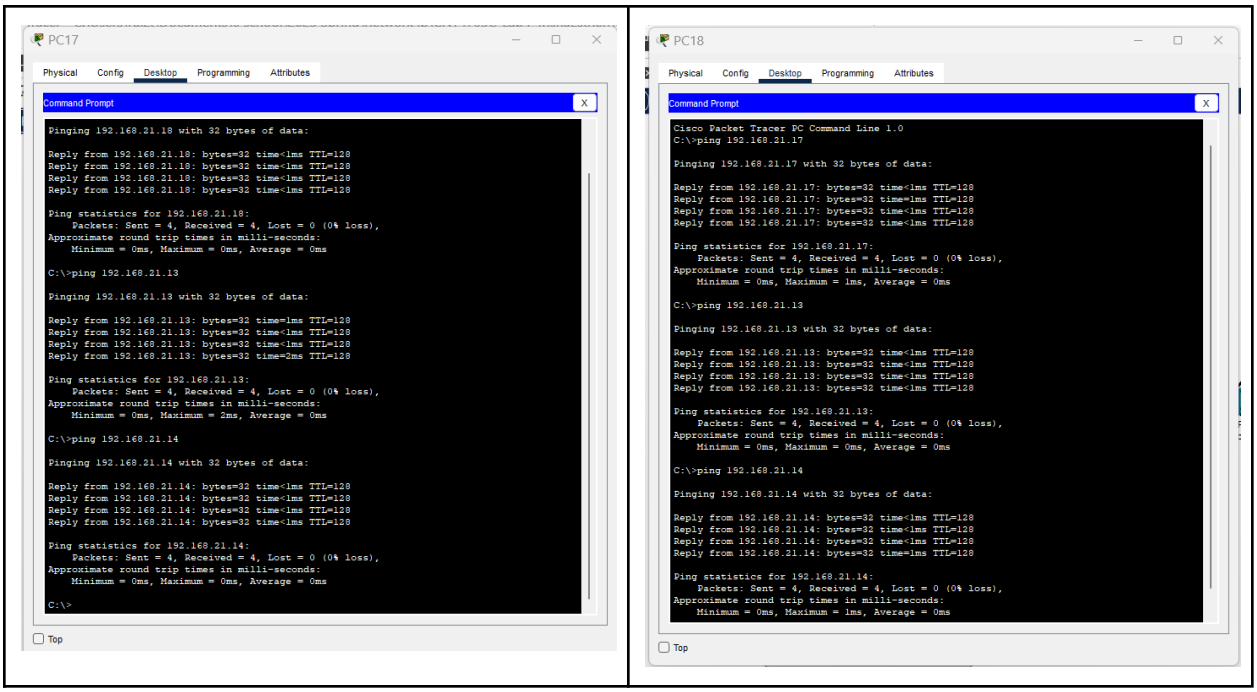



PC13
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Pinging 192.168.21.14 with 32 bytes of data:
Reply from 192.168.21.14: bytes=32 time<1ms TTL=128
Reply from 192.168.21.14: bytes=32 time<1ms TTL=128
Reply from 192.168.21.14: bytes=32 time<1ms TTL=128
Reply from 192.168.21.14: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.14:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.17
Pinging 192.168.21.17 with 32 bytes of data:
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Reply from 192.168.21.17: bytes=32 time=21ms TTL=128
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.17:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 21ms, Average = 5ms
C:\>ping 192.168.21.18
Pinging 192.168.21.18 with 32 bytes of data:
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Reply from 192.168.21.18: bytes=32 time=2ms TTL=128
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.18:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
C:\>
Top

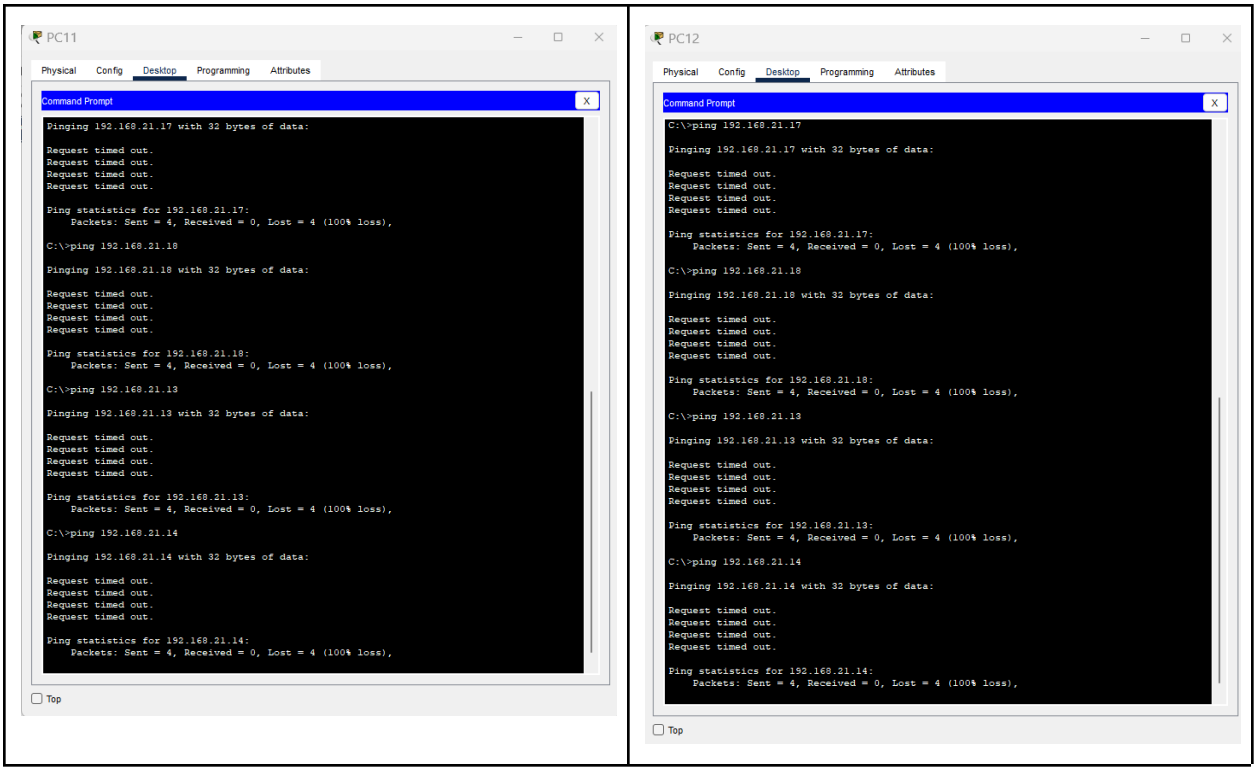

PC14
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Pinging 192.168.21.13 with 32 bytes of data:
Reply from 192.168.21.13: bytes=32 time<1ms TTL=128
Reply from 192.168.21.13: bytes=32 time<1ms TTL=128
Reply from 192.168.21.13: bytes=32 time<1ms TTL=128
Reply from 192.168.21.13: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.13:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.17
Pinging 192.168.21.17 with 32 bytes of data:
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Reply from 192.168.21.17: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.17:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.18
Pinging 192.168.21.18 with 32 bytes of data:
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Reply from 192.168.21.18: bytes=32 time=1ms TTL=128
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Reply from 192.168.21.18: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.18:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top

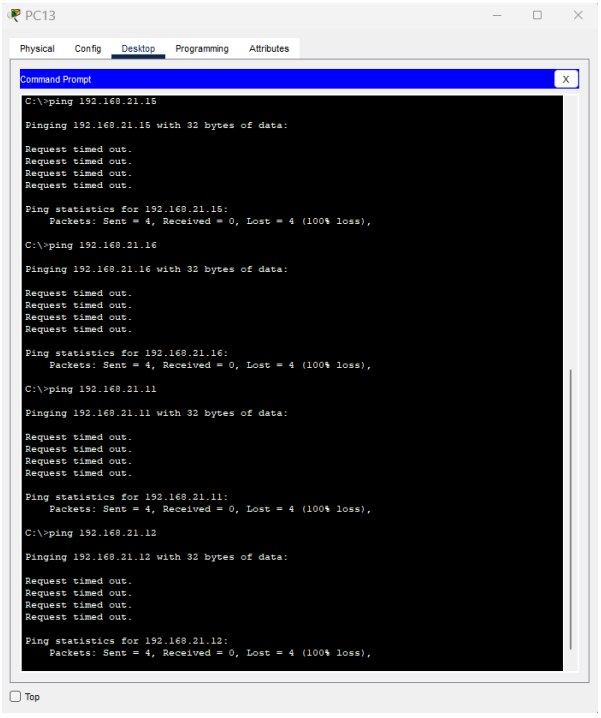

PC15
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.11
Pinging 192.168.21.11 with 32 bytes of data:
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.11:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.16
Pinging 192.168.21.16 with 32 bytes of data:
Reply from 192.168.21.16: bytes=32 time<1ms TTL=128
Reply from 192.168.21.16: bytes=32 time<1ms TTL=128
Reply from 192.168.21.16: bytes=32 time<1ms TTL=128
Reply from 192.168.21.16: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.16:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.12
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 = 1ms, Average = 0ms
C:\>

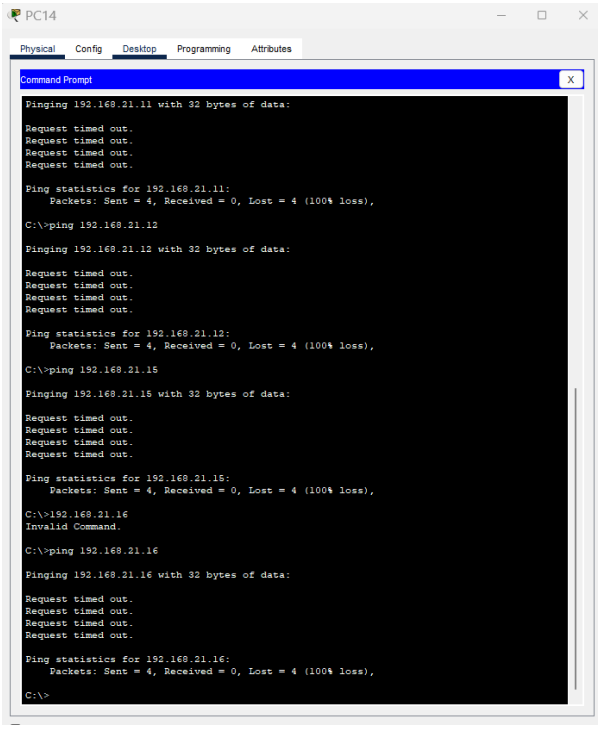

PC16
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Pinging 192.168.21.15 with 32 bytes of data:
Reply from 192.168.21.15: bytes=32 time<1ms TTL=128
Reply from 192.168.21.15: bytes=32 time<1ms TTL=128
Reply from 192.168.21.15: bytes=32 time<1ms TTL=128
Reply from 192.168.21.15: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.15:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>ping 192.168.21.11
Pinging 192.168.21.11 with 32 bytes of data:
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Reply from 192.168.21.11: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.21.11:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.21.12
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:\>
Top

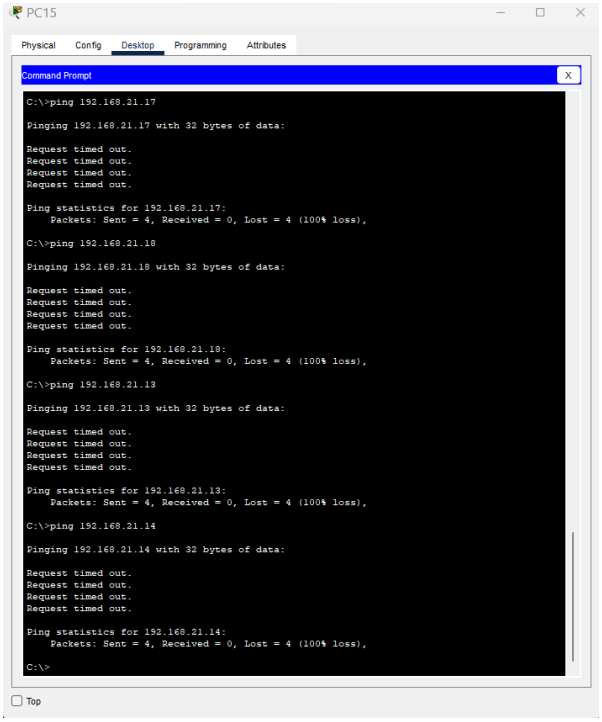


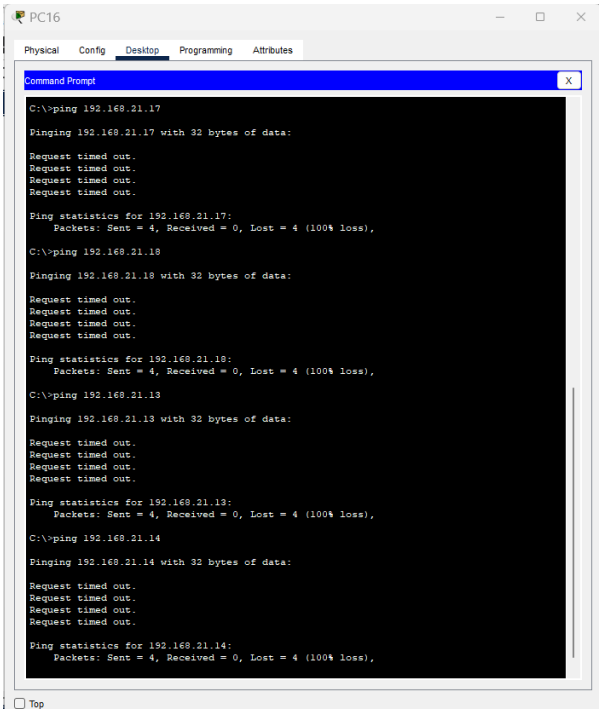
- **Unsuccessful Ping from PC to PC (between VLANS)**

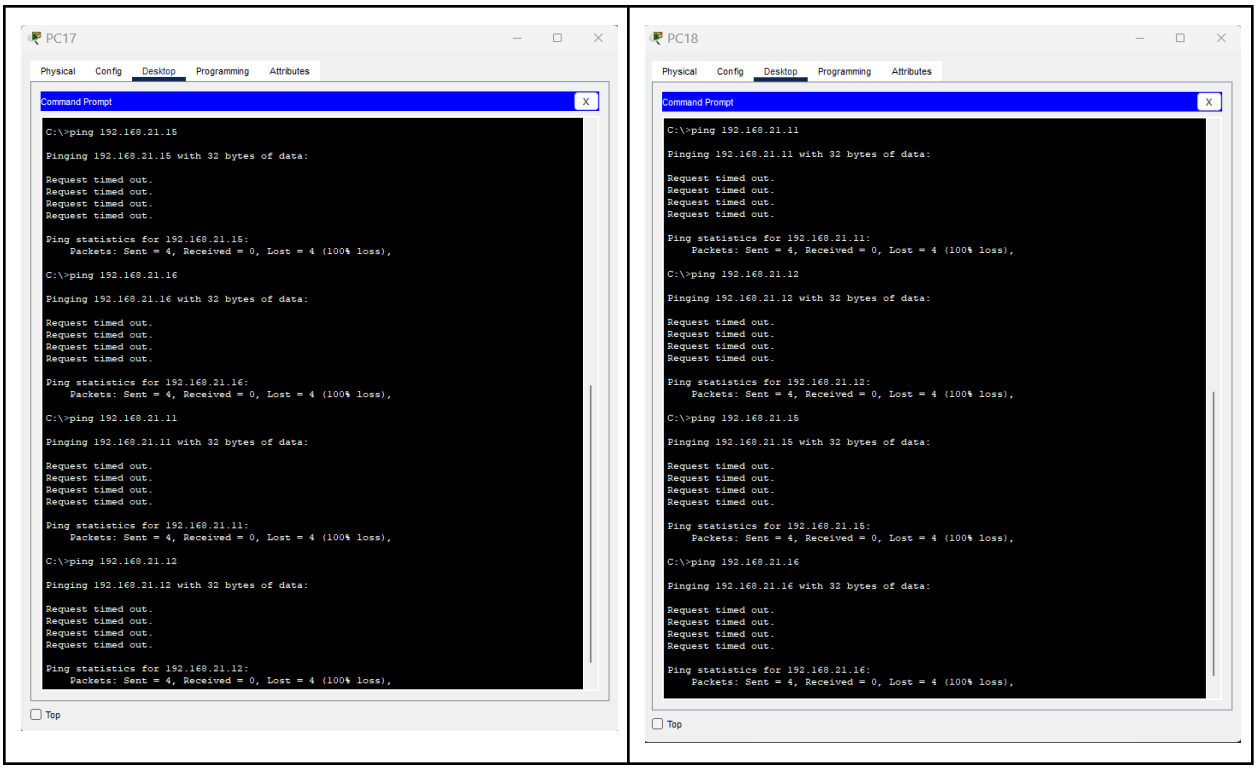



PC13
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.15
Pinging 192.168.21.15 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.15:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.16
Pinging 192.168.21.16 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.16:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.11
Pinging 192.168.21.11 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.11:
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:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.12:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Top


PC14
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Pinging 192.168.21.11 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.11:
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:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.12:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.15
Pinging 192.168.21.15 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.15:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>192.168.21.16
Invalid Command.
C:\>ping 192.168.21.16
Pinging 192.168.21.16 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.16:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>


PC15
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.17
Pinging 192.168.21.17 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.17:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.18
Pinging 192.168.21.18 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.18:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
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 192.168.21.14
Pinging 192.168.21.14 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.14:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
Top

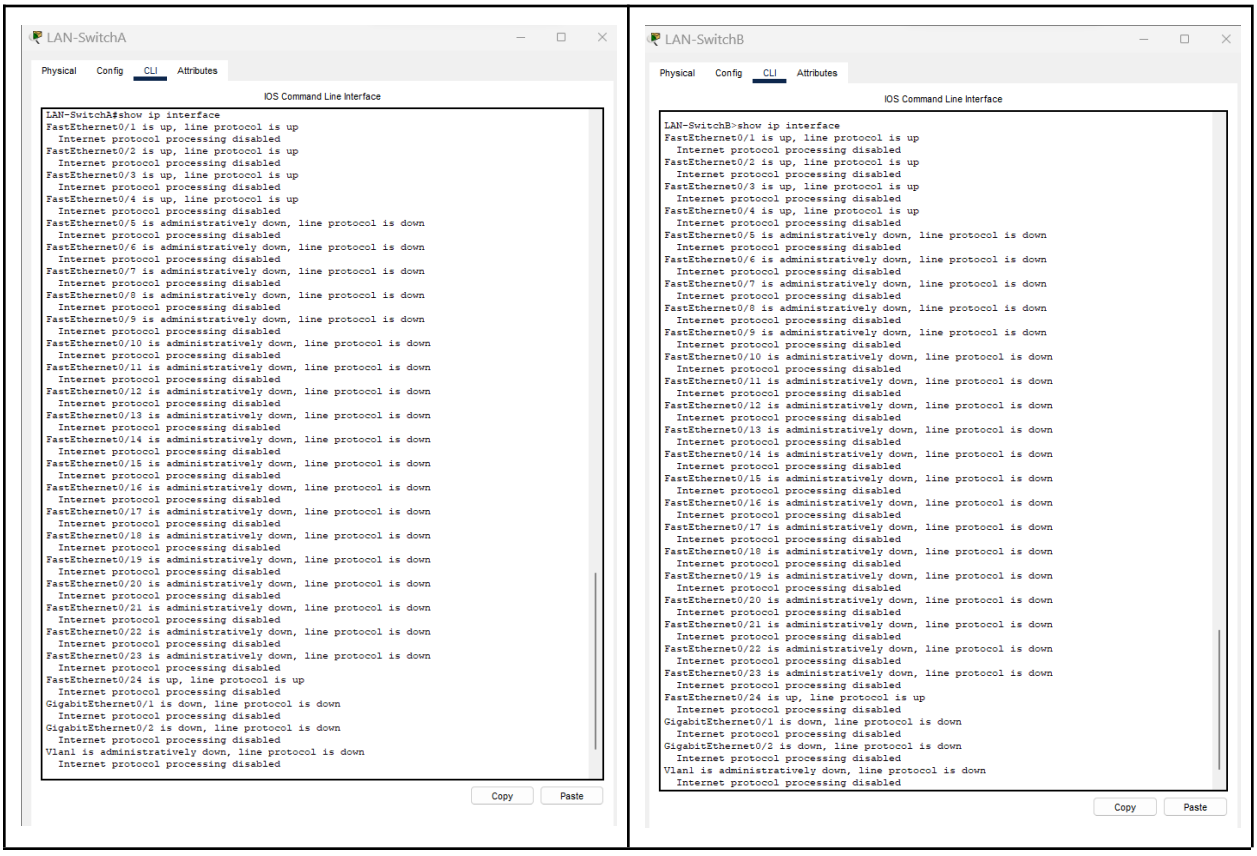

PC16
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.17
Pinging 192.168.21.17 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.17:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.18
Pinging 192.168.21.18 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.18:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
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 192.168.21.14
Pinging 192.168.21.14 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.14:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Top


PC17
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.15
Pinging 192.168.21.15 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.15:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.16
Pinging 192.168.21.16 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.16:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.11
Pinging 192.168.21.11 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.11:
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:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.12:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Top
PC18
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.21.11
Pinging 192.168.21.11 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.11:
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:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.12:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.15
Pinging 192.168.21.15 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.15:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.21.16
Pinging 192.168.21.16 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.21.16:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Top

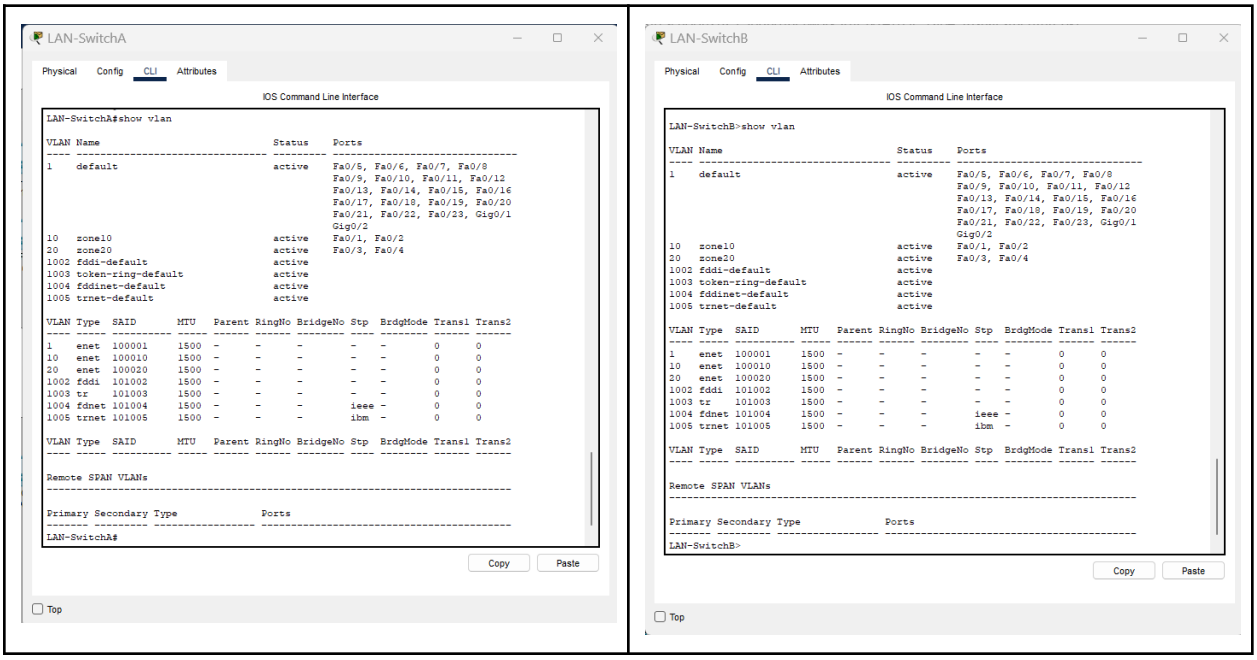
PHOTOS OF SWITCH/PC CONFIGURATIONS

- **Switch Command Results**

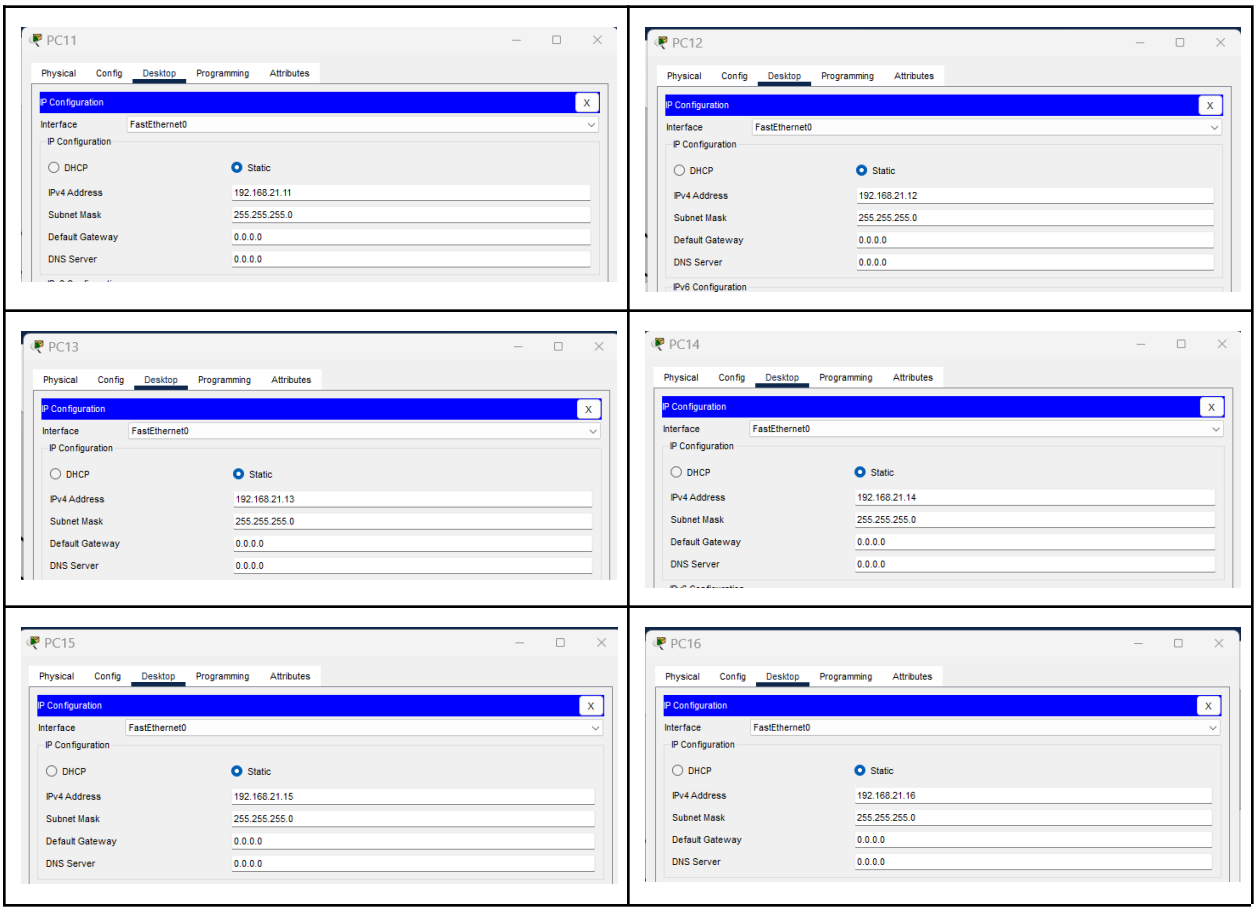
Show ip interface

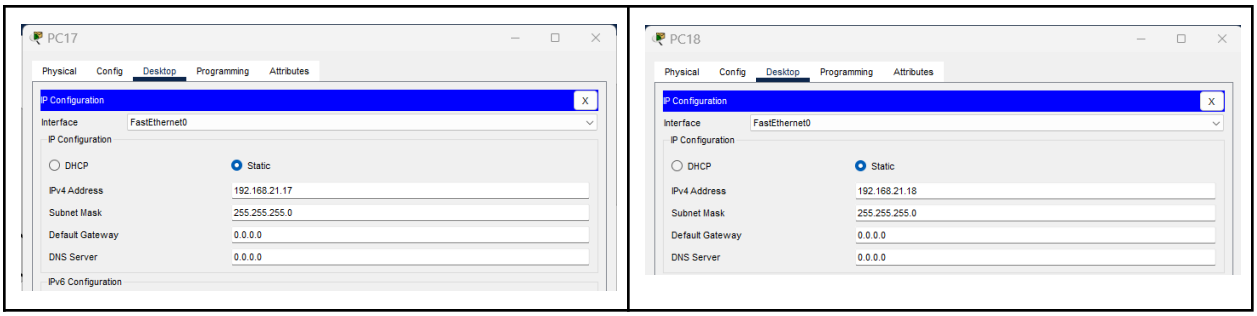


Show vlan



Lab computer IPV4 interface congifurations




PC17
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.21.17
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
PC18
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.21.18
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0

LAB QUESTIONS:

1.)1)

What VLAN number value is an assigned to the default VLAN?

The default VLAN number is 1.

2)

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

The term is called a trunk port, which is a port that can access multiple VLANs.

a.

Why is this type of port necessary?

This type of of port is necessary to communicate between multiple VLANs through a single link. It is more efficient to direct the traffic of a network this way.

3)

What does IEEE stand for?

IEEE stands for Institute of Electrical and Electronics Engineers, which is an organization that creates standards for the industry

a.

What IEEE standard covers VLANs?

The IEEE 802.1Q, or Dot1q is the standard that covers VLANs.

4)

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

VLAN tagging take place in layer 2 the Data Link Layer.

5)

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

VLANs are extremely important in networking. It is helpful since it doesn't require the same network complexity physical LANs. On top of that VLANs offer more data security as it partitions LANs into more manageable segments that can be later grouped by more specific categories. Due to its virtual nature VLANs are also more costeffective, more flexible, and more manageable. Trunk ports on the otherhand are extremely helpful when it comes to the infrastructure of a network. As I've mentioned before, trunk ports are allow multiple VLANs to communicate through a single link. This makes for a more efficient network as the traffic is simplified by that single point of traffic.