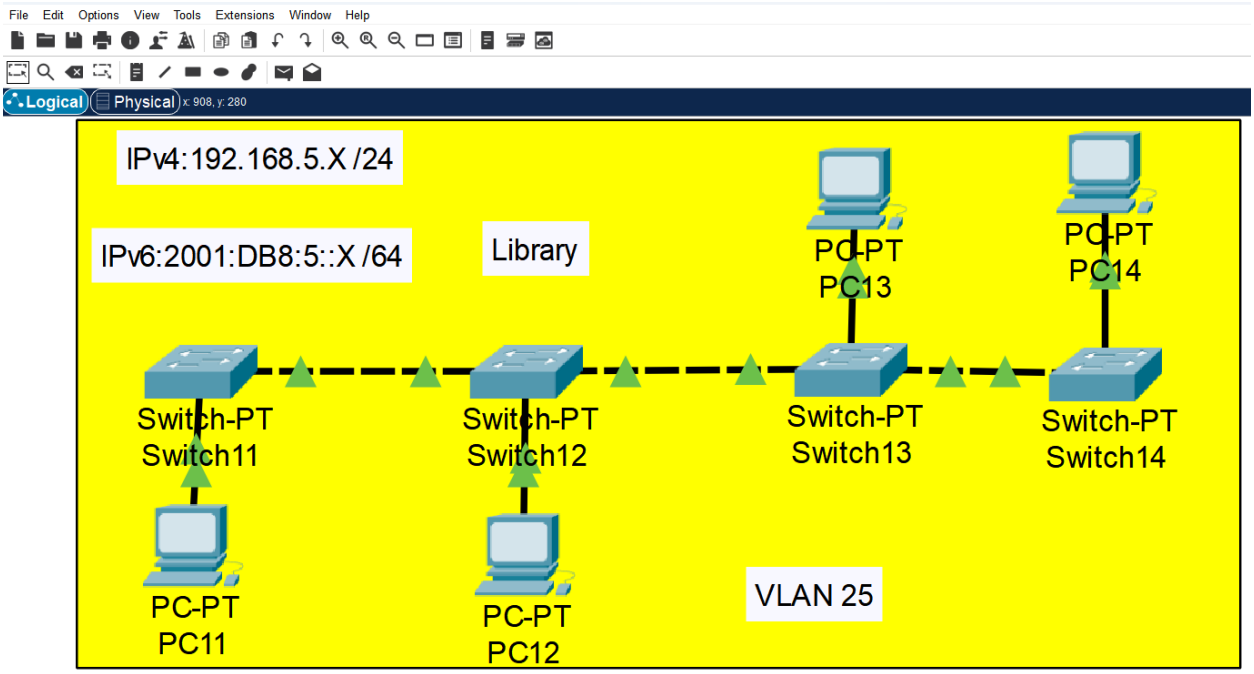
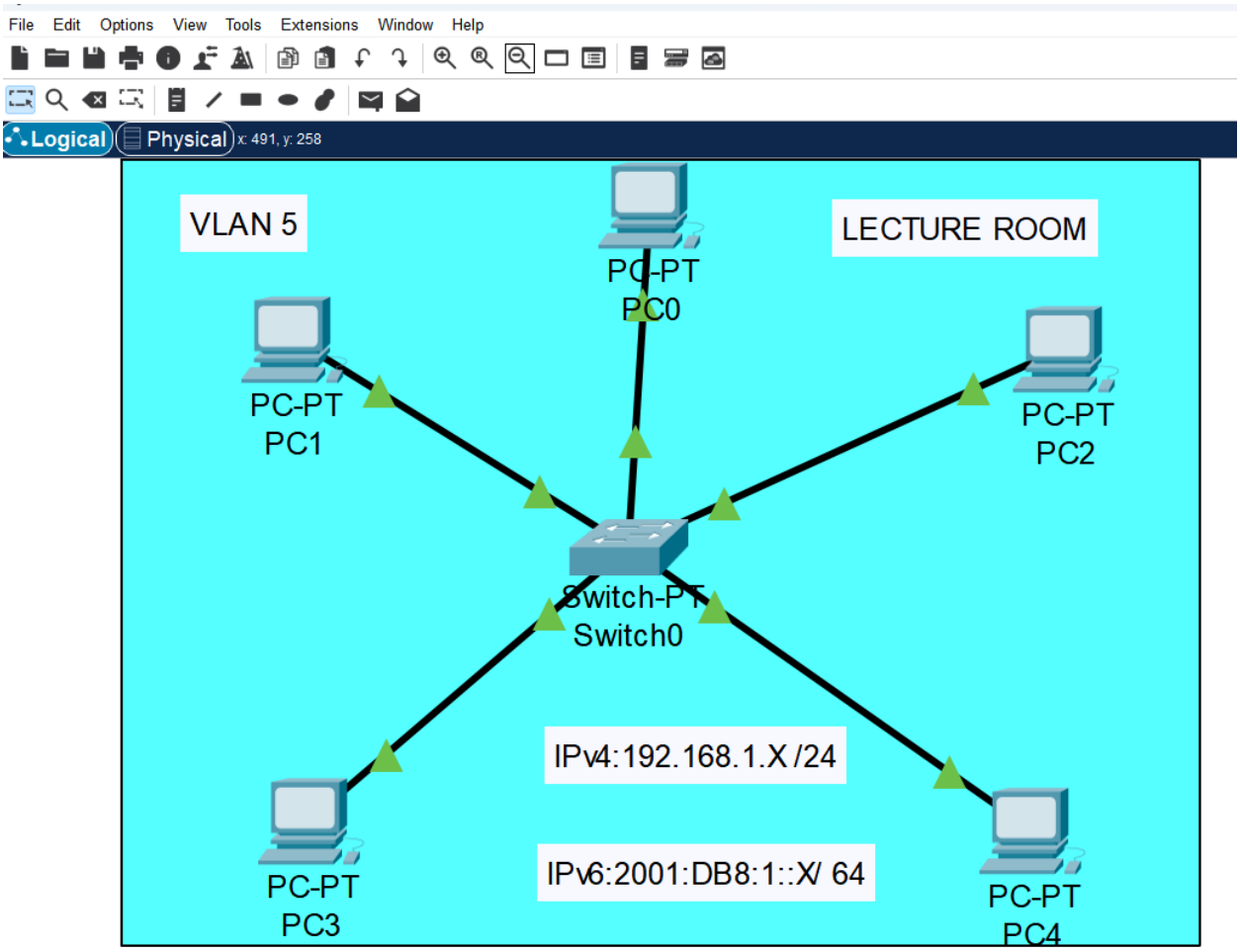
Network Topologies Project screenshot

5 topologies

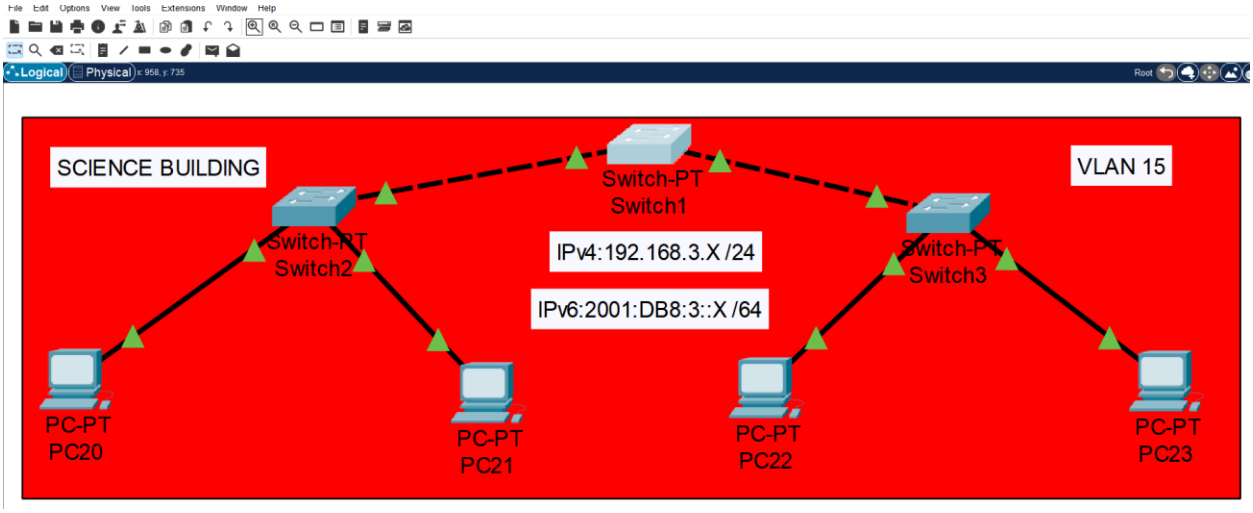
1. Bus



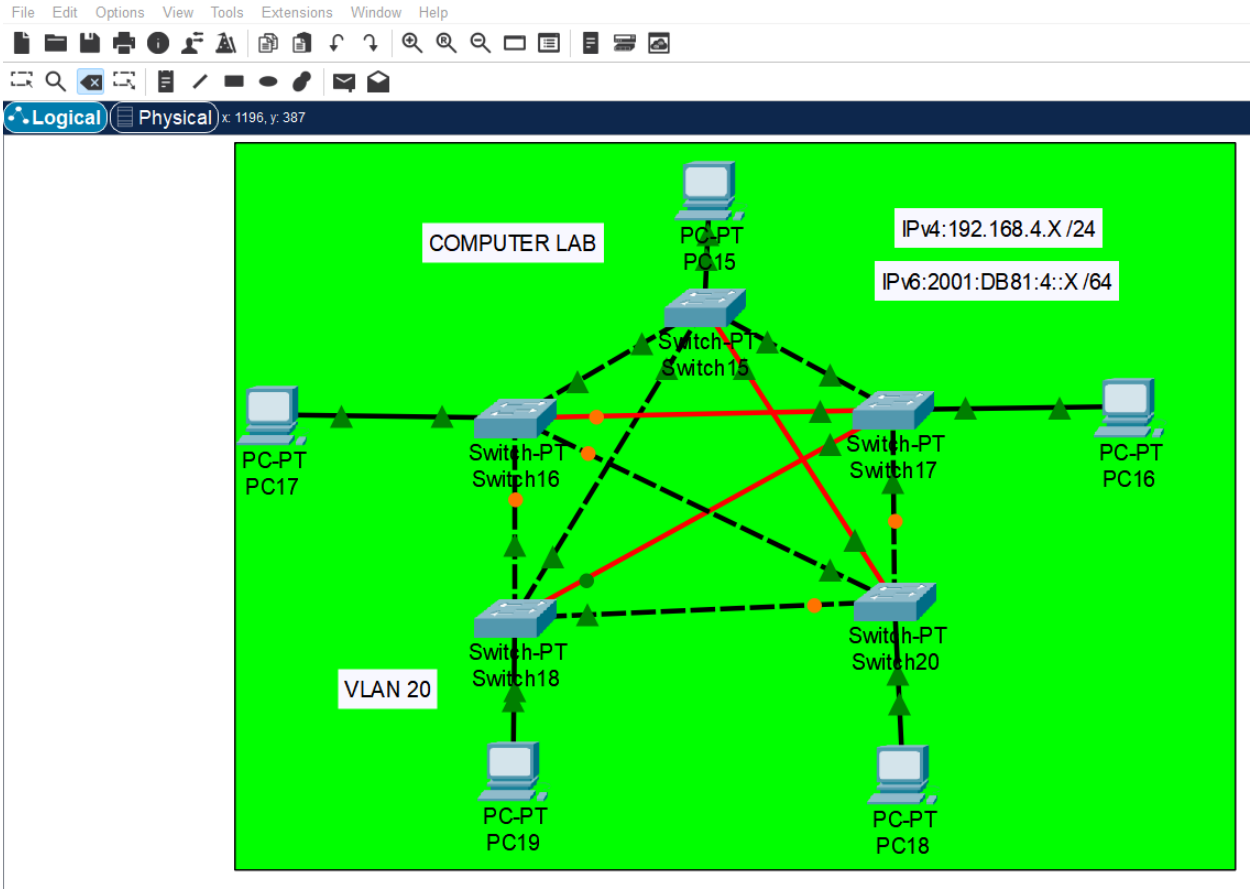
2. Star


File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 491, y: 258
VLAN 5
LECTURE ROOM
PC-PT PC0
PC-PT PC1
PC-PT PC2
Switch-PT Switch0
IPv4:192.168.1.X /24
IPv6:2001:DB8:1::X/ 64
PC-PT PC3
PC-PT PC4

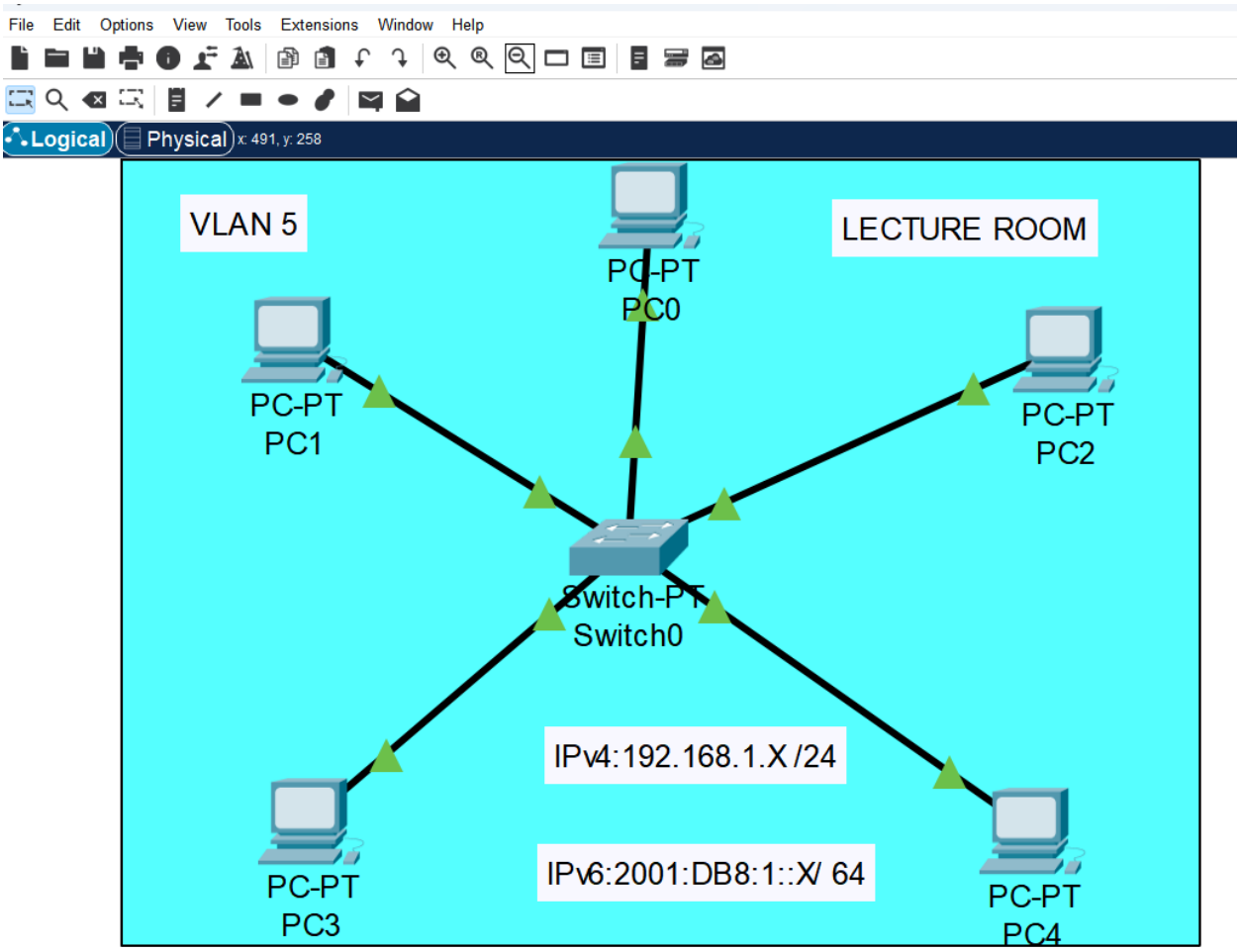
3. Extended star



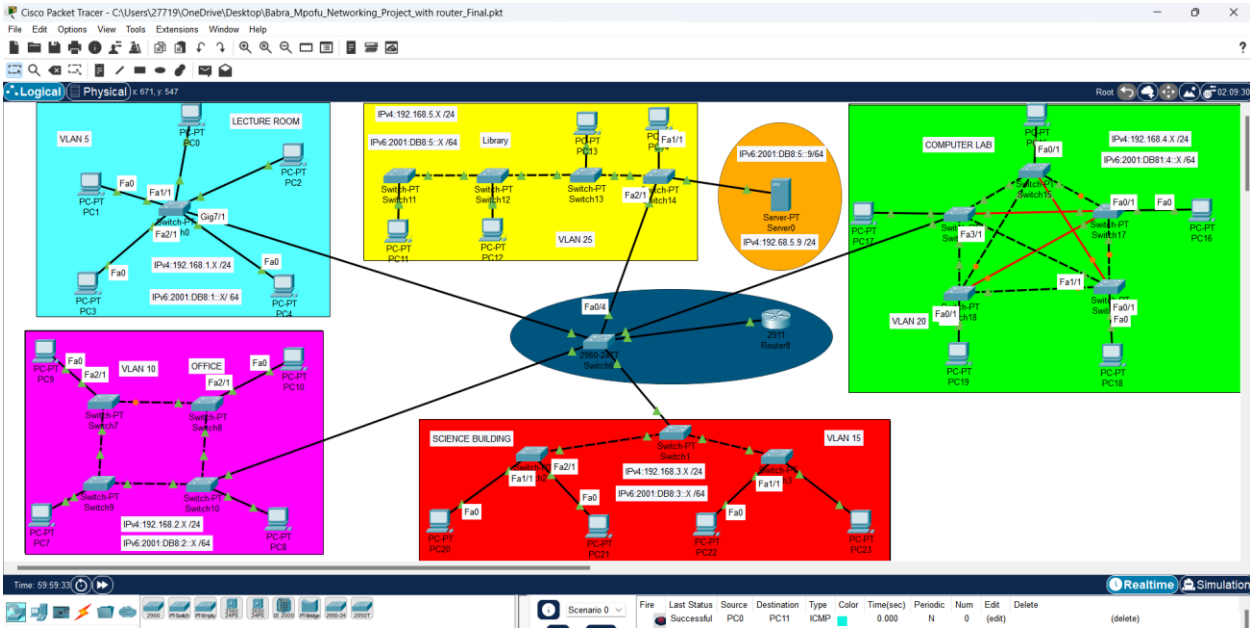
4. Mesh



5.Ring


File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 491, y: 258
VLAN 5
LECTURE ROOM
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Switch-PT
Switch0
IPv4:192.168.1.X /24
IPv6:2001:DB8:1::X/ 64
PC-PT
PC3
PC-PT
PC4

HYBRID


Cisco Packet Tracer - C:\Users\27719\OneDrive\Desktop\Babra_Mpofu_Networking_Project_with router_Final.pkt
File Edit Options View Tools Extensions Window Help
Logical
Physical
Root
LECTURE ROOM
VLAN 5
IPv4:192.168.1.X /24
IPv6:2001:DB8:1::X/ 64
Library
IPv4:192.168.5.X /24
IPv6:2001:DB8:5::X /64
VLAN 25
IPv6:2001:DB8:5::9/64
Server-PT Server0
IPv4:192.68.5.9 /24
COMPUTER LAB
IPv4:192.168.4.X /24
IPv6:2001:DB81:4::X /64
VLAN 20
OFFICE
VLAN 10
IPv4:192.168.2.X /24
IPv6:2001:DB8:2::X /64
SCIENCE BUILDING
VLAN 15
IPv4:192.168.3.X /24
IPv6:2001:DB8:3::X /64
2911 Router8
Realtime
Simulation

IPv4 Network

Topology	Location	Gateway	IP Range	SUBNET MUSK	VLAN
Star	Lecture room	192.168.1.1	192.168.1.2-192.168.1.6	255.255.255.0	5
Ring	Office	192.168.2.1	192.168.2.2-192.168.2.5	255.255.255.0	10
Extended Star	Science building	192.168.3.1	192.168.3.2-192.168.3.5	255.255.255.0	15
Mesh	Computer lab	192.168.4.1	192.168.4.2-192.168.4.6	255.255.255.0	20
Bus	Library	192.168.5.1	192.168.5.2-192.168.5.5	255.255.255.0	25

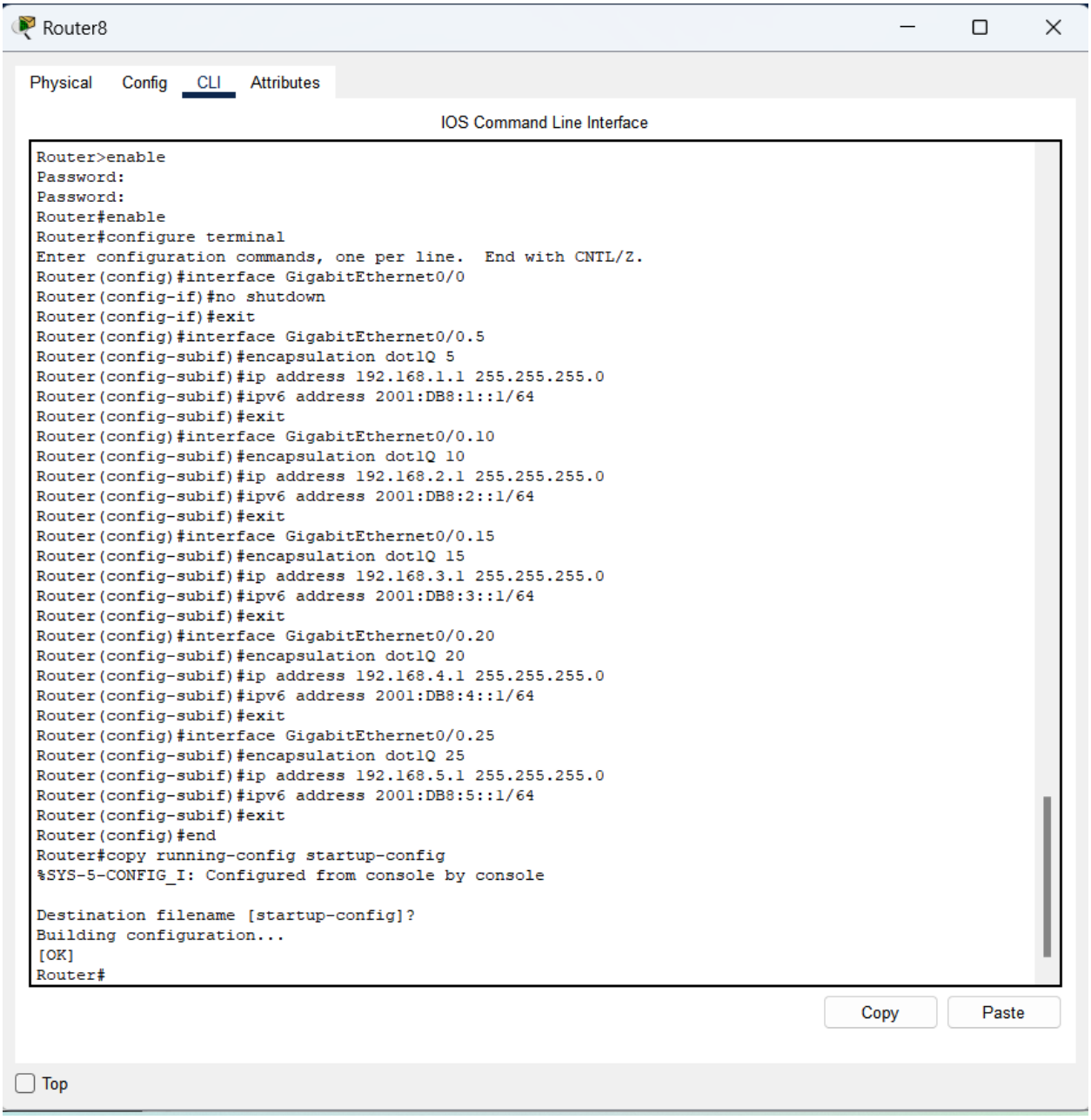
IPv6 Network

Topology	Location	Gateway	IP Range	Prefix	VLAN
Star	Lecture room	2001:DB8:1::1	2001:DB8:1::2-2001:DB8:1::6	/64	5
Ring	Office	2001:DB8:2::1	2001:DB8:2::2-2001:DB8:2::5	/64	10
Extended Star	Science building	2001:DB8:3::1	2001:DB8:3::2-2001:DB8:3::5	/64	15
Mesh	Computer lab	2001:DB8:4::1	2001:DB8:4::2-2001:DB8:4::6	/64	20
Bus	Library	2001:DB8:5::1	2001:DB8:5::2-2001:DB8:5::5	/64	25

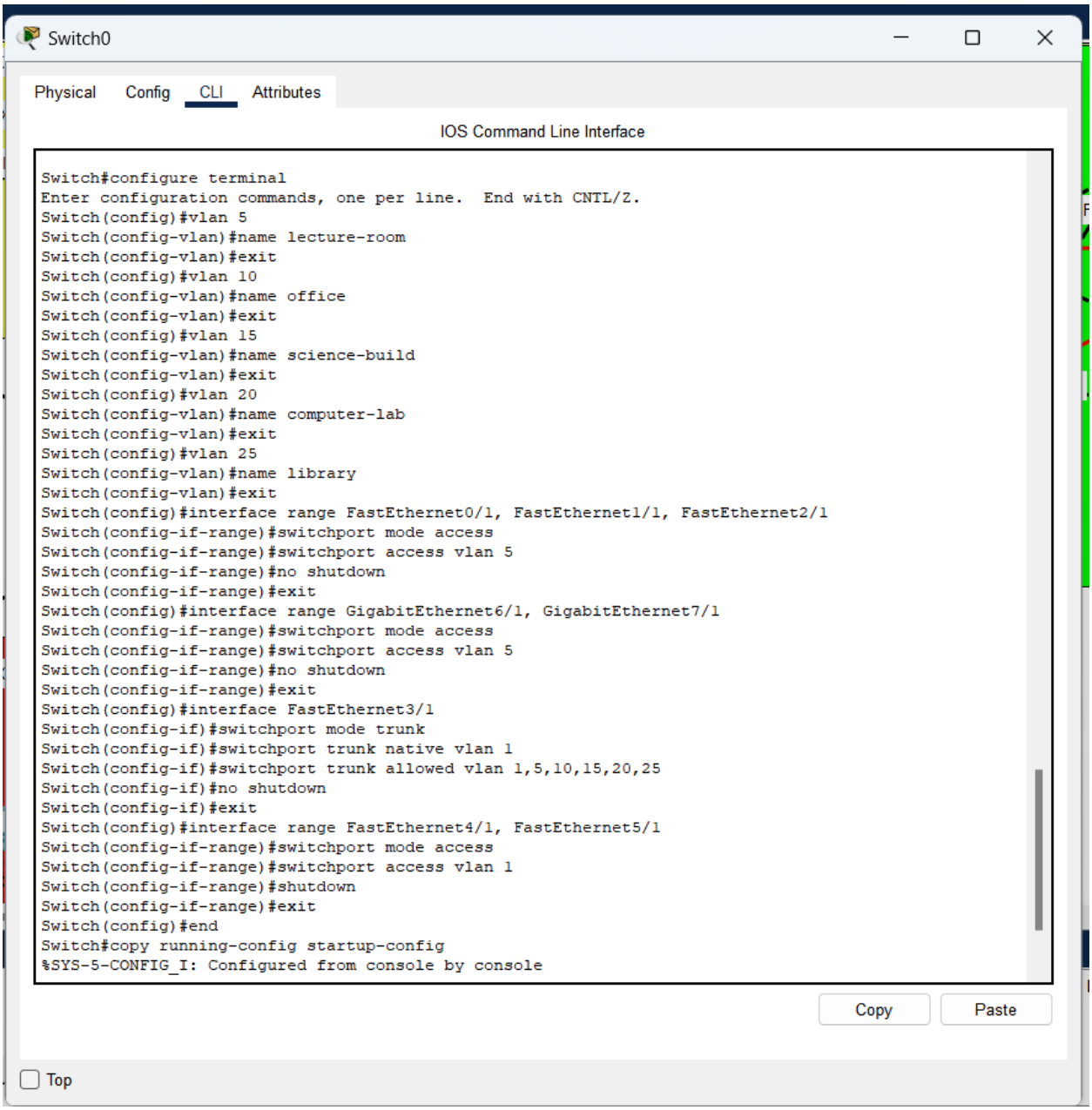
Server IP Addresses

Server	Location	Topology	IPv4 Address	IPv6 Address
HTTP Server	Library	Bus	192.168.5.9	2001:DB8:5::9
DNS Server	Library	Bus	192.168.5.8	2001:DB8:5::8

Router configuration



Vlan Configuration(Example in a star topology)



The Trunk Ports:Cary multiple VLANs between Switches and routers

```
Switch>show interfaces trunk
Port        Mode         Encapsulation  Status        Native vlan
Fa3/1       on           802.1q         trunking      1

Port        Vlans allowed on trunk
Fa3/1       1,5,10,15,20,25

Port        Vlans allowed and active in management domain
Fa3/1       1,5,10,15,20,25

Port        Vlans in spanning tree forwarding state and not pruned
Fa3/1       1,5,10,15,20,25

Switch>
```

Copy Paste

Server0

Physical Config Services Desktop Programming Attributes

SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP

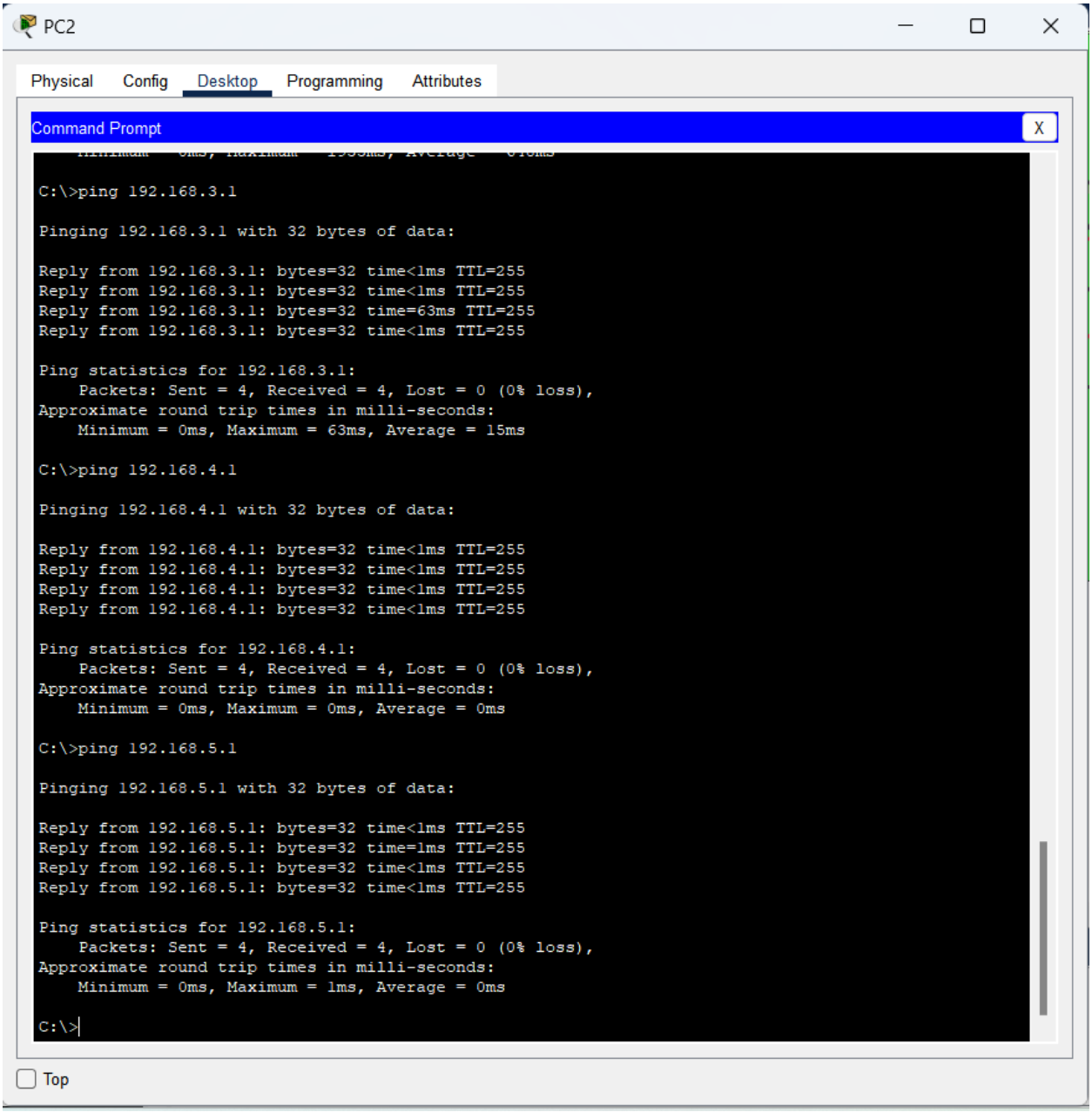
HTTP

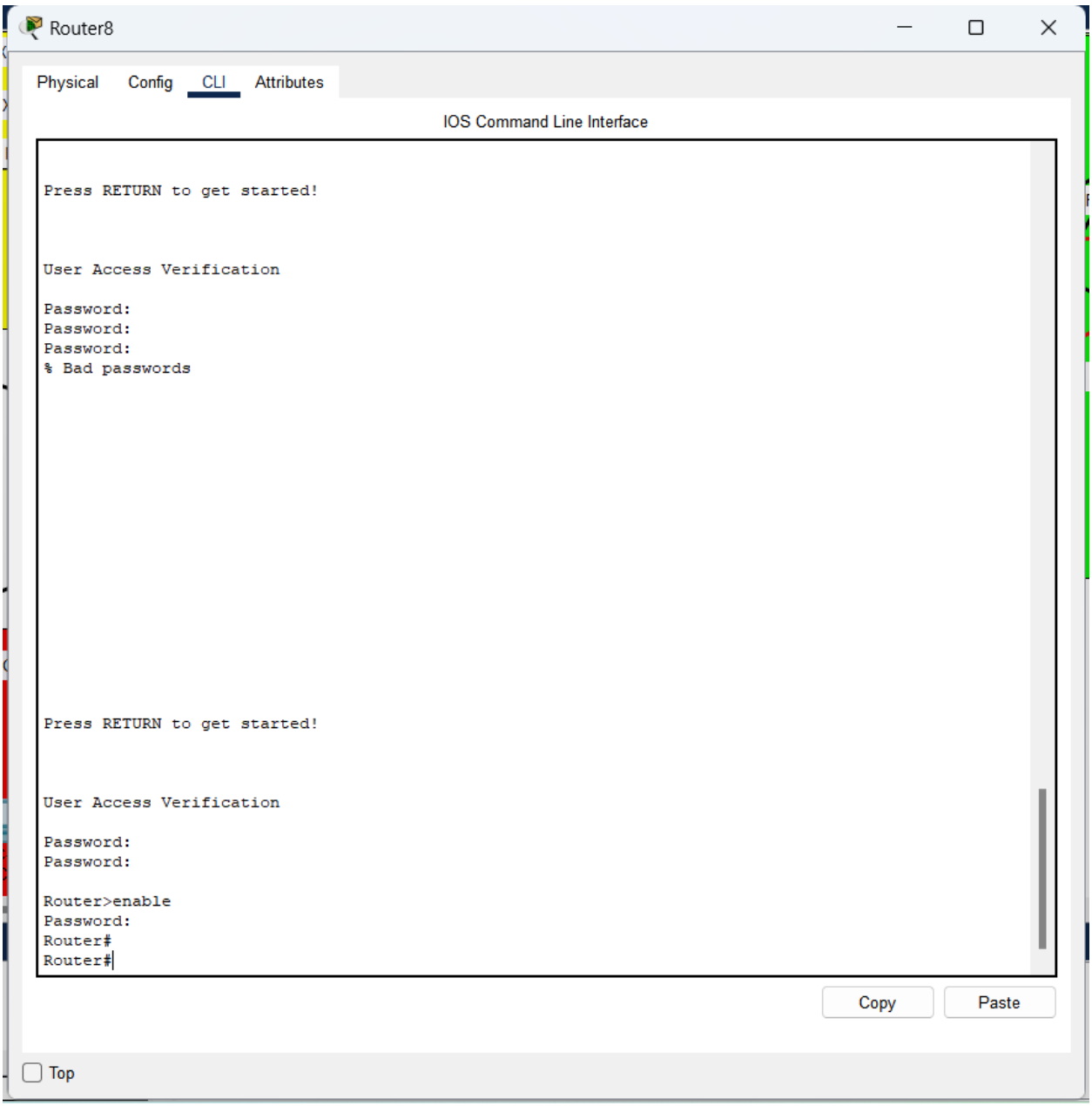
HTTP: On Off

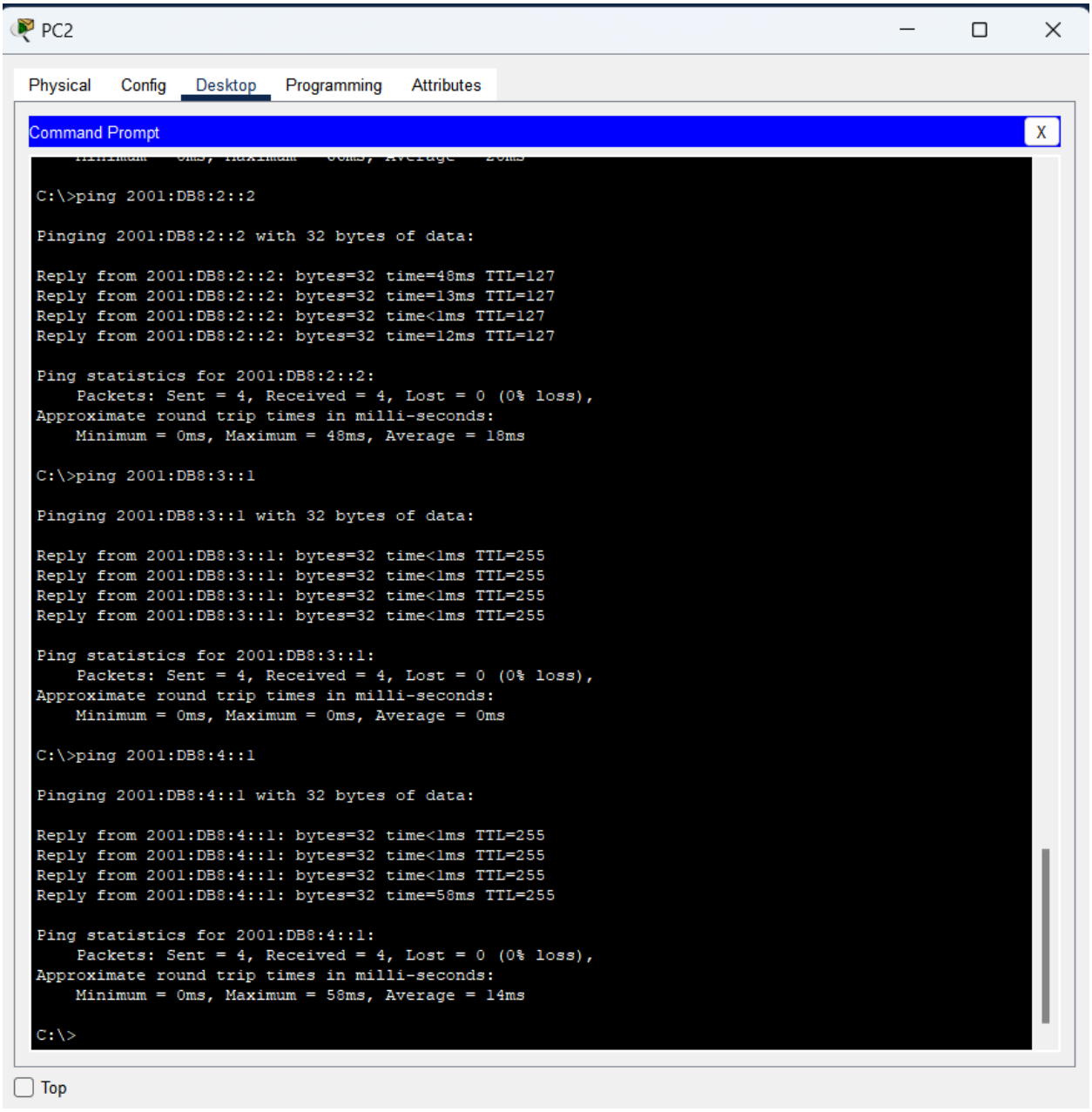
HTTPS: On Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)


PC2
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
C:\>ping 192.168.3.1
Pinging 192.168.3.1 with 32 bytes of data:
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Reply from 192.168.3.1: bytes=32 time=63ms TTL=255
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.3.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 63ms, Average = 15ms
C:\>ping 192.168.4.1
Pinging 192.168.4.1 with 32 bytes of data:
Reply from 192.168.4.1: bytes=32 time<1ms TTL=255
Reply from 192.168.4.1: bytes=32 time<1ms TTL=255
Reply from 192.168.4.1: bytes=32 time<1ms TTL=255
Reply from 192.168.4.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.4.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.5.1
Pinging 192.168.5.1 with 32 bytes of data:
Reply from 192.168.5.1: bytes=32 time<1ms TTL=255
Reply from 192.168.5.1: bytes=32 time=1ms TTL=255
Reply from 192.168.5.1: bytes=32 time<1ms TTL=255
Reply from 192.168.5.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.5.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top


Router8
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
User Access Verification
Password:
Password:
Password:
% Bad passwords
Press RETURN to get started!
User Access Verification
Password:
Password:
Router>enable
Password:
Router#
Router#
Copy
Paste
Top


PC2
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
C:\>ping 2001:DB8:2::2
Pinging 2001:DB8:2::2 with 32 bytes of data:
Reply from 2001:DB8:2::2: bytes=32 time=48ms TTL=127
Reply from 2001:DB8:2::2: bytes=32 time=13ms TTL=127
Reply from 2001:DB8:2::2: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:2::2: bytes=32 time=12ms TTL=127
Ping statistics for 2001:DB8:2::2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 48ms, Average = 18ms
C:\>ping 2001:DB8:3::1
Pinging 2001:DB8:3::1 with 32 bytes of data:
Reply from 2001:DB8:3::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:3::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:3::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:3::1: bytes=32 time<1ms TTL=255
Ping statistics for 2001:DB8:3::1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 2001:DB8:4::1
Pinging 2001:DB8:4::1 with 32 bytes of data:
Reply from 2001:DB8:4::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:4::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:4::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:4::1: bytes=32 time=58ms TTL=255
Ping statistics for 2001:DB8:4::1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 58ms, Average = 14ms
C:\>
Top

NETWORK TOPOLOGY PART 2:

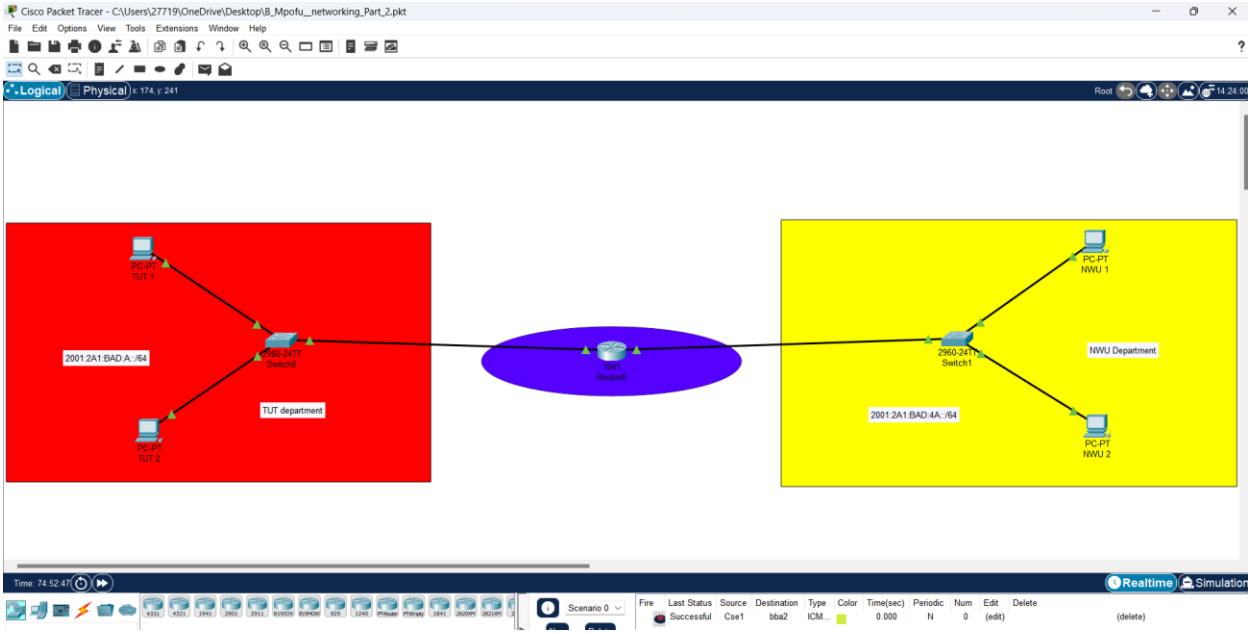
Applying IPv6 Subnetting SCREENSHOTS

IP Address Tables

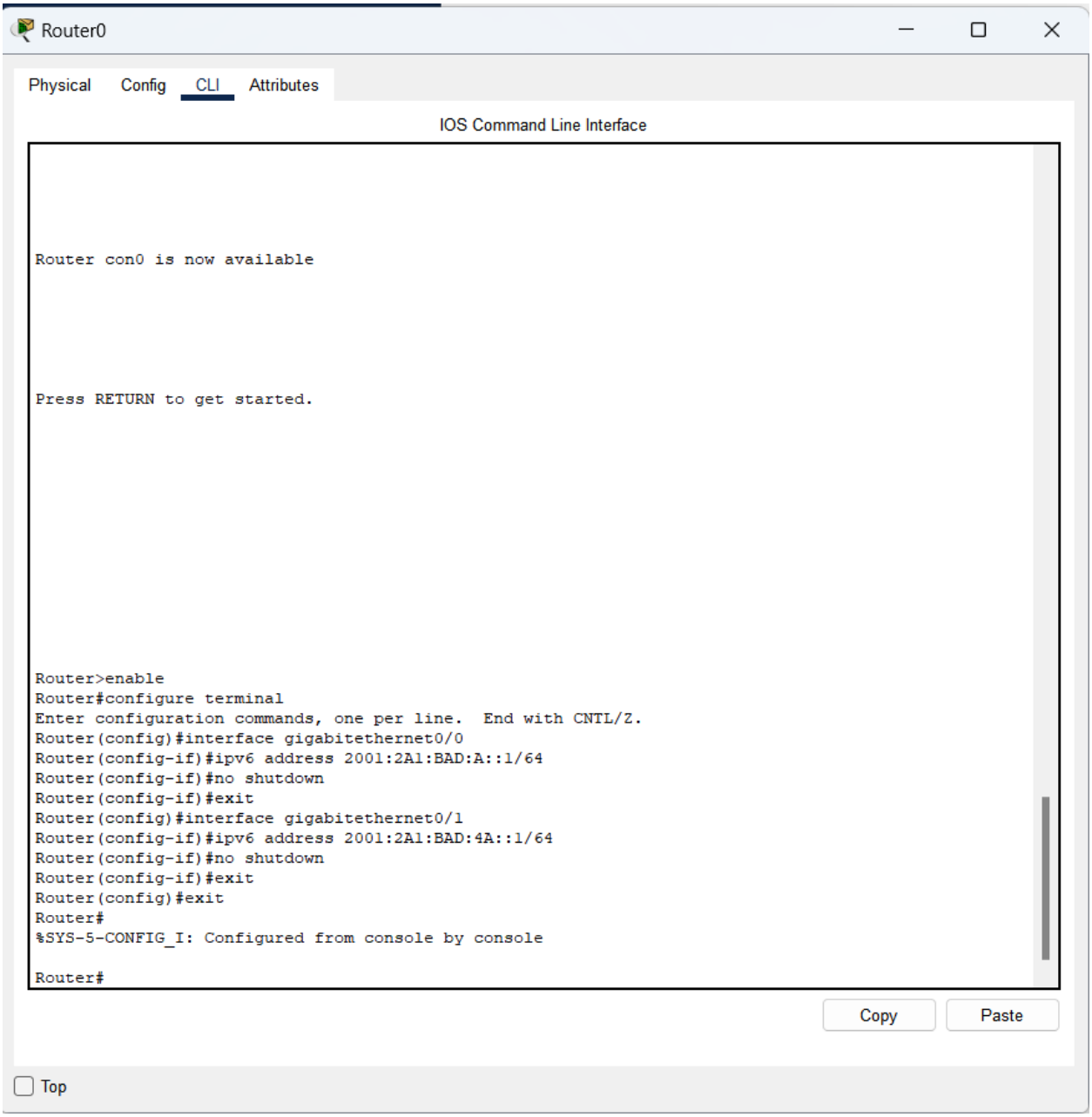
Device	department	Subnet	Ipv6	Interface	Cable type
PC1 (TUT 1)	**TUT**	2001:2A1:BAD::A::/64	2001:2A1:BAD::A::2/64	FastEthernet 0/1	Copper Straight-through
PC2 (TUT 2)	**TUT**	2001:2A1:BAD::A::/64	2001:2A1:BAD::A::3/64	FastEthernet 0/2	Copper Straight-through
PC3 (NWU 1)	**NWU**	2001:2A1:BAD:4A::/64	2001:2A1:BAD:4A::2/64	FastEthernet 0/2	Copper Straight-through
PC 4 (NWU 2)	**NWU**	2001:2A1:BAD:4A::/64	2001:2A1:BAD:4A::3/64	FastEthernet 0/1	Copper Straight-through

Device	Department	Subnet	Ipv6 Address	Interface
Switch 1	TUT	2001:2A1:BAD::A::/64	N/A	Multiple Ports
Switch 2	NWU	2001:2A1:BAD:4A::/64	N/A	Multiple Ports
Router	N/A	2001:2A1:BAD::A::/64 2001:2A1:BAD:4A::/64	2001:2A1:BAD::A::1/64 2001:2A1:BAD:4A::1/64	FastEthernet 0/0 FastEthernet 0/1

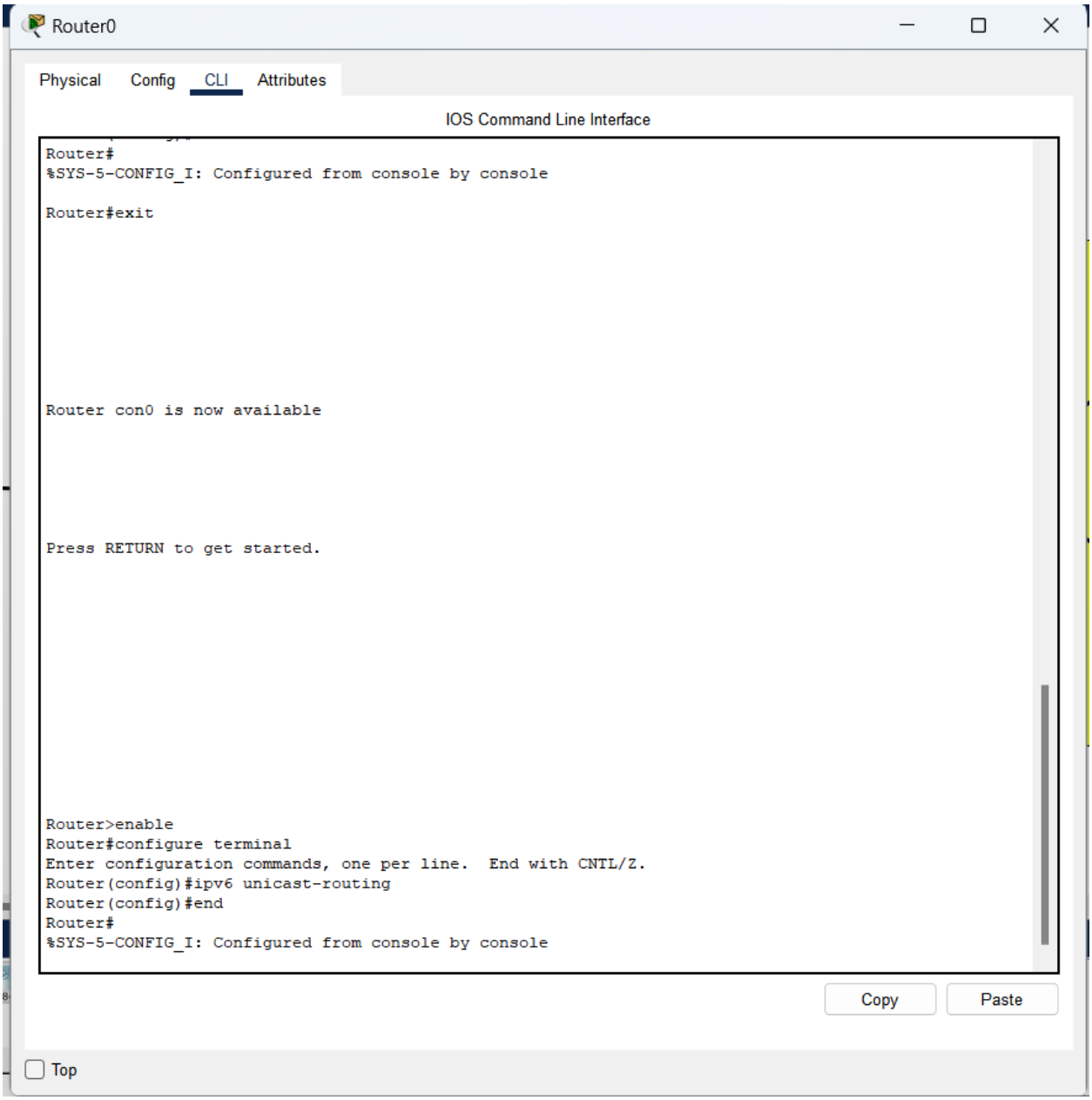
Network Topology



Ipv6 configuration



Ipv6 unicast-routing



Ipv6 Testing