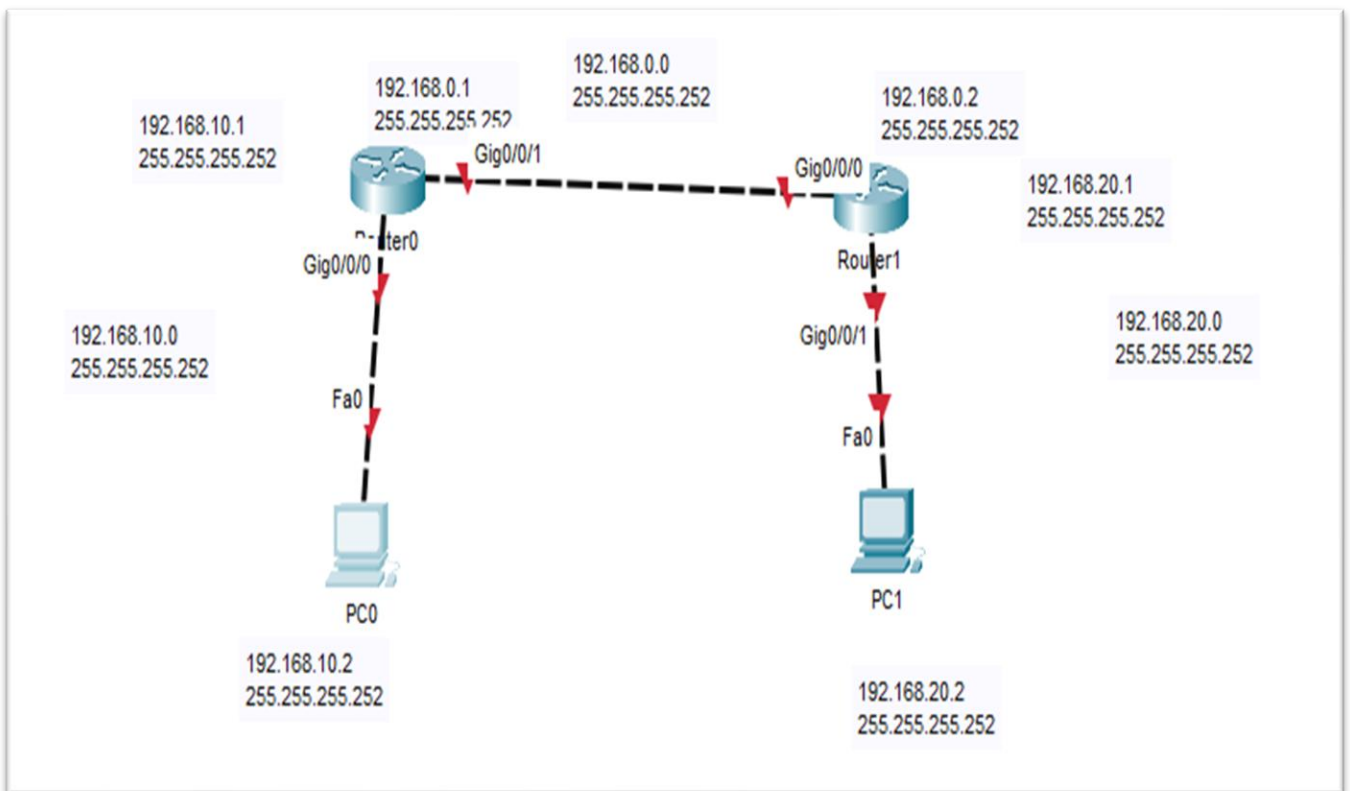


OSPF Configuration Step by Step Guide

- ✓ OSPF (Open shortest path first)
- ✓ Interior gateway protocol
- ✓ Widely used
- ✓ An example of Link state routing protocol
- ✓ It divides an autonomous system into areas
- ✓ Unlimited hop count

Step1: Add place note in all devices for IP address and subnet mask.



Step2: Configure each end devices (PC, laptop, mobile etc) by adding IP address, subnet mask and default gateway IP.

The screenshot shows the configuration window for PC0 in a network simulator. The 'Desktop' tab is selected, and the 'IP Configuration' section is active. The interface is set to 'FastEthernet0'. The IP Configuration section has two radio buttons: 'DHCP' (unselected) and 'Static' (selected). The Static configuration fields are filled with the following values:

Field	Value
IPv4 Address	192.168.10.2
Subnet Mask	255.255.255.252
Default Gateway	192.168.10.1
DNS Server	0.0.0.0

The IPv6 Configuration section also has two radio buttons: 'Automatic' (unselected) and 'Static' (selected). The Static configuration fields are filled with the following values:

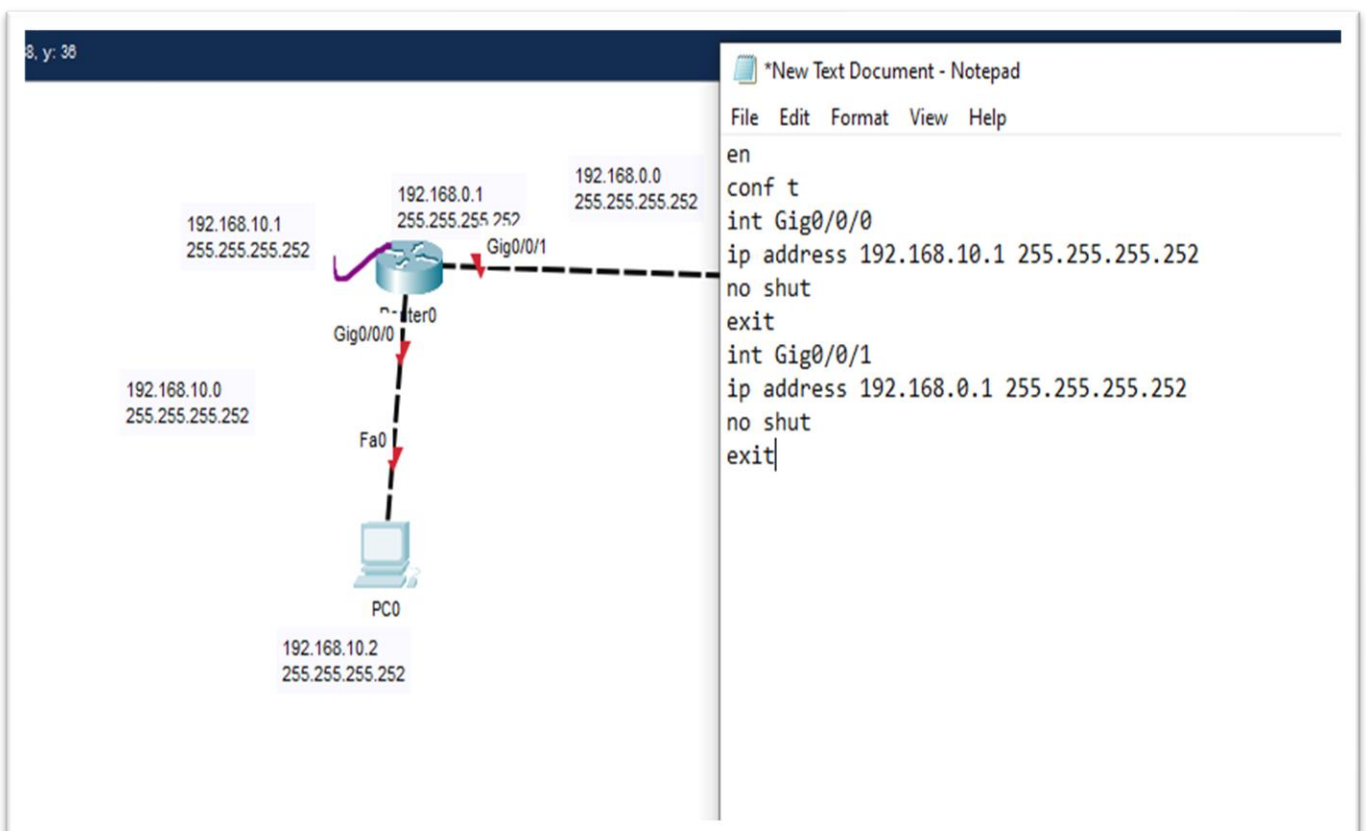
Field	Value
IPv6 Address	[Empty] / [Empty]
Link Local Address	FE80::204:9AFF:FEDA:2D5B
Default Gateway	[Empty]
DNS Server	[Empty]

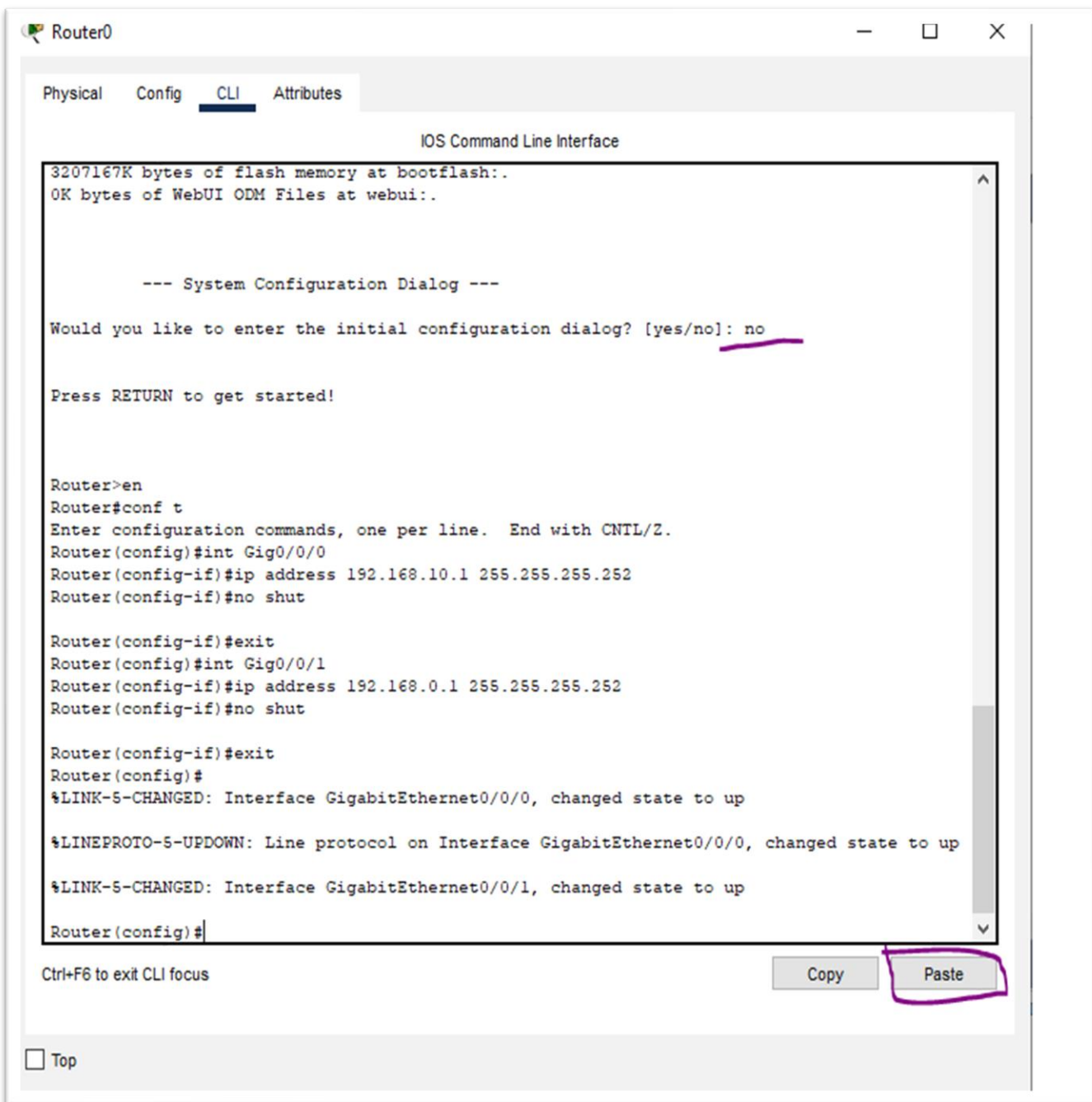
The 802.1X section is also visible, with the 'Use 802.1X Security' checkbox unchecked. The Authentication dropdown is set to 'MD5', and the Username and Password fields are empty.

Step3: Configure each router by writing command in CLI.

The commands are as follows. Write the same command if more than one port is used in the router.

```
Router>en
Router# conf t
Router(config)# int port_number
Router(config-if)# ip address gateway_ip subnet_mask
Router(config-if)#no shutdown
Router(config-if)#exit
```





Logica

*New Text Document - Notepad

File Edit Format View Help

```
en
conf t
int Gig0/0/1
ip address 192.168.20.1 255.255.255.252
no shut
exit
int Gig0/0/0
ip address 192.168.0.2 255.255.255.252
no shut
exit
```

192.168.0.0
255.255.255.252

192.168.0.2
255.255.255.252

192.168.20.1
255.255.255.252

192.168.20.0
255.255.255.252

192.168.20.2
255.255.255.252

Gig0/0/0

Router1

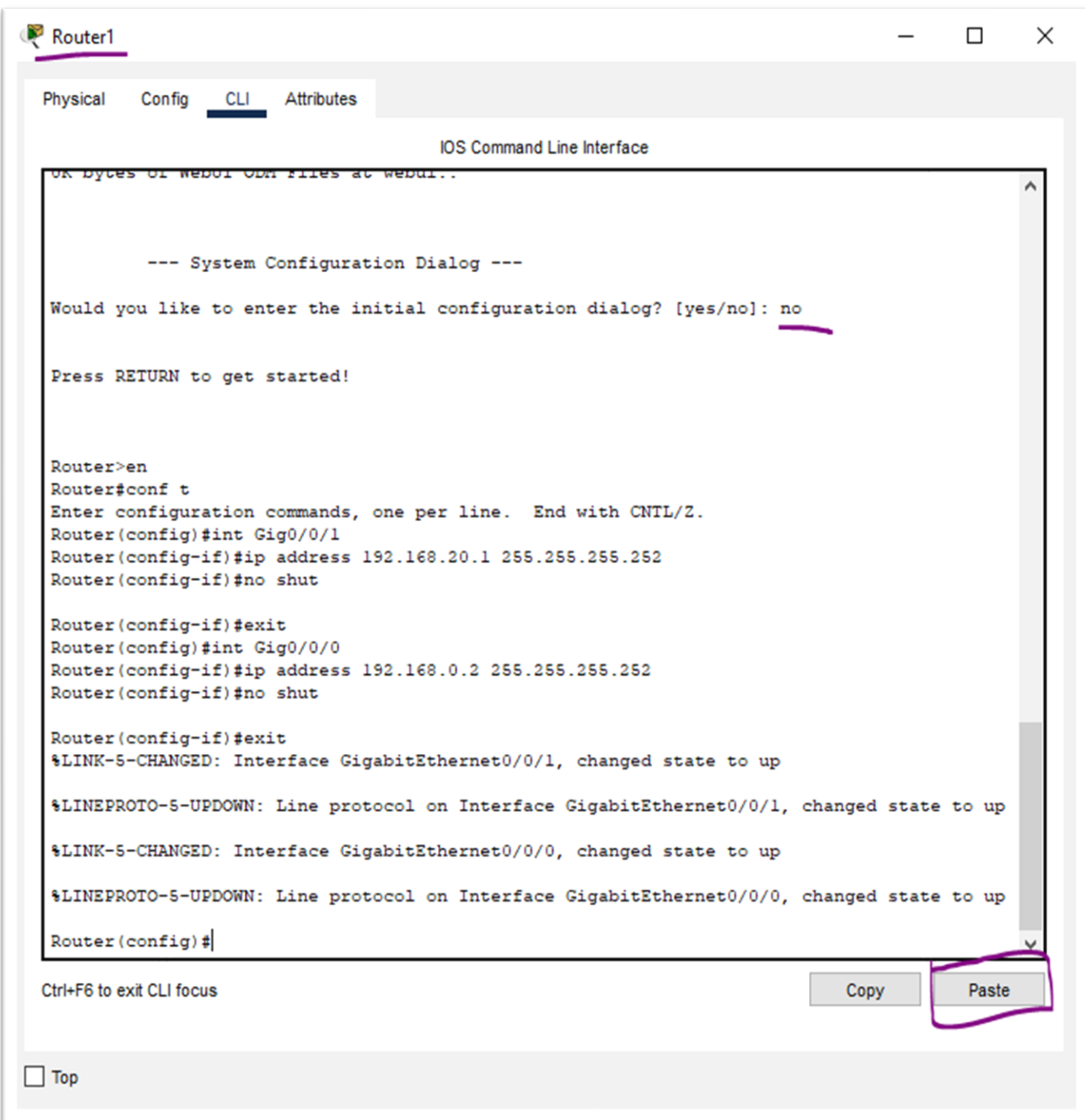
Gig0/0/1

Fa0

PC1

Time: 00:25 Ln 1, Col 1 100% Windows (CRLF) UTF-8

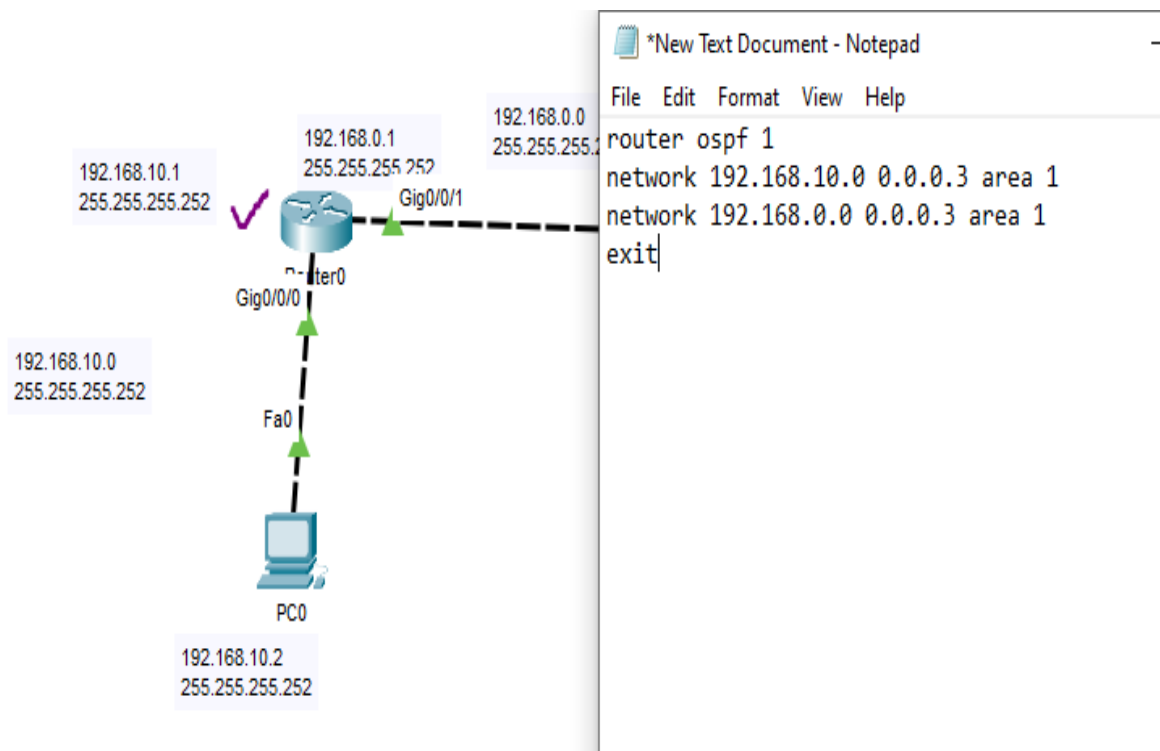
The diagram illustrates a network configuration for a router named Router1. The router has two interfaces: Gig0/0/0 and Gig0/0/1. Gig0/0/0 is connected to a network with IP 192.168.0.0/24. Gig0/0/1 is connected to a network with IP 192.168.20.0/24. The PC is connected to the router's Fa0 interface and has IP 192.168.20.2. The router's Gig0/0/1 interface has IP 192.168.20.1. The router's Gig0/0/0 interface has IP 192.168.0.2. A purple checkmark is next to the router's Gig0/0/1 interface.

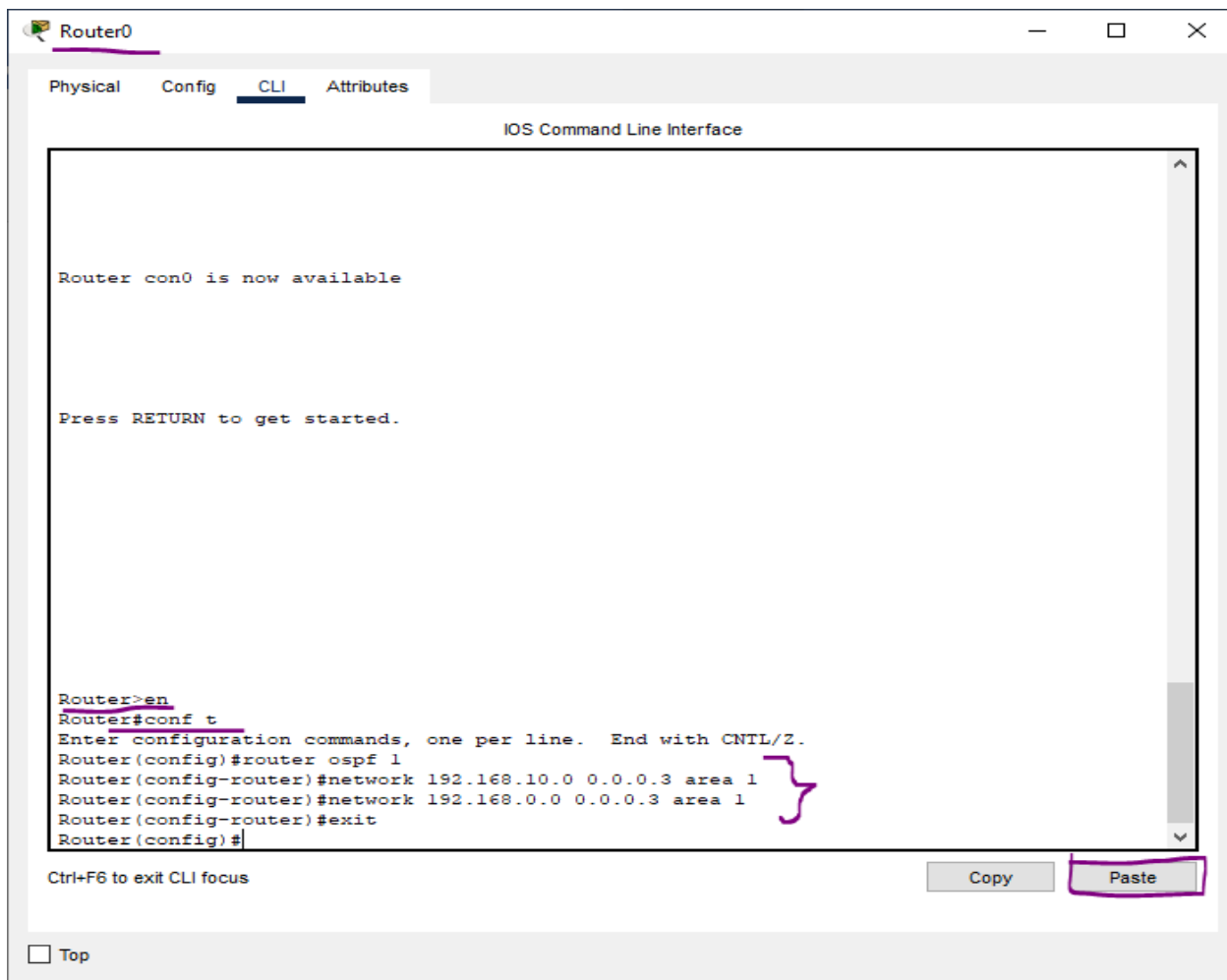


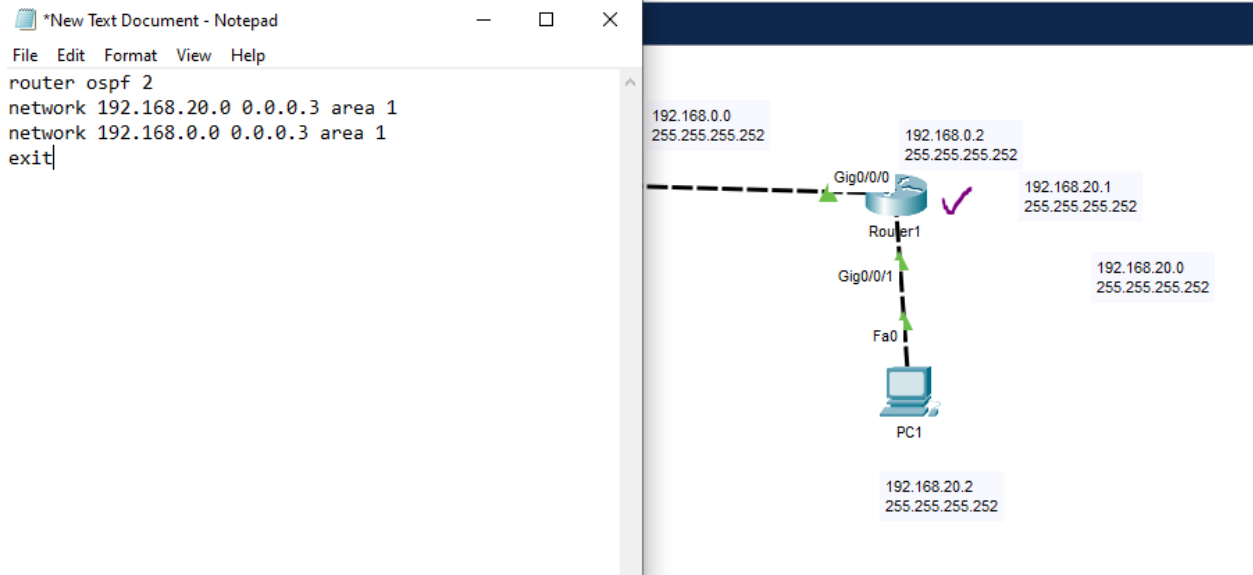
Step4: Configure OSPF protocol for each router in the autonomous system by writing command in CLI.

The commands are as follows:

```
Router(config)#router ospf process_ID
Router(config-router)#network network_address wildcard_mask area
area_number
Router(config-router)#exit
```







Router1

Physical Config CLI Attributes

IOS Command Line Interface

Router con0 is now available

Press RETURN to get started.

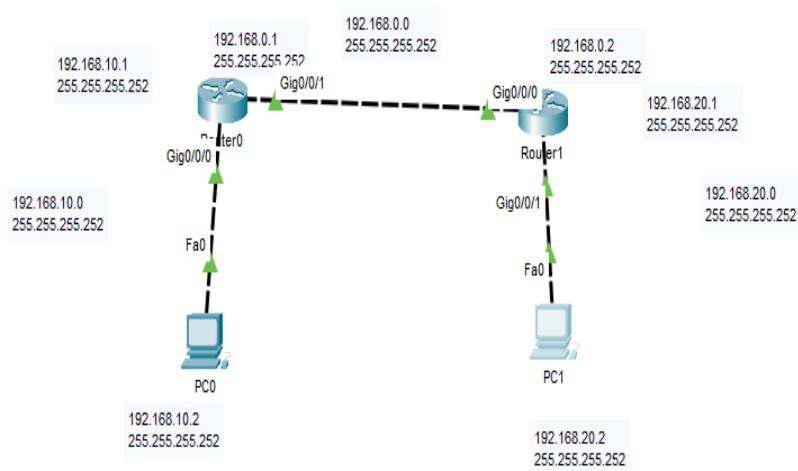
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2
Router(config-router)#network 192.168.20.0 0.0.0.3 area 1
Router(config-router)#network 192.168.0.0 0.0.0.3 area 1
Router(config-router)#exit
Router(config)#
00:41:23: %OSPF-5-ADJCHG: Process 2, Nbr 192.168.10.1 on GigabitEthernet0/0/0 from
LOADING to FULL, Loading Done

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

Step5: Pass the packet from one subnet to another subnet and check the status.



Realtime Simulation									
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edi
✓	Failed	PC0	PC1	ICMP	Green	0.000	N	1	(ec
✓	Successful	PC0	PC1	ICMP	Red	0.000	N	2	(ec
✓	Successful	PC0	PC1	ICMP	Blue	0.000	N	3	(ec

Command description:

Command	Description
Router>en	Enable global configuration mode
Router# conf t	Enter in global configuration mode
Router(config)#int Gig0/0/0	Enter interface mode from global configuration mode
Router(config-if)#ip address 192.168.10.1 255.255.255.252	Assign IP to the interface (eg. Gig0/0/0)
Router(config-if)#no shutdown	Bring the interface up
Router(config-if)#exit	Return in global configuration mode
Router(config)#router ospf 1	Enable OSPF routing protocol under process ID = 1. (Process ID can be any number from 1 to 65,535)
Router(config-router)#network 192.168.10.1 0.0.0.3 area 1	Enable OSPF with area 1 on matching interface.

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