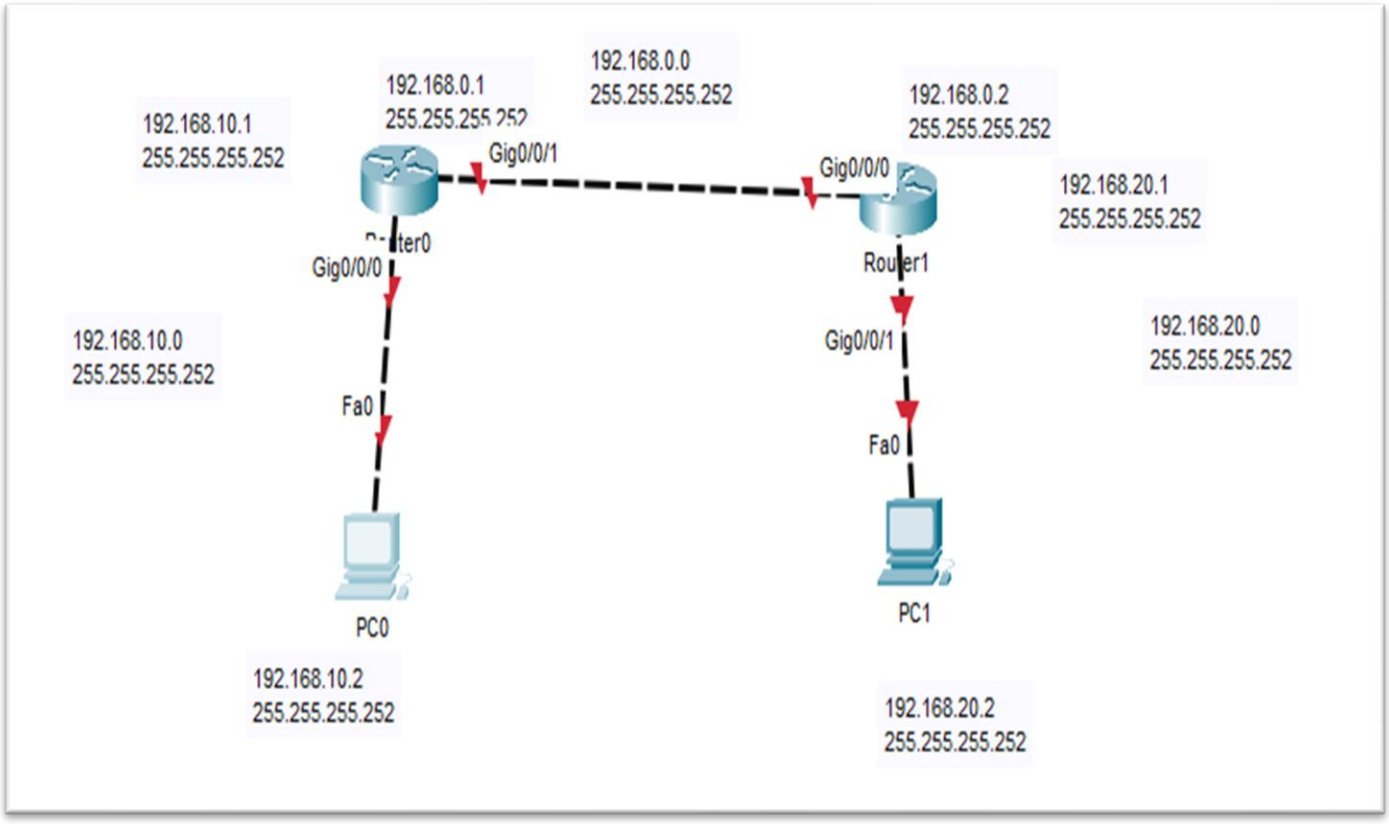
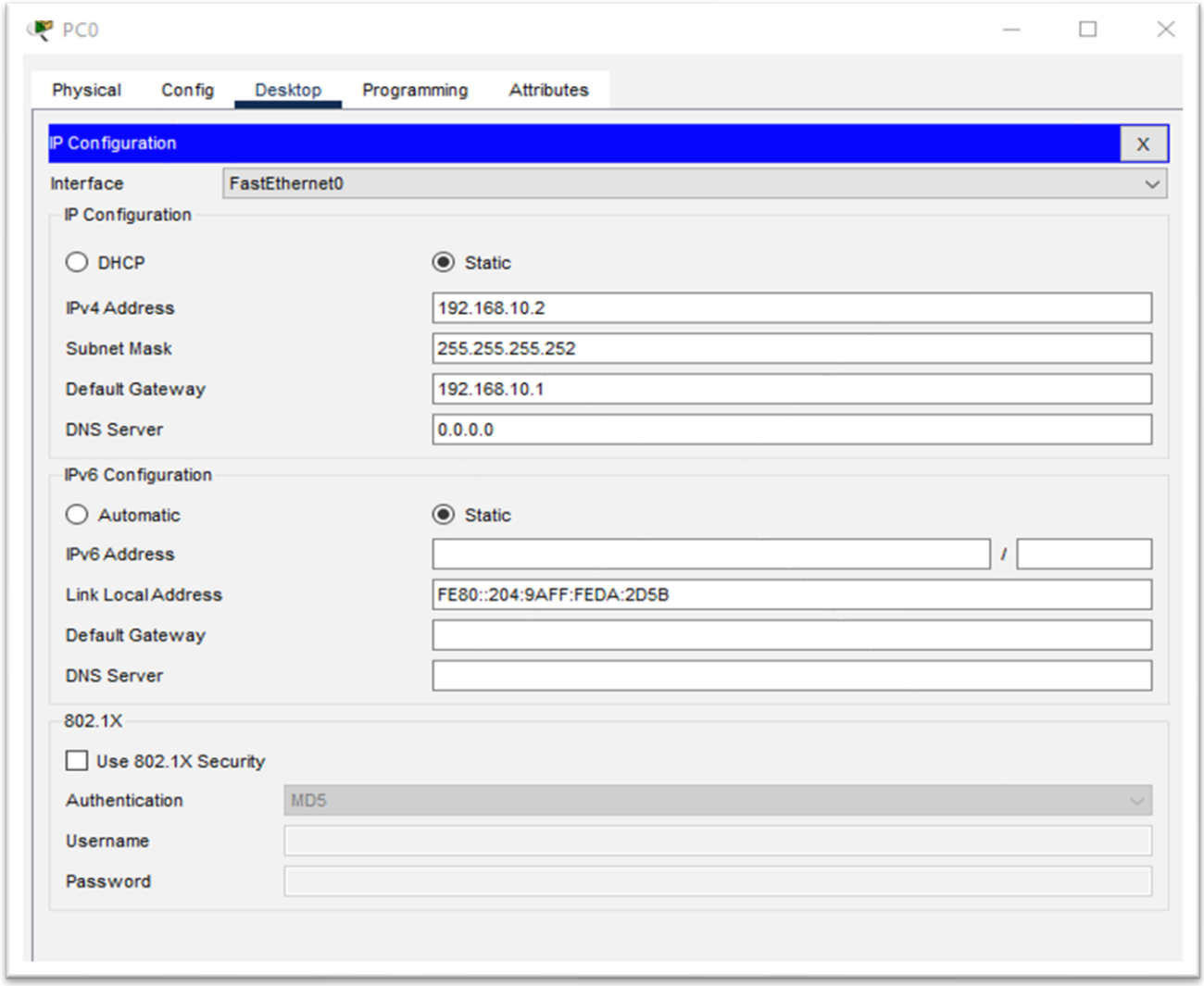
Static Routing Configuration Step by Step Guide

Static routes are the routes that you manually add to the router's routing table. The process of adding static routes to the routing table is known as static routing. It is ideal for small organization.

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



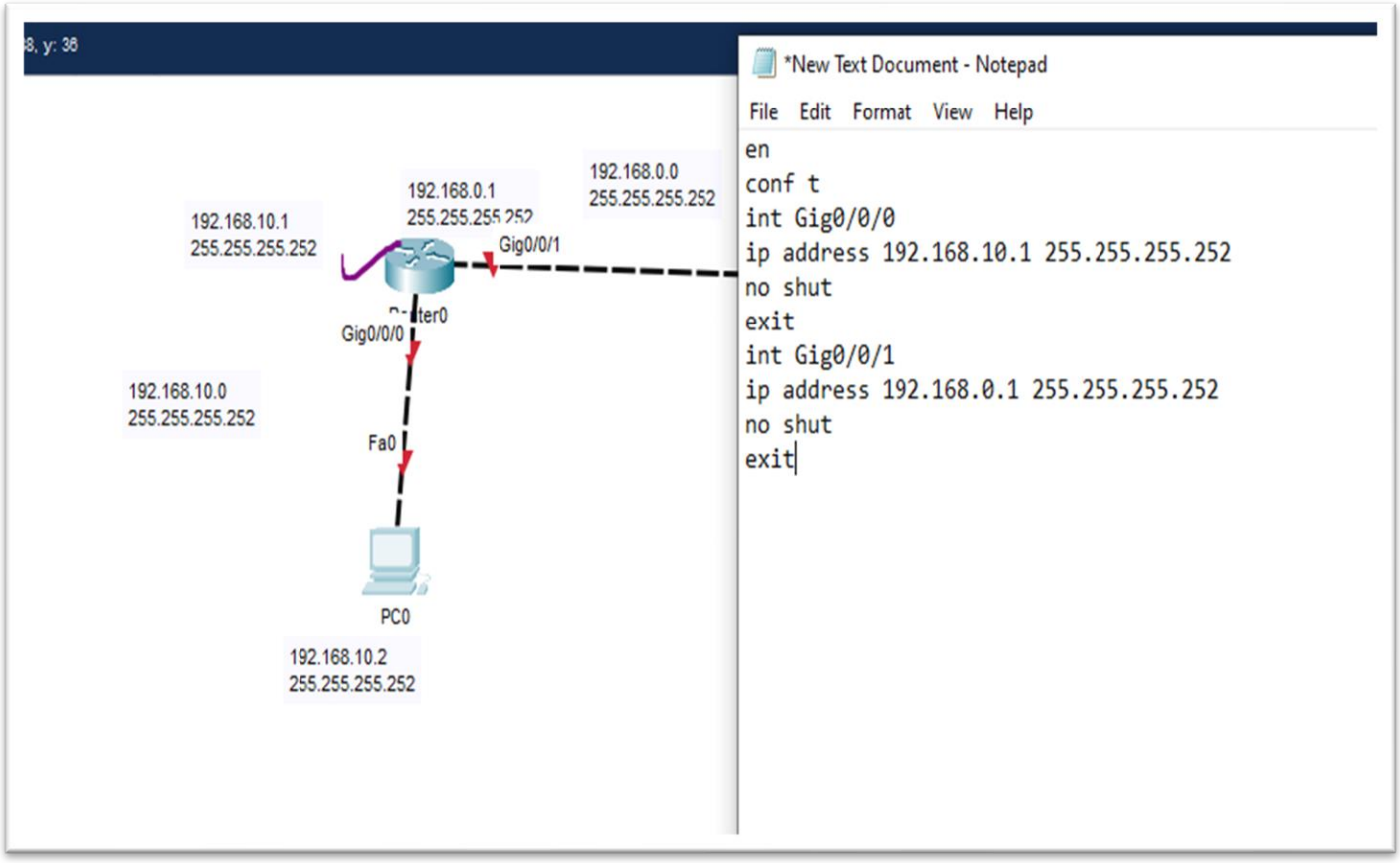
Step2: Configure each end devices (PC, laptop, mobile etc) by adding IP address, subnet mask and default gateway IP.

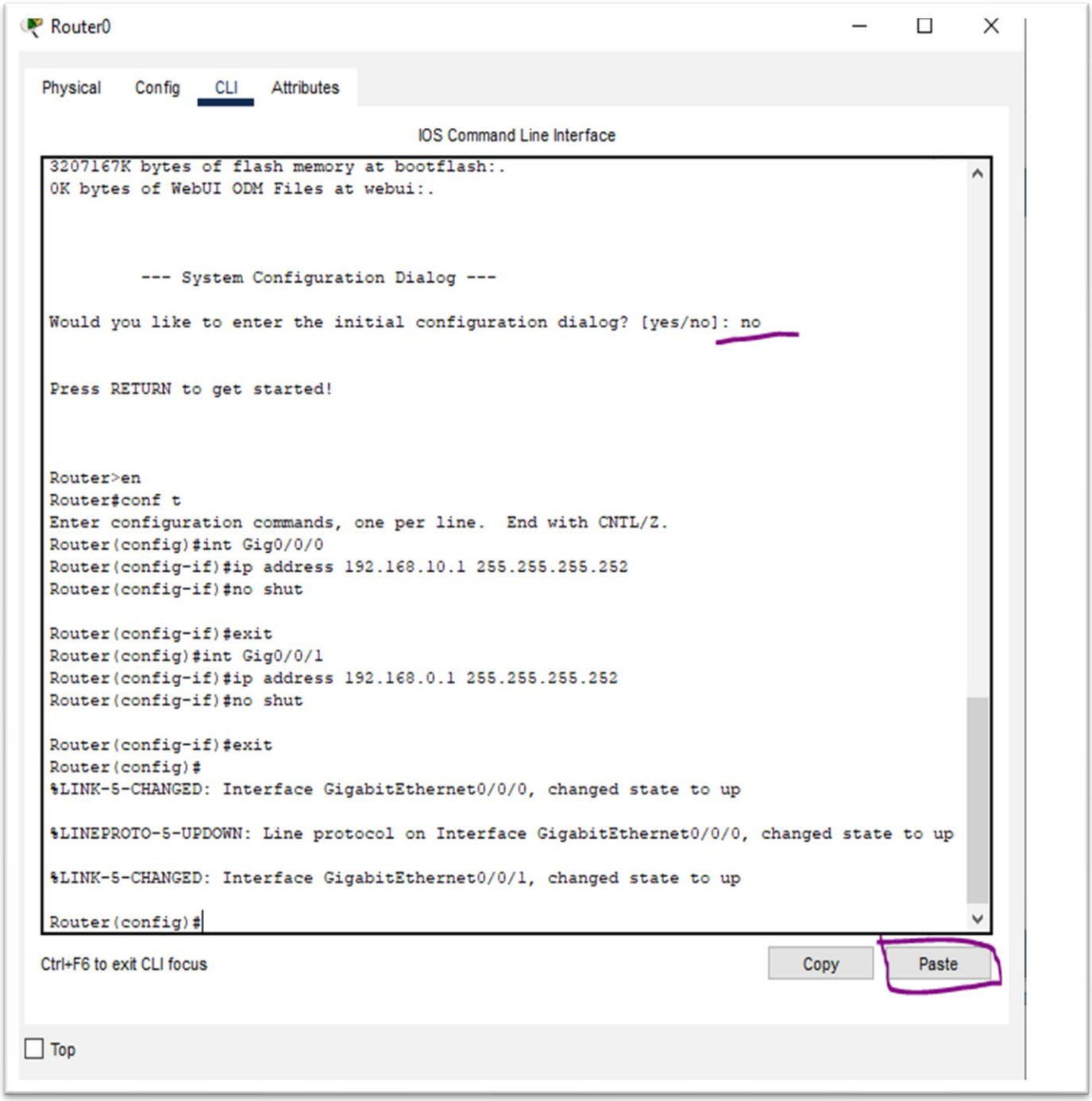


Step3: Configure each router by writing command in CLI.

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
```




Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
3207167K bytes of flash memory at bootflash:.
0K bytes of WebUI ODM Files at webui:.
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int Gig0/0/1
Router(config-if)#ip address 192.168.0.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up
Router(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
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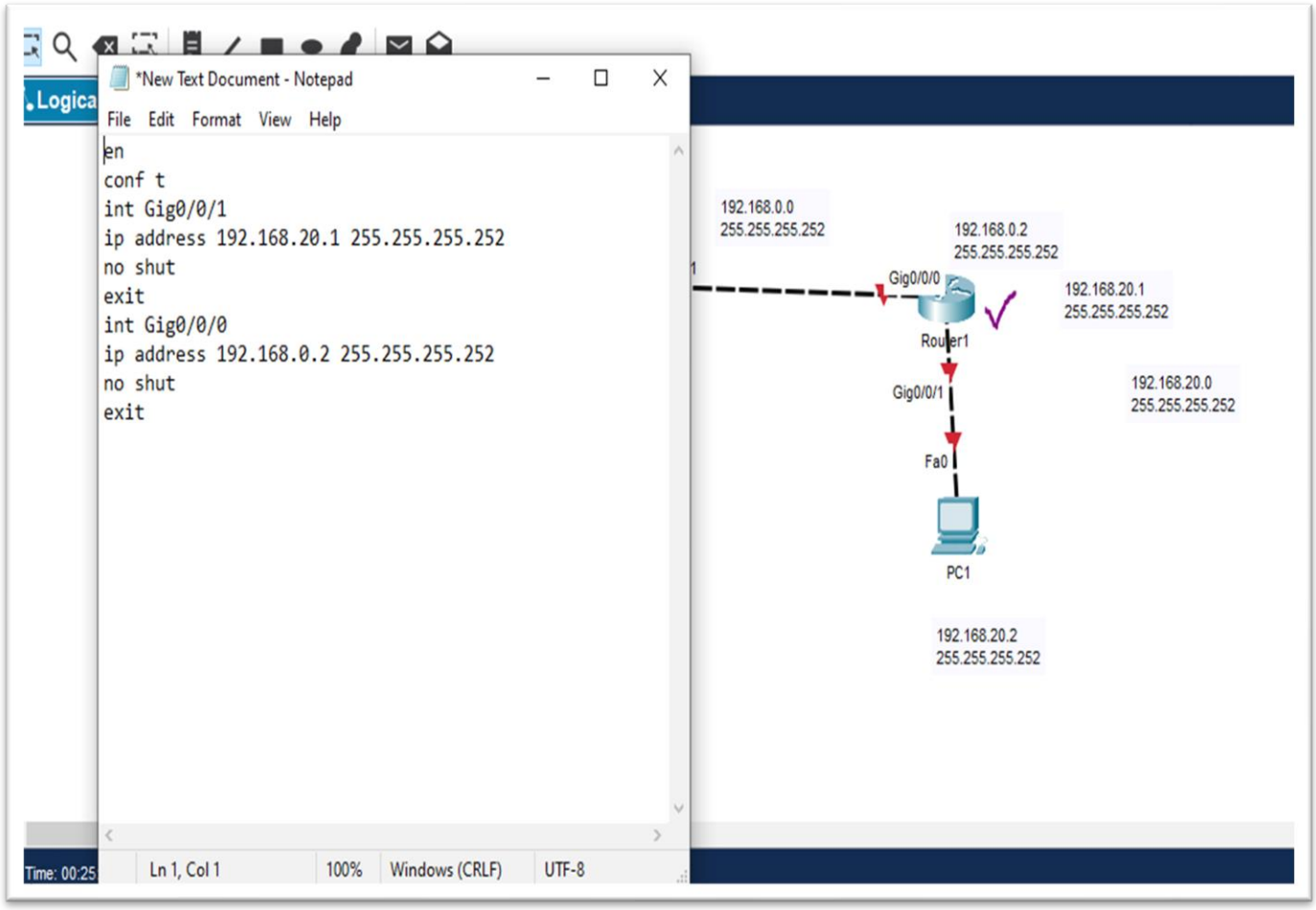
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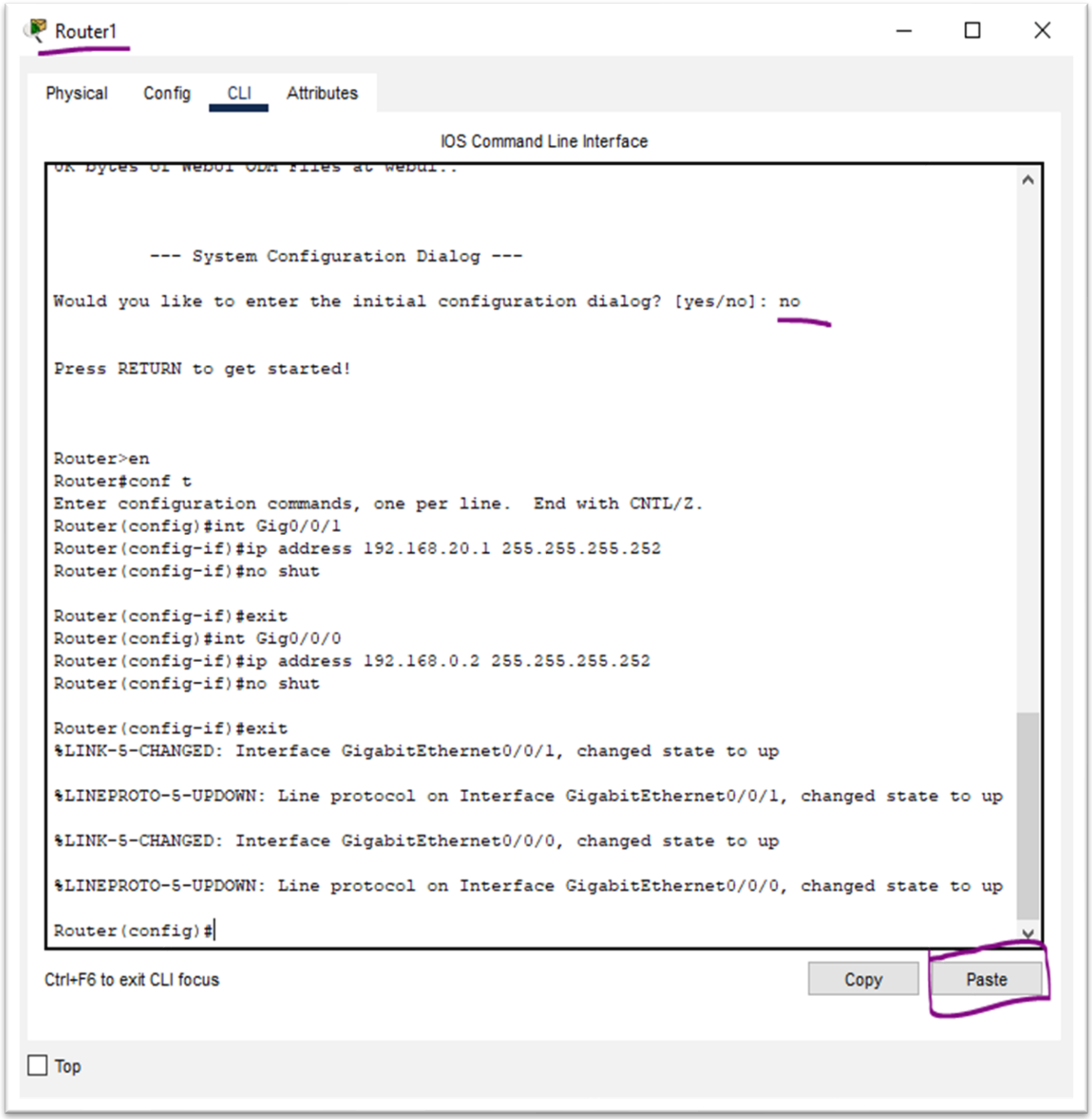
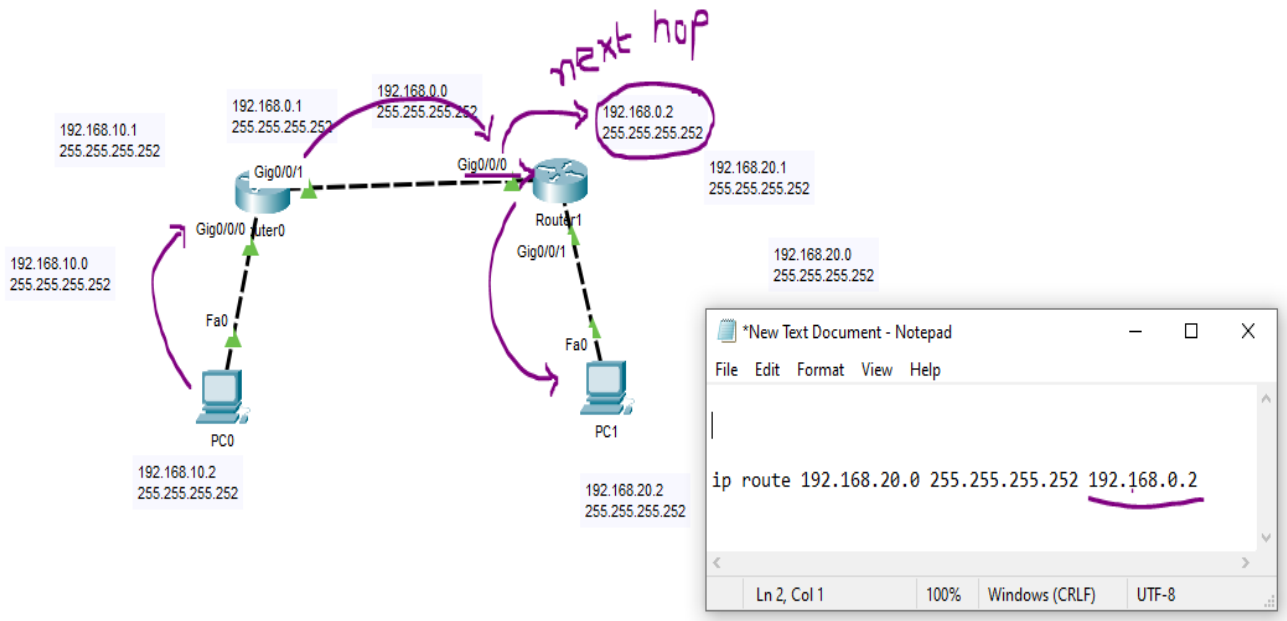
File Edit Format View Help
en
conf t
int Gig0/0/1
ip address 192.168.20.1 255.255.255.252
no shut
exit
int Gig0/0/0
ip address 192.168.0.2 255.255.255.252
no shut
exit
Ln 1, Col 1
100%
Windows (CRLF)
UTF-8
Time: 00:25
192.168.0.0
255.255.255.252
192.168.0.2
255.255.255.252
Gig0/0/0
192.168.20.1
255.255.255.252
Router1
Gig0/0/1
192.168.20.0
255.255.255.252
Fa0
PC1
192.168.20.2
255.255.255.252

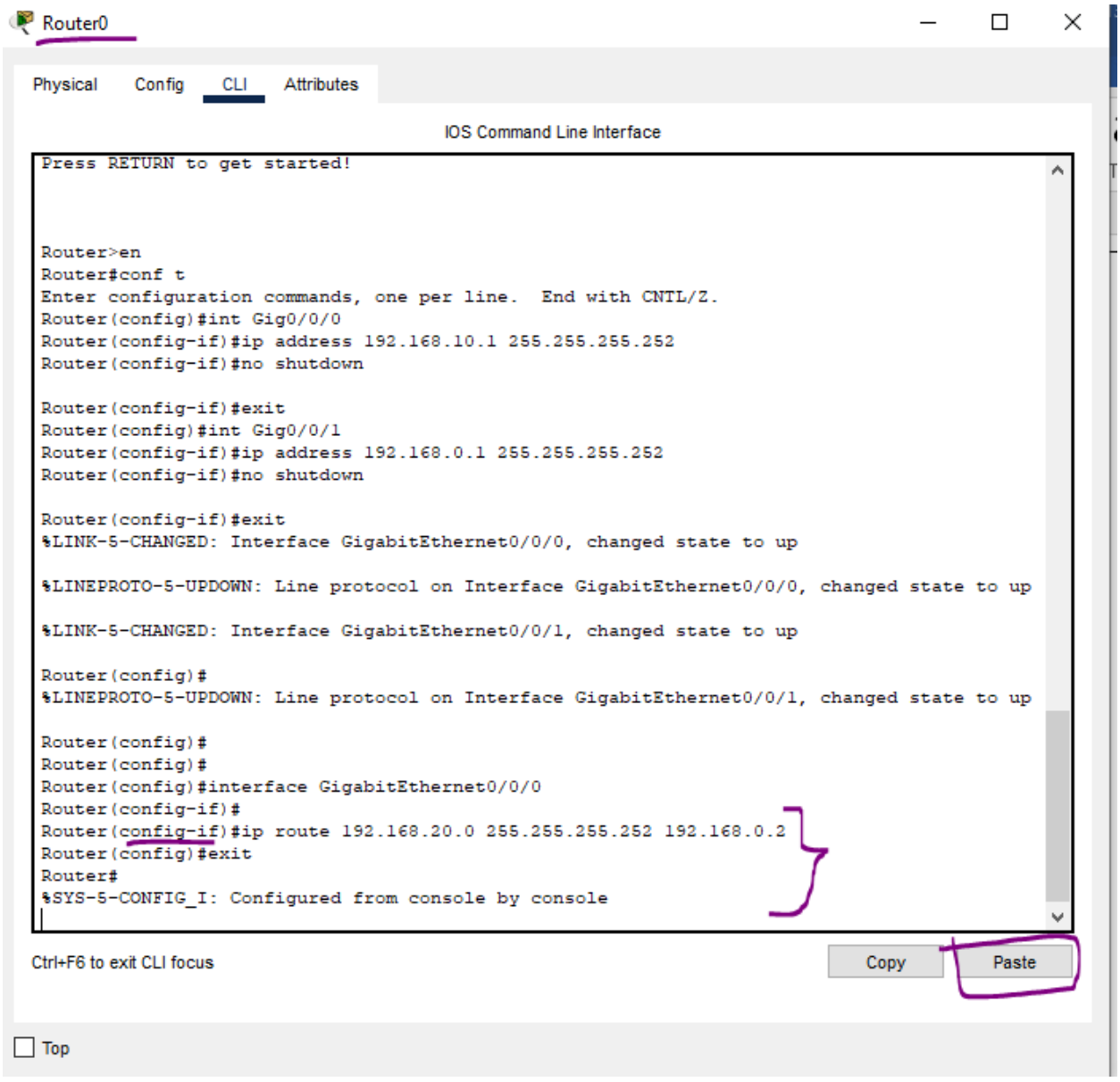

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/1
Router(config-if)#ip address 192.168.20.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int Gig0/0/0
Router(config-if)#ip address 192.168.0.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
Router(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

Step4: Configure static routing for each router by writing command in CLI.

The commands are as follows:

```
Router(config)#ip route destination_network_IP subnet_mask next_hop_IP
Router(config-router)#exit
```




Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#int Gig0/0/1
Router(config-if)#ip address 192.168.0.1 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#exit
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up
Router(config)#
Router(config)#
Router(config)#interface GigabitEthernet0/0/0
Router(config-if)#
Router(config-if)#ip route 192.168.20.0 255.255.255.252 192.168.0.2
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Ctrl+F6 to exit CLI focus
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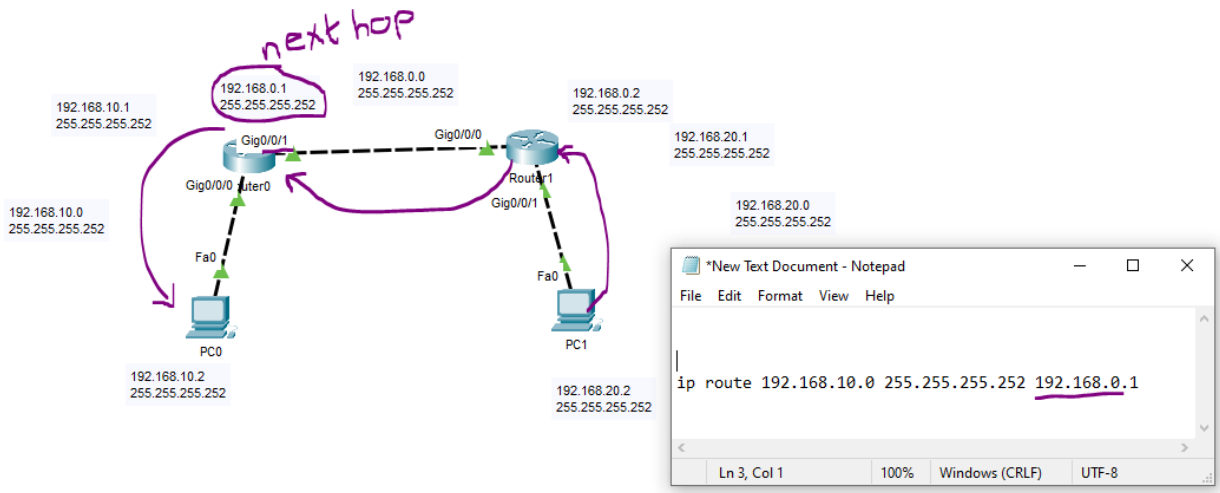
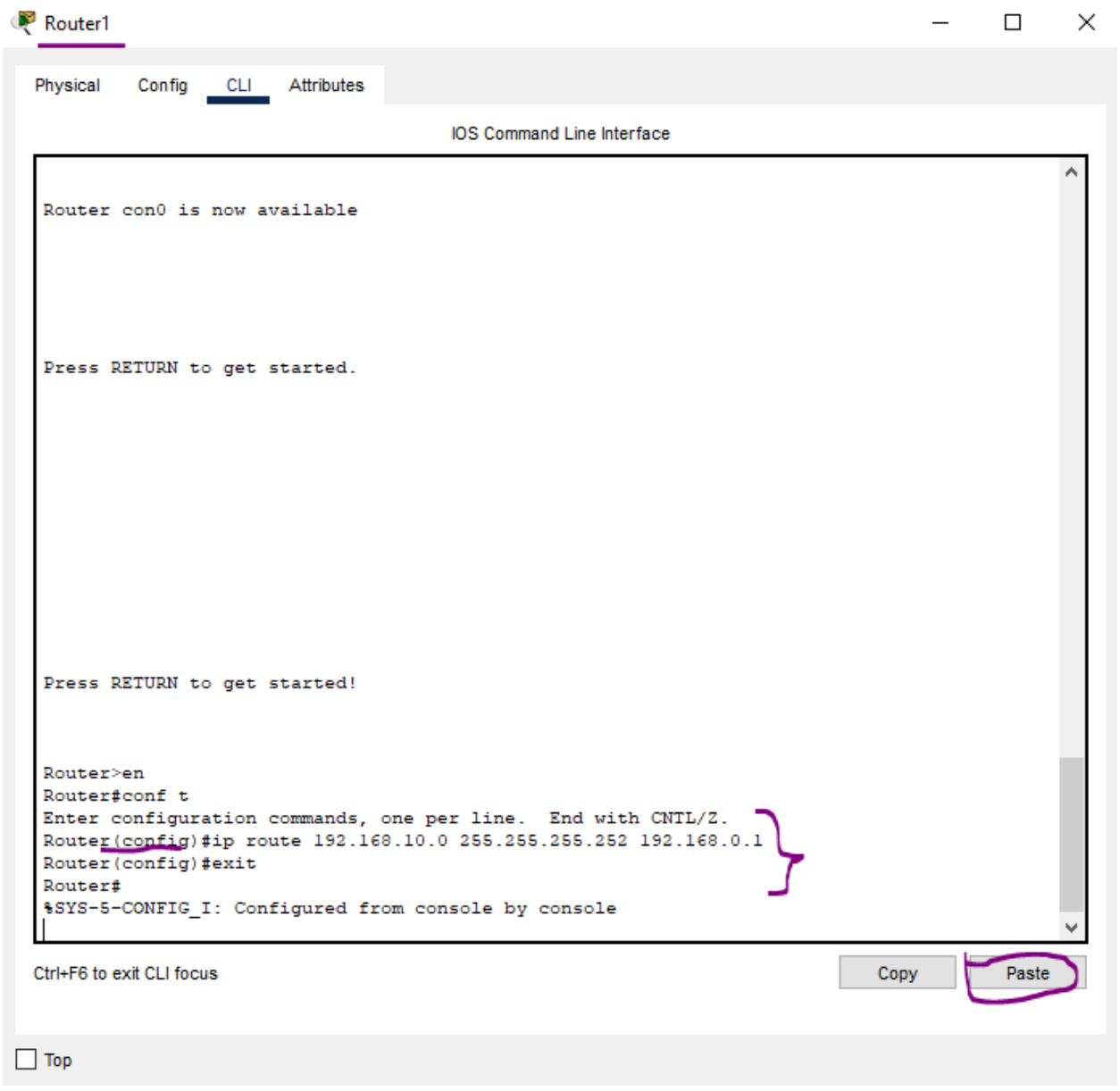

next hop
192.168.0.1
255.255.255.252
192.168.0.0
255.255.255.252
192.168.0.2
255.255.255.252
192.168.10.1
255.255.255.252
192.168.20.1
255.255.255.252
Gig0/0/1
Gig0/0/0
Gig0/0/0
Gig0/0/1
192.168.10.0
255.255.255.252
192.168.20.0
255.255.255.252
Fa0
Fa0
PC0
PC1
192.168.10.2
255.255.255.252
192.168.20.2
255.255.255.252
*New Text Document - Notepad
File Edit Format View Help
ip route 192.168.10.0 255.255.255.252 192.168.0.1
Ln 3, Col 1
100%
Windows (CRLF)
UTF-8


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router con0 is now available
Press RETURN to get started.
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 192.168.10.0 255.255.255.252 192.168.0.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Ctrl+F6 to exit CLI focus
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Paste
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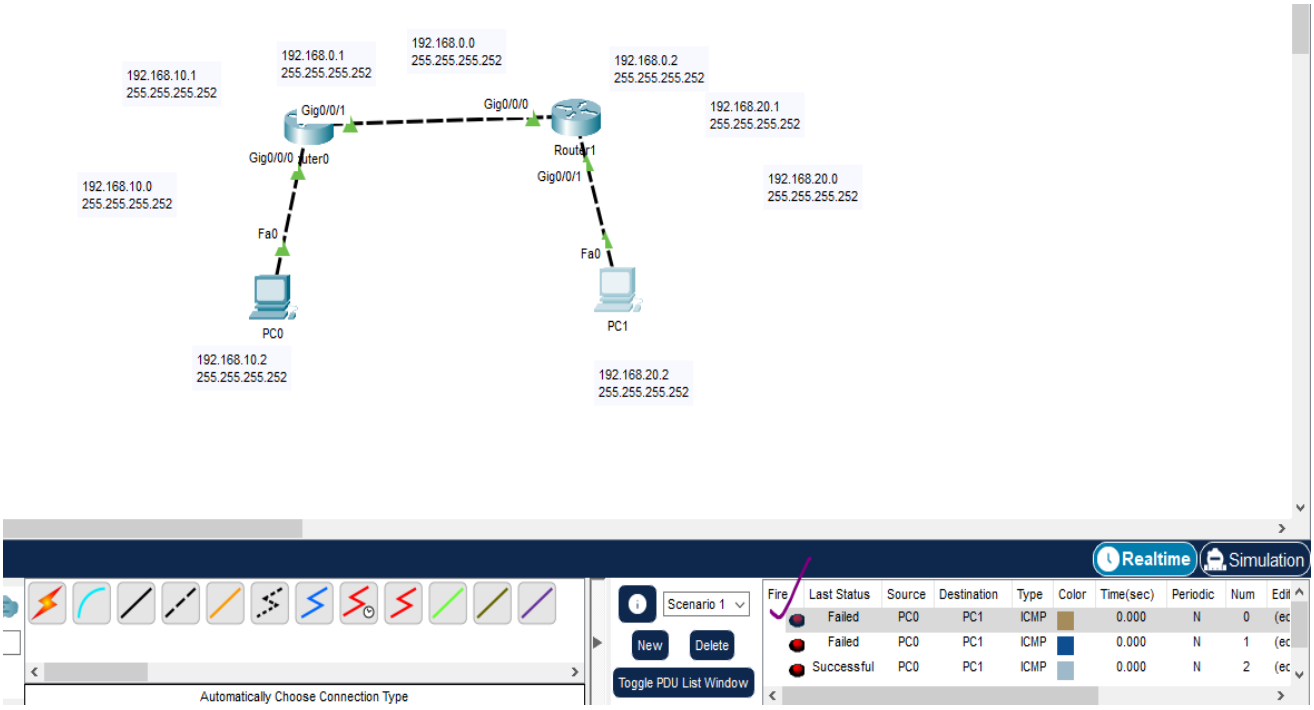
Step5: Pass the packet from one subnet to another subnet and check the status.



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)#ip route 192.168.20.0 255.255.255.252 192.168.0.2	Enable static routing protocol to the destination network via next hop.

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