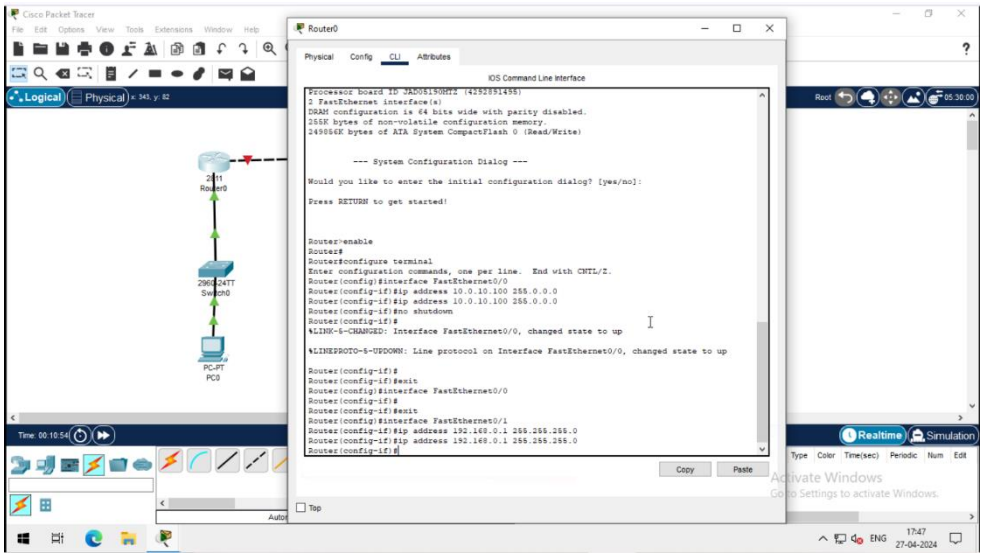
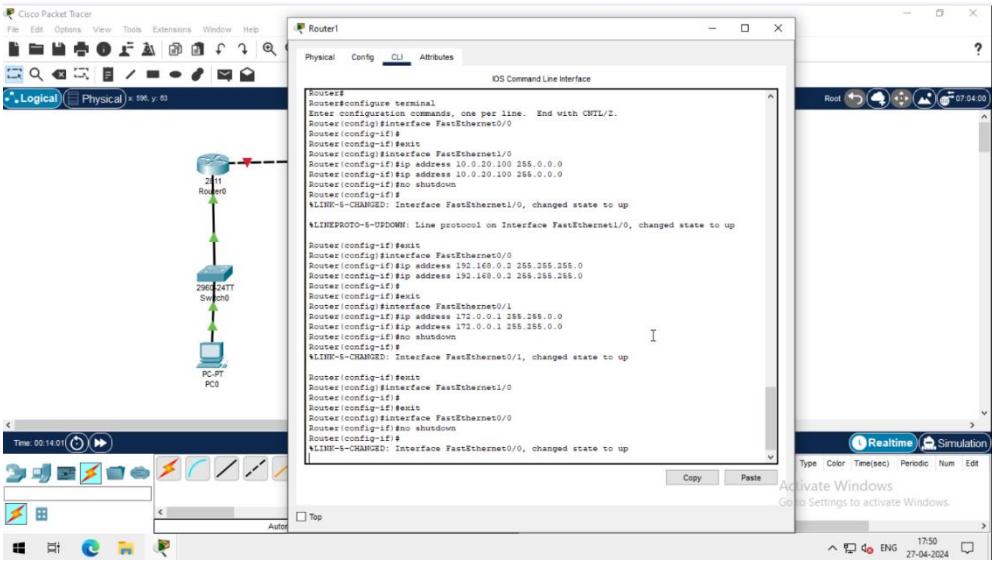
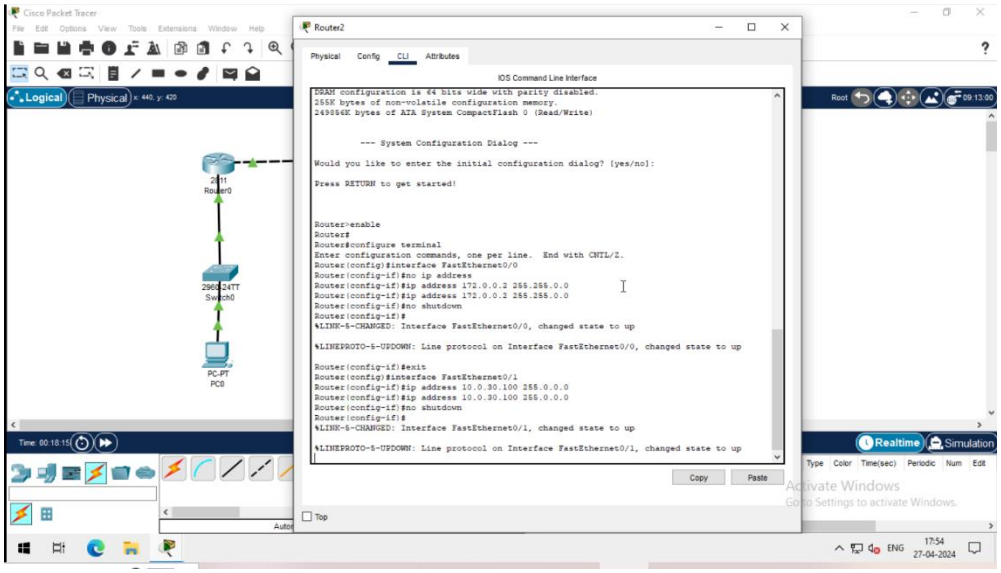
**WEEKEND TASK NETWORKING**

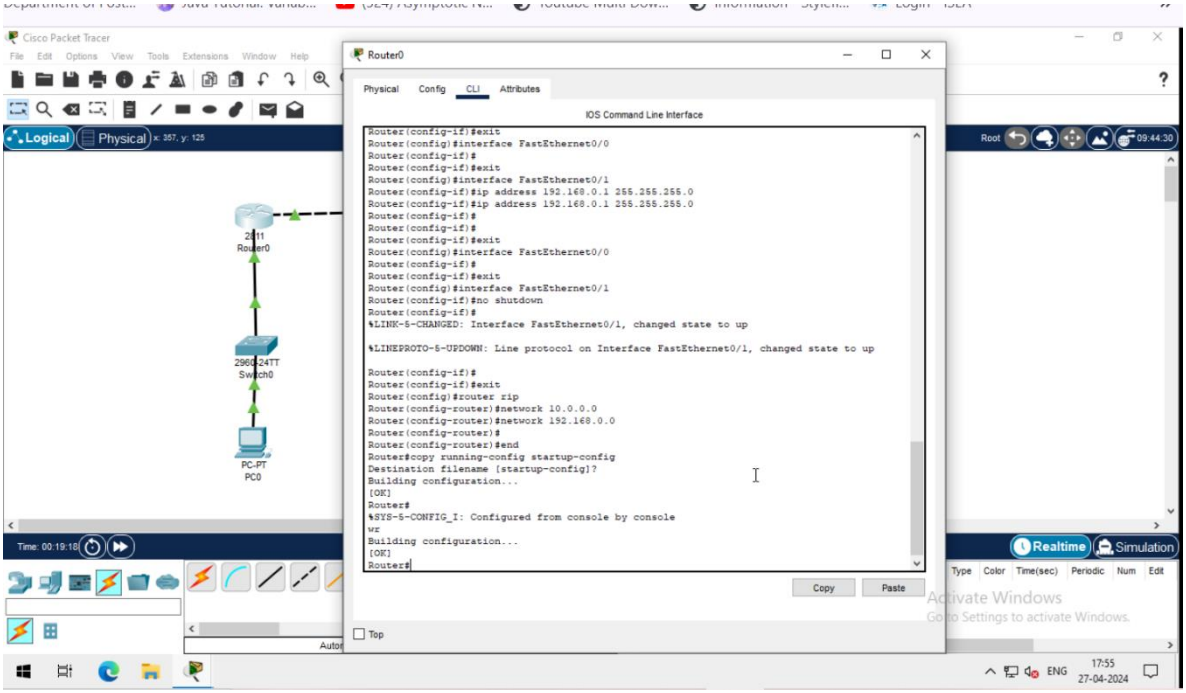
## 1. Implement Static routing, OSPF, RIP & BGP using 3 routers

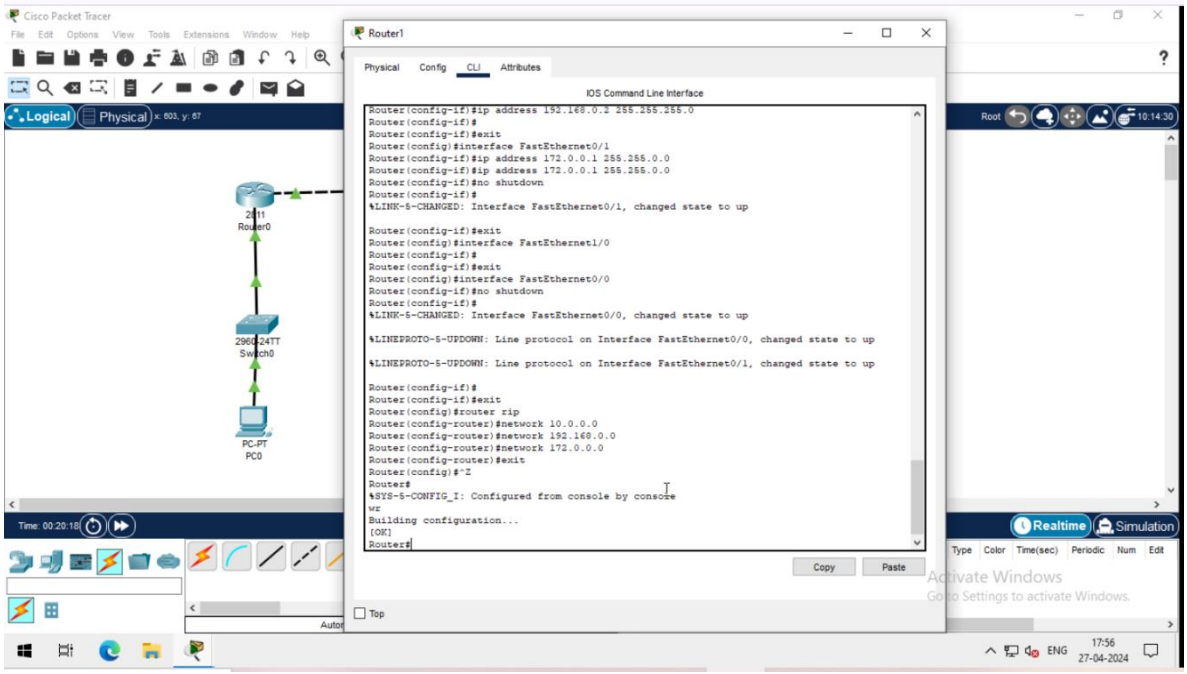
### RIP

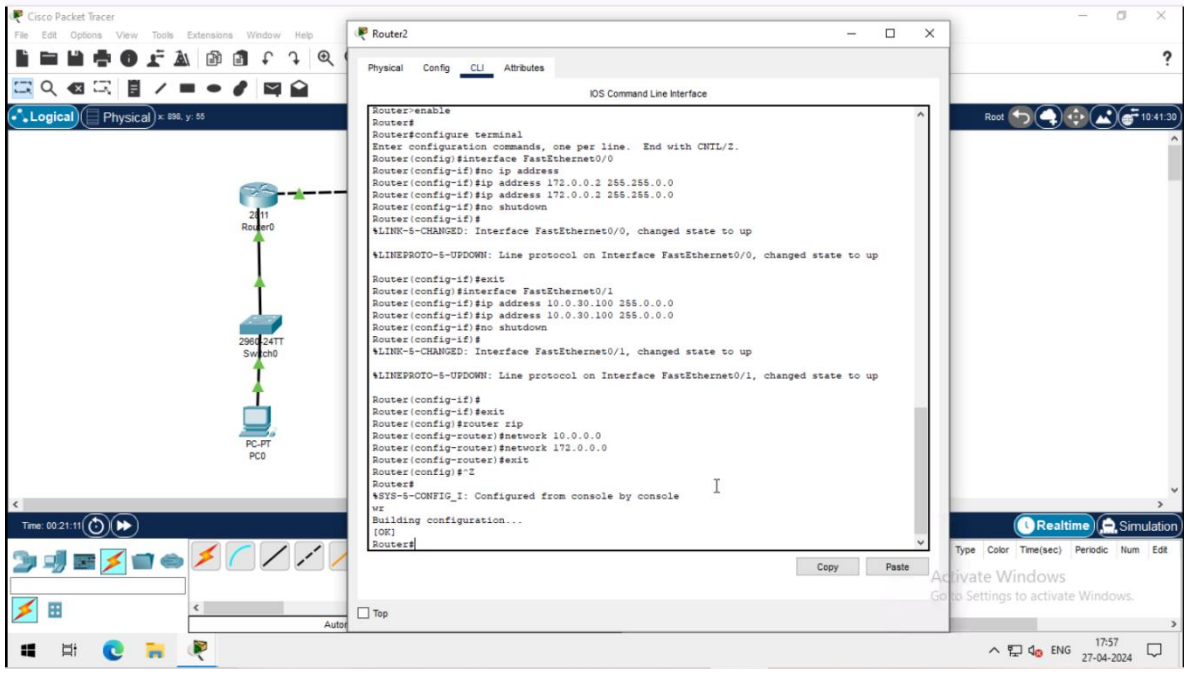


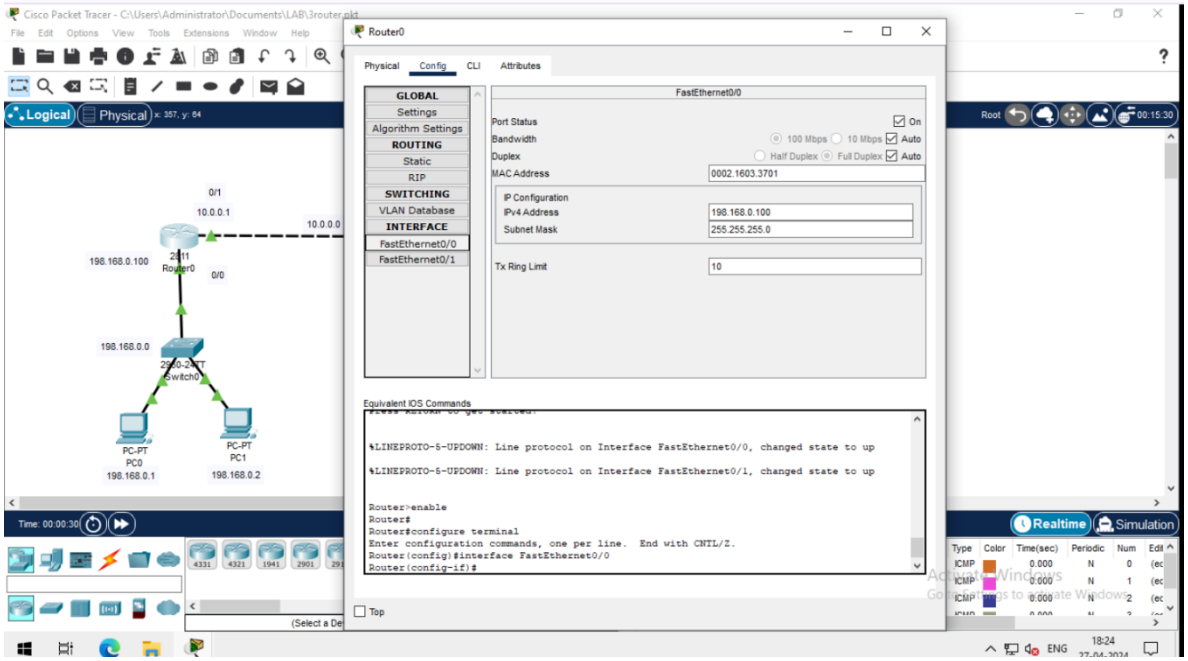



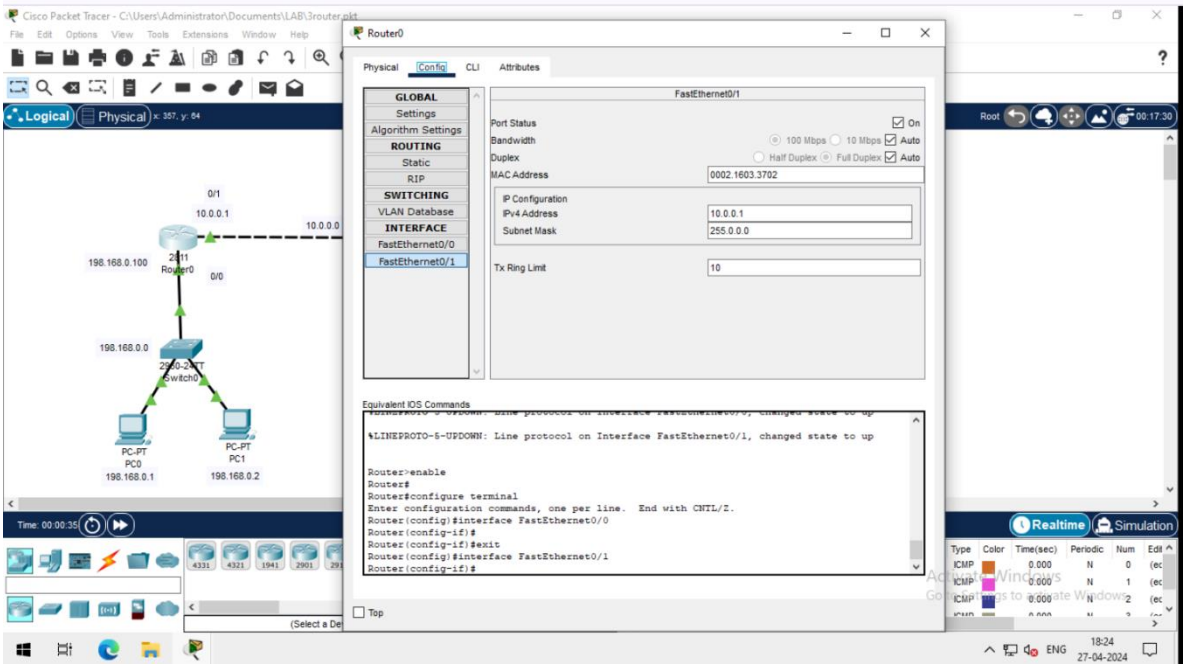

Cisco Packet Tracer
Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 192.168.0.1 255.255.255.0
Router(config-if)#ip address 192.168.0.1 255.255.255.0
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 192.168.0.0
Router(config-router)#
Router(config-router)#end
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
%SYS-5-CONFIG_I: Configured from console by console
wr
Building configuration...
[OK]
Router#
Copy
Paste
Top
2811
Router0
2960-24TT
Switch0
PC-PT
PC0
Logical
Physical
Realtime
Simulation
Activate Windows
Go to Settings to activate Windows.
17:55
27-04-2024

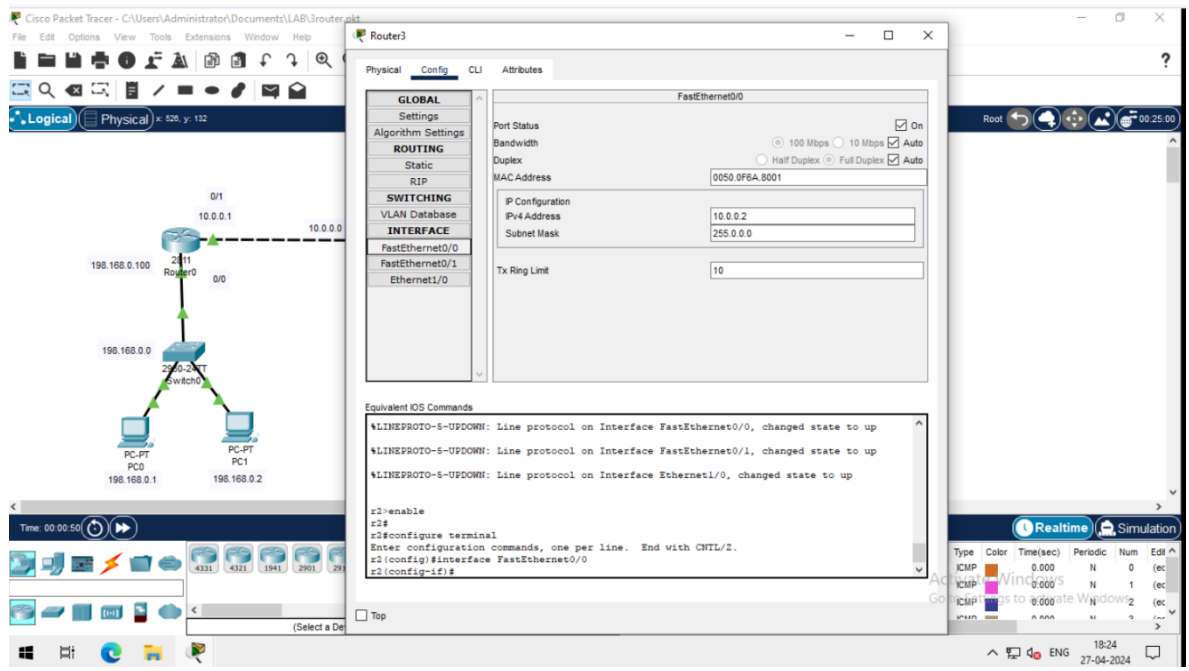

Cisco Packet Tracer
Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router(config-if)#ip address 192.168.0.2 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 172.0.0.1 255.255.0.0
Router(config-if)#ip address 172.0.0.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
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
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 192.168.0.0
Router(config-router)#network 172.0.0.0
Router(config-router)#exit
Router(config)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
wr
Building configuration...
[OK]
Router#
Copy
Paste
Top
2811
Router0
2960-24TT
Switch0
PC-PT
PC0
Logical
Physical
Realtime
Simulation
Activate Windows
Go to Settings to activate Windows.
17:56
27-04-2024

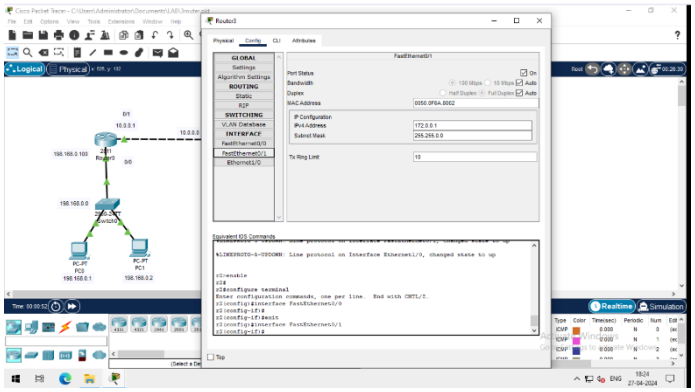

Cisco Packet Tracer
Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#no ip address
Router(config-if)#ip address 172.0.0.2 255.255.0.0
Router(config-if)#ip address 172.0.0.2 255.255.0.0
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 FastEthernet0/1
Router(config-if)#ip address 10.0.30.100 255.0.0.0
Router(config-if)#ip address 10.0.30.100 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 172.0.0.0
Router(config-router)#exit
Router(config)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
wr
Building configuration...
[OK]
Router#
Copy
Paste
Top
2811
Router0
2960-24TT
Switch0
PC-PT
PC0
Logical
Physical
Realtime
Simulation
Activate Windows
Go to Settings to activate Windows.
17:57
27-04-2024

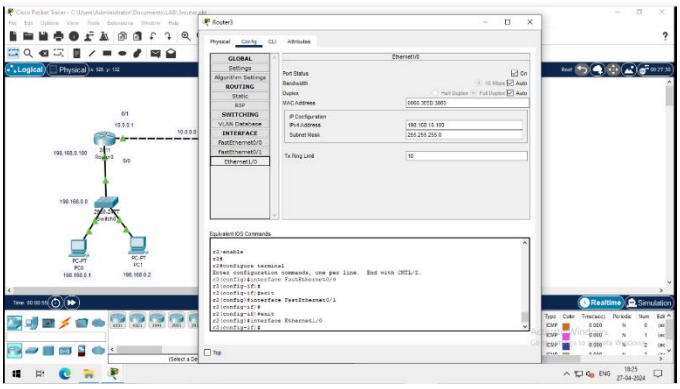
# STATIC ROUTING

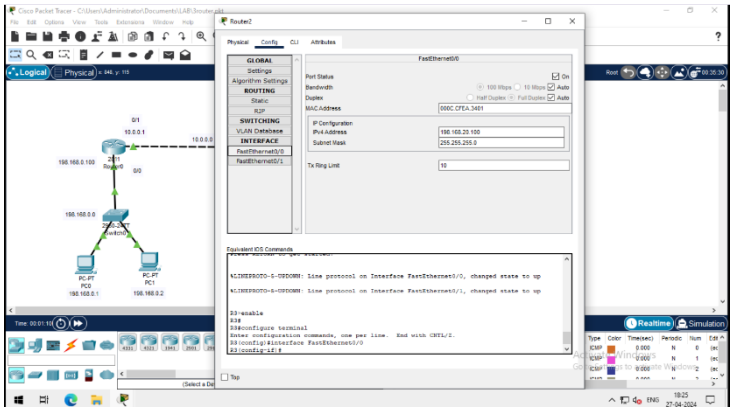


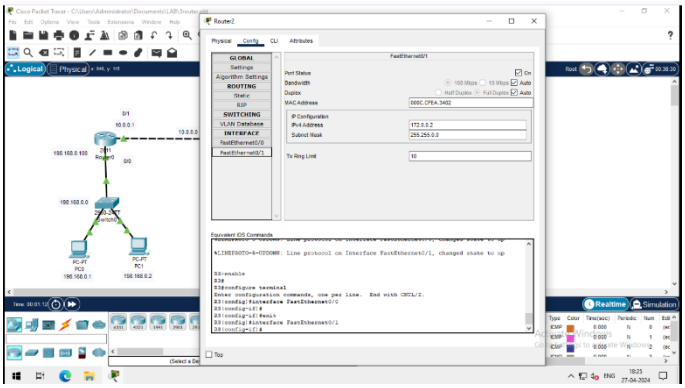



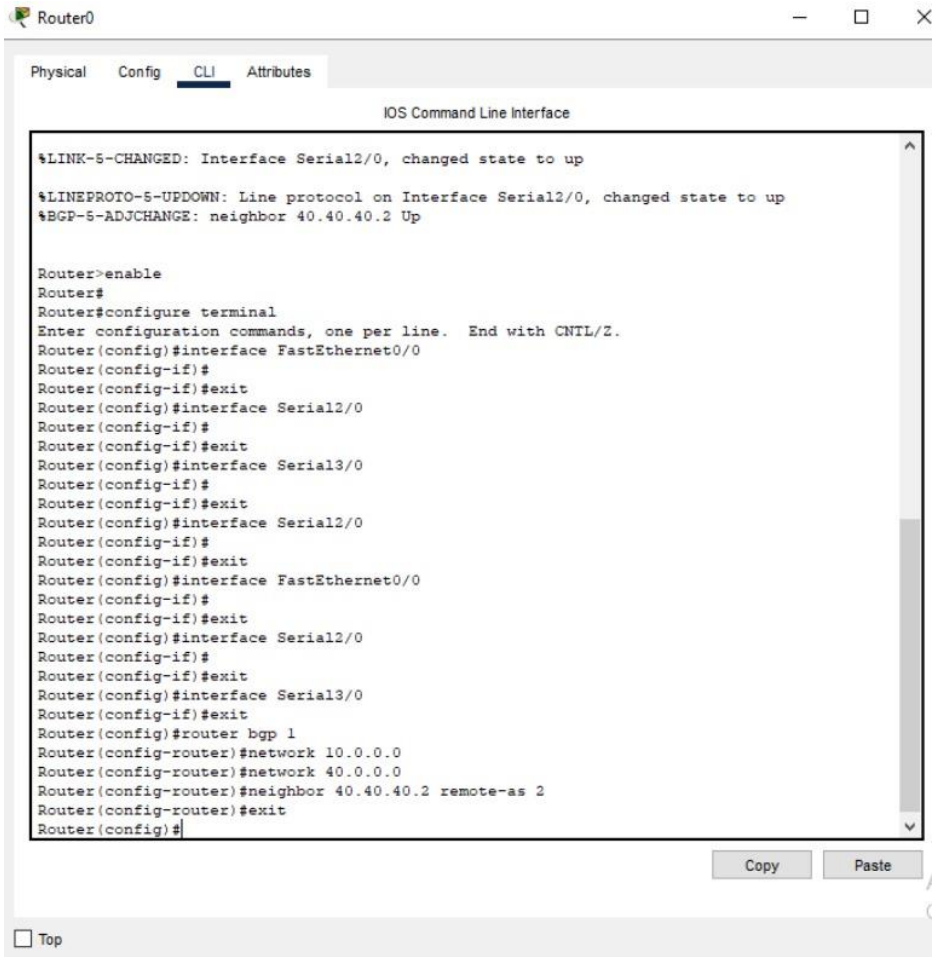








**BGP**


Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%BGP-5-ADJCHANGE: neighbor 40.40.40.2 Up
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#exit
Router(config)#router bgp 1
Router(config-router)#network 10.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#neighbor 40.40.40.2 remote-as 2
Router(config-router)#exit
Router(config)#
Copy
Paste
Top

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%BGP-5-ADJCHANGE: neighbor 50.50.50.2 Up
%BGP-5-ADJCHANGE: neighbor 40.40.40.1 Up


Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#exit
Router(config)#router bgp 2
Router(config-router)#network 20.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#neighbor 40.40.40.1 remote-as 1
Router(config-router)#neighbor 50.50.50.2 remote-as 3
Router(config-router)#exit
Router(config)#
```

Copy Paste

Top

Router2

Physical Config CLI Attributes

IOS Command Line Interface

```
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#no shutdown
Router(config-if)#shutdown
Router(config-if)#
Router(config-if)#router bgp 3
Router(config-router)#network 30.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#neighbor 50.50.50.1 remote-as 2
Router(config-router)#exit
Router(config)#
```

Copy Paste

Top

Router1

Physical | Config | CLI | Attributes

**GLOBAL**
- Settings
- Algorithm Settings

**ROUTING**
- Static
- RIP

**INTERFACE**
- FastEthernet0/0
- FastEthernet1/0
- Serial2/0
- Serial3/0
- FastEthernet4/0
- FastEthernet5/0

**FastEthernet0/0**

| | |
|---|---|
| Port Status | On |
| Bandwidth | 100 Mbps / 10 Mbps / Auto |
| Duplex | Half Duplex / Full Duplex / Auto |
| MAC Address | 00D0.D399.CC4A |

IP Configuration

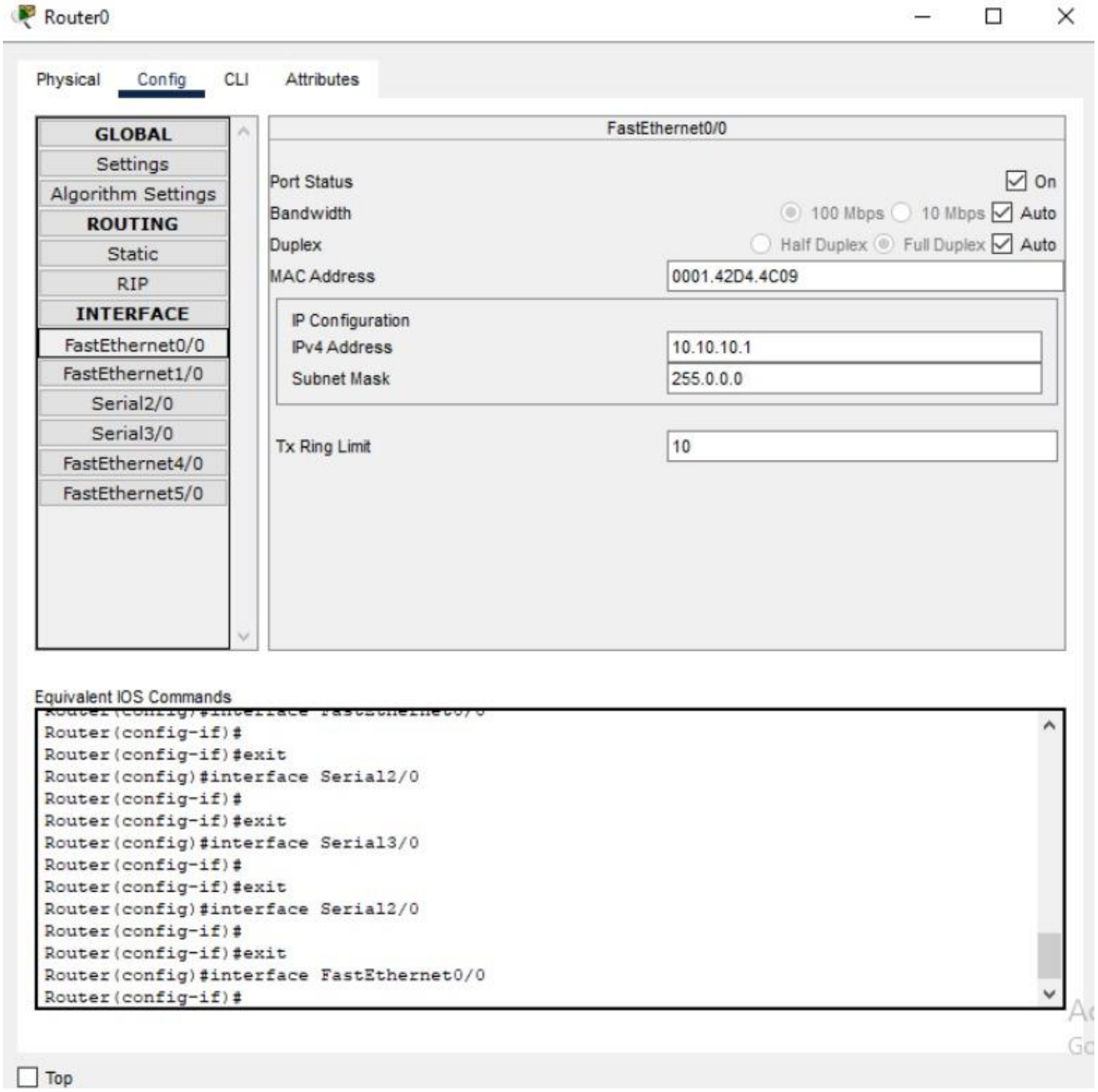
| | |
|---|---|
| IPv4 Address | 20.20.20.1 |
| Subnet Mask | 255.0.0.0 |

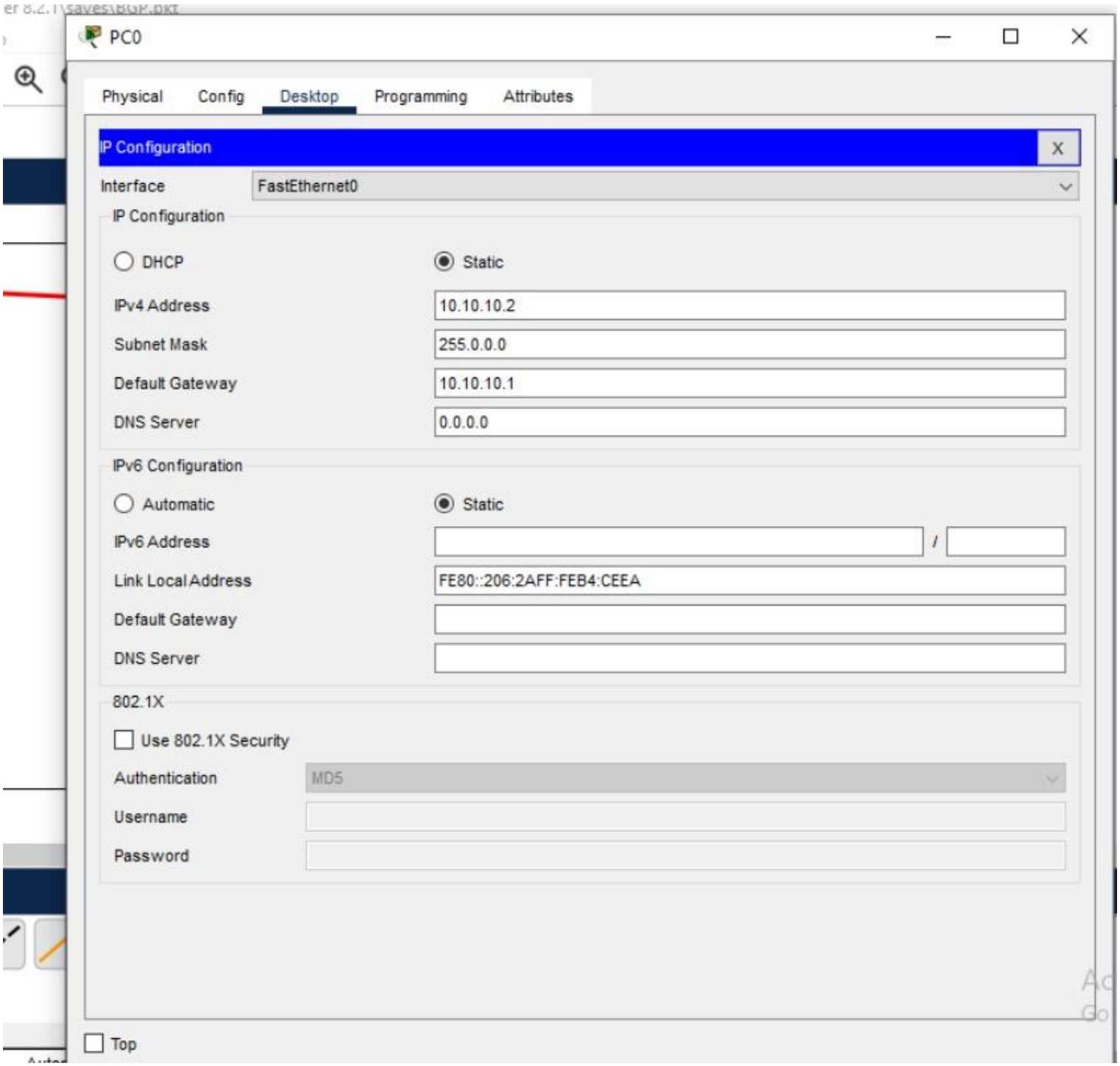
| | |
|---|---|
| Tx Ring Limit | 10 |

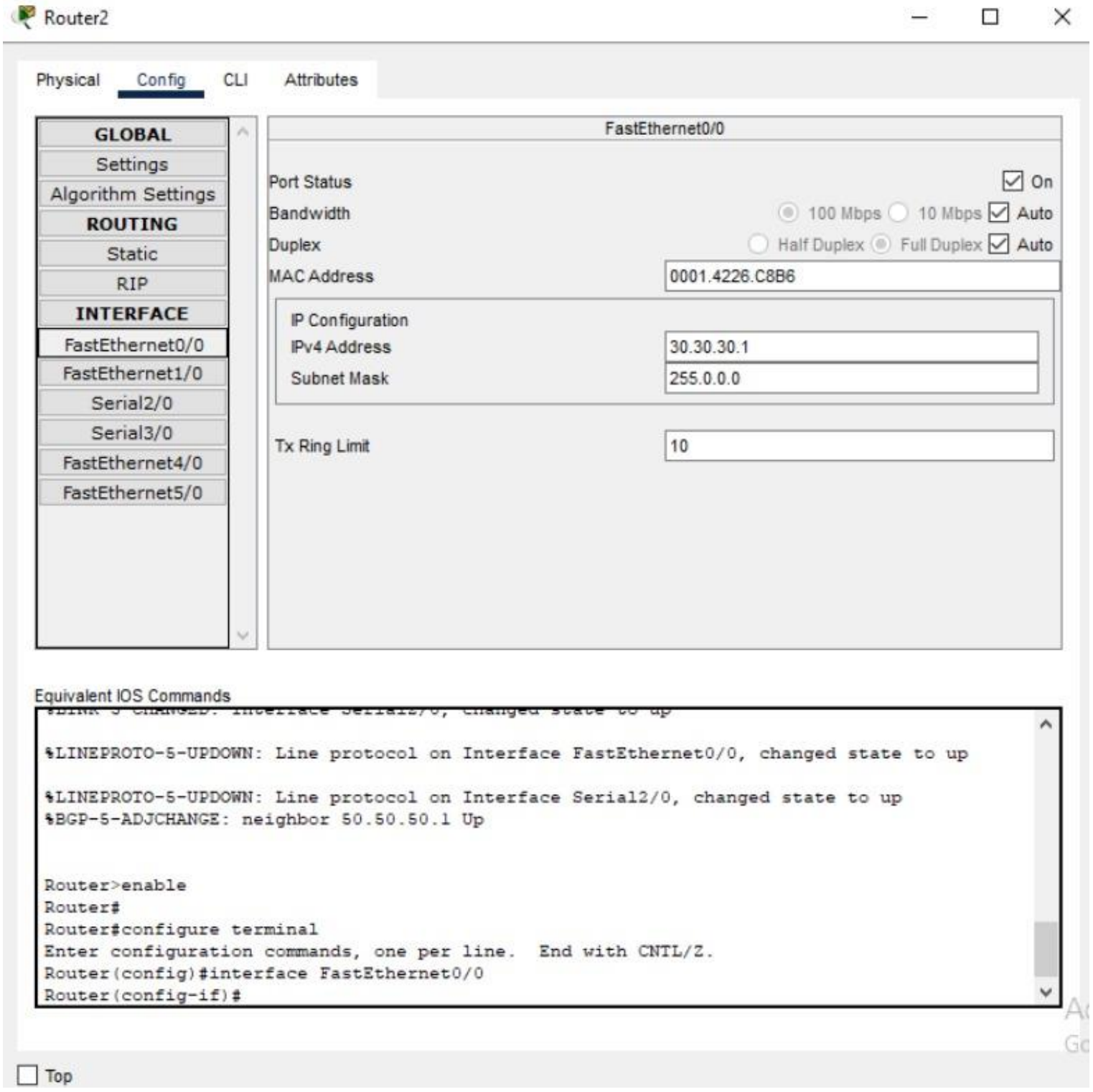
Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

Top


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
FastEthernet0/0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.42D4.4C09
IP Configuration
IPv4 Address
10.10.10.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Top


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.10.10.2
Subnet Mask
255.0.0.0
Default Gateway
10.10.10.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::206:2AFF:FEB4:CEEA
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


Router2
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
FastEthernet0/0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.4226.C8B6
IP Configuration
IPv4 Address
30.30.30.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%BGP-5-ADJCHANGE: neighbor 50.50.50.1 Up
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Top

PC3

Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

- DHCP
- Static

IPv4 Address: 20.20.20.3
Subnet Mask: 255.0.0.0
Default Gateway: 20.20.20.1
DNS Server: 0.0.0.0

IPv6 Configuration

- Automatic
- Static

IPv6 Address:
Link Local Address: FE80::201:C9FF:FE15:398A
Default Gateway:
DNS Server:

802.1X

- Use 802.1X Security

Authentication: MD5
Username:
Password:

Top

PC5

Physical | Config | Desktop | Programming | Attributes

**IP Configuration** X

Interface: FastEthernet0

**IP Configuration**

- ○ DHCP
- ◉ Static

| | |
|---|---|
| IPv4 Address | 30.30.30.3 |
| Subnet Mask | 255.0.0.0 |
| Default Gateway | 30.30.30.1 |
| DNS Server | 0.0.0.0 |

**IPv6 Configuration**

- ○ Automatic
- ◉ Static

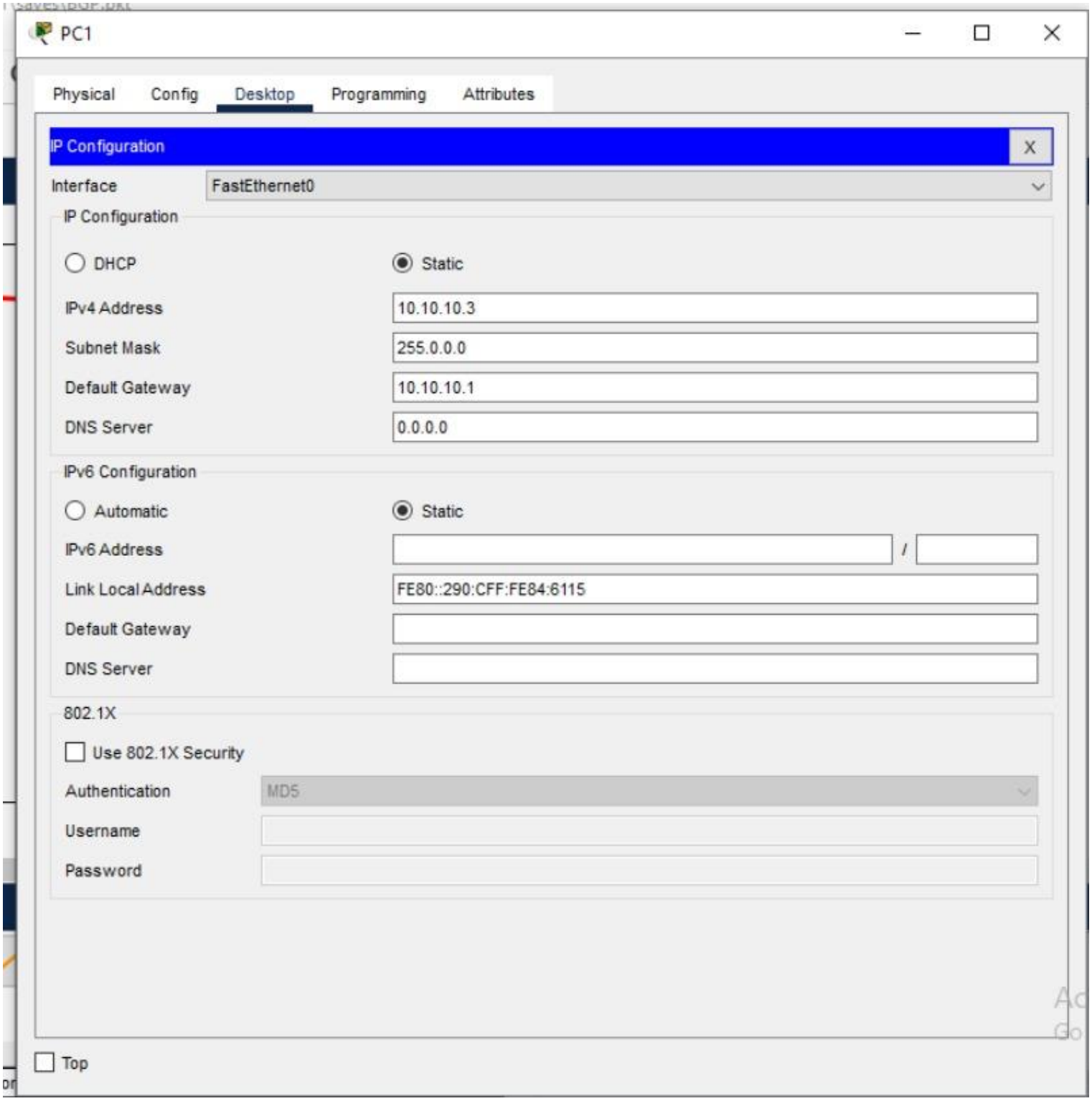
| | |
|---|---|
| IPv6 Address | / |
| Link Local Address | FE80::201:43FF:FE0C:ED0C |
| Default Gateway | |
| DNS Server | |

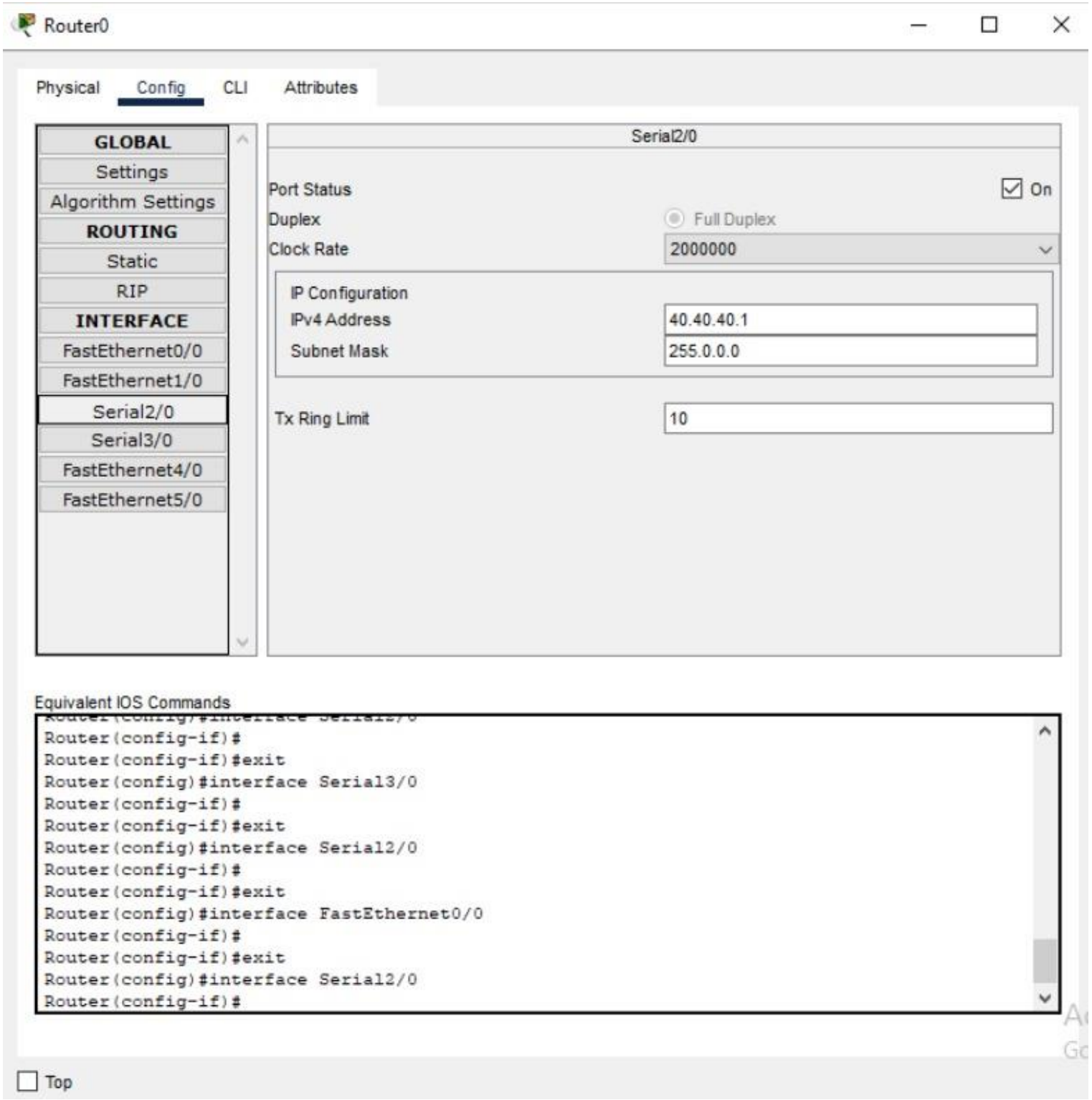
**802.1X**

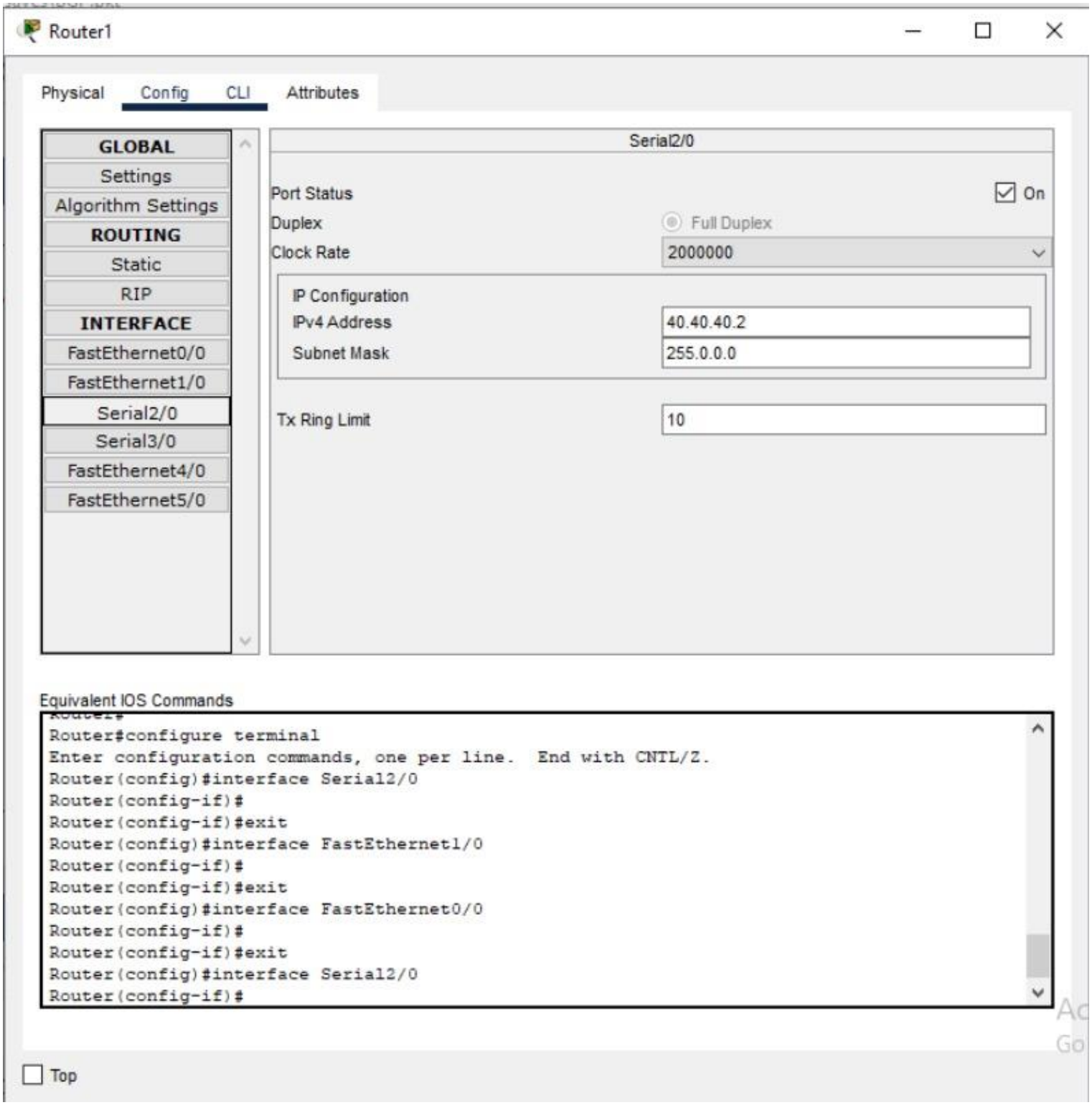
☐ Use 802.1X Security

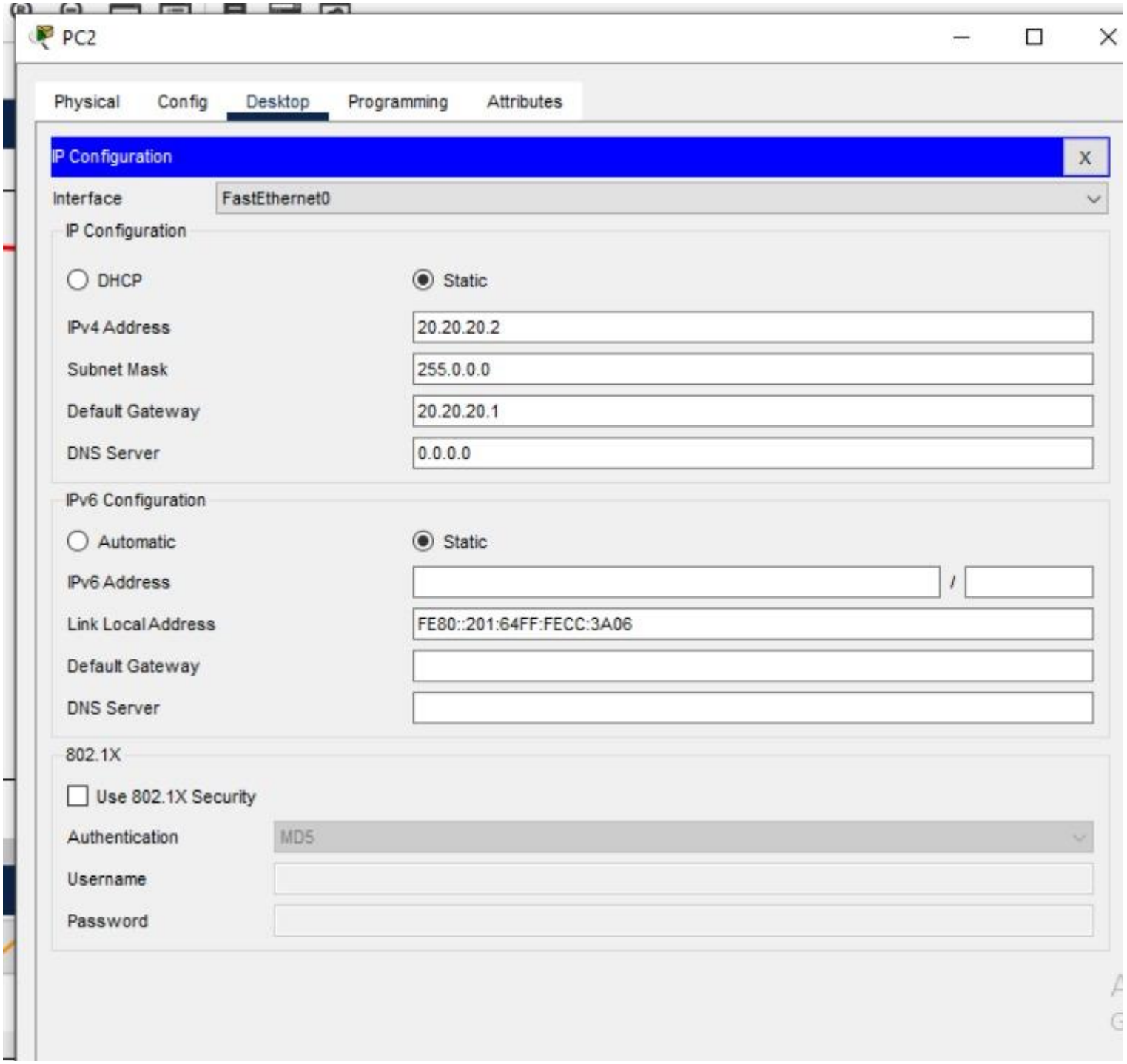
| | |
|---|---|
| Authentication | MD5 |
| Username | |
| Password | |

☐ Top


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.10.10.3
Subnet Mask
255.0.0.0
Default Gateway
10.10.10.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::290:CFF:FE84:6115
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
2000000
IP Configuration
IPv4 Address
40.40.40.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Top


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
2000000
IP Configuration
IPv4 Address
40.40.40.2
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Top


PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
20.20.20.2
Subnet Mask
255.0.0.0
Default Gateway
20.20.20.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::201:64FF:FECC:3A06
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

PC4

Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

- DHCP
- Static

IPv4 Address: 30.30.30.2

Subnet Mask: 255.0.0.0

Default Gateway: 30.30.30.1

DNS Server: 0.0.0.0

IPv6 Configuration

- Automatic
- Static

IPv6 Address:

Link Local Address: FE80::290:21FF:FED2:C621

Default Gateway:

DNS Server:

802.1X

Use 802.1X Security

Authentication: MD5

Username:

Password:

Top

Router2

Physical | Config | CLI | Attributes

**GLOBAL**
Settings
Algorithm Settings
**ROUTING**
Static
RIP
**INTERFACE**
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0

Serial2/0

Port Status: On
Duplex: Full Duplex
Clock Rate: 2000000

IP Configuration
IPv4 Address: 50.50.50.2
Subnet Mask: 255.0.0.0

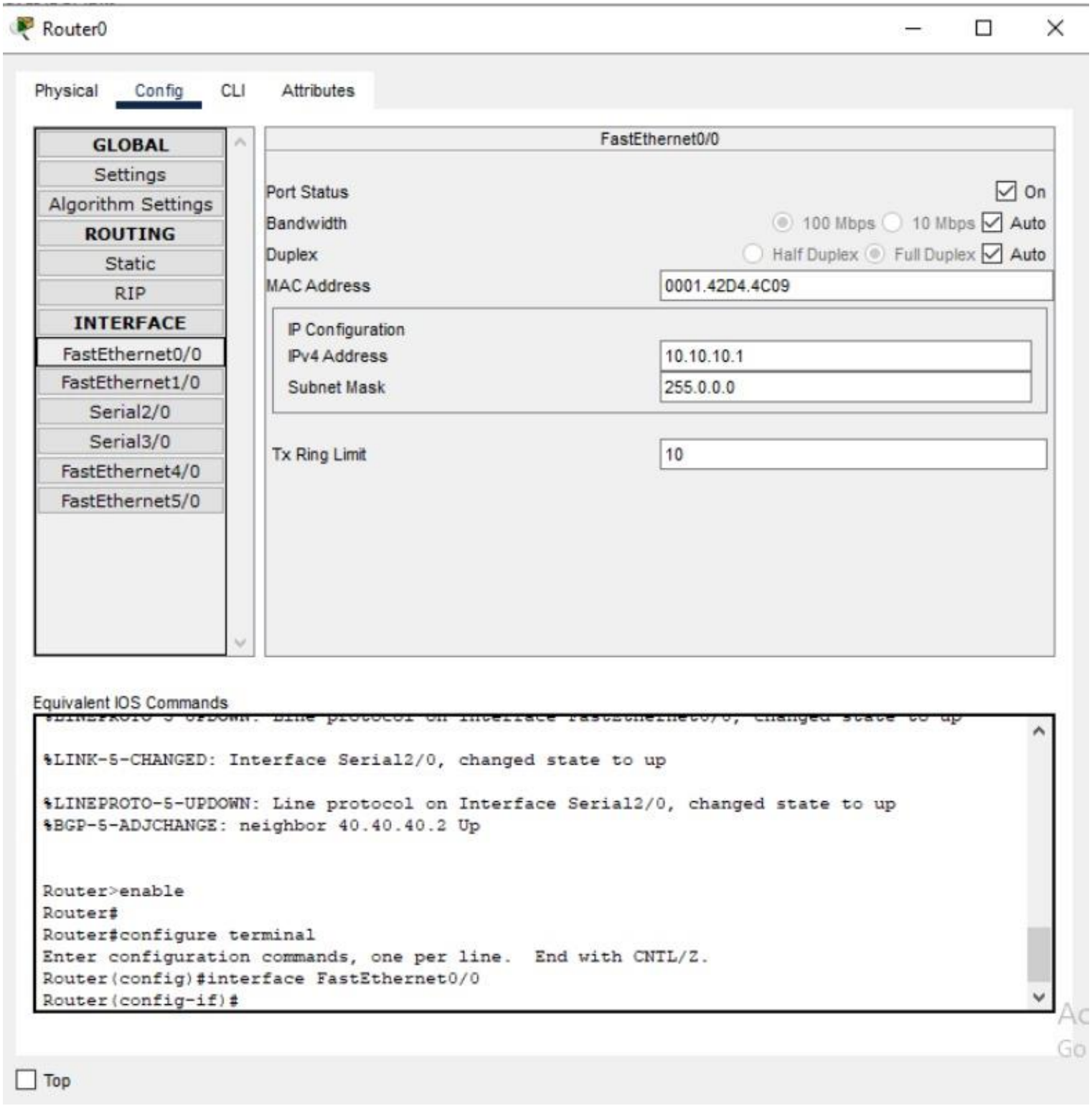
Tx Ring Limit: 10

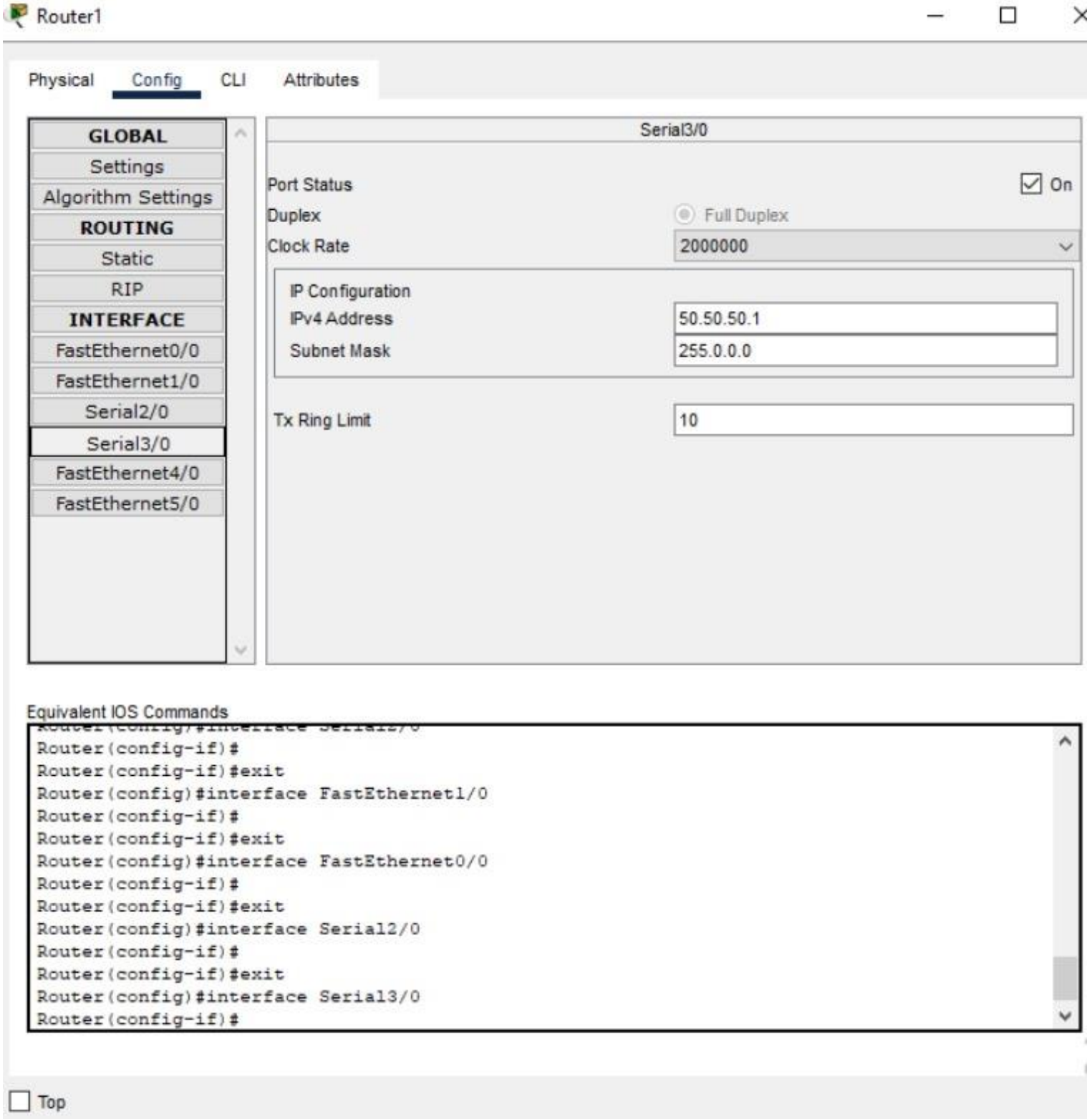
Equivalent IOS Commands

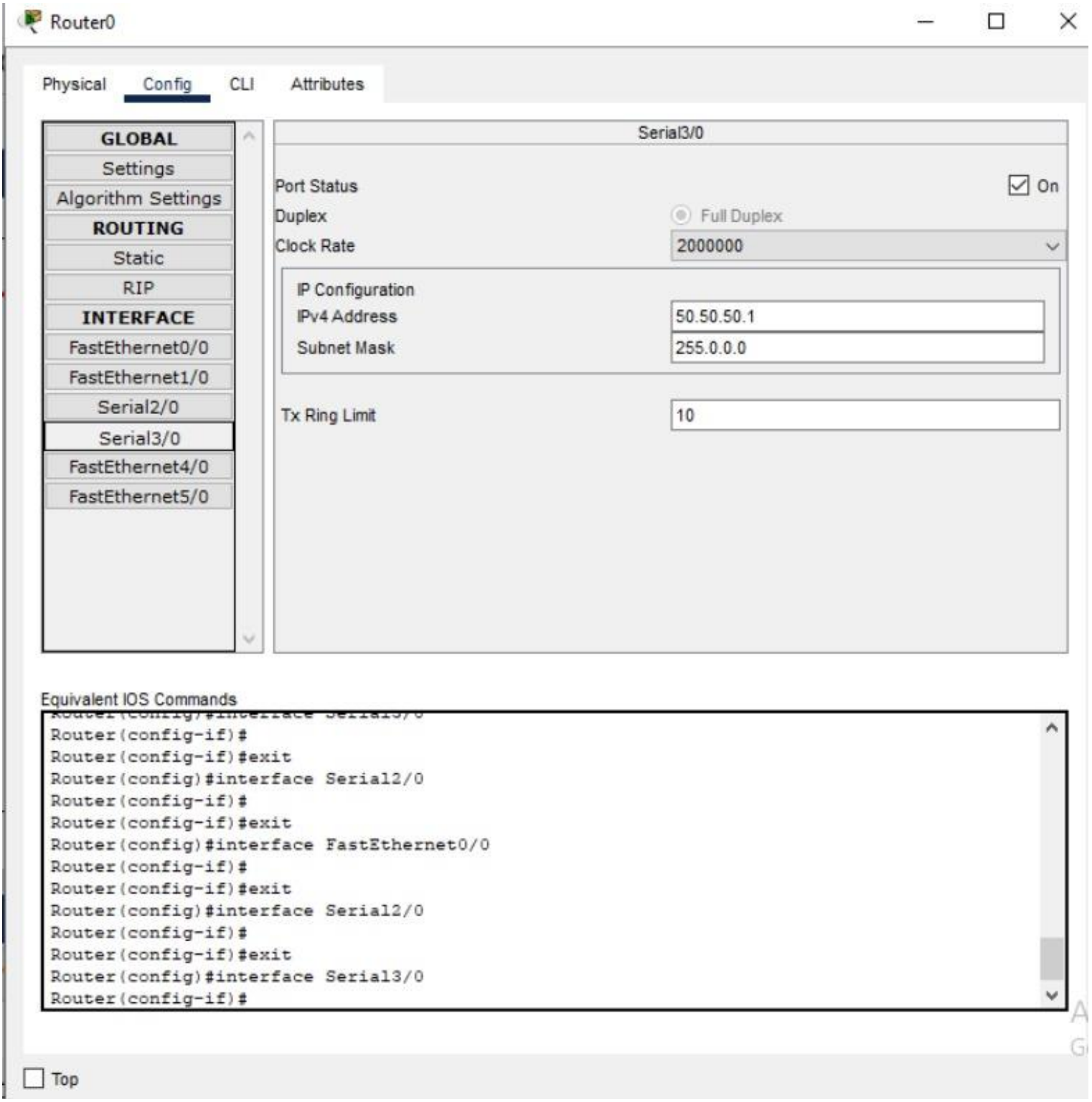
```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%BGP-5-ADJCHANGE: neighbor 50.50.50.1 Up


Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
```

Top


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
FastEthernet0/0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.42D4.4C09
IP Configuration
IPv4 Address
10.10.10.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%BGP-5-ADJCHANGE: neighbor 40.40.40.2 Up
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Top


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Serial3/0
Port Status
On
Duplex
Full Duplex
Clock Rate
2000000
IP Configuration
IPv4 Address
50.50.50.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Top


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Serial3/0
Port Status
On
Duplex
Full Duplex
Clock Rate
2000000
IP Configuration
IPv4 Address
50.50.50.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Top