RIP - Routing Information Protocol

We use RIP to config routers

It is a distance vector routing protocol

knows only neighbours. It doesn't know entire topology Routing by rumors

But Rip routing to neighbour

It doesn't support classless network (CIDR) Version 2 supports CIDR & VLSM. It will update information every 30 s. It sends routing table

PPP - point to point protcol
for serial clock connections

encapsulation ppp for serial interfaces only
clock rate only for clock interfaces

To configure RIP protcol
click on router 1 → enable → config terminal
router rip
network 10.0.0.0
network 20.0.0.0
exit

for router 2
same commands
except
network 20.0.0.0
30.0.0.0

for router 3
network 30.0.0.0
network 40.0.0.0

→ RIP is configured in all the routers

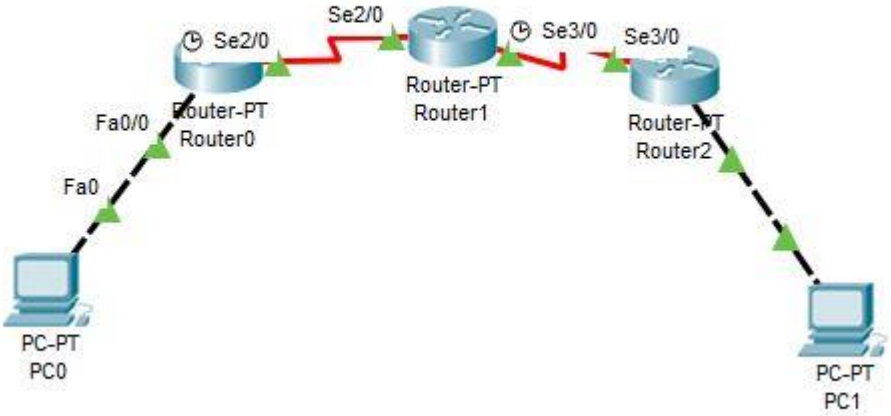
To check if router is collecting routing info
command:- show ip route

to config PC

Fast Ethernet0 - 10.0.0.10

1. Gateway - 10.0.0.1
   IP:
2. 40.0.0.10

Gateway - 40.0.0.1



IOS Command Line Interface

```
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip address 10.0.0.1 255.0.0.0
                  ^
% Invalid input detected at '^' marker.

Router(config)#ip address 10.0.0.1 255.0.0.0
                  ^
% Invalid input detected at '^' marker.

Router(config)#interface fastetherner2/0
                                    ^
% Invalid input detected at '^' marker.

Router(config)#interface fa0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
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
exit
Router(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config)#interface fa0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
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
exit
Router(config)#config terminal
%Invalid hex value
Router(config)#interface se2/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#wxit
                  ^
% Invalid input detected at '^' marker.

Router(config-if)#
```

Ctrl+F6 to exit CLI focus Copy Paste

] Top

Router1

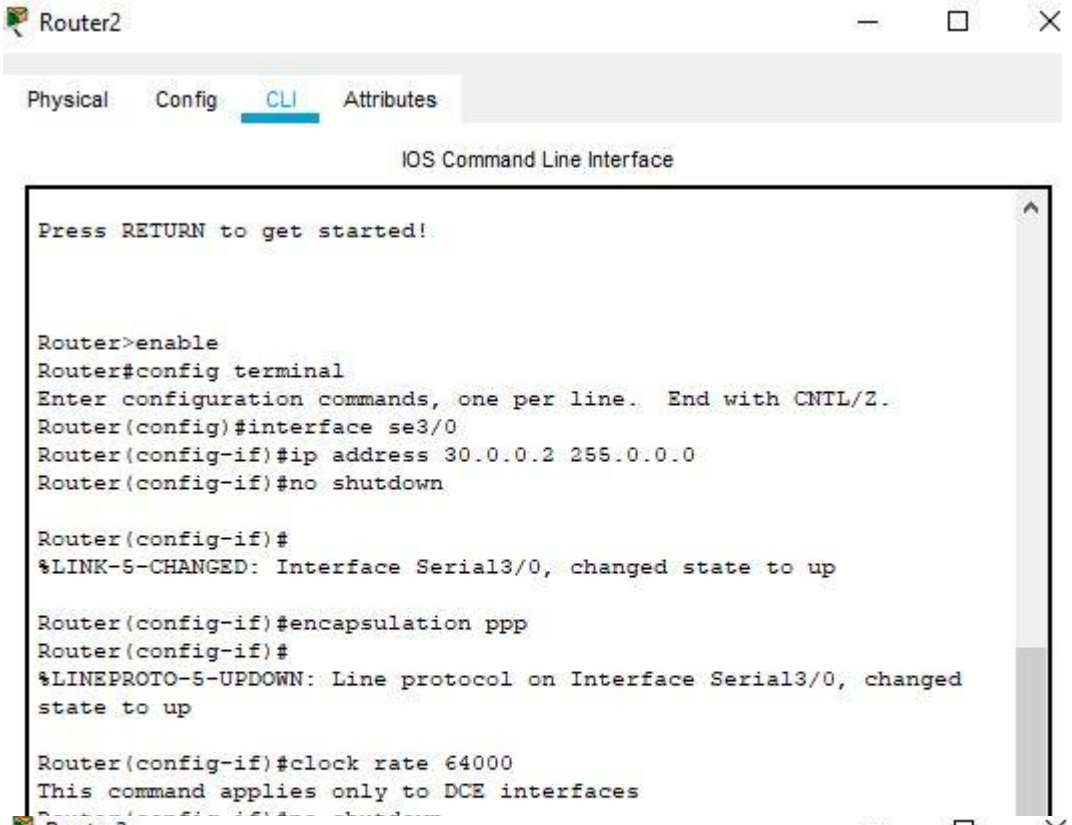
Physical Config CLI Attributes

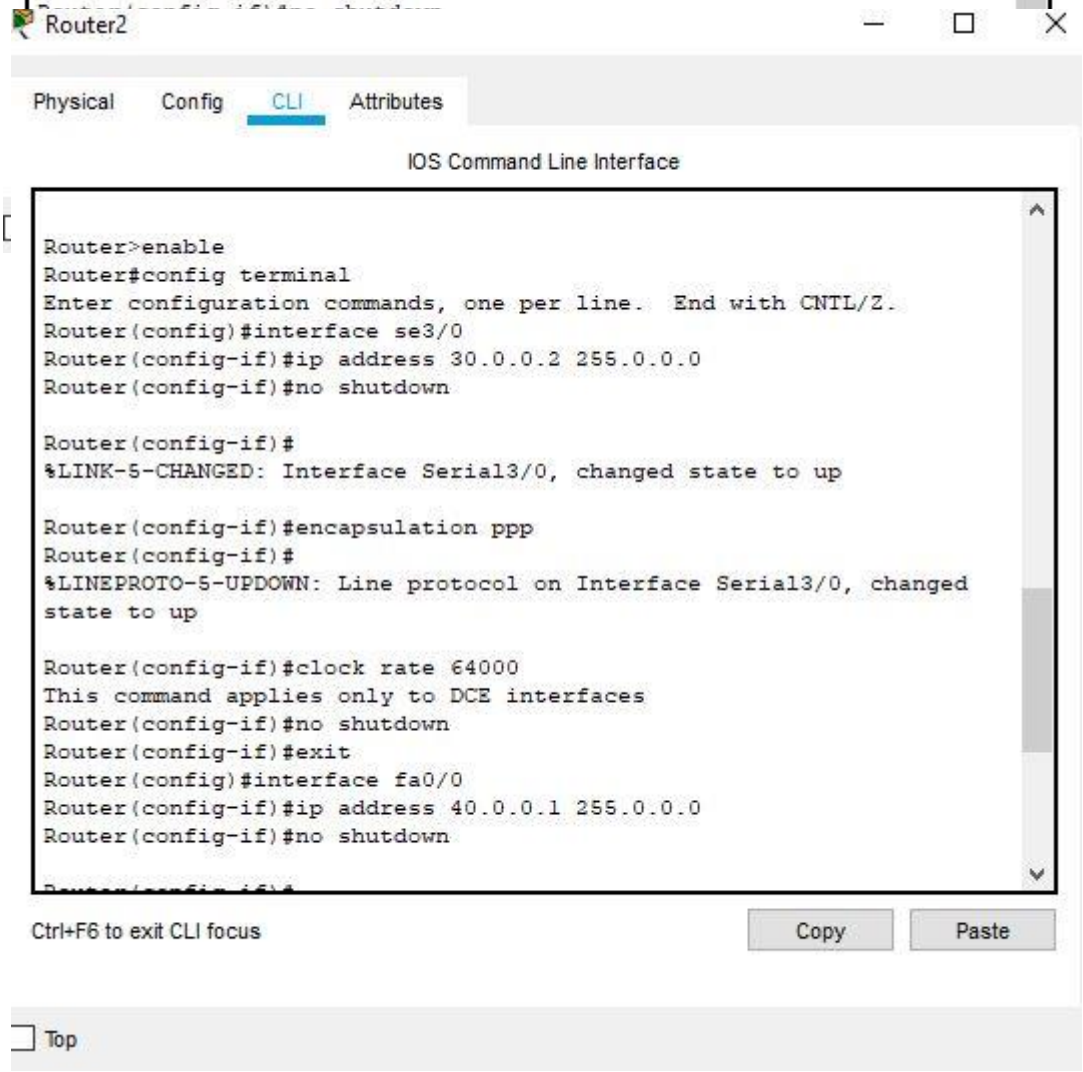
IOS Command Line Interface

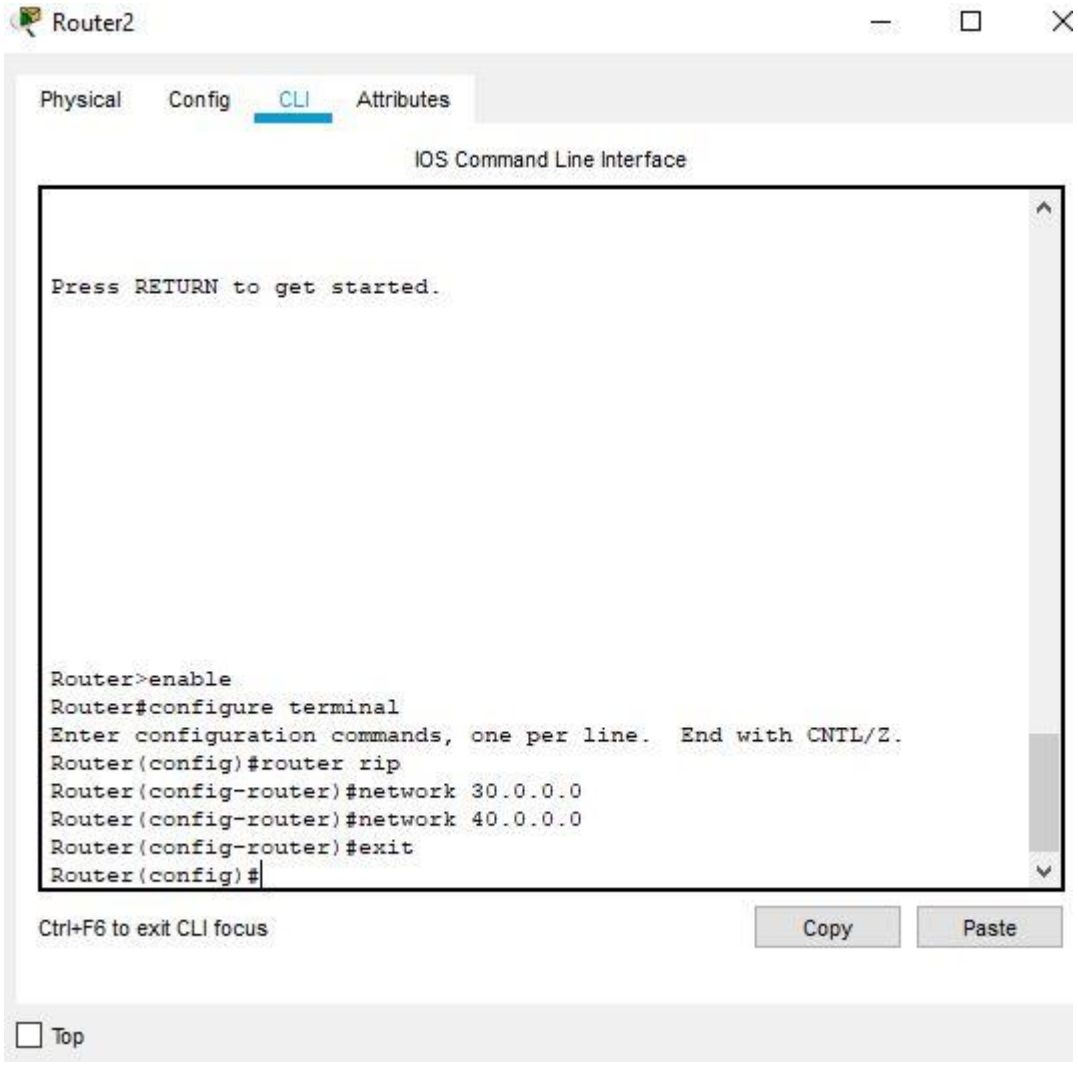
```
Would you like to enter the initial configuration dialog? [yes/no]:
no


Press RETURN to get started!



Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface se2/0
Router(config-if)#ip address 20.0.0.2 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed
state to up
exit
Router(config)#
```

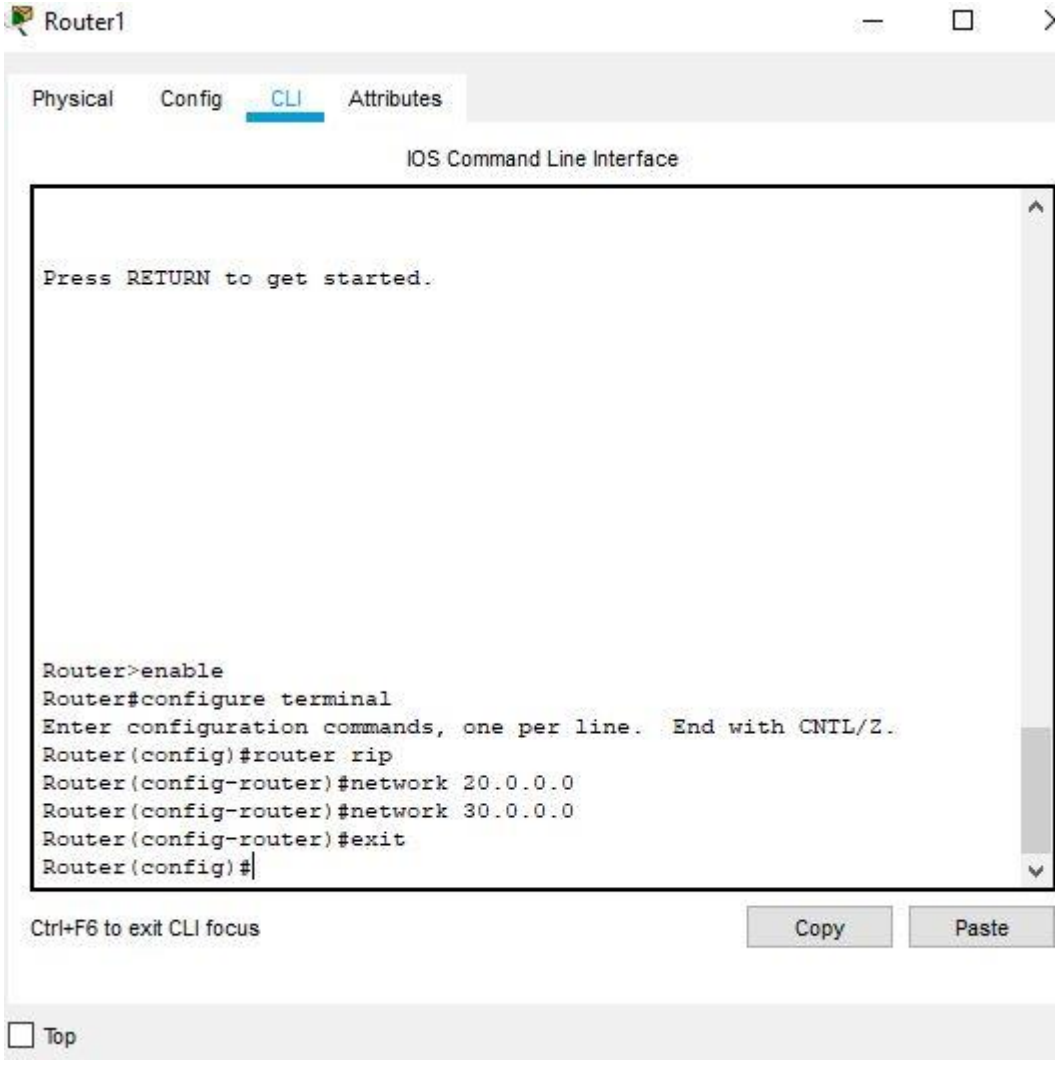
Ctrl+F6 to exit CLI focus Copy Paste

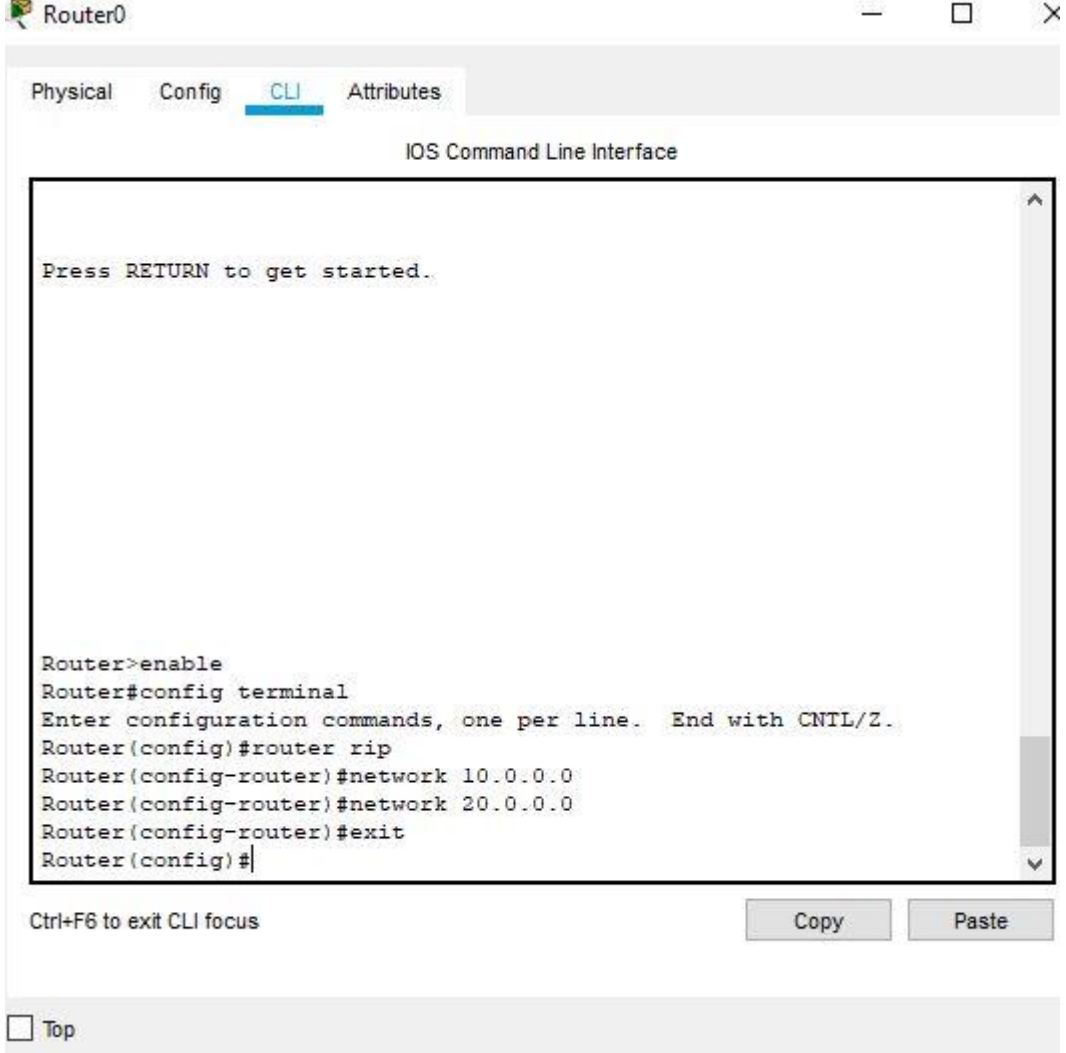
Top

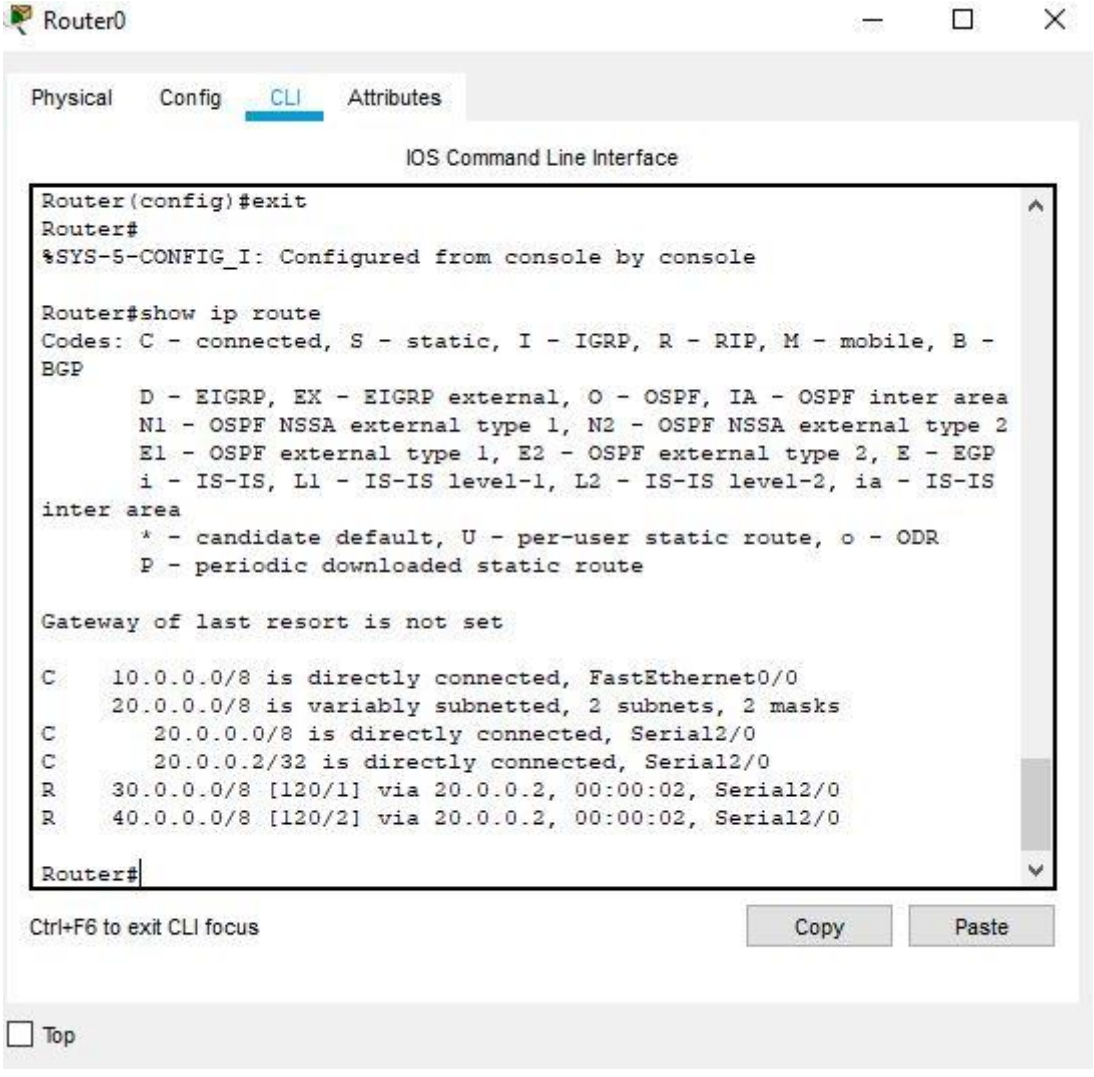

Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface se3/0
Router(config-if)#ip address 30.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
Router(config-if)#encapsulation ppp
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed
state to up
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces

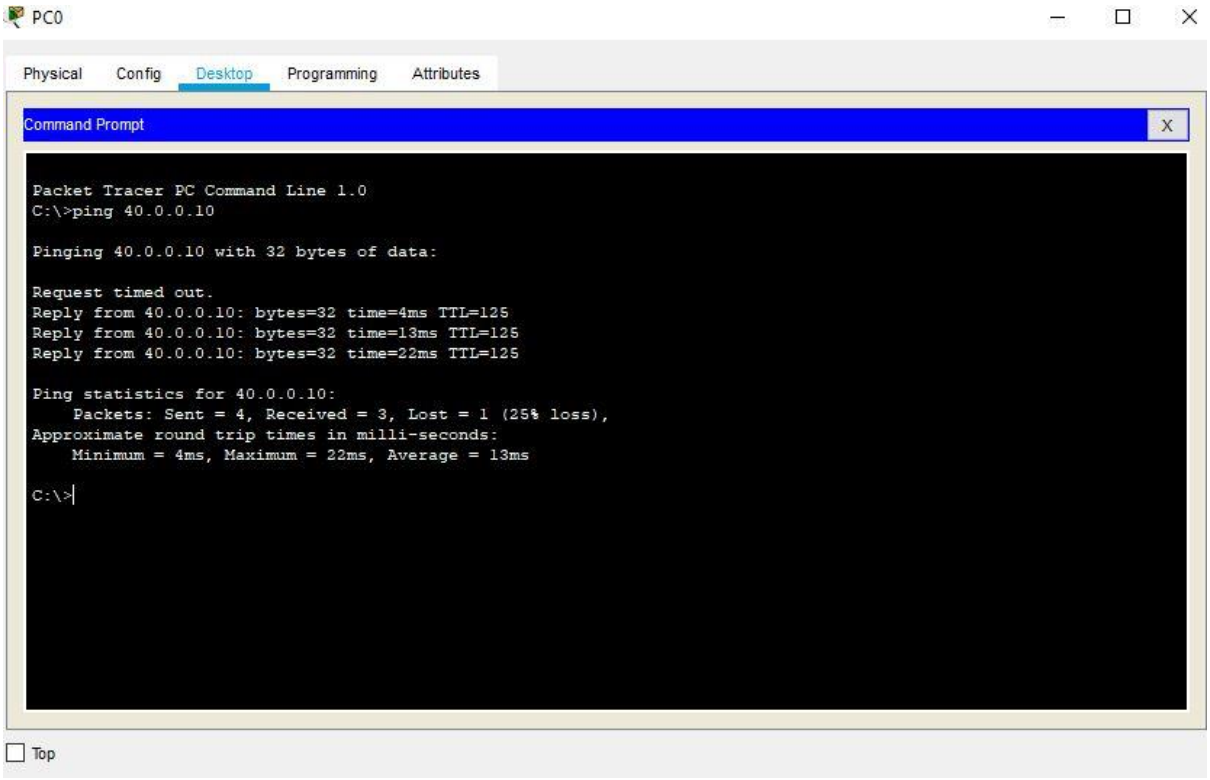

Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface se3/0
Router(config-if)#ip address 30.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
Router(config-if)#encapsulation ppp
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed
state to up
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fa0/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

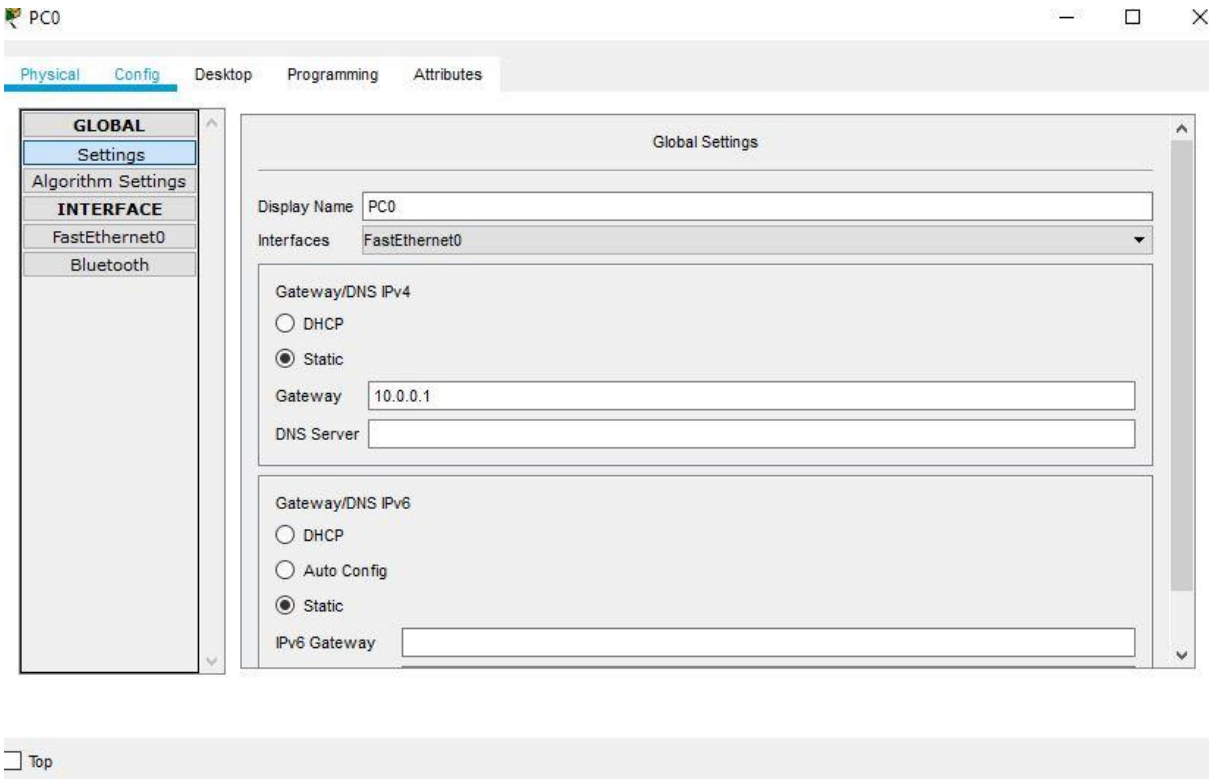

Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started.
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 30.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#exit
Router(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

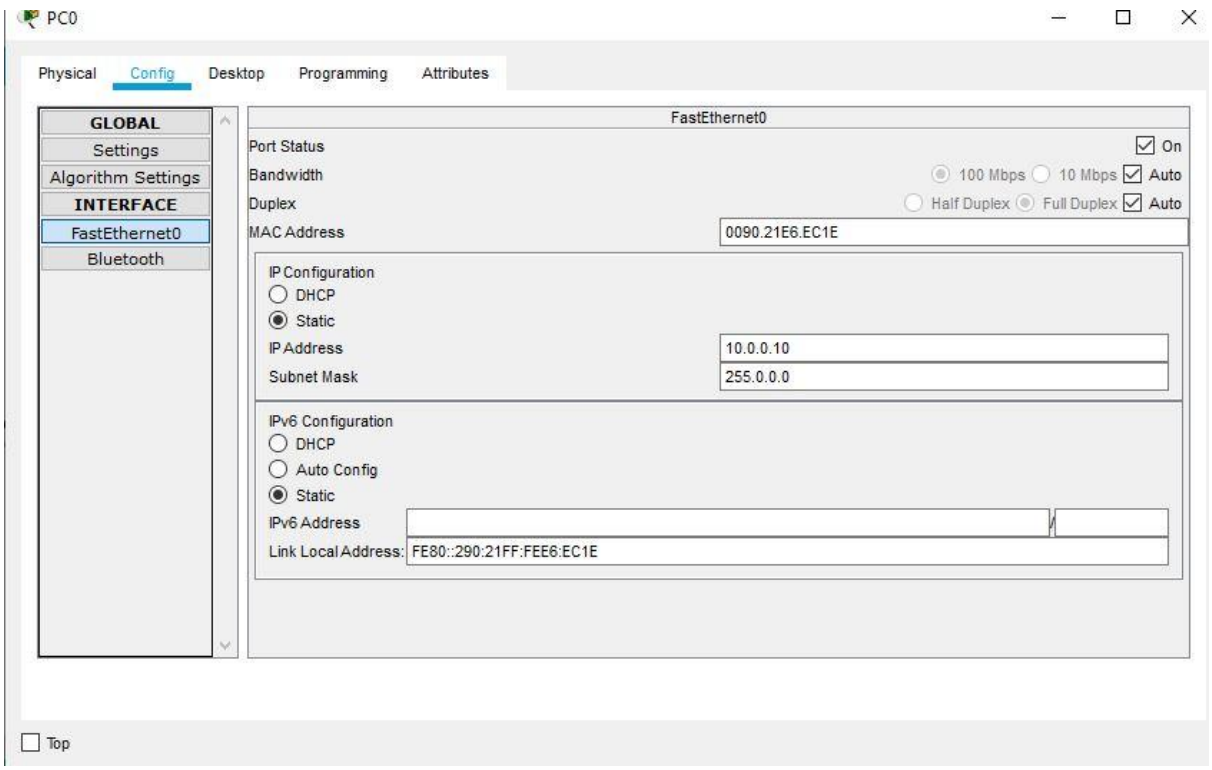

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started.
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#exit
Router(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

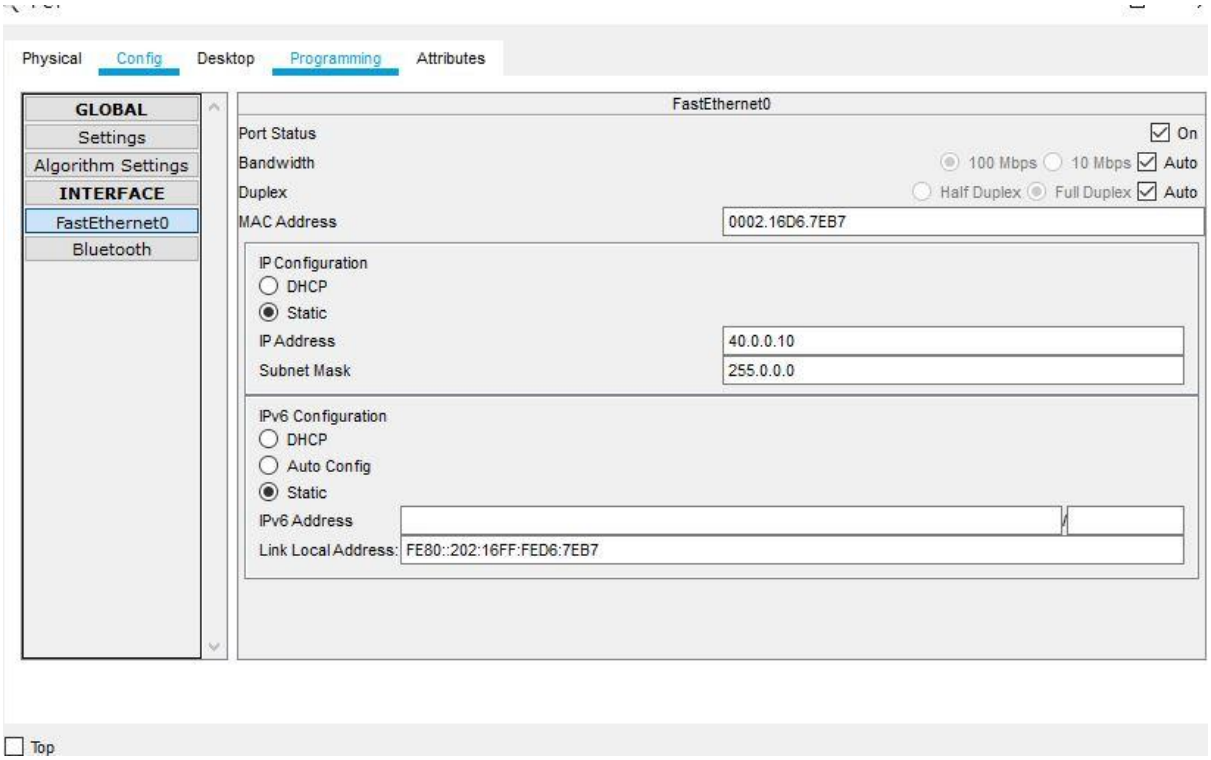

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started.
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

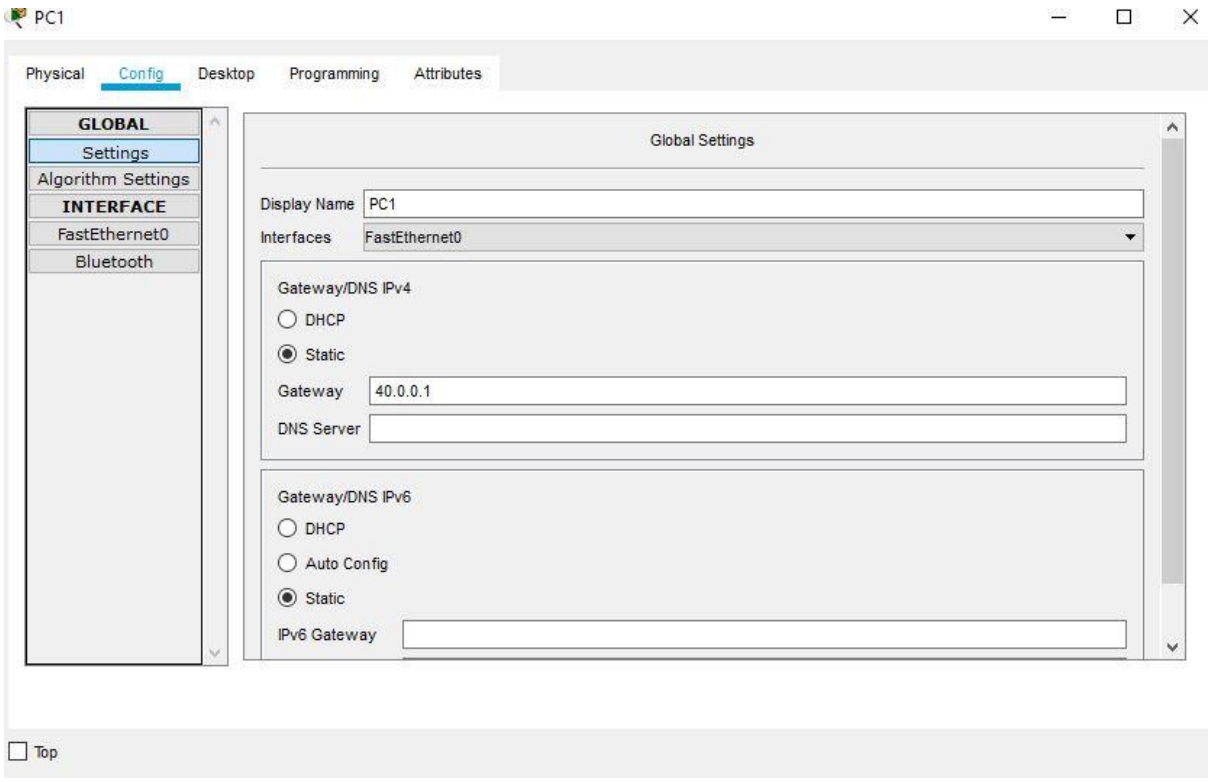

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B -
BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
C 10.0.0.0/8 is directly connected, FastEthernet0/0
20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 20.0.0.0/8 is directly connected, Serial2/0
C 20.0.0.2/32 is directly connected, Serial2/0
R 30.0.0.0/8 [120/1] via 20.0.0.2, 00:00:02, Serial2/0
R 40.0.0.0/8 [120/2] via 20.0.0.2, 00:00:02, Serial2/0
Router#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 40.0.0.10
Pinging 40.0.0.10 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.10: bytes=32 time=4ms TTL=125
Reply from 40.0.0.10: bytes=32 time=13ms TTL=125
Reply from 40.0.0.10: bytes=32 time=22ms TTL=125
Ping statistics for 40.0.0.10:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 4ms, Maximum = 22ms, Average = 13ms
C:\>
Top


PC0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC0
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Gateway
10.0.0.1
DNS Server
Gateway/DNS IPv6
DHCP
Auto Config
Static
IPv6 Gateway
Top


PC0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0090.21E6.EC1E
IP Configuration
DHCP
Static
IP Address
10.0.0.10
Subnet Mask
255.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::290:21FF:FEE6:EC1E
Top


Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0002.16D6.7EB7
IP Configuration
DHCP
Static
IP Address
40.0.0.10
Subnet Mask
255.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::202:16FF:FED6:7EB7
Top


PC1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC1
Interfaces
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Gateway/DNS IPv4
DHCP
Static
Gateway
40.0.0.1
DNS Server
Gateway/DNS IPv6
DHCP
Auto Config
Static
IPv6 Gateway
Top