Bafna Gold

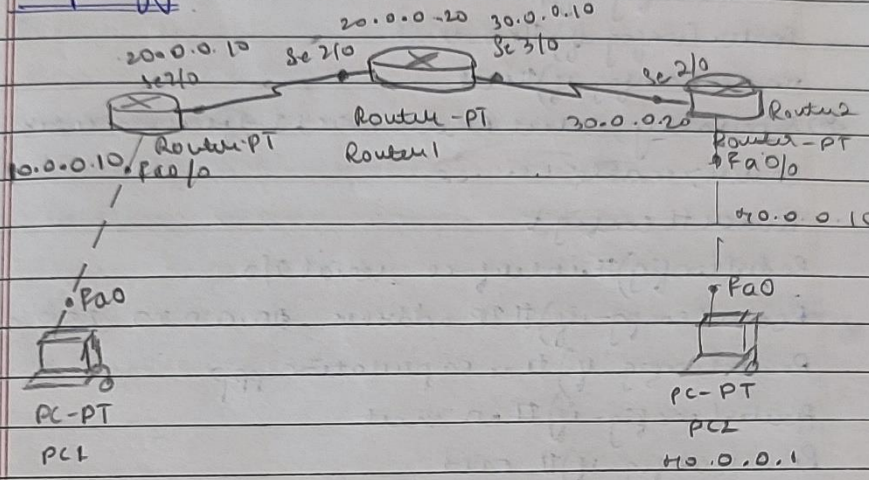
Date: Page:

6/7/23.

Experiment -6

Aim: To configure RIP routing Protocol in Routers

Topology:



Procedure

1) Select 2 PCs, 3 routers and drop them to the workspace. Set the IP address for PC1
2) select PC → config → fastethernet → IP address set as 10.0.0.1 and, global → settings → gateway as 10.0.0.10 similarly set IP address for PC2 as 40.0.0.1 and gateway for 40.0.0.10.
3) Connect the two pcs to the routers using copper cross over connection and routers with serial DCE the cable with clock.
4) select Router 0 → CLI, enter no, press enter

```
Router#enable
Router#config t
Router(config)#interface fastethernet 0/0
Router(config-if)#IP address 10.0.0.10 255.0.0.0
Router(config-if)#no shut
Router(config-if)#exit
```

Router(config)# interface serial 2/0
Router(config-if)# IP address 20.0.0.10 255.0.0.0
Router(config-if)# encapsulation ppp
Router(config-if)# clock rate 64000
Router(config-if)# no shut
Router(config-if)# exit
*) Similarly, select Router1 → CLI → press no enter.
Router> enable
Router# config t
Router(config)# interface serial 2/0
Router(config-if)# IP address 20.0.0.20 255.0.0.0
Router(config-if)# encapsulation ppp
Router(config-if)# no shut
Router(config-if)# exit
Router(config)# interface serial 3/0
Router(config-if)# IP address 30.0.0.10 255.0.0.0
Router(config-if)# encapsulation ppp
Router(config-if)# clock rate 64000
Router(config-if)# no shut
Router(config-if)# exit
*) select Router2 → CLI → type no press enter
Router> enable
Router# Config t
Router(config)# interface serial2/0
Router(config-if)# IP address 30.0.0.20 255.0.0.0
Router(config-if)# encapsulation ppp
Router(config-if)# no shut
Router(config-if)# exit
Router(config)# interface fastethernet 0/0
Router(config-if)# IP address 40.0.0.10 255.0.0.0
Router(config-if)# no shut
Router(config-if)# exit

Bafna Gold
Date: Page:

*) select Router0, CLI → when router is in config mode
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)#exit

*) select Router 1, CLI, To see IP rout (initially)
Router#show ip rout
Gateway of last resort is not set
C 20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 20.0.0.0/8 is directly connected serial 2/0
C 20.0.0.10/32 is directly connected, serial 2/0
30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 30.0.0.0/8 is directly connected, serial 3/0
C 30.0.0.20/32 is directly connected, serial 3/0

Router#config t
Router(config)#router rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#~~no rout~~ exit
Router(config)#exit

*) select Router 2, CLI
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)#exit

*) select Router 0
Router#show ip rout
C 10.0.0.0/8 is directly connected, fastethernet 0/0
C 20.0.0.0/8 is directly connected, serial 2/0

C 20.0.0.20/32 is directly connected, serial 2/0
R 30.0.0.0/8 [120/1] via 20.0.0.20, 00:00:16, serial 2/0
R 40.0.0.0/8 [120/2] via 20.0.0.20, 00:00:16, serial 2/0

* similarly for Router1
Router1#show ip rout.
R 10.0.0.0/8 [120/1] via 20.0.0.10, 00:00:21, serial 2/0
C 20.0.0.0/8 is directly connected, serial 2/0
C 20.0.0.10/32 is directly connected, serial 2/0
C 30.0.0.0/8 is directly connected, serial 3/0
C 30.0.0.20/32 is directly connected, serial 3/0
R 40.0.0.0/8 [120/1] via 30.0.0.20, 00:00:09 serial 3/0

* select Router2.
Router#show ip rout
R 10.0.0.0/8 [120/2] via 30.0.0.10, 00:00:26, serial 2/0
R 20.0.0.0/8 [120/1] via 30.0.0.10, 00:00:26, serial 2/0
C 30.0.0.0/8 is directly connected, serial 2/0
C 30.0.0.10/32 is directly connected, serial 2/0
C 40.0.0.0/8 is directly connected, FastEthernet 0/0

Ping output (Unreachable case)

Result :-

* select PC 1 with IP address 10.0.0.1
PC> ping 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=1ms TTL=125
Reply from 40.0.0.1: bytes=32 time=9ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent=4, Received=3, Lost=1 (25% loss),
Approximate round trip times in milli-seconds

Minimum = 2ms, Maximum = 11ms, Average = 7ms

PC > ping 10.0.0.1

pinging

Result:

PC > ping 10.0.0.1

pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes = 32 time = 2ms TTL = 125

Reply from 10.0.0.1: bytes = 32 time = 2ms TTL = 125

Reply from 10.0.0.1: bytes = 32 time = 2ms TTL = 125

Reply from 10.0.0.1: bytes = 32 time = 2ms TTL = 125

ping statistics for 10.0.0.1:

packets: sent = 4, Received = 4, Lost = 0 (0% Loss);

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 2 7ms, Average = 3ms

Similarly, peng from 10.0.0.1 to 10.0.0.1

Select PC2 → desktop - command prompt

PC > ping 10.0.0.1

pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes = 32 time = 2ms TTL = 12

Reply from 10.0.0.1: bytes = 32 time = 7ms TTL = 125

Reply from 10.0.0.1: bytes = 32 time = 17ms TTL = 12

Reply from 10.0.0.1: bytes = 32 time = 16ms TTL = 1

ping statistics for 10.0.0.1:

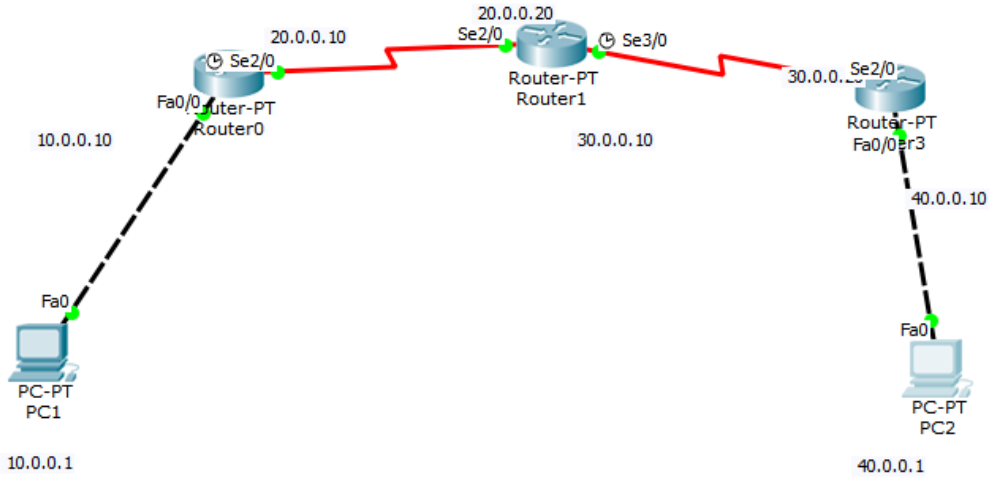
packets: sent = 4, Received = 4, Lost = 0 (0% loss);

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 17ms, Average = 10ms

10/10

23/7/23

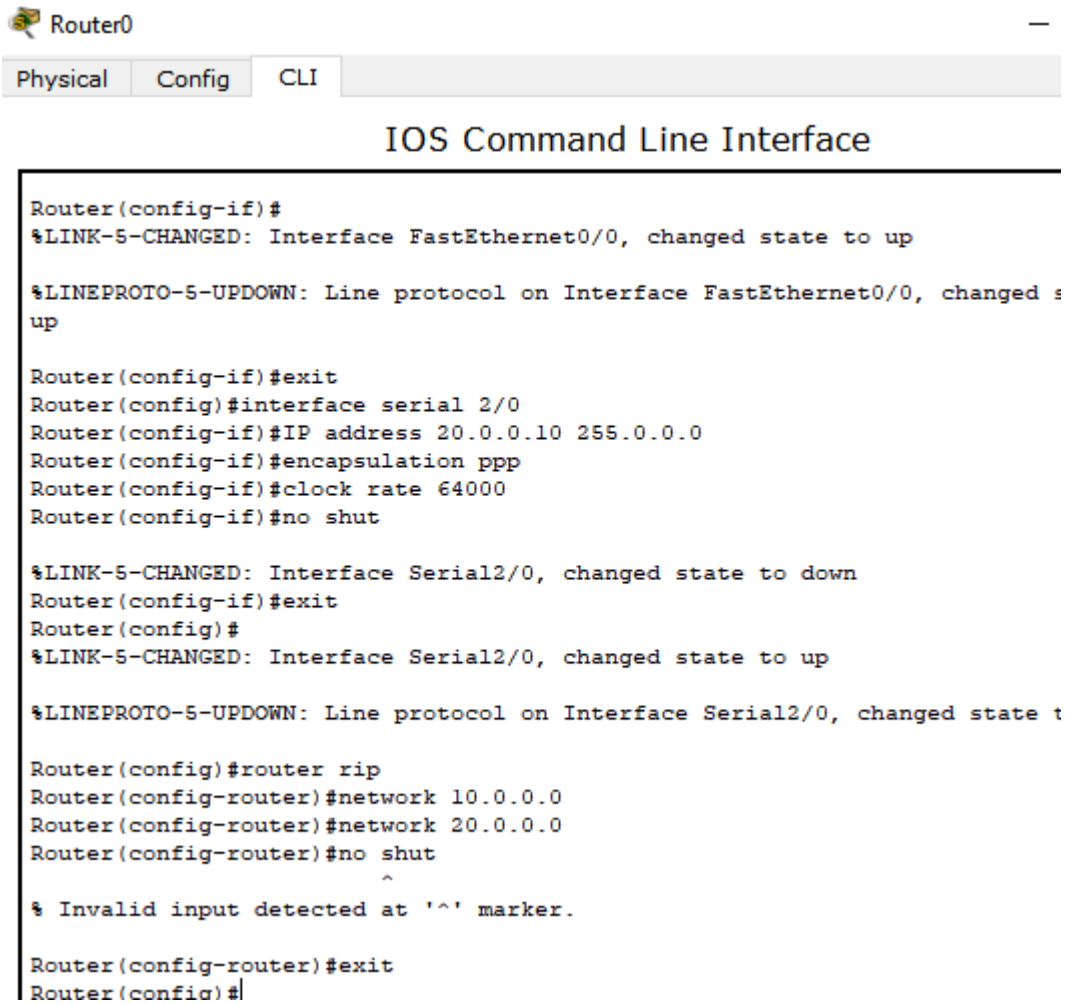


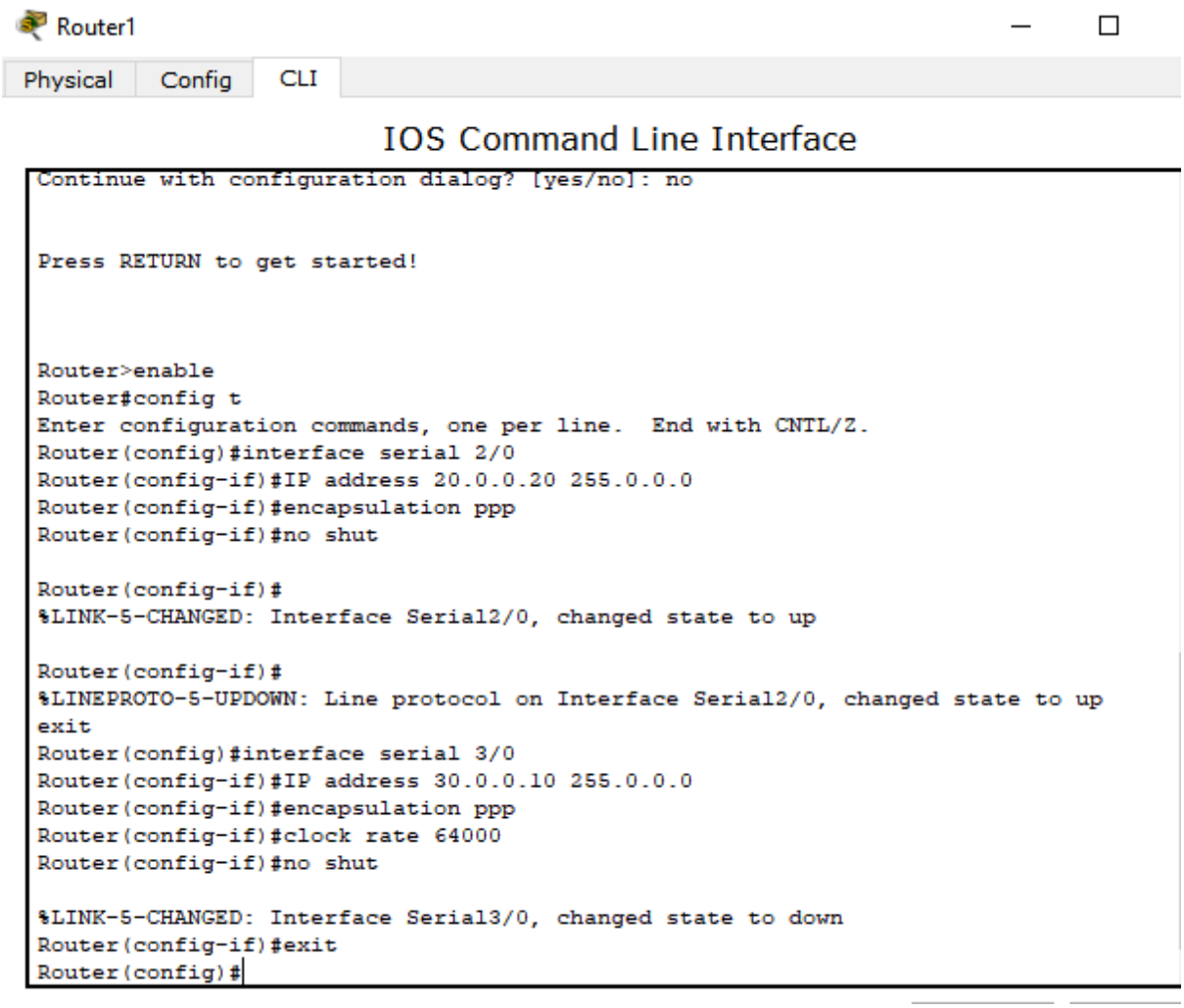
Router0

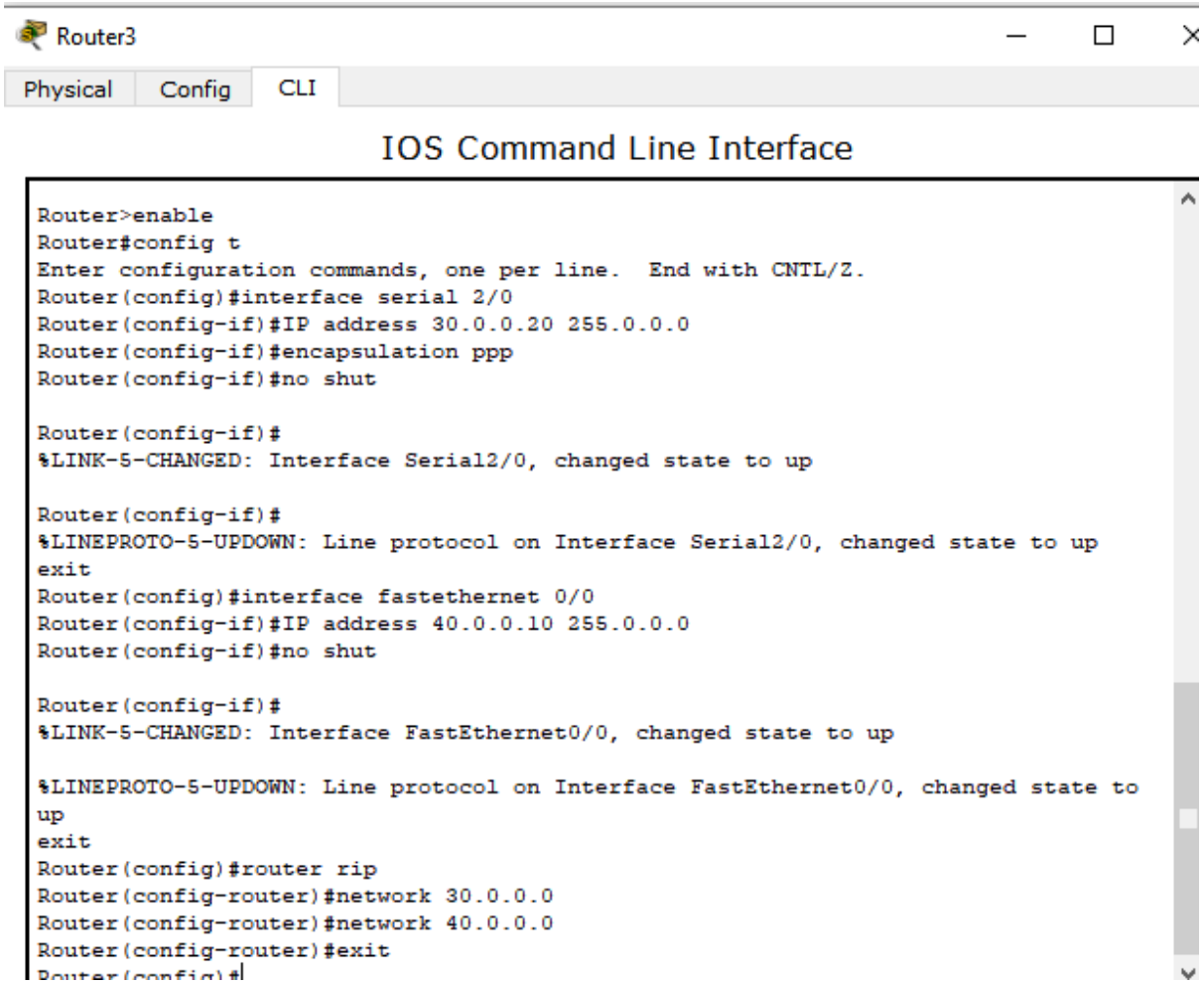
Physical | Config | CLI

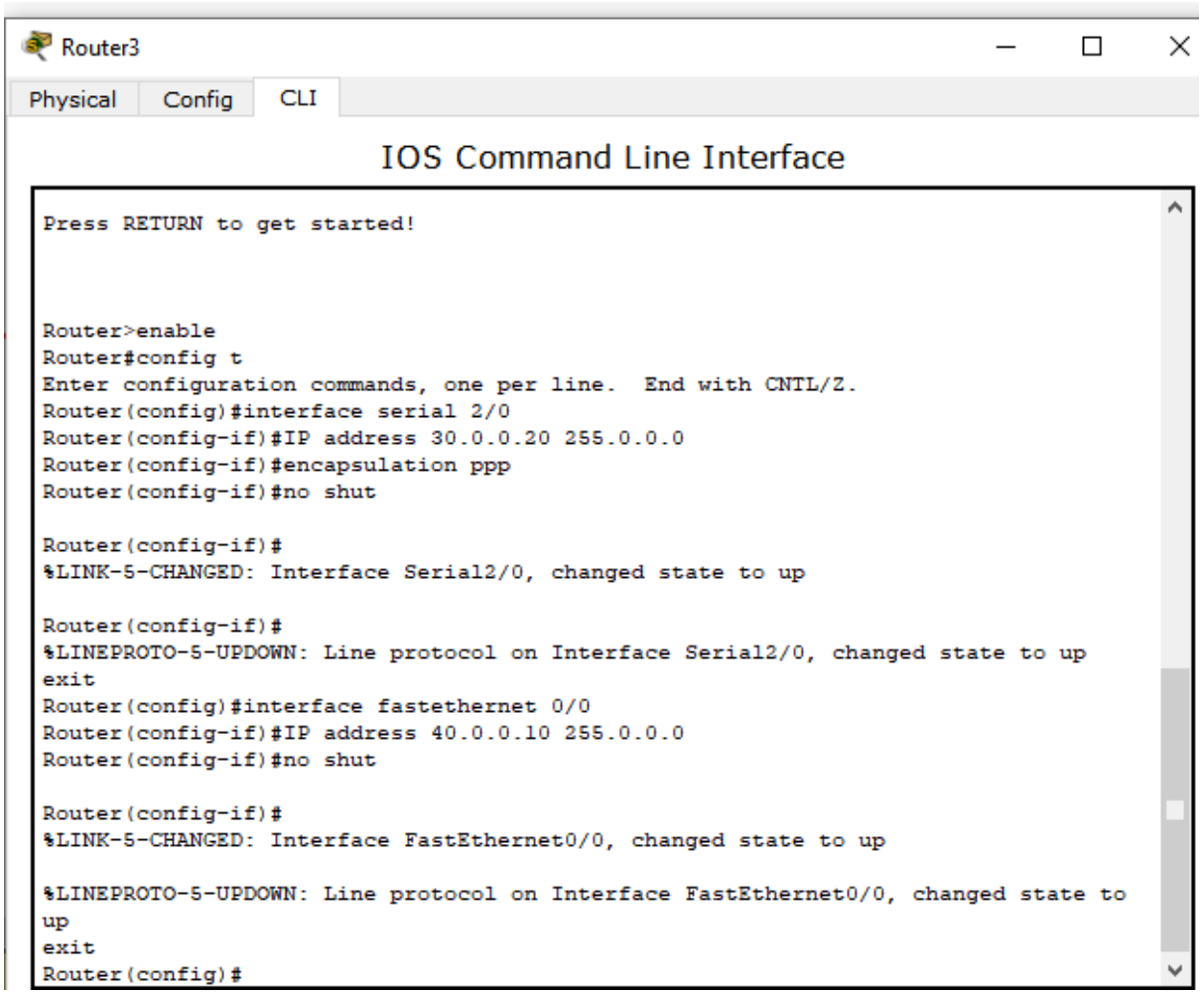
IOS Command Line Interface

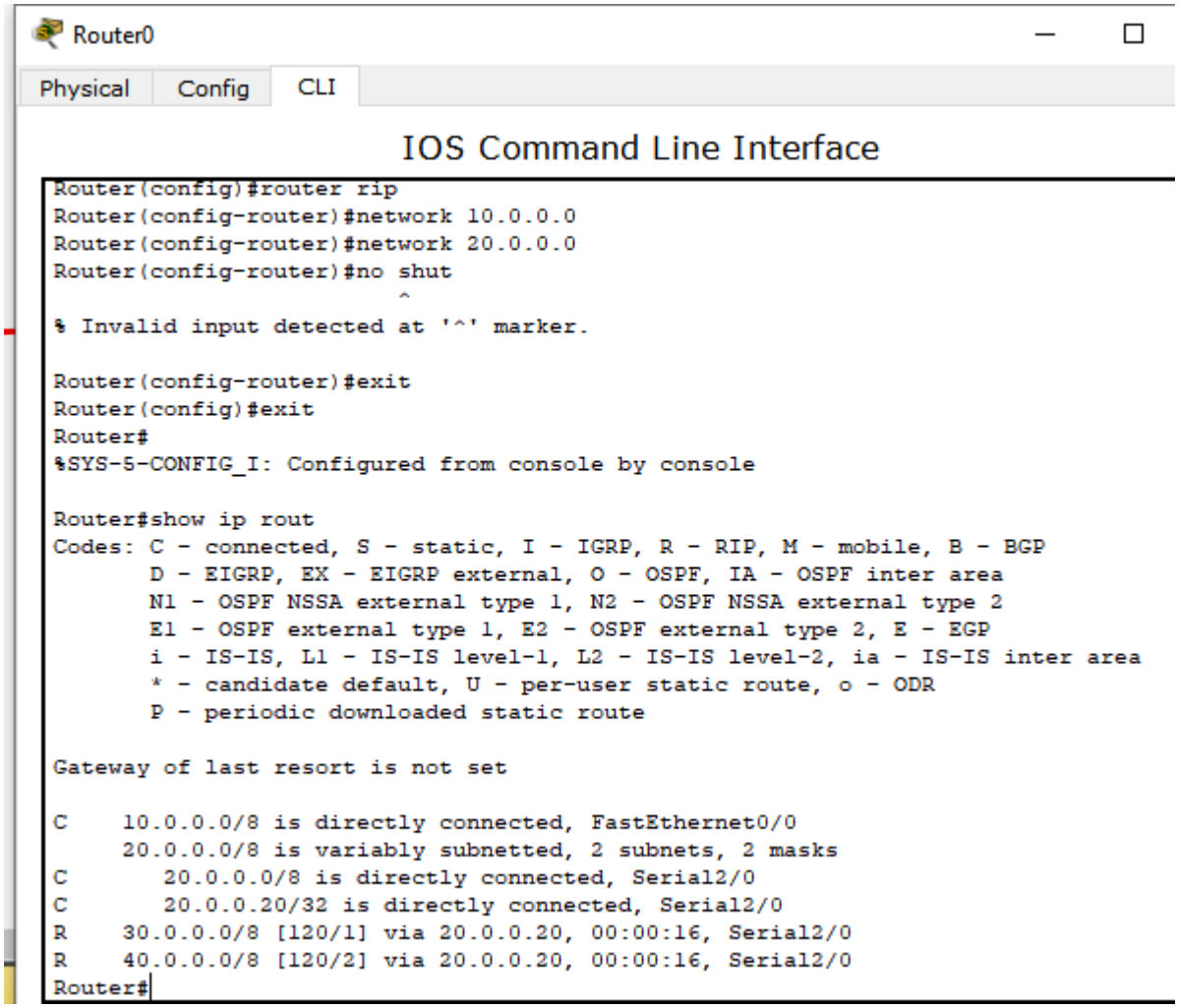
```
Continue with configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 10.0.0.10 255.0.0.0
Router(config-if)#no shut

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 serial 2/0
Router(config-if)#IP address 20.0.0.10 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut

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

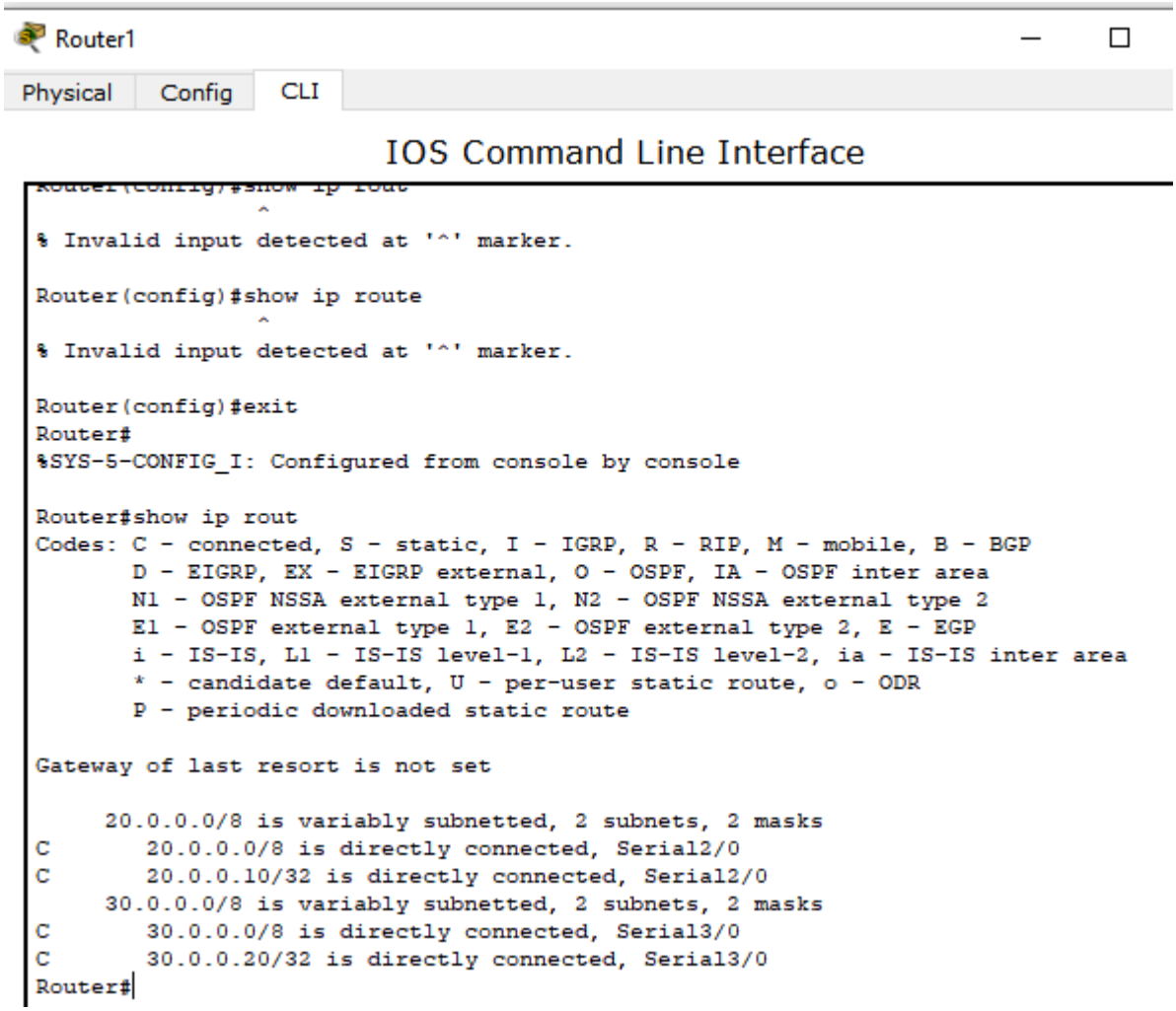

Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed s
up
Router(config-if)#exit
Router(config)#interface serial 2/0
Router(config-if)#IP address 20.0.0.10 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state t
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#no shut
^
% Invalid input detected at '^' marker.
Router(config-router)#exit
Router(config)#

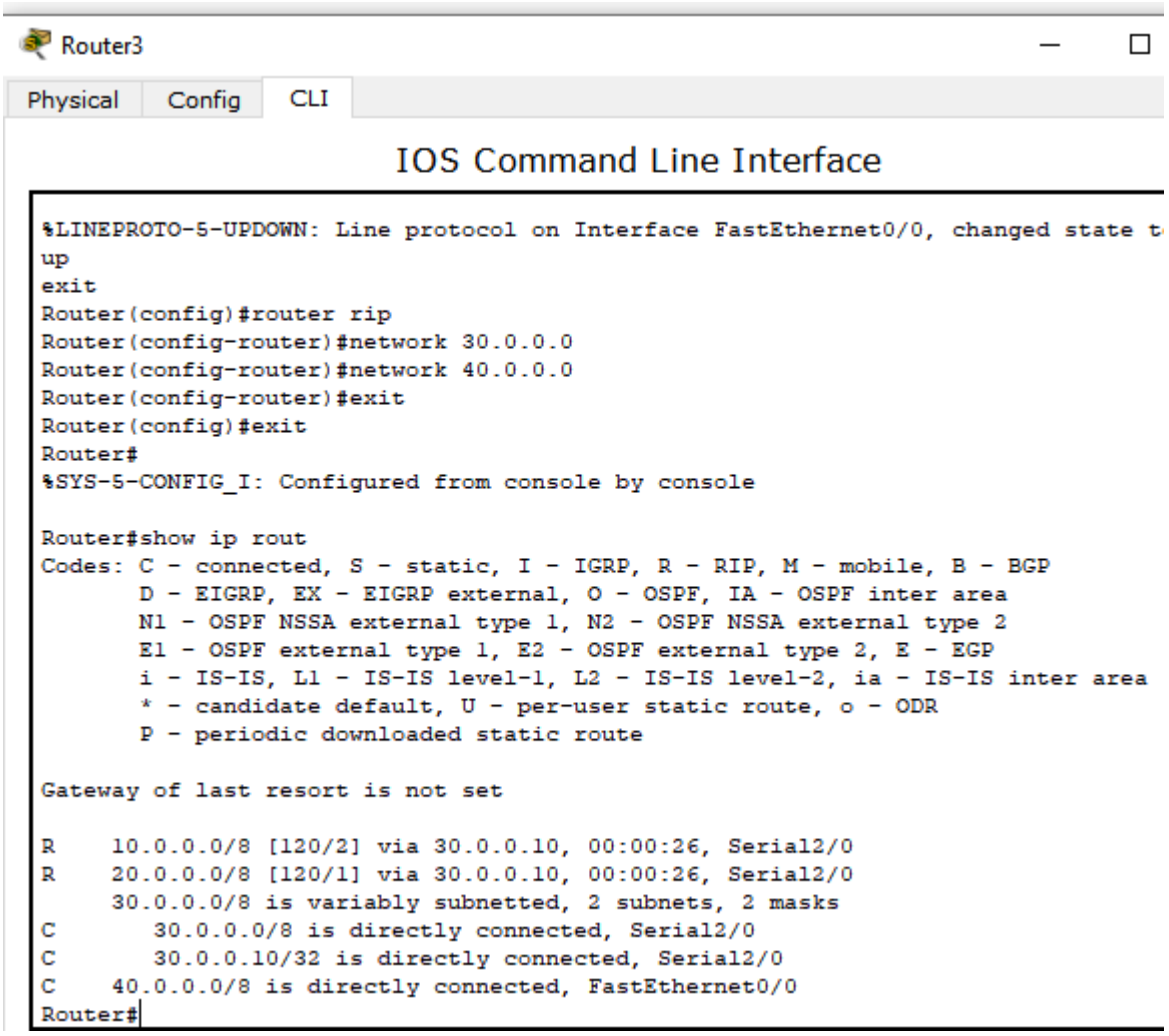

Router1
Physical
Config
CLI
IOS Command Line Interface
Continue with configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#IP address 20.0.0.20 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
exit
Router(config)#interface serial 3/0
Router(config-if)#IP address 30.0.0.10 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#exit
Router(config)#

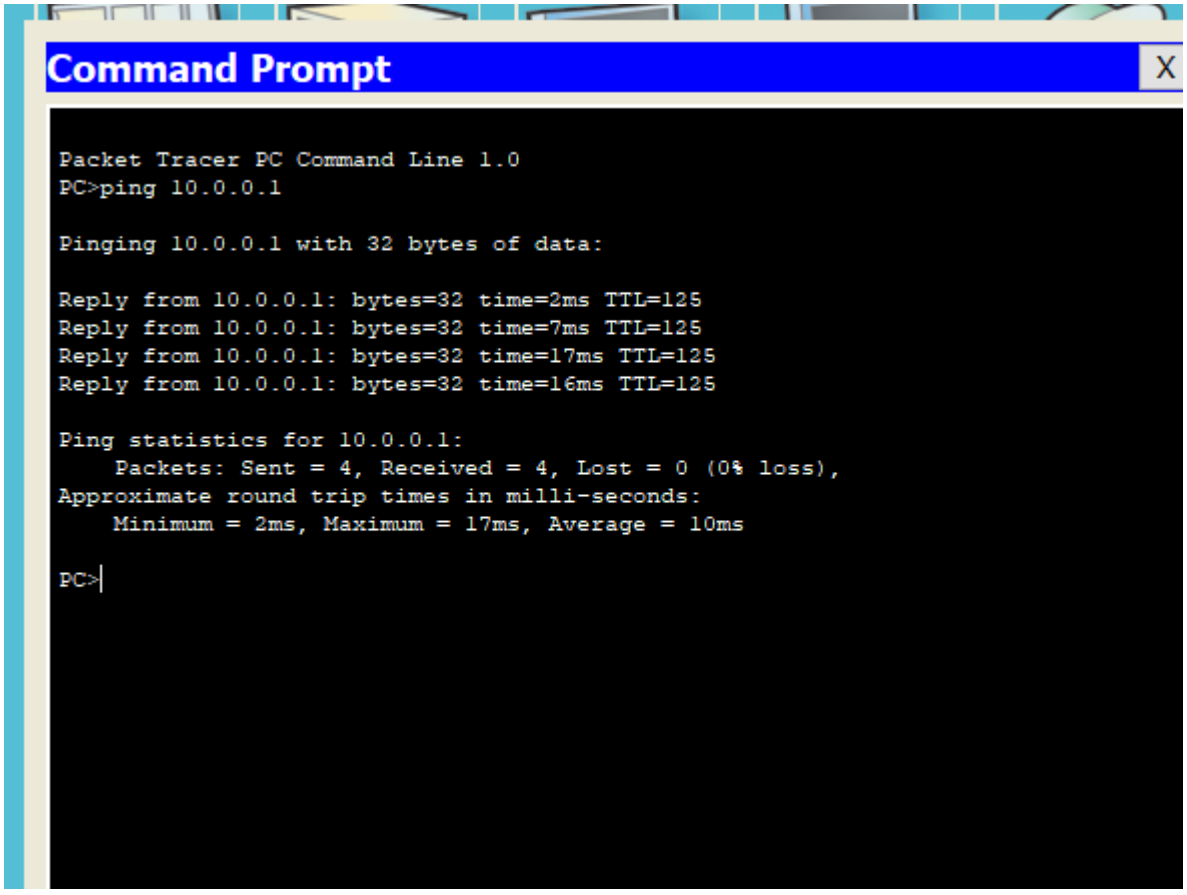

Router3
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#IP address 30.0.0.20 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
exit
Router(config)#interface fastethernet 0/0
Router(config-if)#IP address 40.0.0.10 255.0.0.0
Router(config-if)#no shut
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)#router rip
Router(config-router)#network 30.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#exit
Router(config)#

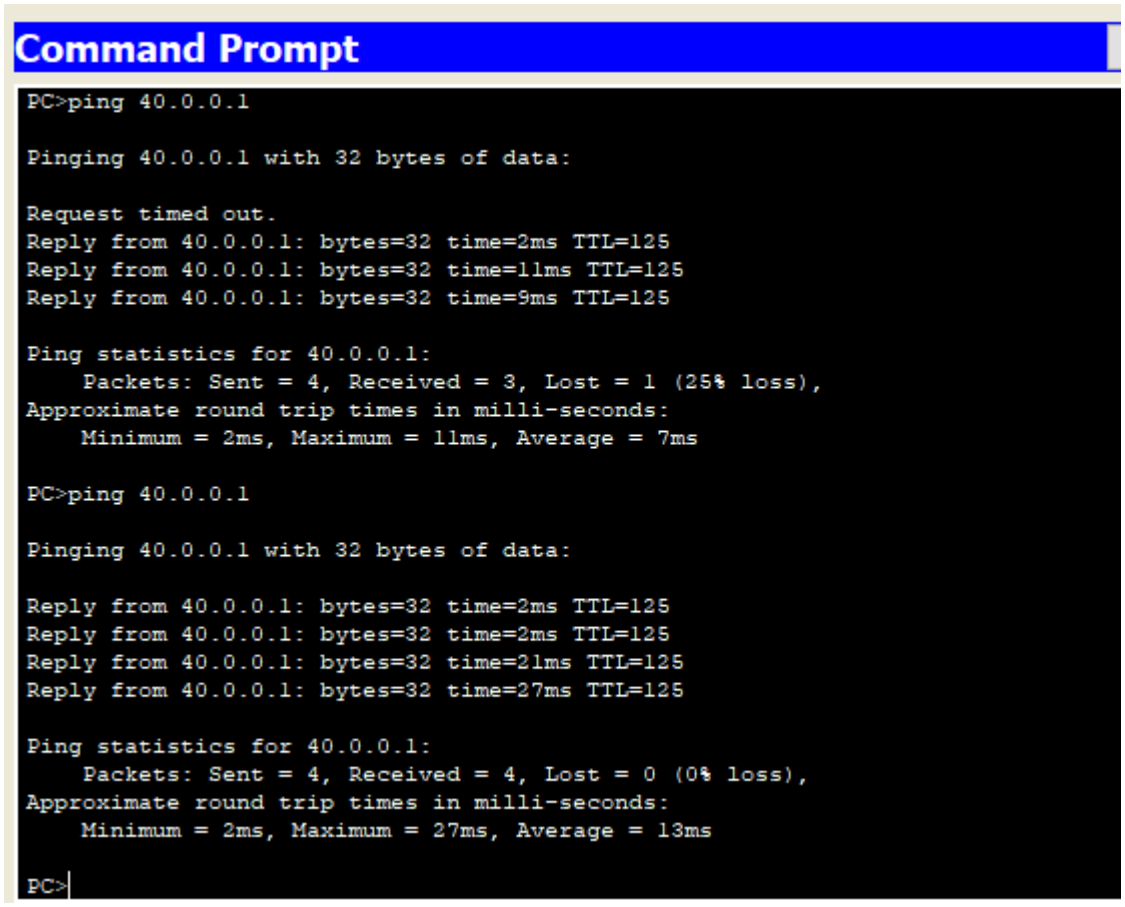

Router3
Physical
Config
CLI
IOS Command Line Interface
Press RETURN to get started!
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#IP address 30.0.0.20 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
exit
Router(config)#interface fastethernet 0/0
Router(config-if)#IP address 40.0.0.10 255.0.0.0
Router(config-if)#no shut
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)#


Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#no shut
^
% Invalid input detected at '^' marker.
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip rout
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 20.0.0.20/32 is directly connected, Serial2/0
R 30.0.0.0/8 [120/1] via 20.0.0.20, 00:00:16, Serial2/0
R 40.0.0.0/8 [120/2] via 20.0.0.20, 00:00:16, Serial2/0
Router#


Router1
Physical
Config
CLI
IOS Command Line Interface
^
% Invalid input detected at '^' marker.
Router(config)#show ip route
^
% Invalid input detected at '^' marker.
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip rout
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
20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 20.0.0.0/8 is directly connected, Serial2/0
C 20.0.0.10/32 is directly connected, Serial2/0
30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 30.0.0.0/8 is directly connected, Serial3/0
C 30.0.0.20/32 is directly connected, Serial3/0
Router#


Router3
Physical
Config
CLI
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state t
up
exit
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)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip rout
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
R 10.0.0.0/8 [120/2] via 30.0.0.10, 00:00:26, Serial2/0
R 20.0.0.0/8 [120/1] via 30.0.0.10, 00:00:26, Serial2/0
30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 30.0.0.0/8 is directly connected, Serial2/0
C 30.0.0.10/32 is directly connected, Serial2/0
C 40.0.0.0/8 is directly connected, FastEthernet0/0
Router#


Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=7ms TTL=125
Reply from 10.0.0.1: bytes=32 time=17ms TTL=125
Reply from 10.0.0.1: bytes=32 time=16ms TTL=125
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 17ms, Average = 10ms
PC>


Command Prompt
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=11ms TTL=125
Reply from 40.0.0.1: bytes=32 time=9ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 11ms, Average = 7ms
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=21ms TTL=125
Reply from 40.0.0.1: bytes=32 time=27ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 27ms, Average = 13ms
PC>