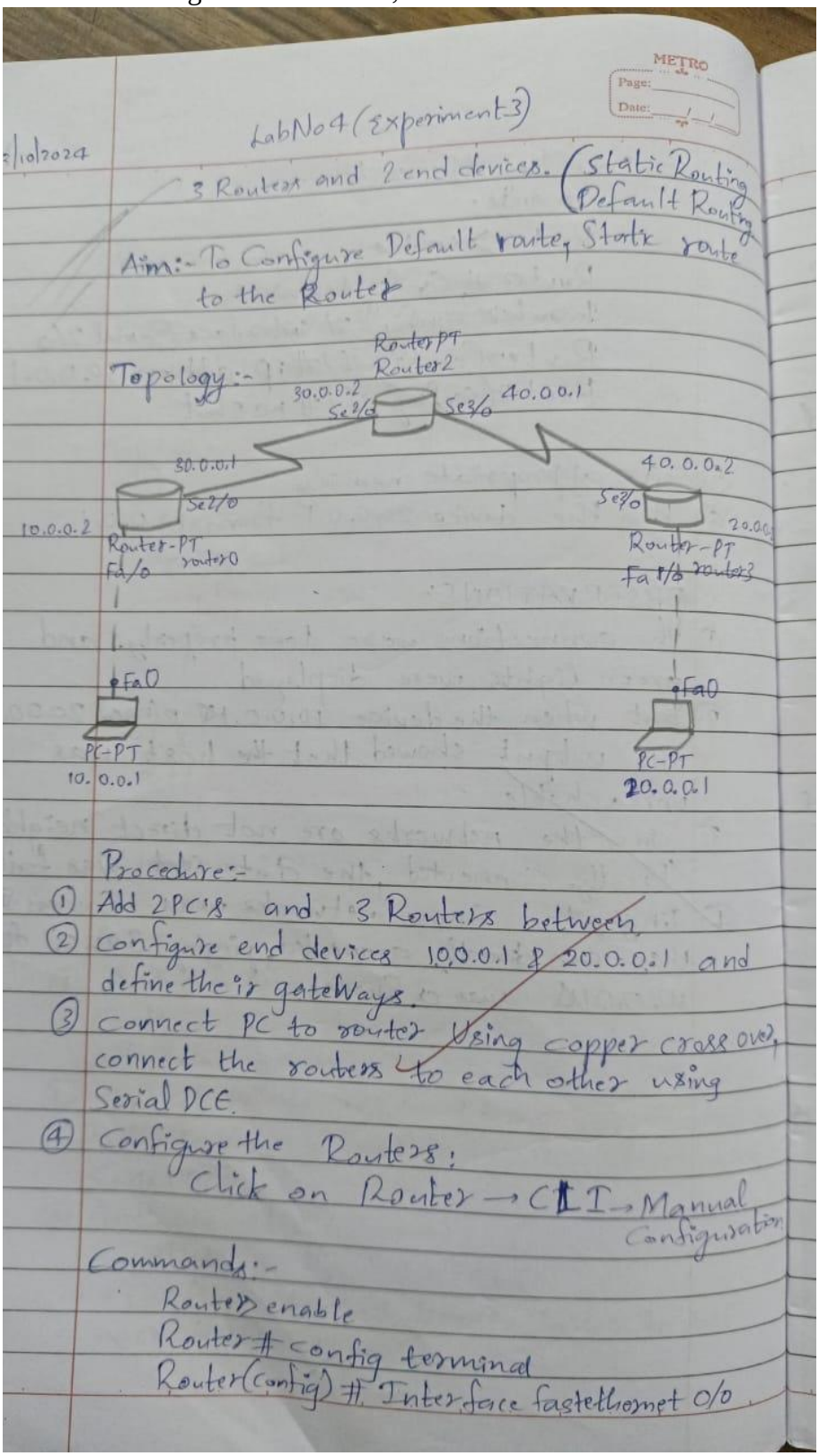
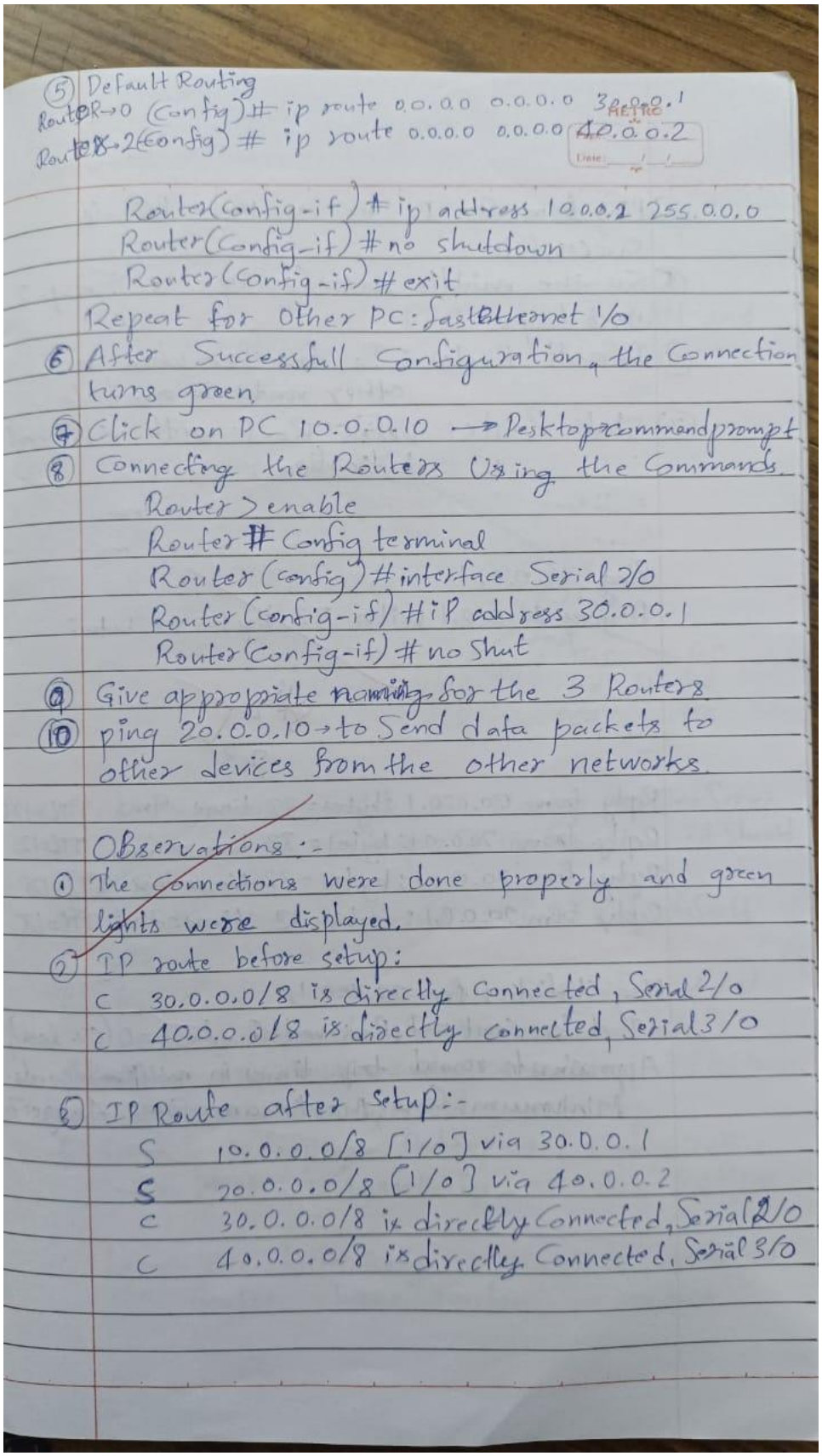
LABORATORY PROGRAM – 3

Configure default route, static route to the Router.





(5) Default Routing
Router(config)# ip route 0.0.0.0 0.0.0.0 30.0.0.1
Router(config)# ip route 0.0.0.0 0.0.0.0 40.0.0.2

Router(config-if)# ip address 10.0.0.1 255.0.0.0
Router(config-if)# no shutdown
Router(config-if)# exit
Repeat for other PC: FastEthernet 1/0

(6) After Successfull Configuration, the Connection turns green

(7) Click on PC 10.0.0.10 → Desktop → command prompt

(8) Connecting the Routers Using the Commands.
Router > enable
Router # Config terminal
Router(config)# interface Serial 2/0
Router(config-if)# IP address 30.0.0.1
Router(config-if)# no Shut

(9) Give appropriate naming for the 3 Routers.

(10) ping 20.0.0.10 → to Send data packets to other devices from the other networks.

Observations :-

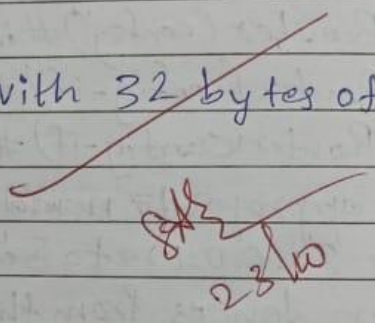
(1) The Connections were done properly and green lights were displayed.

(2) IP route before setup:
C 30.0.0.0/8 is directly Connected, Serial 2/0
C 40.0.0.0/8 is directly connected, Serial 3/0

(3) IP Route after setup:-
S 10.0.0.0/8 [1/0] via 30.0.0.1
S 20.0.0.0/8 [1/0] via 40.0.0.2
C 30.0.0.0/8 is directly Connected, Serial 2/0
C 40.0.0.0/8 is directly Connected, Serial 3/0

4. Ping from one pc to another PC is successfull
5. So the middle router (router 1) is setup 2 next hops.
6. Default Router : To transfer when no other router is available
7. Static Route : Define Route with assigned destination.

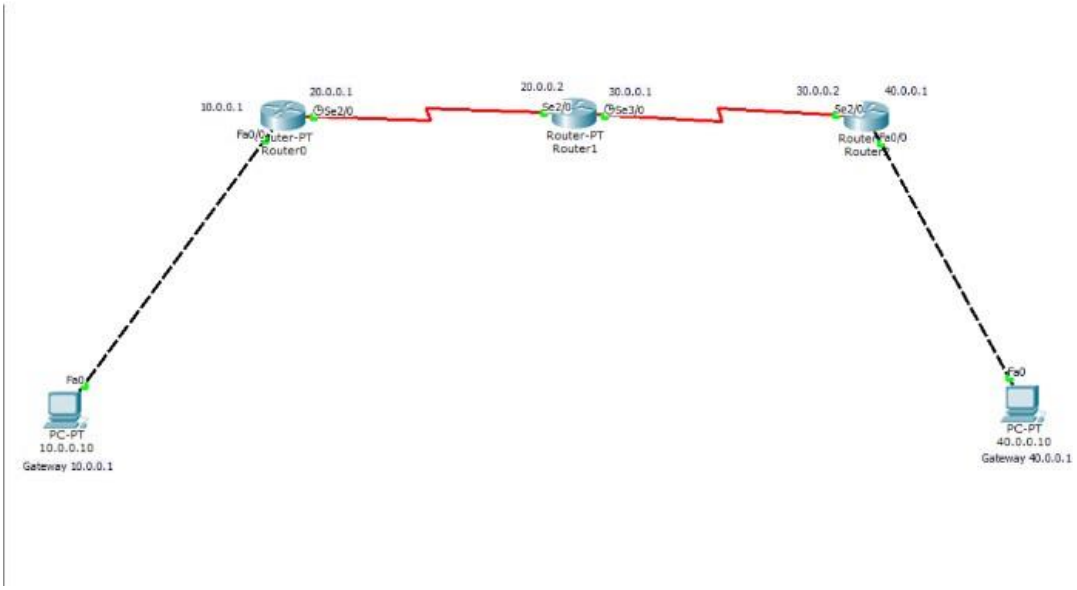
Ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:

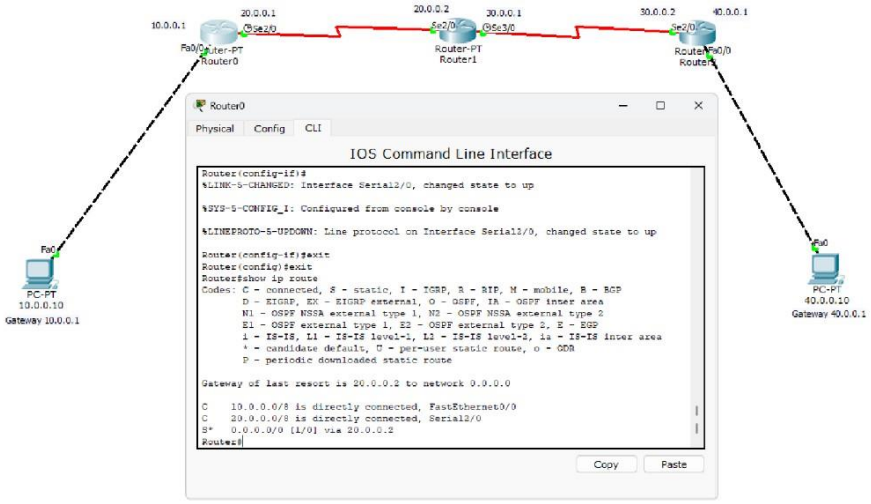


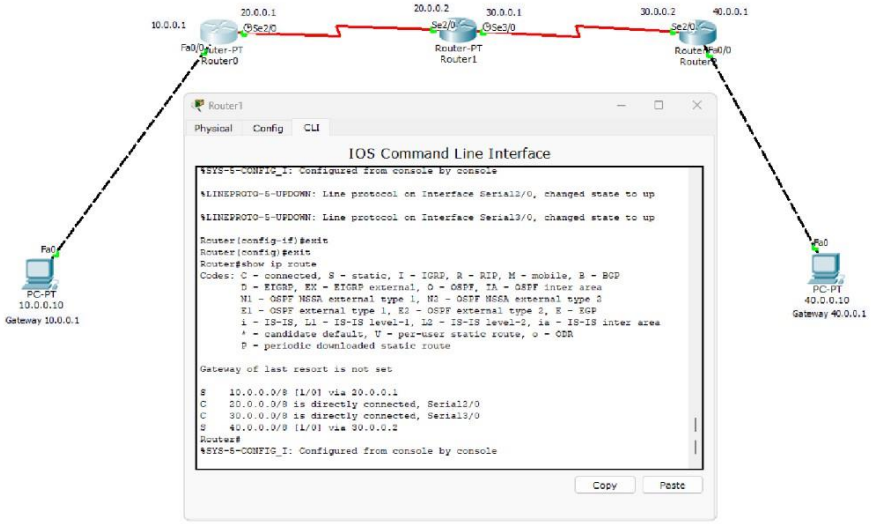
Reply from 20.0.0.1 : bytes=32 time=9ms TTL=128
Reply from 20.0.0.1: bytes=32 time=6ms TTL=128
Reply from 20.0.0.1 : bytes=32 time=7ms TTL=128
Reply from 20.0.0.1 : bytes=32 time=7ms TTL=128

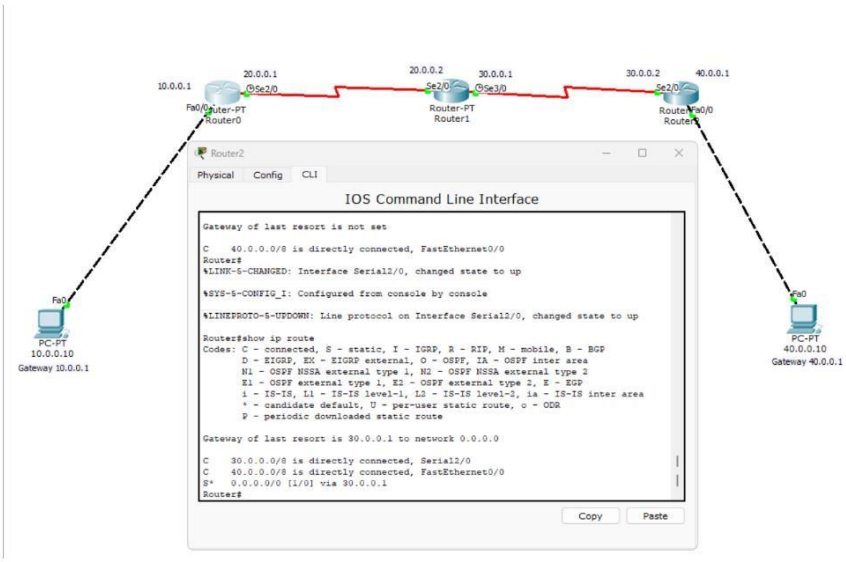
Ping Statistics for 20.0.0.1:
Packets: Sent=4, Recieved=4, Lost=0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum=6ms, Maximum=9ms, Average=7ms

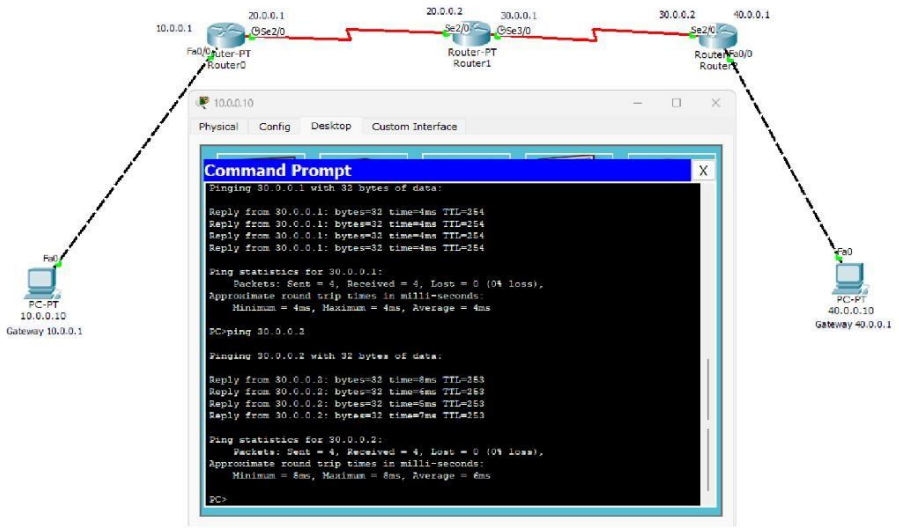
Screenshots:

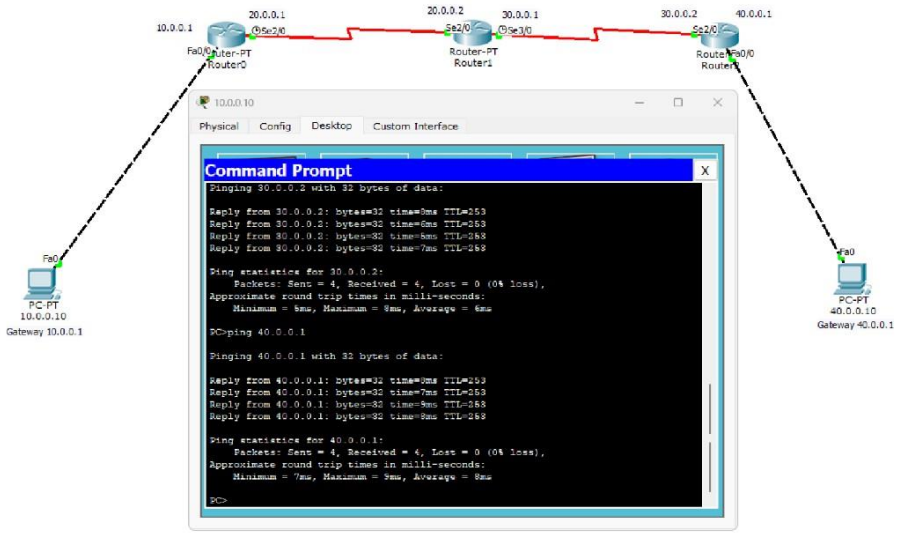


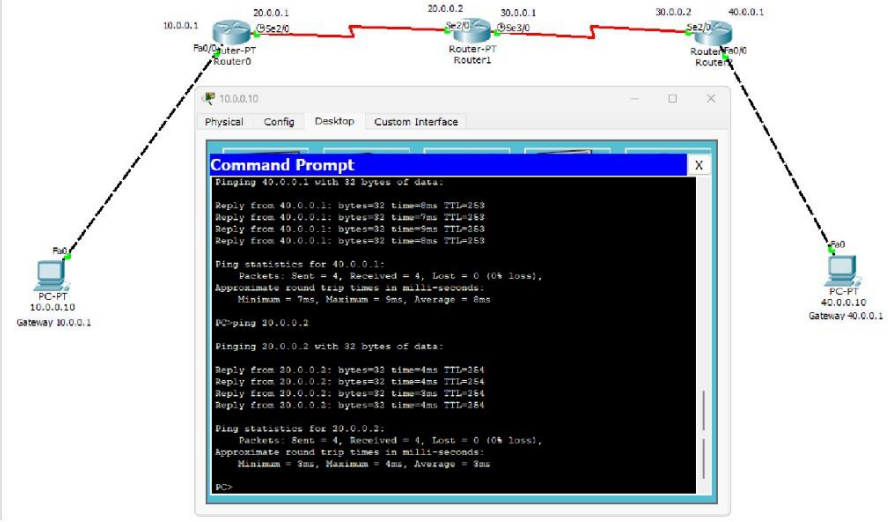

10.0.0.1
20.0.0.1
Se2/0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
30.0.0.2
Se2/0
40.0.0.1
Fa0/0
Router-PT
Router0
Router-PT
Router1
Router
Router2
Fa0/0
Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%SYS-5-CONFIG_I: Configured from console by console
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router(config-if)#exit
Router(config)#exit
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 20.0.0.2 to network 0.0.0.0
C 10.0.0.0/8 is directly connected, FastEthernet0/0
C 20.0.0.0/8 is directly connected, Serial2/0
S* 0.0.0.0/0 [1/0] via 20.0.0.2
Router#
Copy
Paste
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
Fa0
PC-PT
40.0.0.10
Gateway 40.0.0.1


10.0.0.1
20.0.0.1
Se2/0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
30.0.0.2
Se2/0
40.0.0.1
Fa0/0
Router-PT
Router0
Router-PT
Router1
Router
Router2
Fa0/0
Router1
Physical
Config
CLI
IOS Command Line Interface
%SYS-5-CONFIG_I: Configured from console by console
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
Router(config-if)#exit
Router(config)#exit
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
S 10.0.0.0/8 [1/0] via 20.0.0.1
C 20.0.0.0/8 is directly connected, Serial2/0
C 30.0.0.0/8 is directly connected, Serial3/0
S 40.0.0.0/8 [1/0] via 30.0.0.2
Router#
%SYS-5-CONFIG_I: Configured from console by console
Copy
Paste
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
Fa0
PC-PT
40.0.0.10
Gateway 40.0.0.1


10.0.0.1
20.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
40.0.0.1
Fa0/0
Se2/0
Se3/0
Router-PT
Router0
Router1
Router2
Router2
Physical
Config
CLI
IOS Command Line Interface
Gateway of last resort is not set
C 40.0.0.0/8 is directly connected, FastEthernet0/0
Router#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%SYS-5-CONFIG_I: Configured from console by console
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
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 30.0.0.1 to network 0.0.0.0
C 30.0.0.0/8 is directly connected, Serial2/0
C 40.0.0.0/8 is directly connected, FastEthernet0/0
S* 0.0.0.0/0 [1/0] via 30.0.0.1
Router#
Copy
Paste
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
PC-PT
40.0.0.10
Gateway 40.0.0.1


10.0.0.1
20.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
40.0.0.1
Fa0/0
Se2/0
Se3/0
Router-PT
Router0
Router1
Router2
10.0.0.10
Physical
Config
Desktop
Custom Interface
Command Prompt
Pinging 30.0.0.1 with 32 bytes of data:
Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Ping statistics for 30.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 4ms, Maximum = 4ms, Average = 4ms
PC>ping 30.0.0.2
Pinging 30.0.0.2 with 32 bytes of data:
Reply from 30.0.0.2: bytes=32 time=8ms TTL=253
Reply from 30.0.0.2: bytes=32 time=6ms TTL=253
Reply from 30.0.0.2: bytes=32 time=5ms TTL=253
Reply from 30.0.0.2: bytes=32 time=7ms TTL=253
Ping statistics for 30.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 5ms, Maximum = 8ms, Average = 6ms
PC>
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
PC-PT
40.0.0.10
Gateway 40.0.0.1


10.0.0.1
20.0.0.1
Se2/0
Fa0/0
Router-PT
Router0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Router-PT
Router1
30.0.0.2
Se2/0
40.0.0.1
Fa0/0
Router
10.0.0.10
Physical
Config
Desktop
Custom Interface
Command Prompt
Pinging 30.0.0.2 with 32 bytes of data:
Reply from 30.0.0.2: bytes=32 time=8ms TTL=253
Reply from 30.0.0.2: bytes=32 time=6ms TTL=253
Reply from 30.0.0.2: bytes=32 time=5ms TTL=253
Reply from 30.0.0.2: bytes=32 time=7ms TTL=253
Ping statistics for 30.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 5ms, Maximum = 8ms, Average = 6ms
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=9ms TTL=253
Reply from 40.0.0.1: bytes=32 time=7ms TTL=253
Reply from 40.0.0.1: bytes=32 time=9ms TTL=253
Reply from 40.0.0.1: bytes=32 time=8ms TTL=253
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 7ms, Maximum = 9ms, Average = 8ms
PC>
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
Fa0
PC-PT
40.0.0.10
Gateway 40.0.0.1


10.0.0.1
20.0.0.1
Se2/0
Fa0/0
Router-PT
Router0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Router-PT
Router1
30.0.0.2
Se2/0
40.0.0.1
Fa0/0
Router
10.0.0.10
Physical
Config
Desktop
Custom Interface
Command Prompt
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=8ms TTL=253
Reply from 40.0.0.1: bytes=32 time=7ms TTL=253
Reply from 40.0.0.1: bytes=32 time=9ms TTL=253
Reply from 40.0.0.1: bytes=32 time=8ms TTL=253
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 7ms, Maximum = 9ms, Average = 8ms
PC>ping 20.0.0.2
Pinging 20.0.0.2 with 32 bytes of data:
Reply from 20.0.0.2: bytes=32 time=4ms TTL=254
Reply from 20.0.0.2: bytes=32 time=4ms TTL=254
Reply from 20.0.0.2: bytes=32 time=3ms TTL=254
Reply from 20.0.0.2: bytes=32 time=4ms TTL=254
Ping statistics for 20.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 3ms, Maximum = 4ms, Average = 3ms
PC>
Fa0
PC-PT
10.0.0.10
Gateway 10.0.0.1
Fa0
PC-PT
40.0.0.10
Gateway 40.0.0.1