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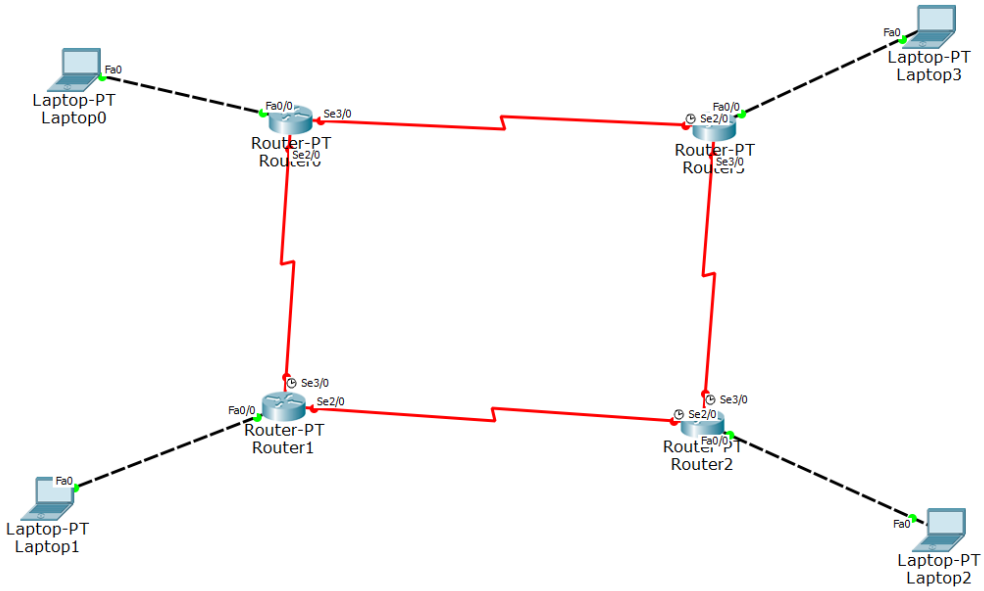
NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCE

Computer Network Lab (CL3001)

Lab Session 10

Q1: Implement Subnetting with IP address of XX.XX.0.0/24. where xx is your roll no same are midterm. Then assign ip address in such a way that very less ip address should waste. Last run RIP routing protocol in such a way that all devices can communicate easily. What will be the administrative distance of the routing? Use figure 8 for your reference.

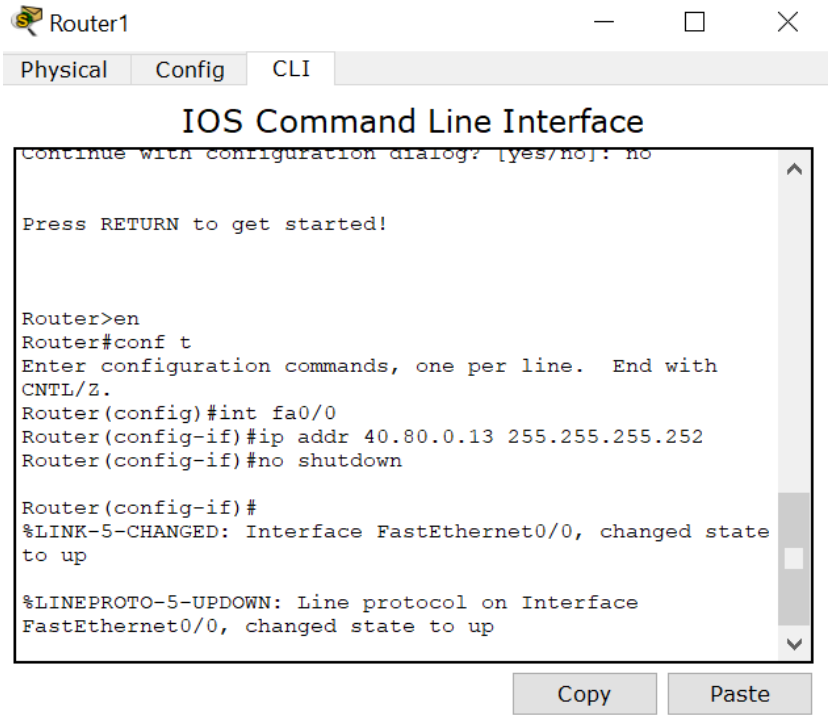


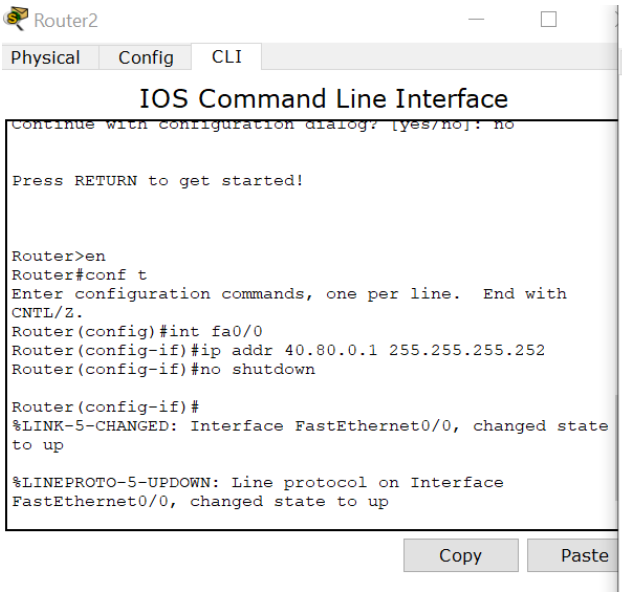
Router0

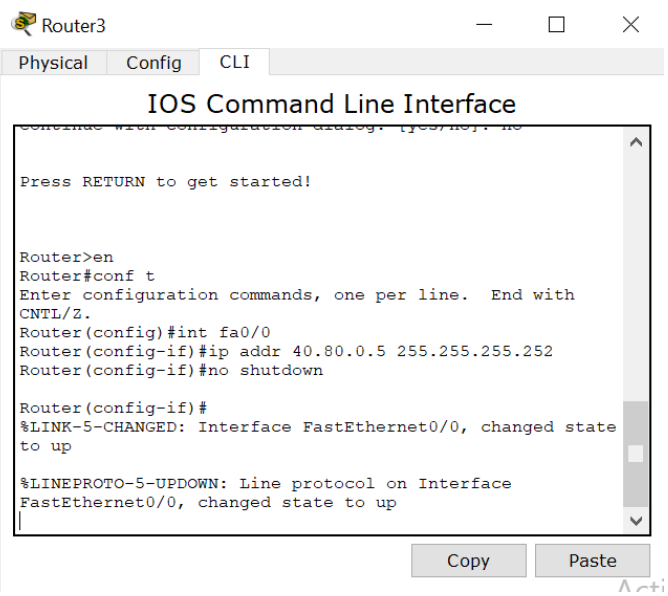
Physical Config CLI

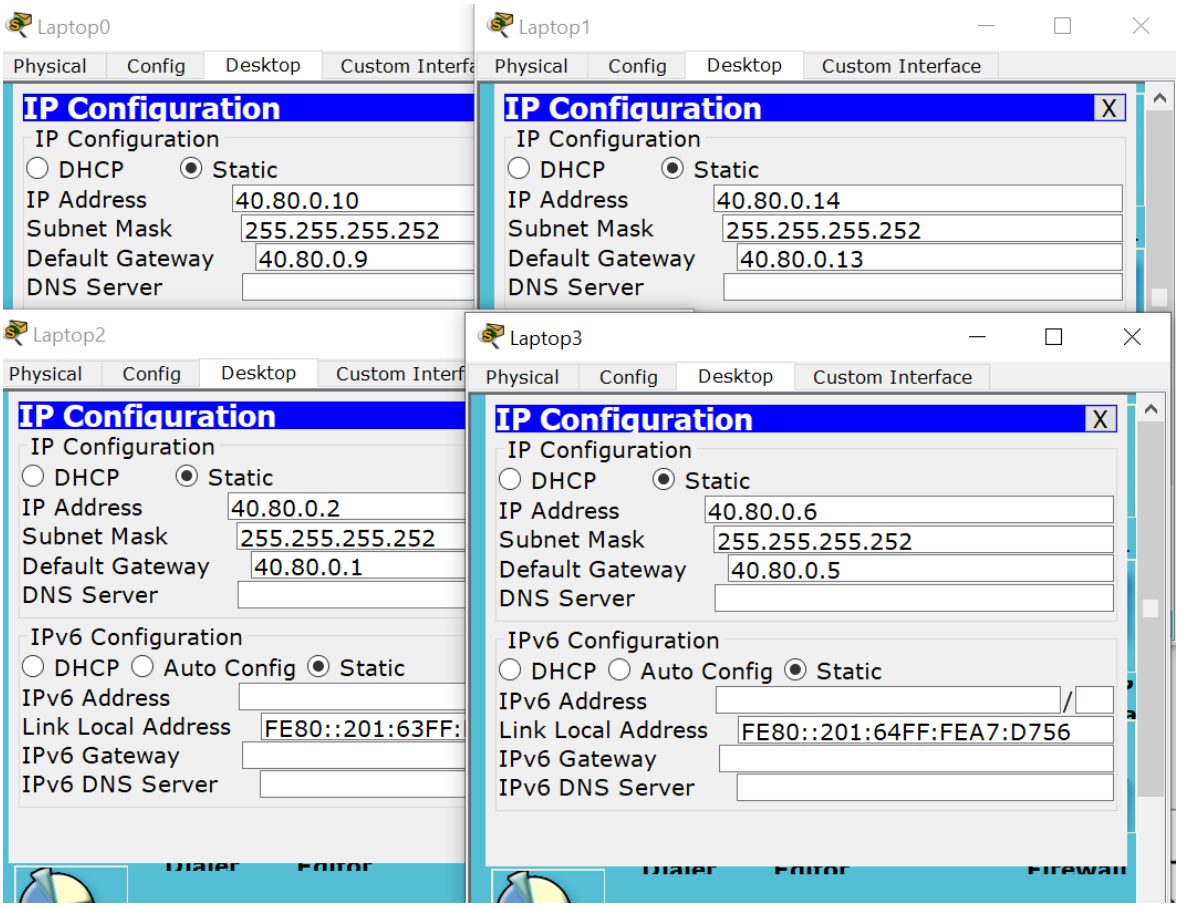
IOS Command Line Interface

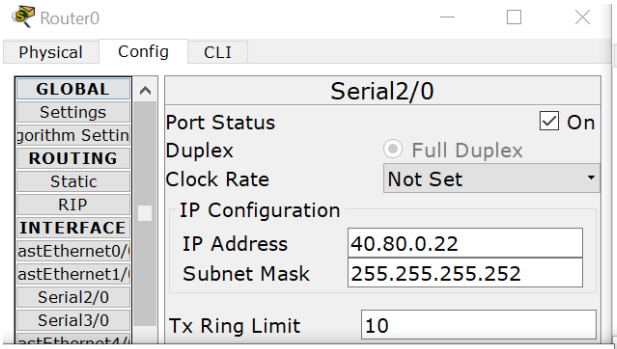
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with
CNTL/Z.
Router(config)#fa0/0
               ^
% Invalid input detected at '^' marker.

Router(config)#int fa0/0
Router(config-if)#ip addr 40.80.0.13 255.255.255.252
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
```

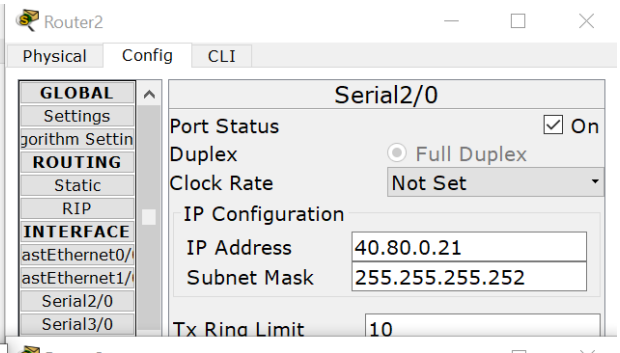

Router1
Physical
Config
CLI
IOS Command Line Interface
Continue with configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip addr 40.80.0.13 255.255.255.252
Router(config-if)#no 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
Copy
Paste

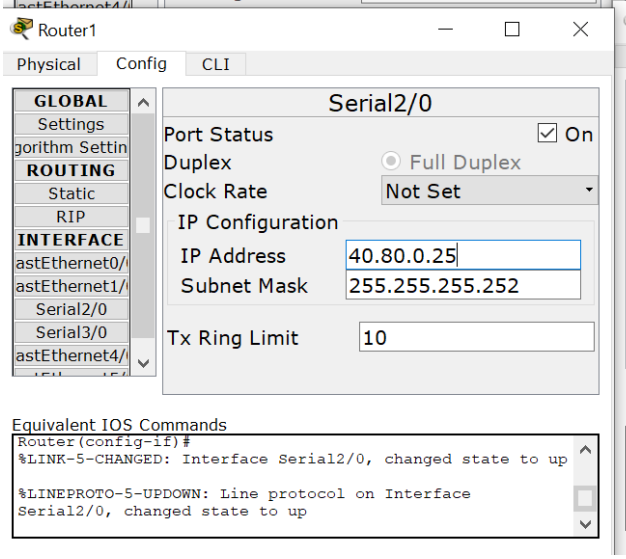

Router2
Physical
Config
CLI
IOS Command Line Interface
Continue with configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip addr 40.80.0.1 255.255.255.252
Router(config-if)#no 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
Copy
Paste

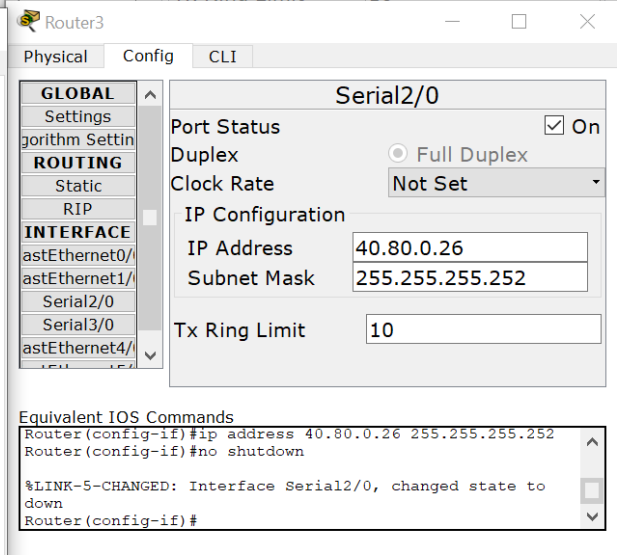

Router3
Physical
Config
CLI
IOS Command Line Interface
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip addr 40.80.0.5 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state
to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/0, changed state to up
Copy
Paste

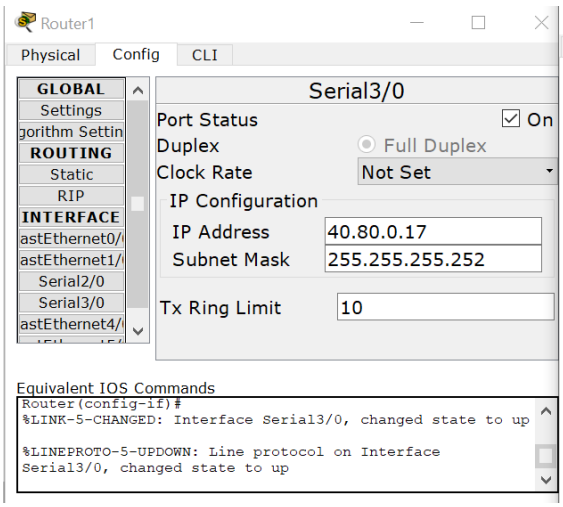

Laptop0
Physical
Config
Desktop
Custom Interfa
IP Configuration
IP Configuration
DHCP
Static
IP Address
40.80.0.10
Subnet Mask
255.255.255.252
Default Gateway
40.80.0.9
DNS Server
Laptop1
Physical
Config
Desktop
Custom Interface
IP Configuration
IP Configuration
DHCP
Static
IP Address
40.80.0.14
Subnet Mask
255.255.255.252
Default Gateway
40.80.0.13
DNS Server
Laptop2
Physical
Config
Desktop
Custom Interf
IP Configuration
IP Configuration
DHCP
Static
IP Address
40.80.0.2
Subnet Mask
255.255.255.252
Default Gateway
40.80.0.1
DNS Server
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::201:63FF:
IPv6 Gateway
IPv6 DNS Server
Laptop3
Physical
Config
Desktop
Custom Interface
IP Configuration
IP Configuration
DHCP
Static
IP Address
40.80.0.6
Subnet Mask
255.255.255.252
Default Gateway
40.80.0.5
DNS Server
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::201:64FF:FEA7:D756
IPv6 Gateway
IPv6 DNS Server

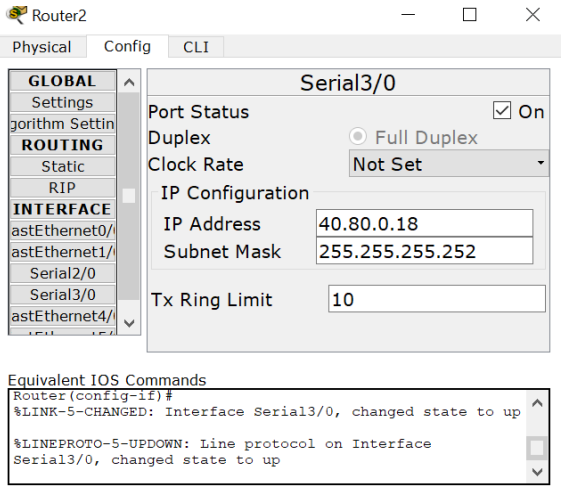

Router0
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.22
Subnet Mask
255.255.255.252
Tx Ring Limit
10

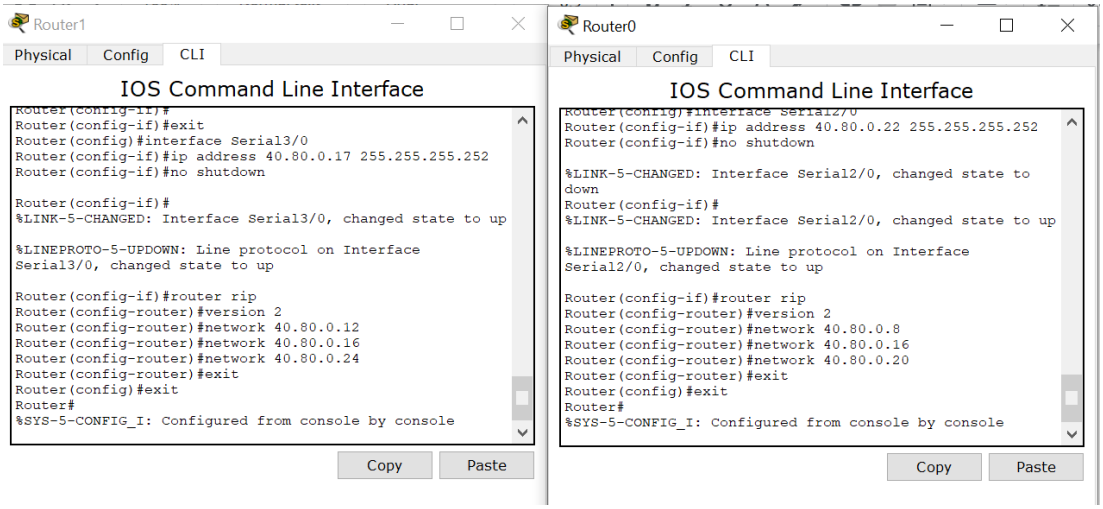

Router2
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.21
Subnet Mask
255.255.255.252
Tx Ring Limit
10

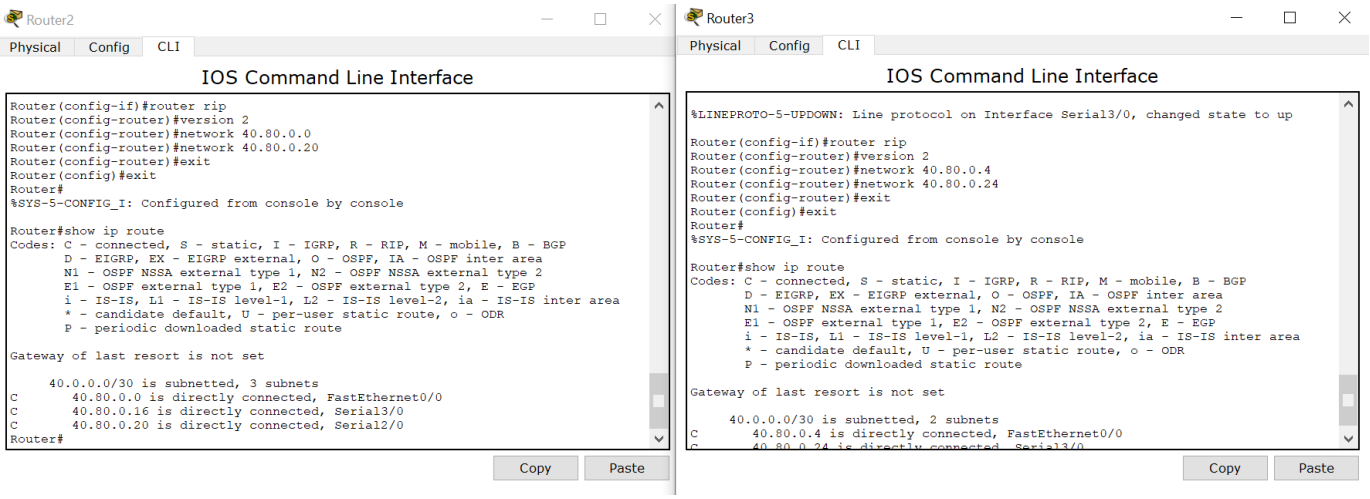

Router1
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
astEthernet4/
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.25
Subnet Mask
255.255.255.252
Tx Ring Limit
10
Equivalent IOS Commands
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

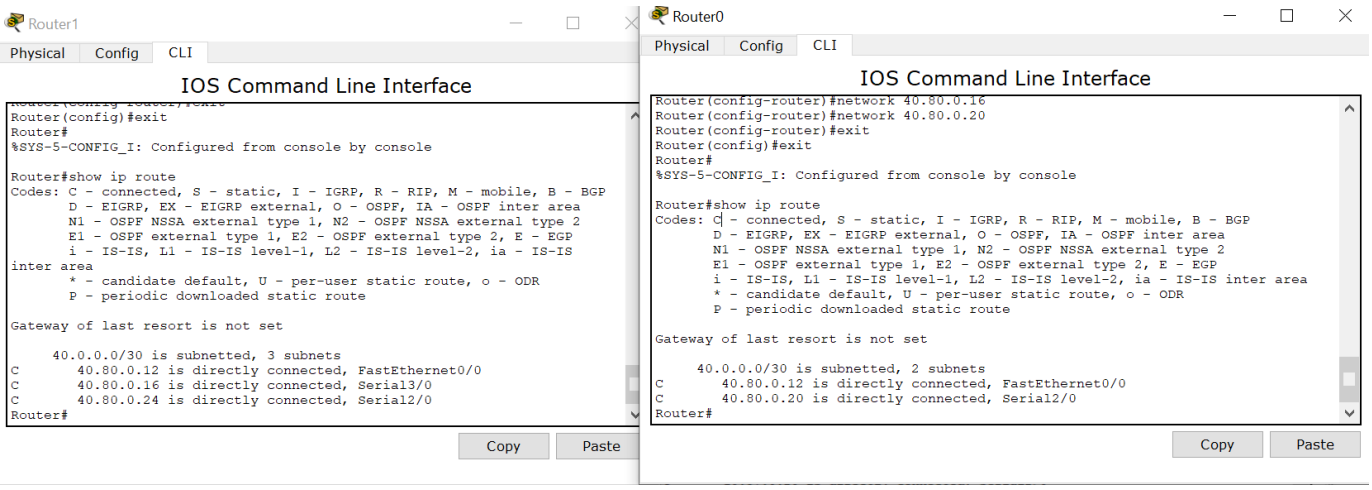

Router3
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
astEthernet4/
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.26
Subnet Mask
255.255.255.252
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#ip address 40.80.0.26 255.255.255.252
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial2/0, changed state to
down
Router(config-if)#

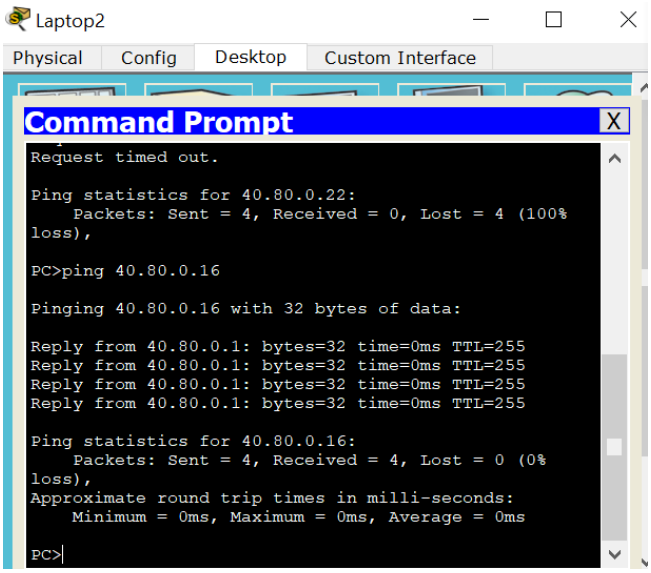

Router1
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
astEthernet4/
Serial3/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.17
Subnet Mask
255.255.255.252
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface
Serial3/0, changed state to up


Router2
Physical
Config
CLI
GLOBAL
Settings
gorithm Settin
ROUTING
Static
RIP
INTERFACE
astEthernet0/
astEthernet1/
Serial2/0
Serial3/0
astEthernet4/
Serial3/0
Port Status
On
Duplex
Full Duplex
Clock Rate
Not Set
IP Configuration
IP Address
40.80.0.18
Subnet Mask
255.255.255.252
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface
Serial3/0, changed state to up


Router1
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 40.80.0.17 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface
Serial3/0, changed state to up
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#network 40.80.0.12
Router(config-router)#network 40.80.0.16
Router(config-router)#network 40.80.0.24
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Copy
Paste
Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config)#interface Serial2/0
Router(config-if)#ip address 40.80.0.22 255.255.255.252
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial2/0, changed state to
down
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
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#network 40.80.0.8
Router(config-router)#network 40.80.0.16
Router(config-router)#network 40.80.0.20
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Copy
Paste

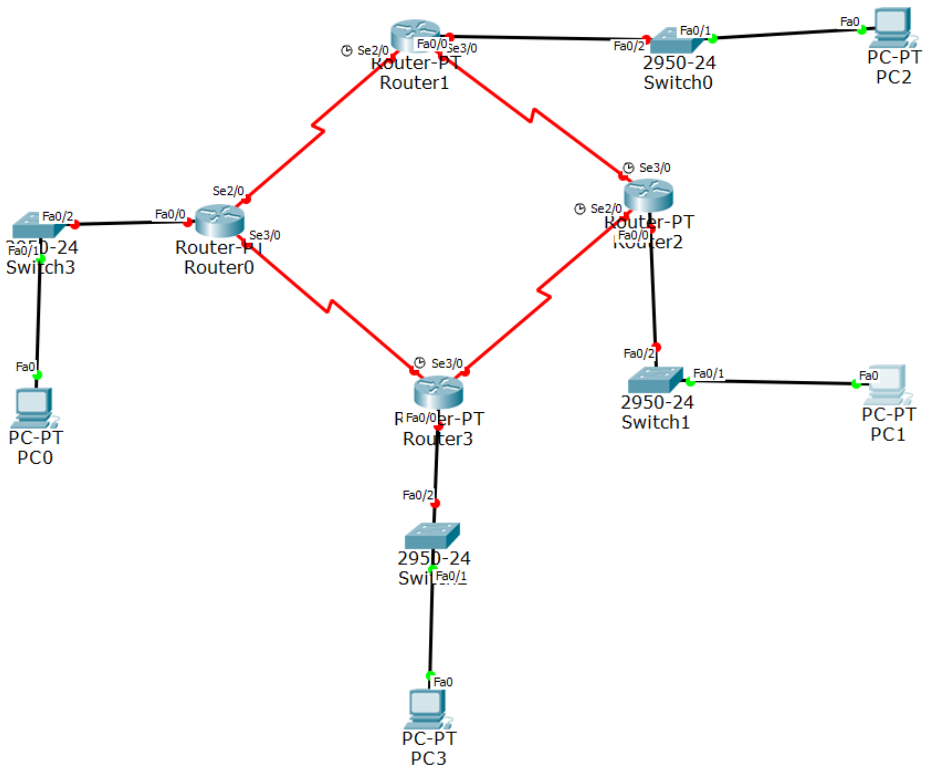

Router2
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#network 40.80.0.0
Router(config-router)#network 40.80.0.20
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
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
40.0.0.0/30 is subnetted, 3 subnets
C 40.80.0.0 is directly connected, FastEthernet0/0
C 40.80.0.16 is directly connected, Serial3/0
C 40.80.0.20 is directly connected, Serial2/0
Router#
Copy
Paste
Router3
Physical
Config
CLI
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#network 40.80.0.4
Router(config-router)#network 40.80.0.24
Router(config-router)#exit
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
40.0.0.0/30 is subnetted, 2 subnets
C 40.80.0.4 is directly connected, FastEthernet0/0
Copy
Paste


Router1
Physical
Config
CLI
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
40.0.0.0/30 is subnetted, 3 subnets
C 40.80.0.12 is directly connected, FastEthernet0/0
C 40.80.0.16 is directly connected, Serial3/0
C 40.80.0.24 is directly connected, Serial2/0
Router#
Copy
Paste
Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config-router)#network 40.80.0.16
Router(config-router)#network 40.80.0.20
Router(config-router)#exit
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
40.0.0.0/30 is subnetted, 2 subnets
C 40.80.0.12 is directly connected, FastEthernet0/0
C 40.80.0.20 is directly connected, Serial2/0
Router#
Copy
Paste



The administrative distance of rip version2 is 120.

Q2: Implement Subnetting with IP address of 172.168.1.0/24. All the assignment of IP should be done dynamically in such a way that there should be less waste of Ips. Run the dynamic routing protocol with less administrative distance. What will be the administrative distance of the routing? Use Figure 9 as reference.



Router0

Physical Config CLI

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 fa0/0
Router(config-if)#ip addr 172.168.1.25 255.255.255.252
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
```

Router1

Physical Config CLI

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 fa0/0
Router(config-if)#ip addr 172.168.1.21 255.255.255.252
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
```

Router2

Physical Config CLI

IOS Command Line Interface

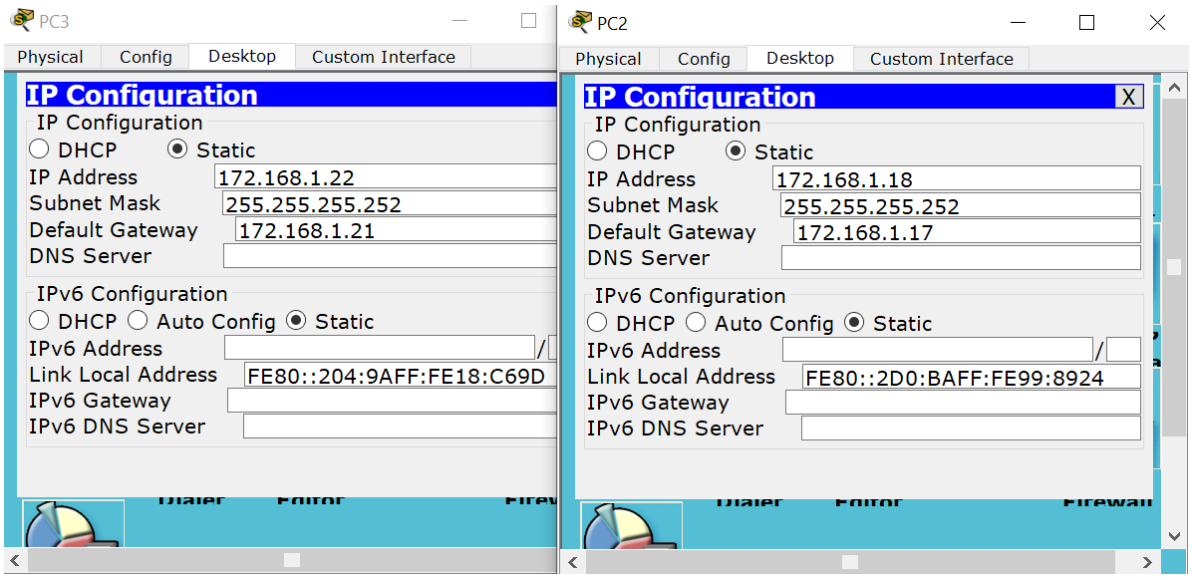
```
Press RETURN to get started!


Router>en
Router#conf t
Enter configuration commands, one per line.  End with
CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip addr 172.168.1.29 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed sta
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/0, changed state to up
```

Router3

Physical Config CLI

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 fa0/0
Router(config-if)#ip addr 172.168.1.17 255.255.255.252
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
```



Wild card subnet mask calculation: 255.255.255.255 – 255.255.255.252 = 0.0.0.3

Router1

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 state to up

Router(config-if)#exit
Router(config)#int serial3/0
Router(config-if)#ip addr 172.168.1.9 255.255.255.252
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to
down
Router(config-if)#exit
Router(config)#router ospf 1
Router(config-router)#network 172.168.1.24 0.0.0.3 area 0
Router(config-router)#network 172.168.1.0 0.0.0.3 area 0
Router(config-router)#network 172.168.1.8 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#
```

Router2

Physical Config CLI

IOS Command Line Interface

```
Router(config-if)#exit
Router(config)#int serial3/0
Router(config-if)#ip addr 172.168.1.9 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

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

Router(config-if)#exit
Router(config)#int serial3/0
Router(config-if)#ip addr 172.168.1.6 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#router ospf 1
Router(config-router)#network 172.168.1.20 0.0.0.3 area 0
Router(config-router)#network 172.168.1.4 0.0.0.3 area 0
Router(config-router)#network 172.168.1.8 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#
```

Router3

Physical Config CLI

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with
CNTL/Z.
Router(config)#ruter ospf 1
               ^
% Invalid input detected at '^' marker.

Router(config)#router ospf 1
Router(config-router)#network 172.168.1.28 0.0.03 area 0
                                           ^
% Invalid input detected at '^' marker.

Router(config-router)#network 172.168.1.28 0.0.0.3 area 0
Router(config-router)#network 172.168.1.0 0.0.0.3 area 0
Router(config-router)#network 172.168.1.12 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#
```

Router4

Physical Config CLI

IOS Command Line Interface

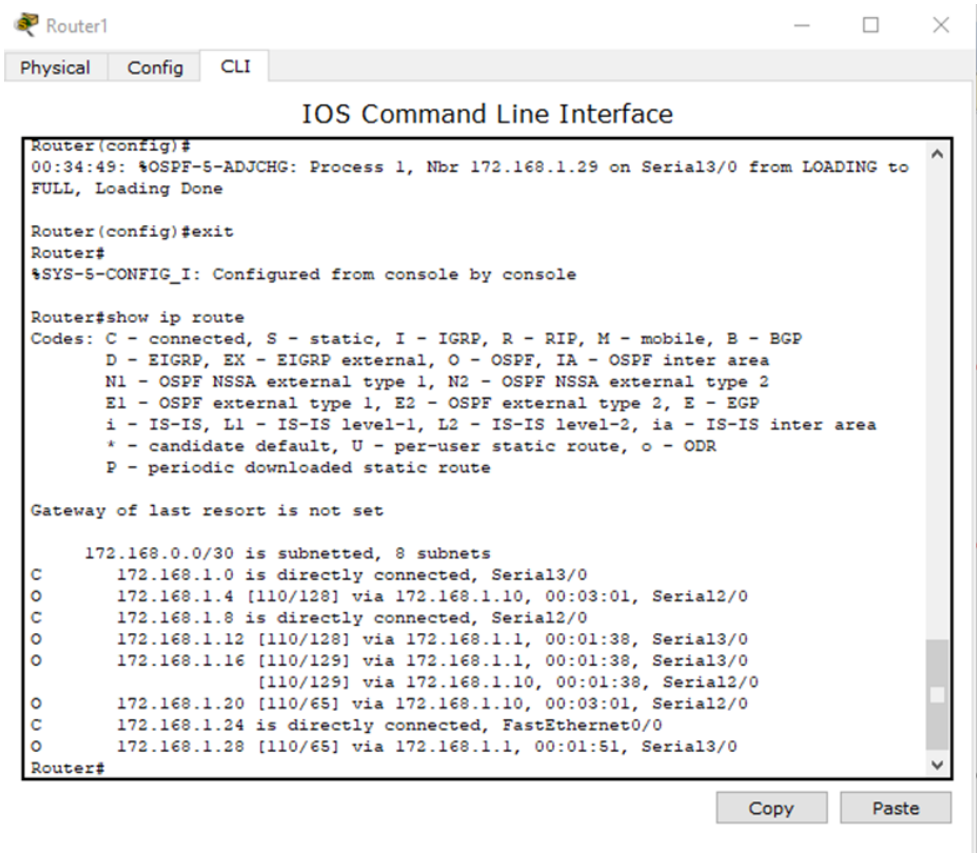
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with
CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#network 172.168.1.16 0.0.0.3 area 0
Router(config-router)#network 172.168.1.4 0.0.0.3 area 0
Router(config-router)#network 172.168.1.12 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

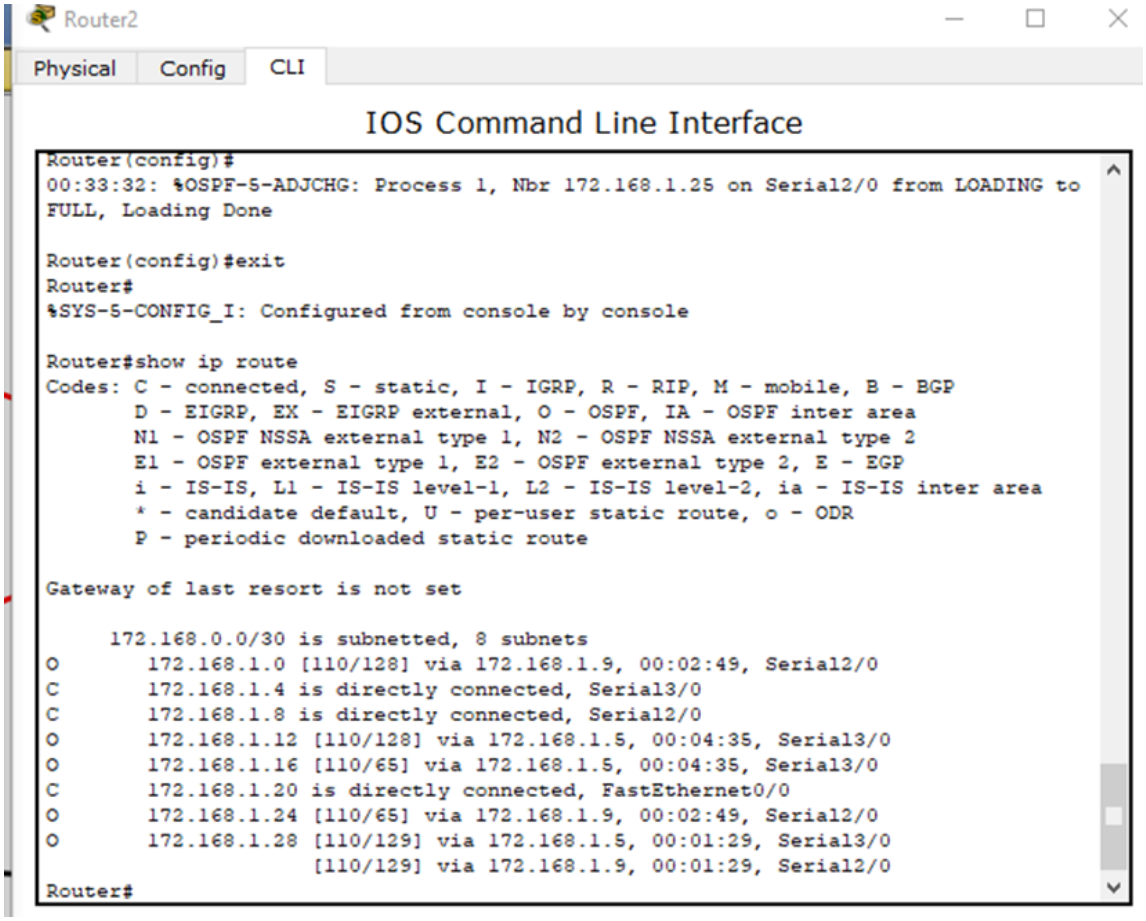
Router4

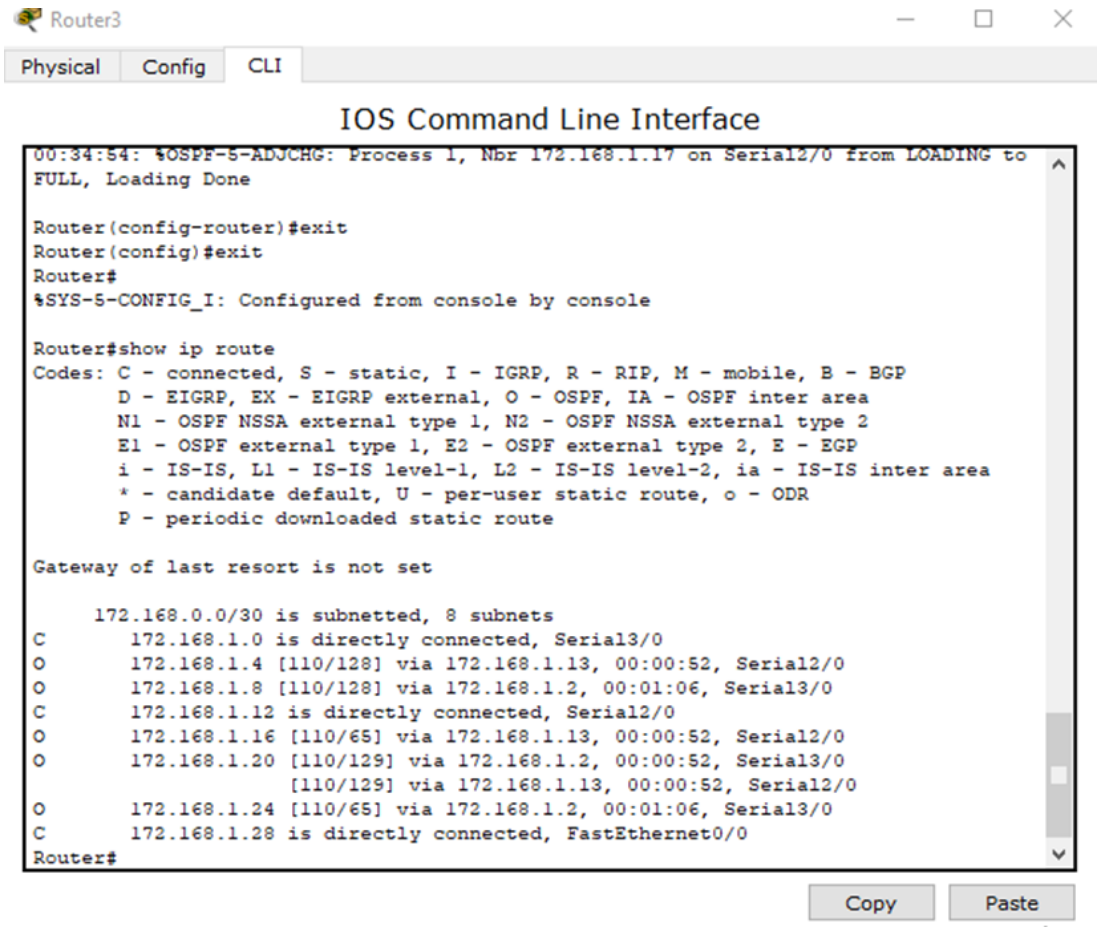
Physical Config CLI

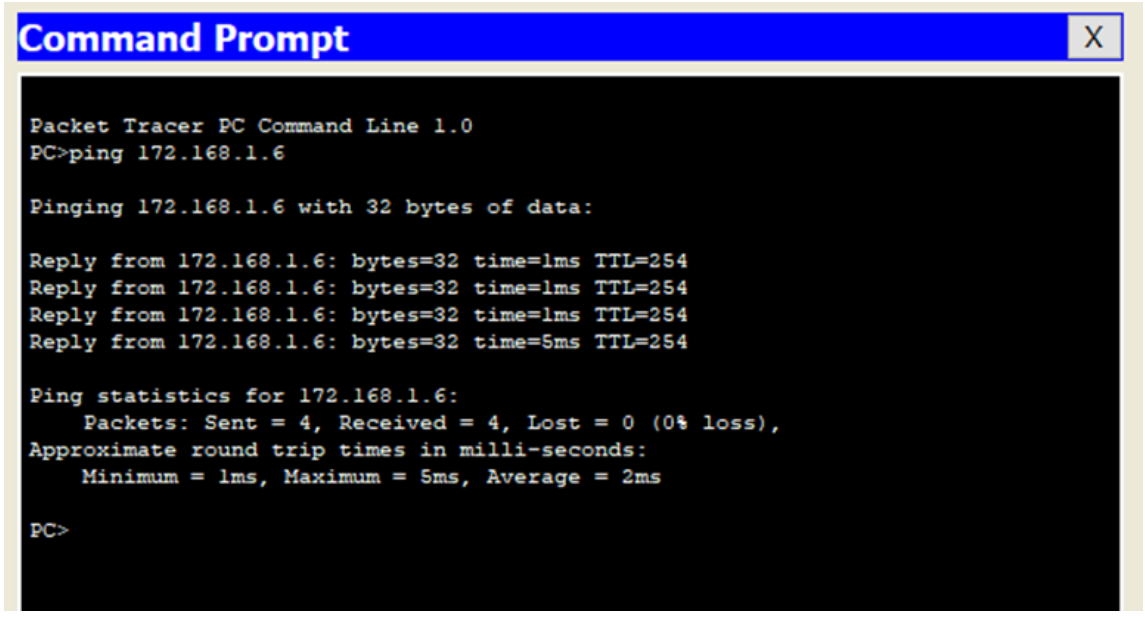
IOS Command Line Interface

```
%SYS-5-CONFIG_I: Configured from console by console

00:27:18: %OSPF-5-ADJCHG: Process 1, Nbr 172.168.1.21 on Serial3/0 from LOADING to
FULL, Loading Done

00:30:27: %OSPF-5-ADJCHG: Process 1, Nbr 172.168.1.29 on Serial2/0 from LOADING to
FULL, Loading Done

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

     172.168.0.0/30 is subnetted, 8 subnets
O       172.168.1.0 [110/128] via 172.168.1.14, 00:00:40, Serial2/0
C       172.168.1.4 is directly connected, Serial3/0
O       172.168.1.8 [110/128] via 172.168.1.6, 00:03:30, Serial3/0
C       172.168.1.12 is directly connected, Serial2/0
C       172.168.1.16 is directly connected, FastEthernet0/0
O       172.168.1.20 [110/65] via 172.168.1.6, 00:03:45, Serial3/0
O       172.168.1.24 [110/129] via 172.168.1.6, 00:00:40, Serial3/0
                     [110/129] via 172.168.1.14, 00:00:40, Serial2/0
O       172.168.1.28 [110/65] via 172.168.1.14, 00:00:40, Serial2/0
Router#
```


Router1
Physical
Config
CLI
IOS Command Line Interface
Router(config)#
00:34:49: %OSPF-5-ADJCHG: Process 1, Nbr 172.168.1.29 on Serial3/0 from LOADING to FULL, Loading Done
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
172.168.0.0/30 is subnetted, 8 subnets
C 172.168.1.0 is directly connected, Serial3/0
O 172.168.1.4 [110/128] via 172.168.1.10, 00:03:01, Serial2/0
C 172.168.1.8 is directly connected, Serial2/0
O 172.168.1.12 [110/128] via 172.168.1.1, 00:01:38, Serial3/0
O 172.168.1.16 [110/129] via 172.168.1.1, 00:01:38, Serial3/0
[110/129] via 172.168.1.10, 00:01:38, Serial2/0
O 172.168.1.20 [110/65] via 172.168.1.10, 00:03:01, Serial2/0
C 172.168.1.24 is directly connected, FastEthernet0/0
O 172.168.1.28 [110/65] via 172.168.1.1, 00:01:51, Serial3/0
Router#
Copy
Paste

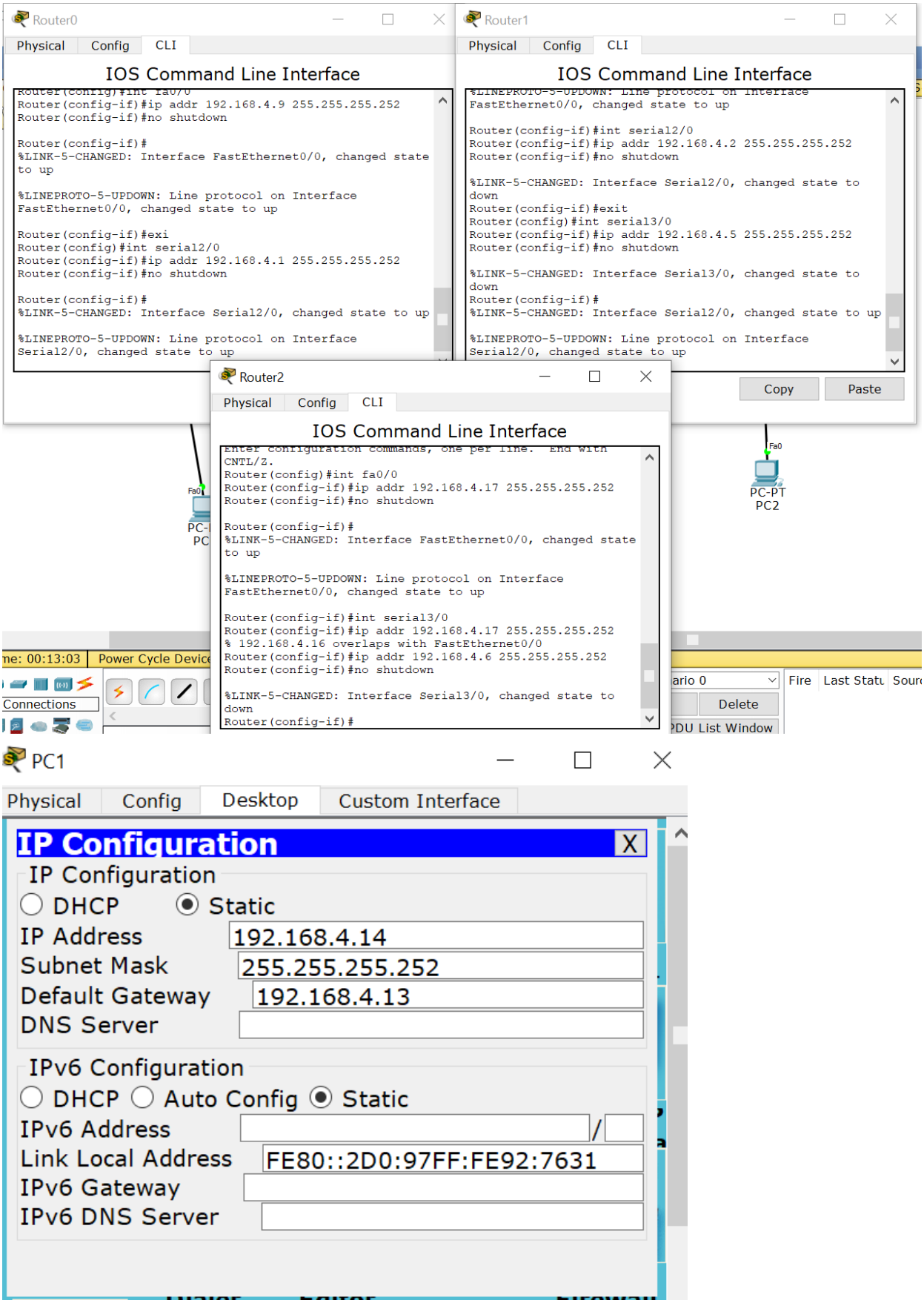

Router2
Physical
Config
CLI
IOS Command Line Interface
Router(config)#
00:33:32: %OSPF-5-ADJCHG: Process 1, Nbr 172.168.1.25 on Serial2/0 from LOADING to FULL, Loading Done
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip route
Codes: C - connected, S - static, 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
172.168.0.0/30 is subnetted, 8 subnets
O 172.168.1.0 [110/128] via 172.168.1.9, 00:02:49, Serial2/0
C 172.168.1.4 is directly connected, Serial3/0
C 172.168.1.8 is directly connected, Serial2/0
O 172.168.1.12 [110/128] via 172.168.1.5, 00:04:35, Serial3/0
O 172.168.1.16 [110/65] via 172.168.1.5, 00:04:35, Serial3/0
C 172.168.1.20 is directly connected, FastEthernet0/0
O 172.168.1.24 [110/65] via 172.168.1.9, 00:02:49, Serial2/0
O 172.168.1.28 [110/129] via 172.168.1.5, 00:01:29, Serial3/0
[110/129] via 172.168.1.9, 00:01:29, Serial2/0
Router#

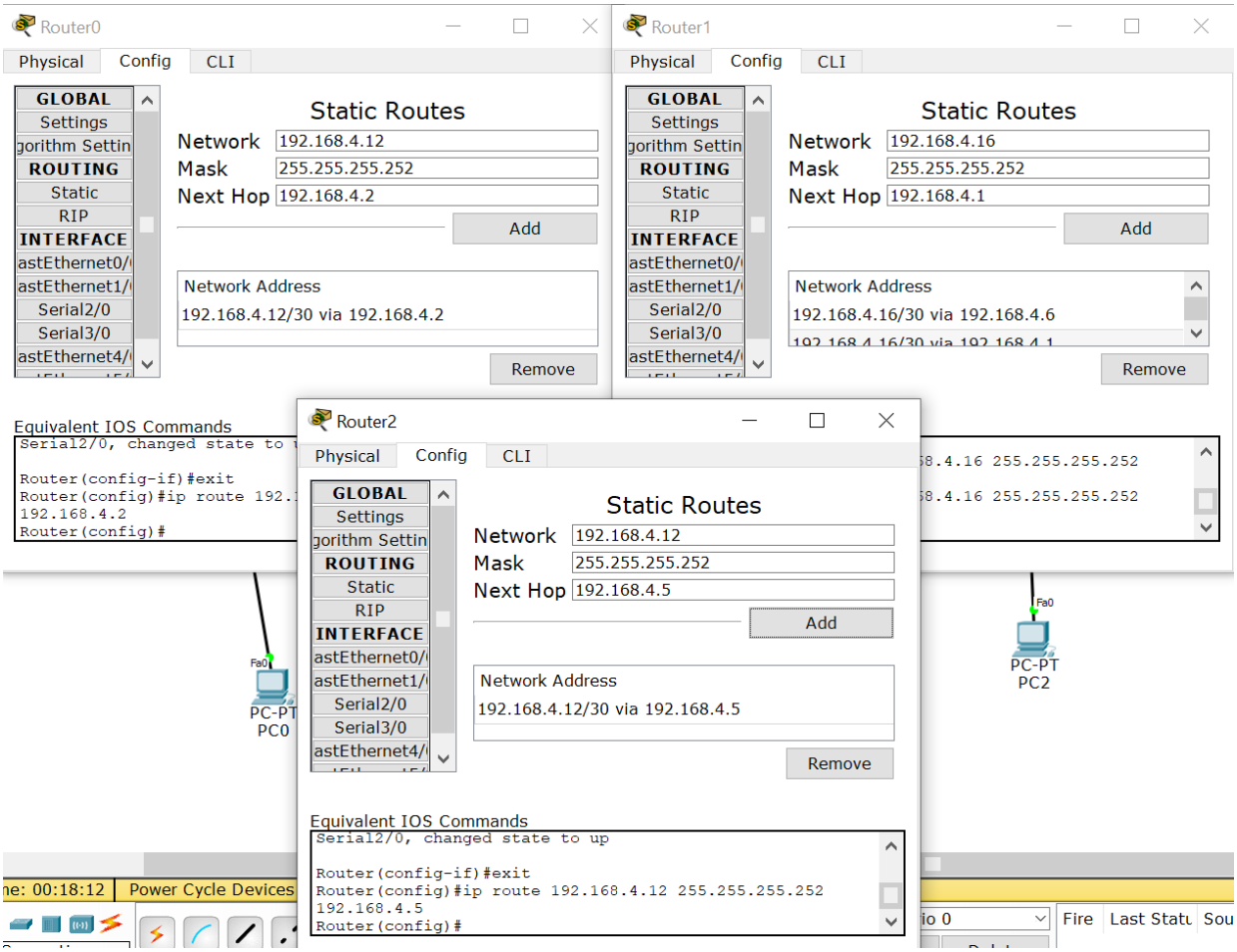


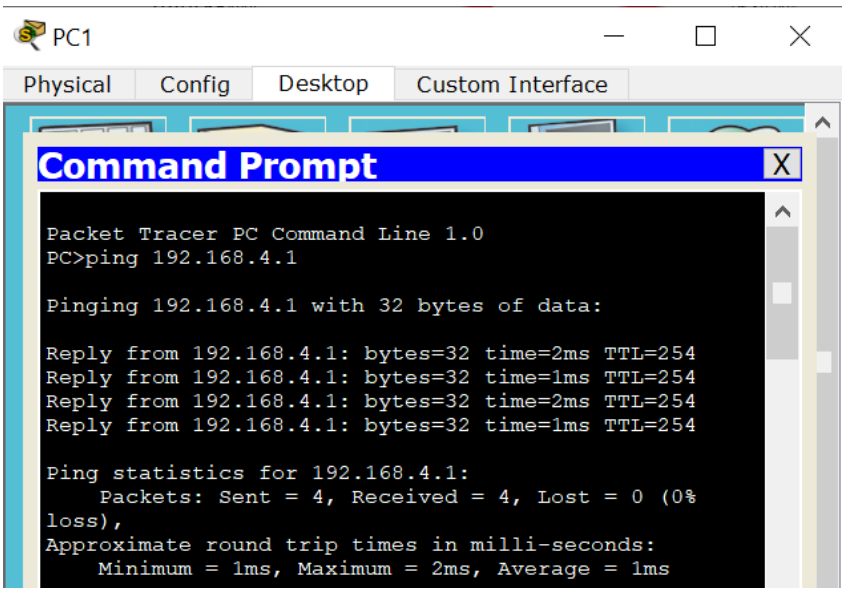


Administrative distance of OSPF is 110

Q3: Implement the subnetting on the given scenario of figure 10. You have to implement the static routing on the same. What will be the administrative distance of the routing?
Use Network Address as follows: 192.168.4.0/24.


Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#ip addr 192.168.4.9 255.255.255.252
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)#exi
Router(config)#int serial2/0
Router(config-if)#ip addr 192.168.4.1 255.255.255.252
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
Router1
Physical
Config
CLI
IOS Command Line Interface
FastEthernet0/0, changed state to up
Router(config-if)#int serial2/0
Router(config-if)#ip addr 192.168.4.2 255.255.255.252
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#int serial3/0
Router(config-if)#ip addr 192.168.4.5 255.255.255.252
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
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
Copy
Paste
Router2
Physical
Config
CLI
IOS Command Line Interface
CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip addr 192.168.4.17 255.255.255.252
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)#int serial3/0
Router(config-if)#ip addr 192.168.4.17 255.255.255.252
% 192.168.4.16 overlaps with FastEthernet0/0
Router(config-if)#ip addr 192.168.4.6 255.255.255.252
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
Fa0
PC-PT PC2
Power Cycle Device
Connections
Delete
Fire
Last Statu
Sour
PC1
Physical
Config
Desktop
Custom Interface
IP Configuration
X
IP Configuration
DHCP
Static
IP Address 192.168.4.14
Subnet Mask 255.255.255.252
Default Gateway 192.168.4.13
DNS Server
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address FE80::2D0:97FF:FE92:7631
IPv6 Gateway
IPv6 DNS Server





Administrative distance of OSPF is 1

Q4: In what case we use static routing or dynamic routing given a topological reason for this question.
Static routing is mainly used to connect a smaller number of devices, whereas dynamic routing is used for larger networks in which multiple devices share data and network messages.