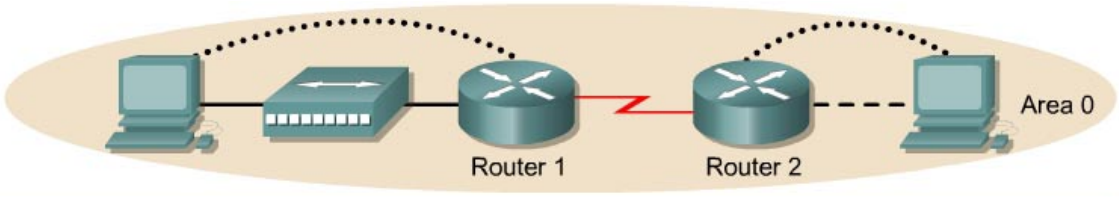
Lab 2.3.3 Modifying OSPF Cost Metric – 2500 Series



Router Designation	Router Name	Enable Secret Password	Enable, VTY, and Console Passwords	Routing Protocol	Network Statements
Router 1	Cairo	class	cisco	OSPF	192.168.1.0
Router 2	Moscow	class	cisco	OSPF	192.168.1.0 192.168.0.0

Router Designation	IP Host Table Entry	FastEthernet 0 Address/ Subnet Mask	Interface Type Serial 0	Serial 0 Address/Subnet Mask	Interface Type Serial 1	Serial 1 Address/Subnet Mask
Router 1	Moscow	192.168.1.129/26	DCE	192.168.1.1/30	NA	No address
Router 2	Cairo	192.168.0.1/24	DTE	192.168.1.2/30	NA	No address

Note: The IP Host Table Entry column contents indicate the name(s) of the other router(s) in the IP host table.

Straight-through cable		Console (Rollover)	
Serial cable		Crossover cable	

Objective

- Setup an IP addressing scheme for Open Shortest Path First (OSPF) area.
- Configure and verify OSPF routing.
- Modify OSPF cost metric on an interface.

Background/Preparation

Cable a network similar to the one shown in the diagram. Any router that meets the interface requirements displayed on the above diagram may be used. For example, router series 800, 1600, 1700, 2500, and 2600 or any such combination can be used. Please refer to the chart at the end of the lab to correctly identify the interface identifiers to be used based on the equipment in the lab. The configuration output used in this lab is produced from 1721 series routers. Any other router used may produce slightly different output. Perform the following steps on each router unless specifically instructed otherwise.

Start a HyperTerminal session.

Note: Go to the erase and reload instructions at the end of this lab. Perform those steps on all routers in this lab assignment before continuing.

Step 1 Configure the routers

On the routers, enter the global configuration mode and configure the hostname, console, virtual terminal, and enable secret passwords. Next configure the interfaces and IP hostnames according to

the chart. Do not configure the routing protocol until specifically told to. If there are any problems configuring the router basics, refer to the lab “Review of Basic Router Configuration with RIP”.

Router 1

```
Router>enable
Router#configure terminal
Router(config)#hostname Cairo

Cairo(config)#enable secret class
Cairo(config)#line console 0
Cairo(config-line)#password cisco
Cairo(config-line)#login
Cairo(config-line)#line vty 0 4
Cairo(config-line)#password cisco
Cairo(config-line)#login
Cairo(config-line)#exit
Cairo(config)#interface serial 0
Cairo(config-if)#ip address 192.168.1.1 255.255.255.252
Cairo(config-if)#clockrate 64000
Cairo(config-if)#no shutdown
Cairo(config-if)#interface ethernet 0
Cairo(config-if)#ip address 192.168.1.129 255.255.255.192
Cairo(config-if)#no shutdown
Cairo(config-if)#exit
Cairo(config)#ip host Moscow 192.168.0.1 192.168.1.2
Cairo(config)#exit
```

Router 2

```
Router>enable
Router#configure terminal
Router(config)#hostname Moscow

Moscow(config)#enable secret class
Moscow(config)#line console 0
Moscow(config-line)#password cisco
Moscow(config-line)#login
Moscow(config-line)#line vty 0 4
Moscow(config-line)#password cisco
Moscow(config-line)#login
Moscow(config-line)#exit
Moscow(config)#interface serial 0
Moscow(config-if)#ip address 192.168.1.2 255.255.255.252
Moscow(config-if)#no shutdown
Moscow(config-if)#interface ethernet 0
Moscow(config-if)#ip address 192.168.0.1  255.255.255.0
Moscow(config-if)#no shutdown
Moscow(config-if)#exit
Moscow(config)#ip host Cairo 192.168.1.129 192.168.1.1
Moscow(config)#exit
```

Step 2 Save the configuration information from the privileged EXEC command mode

```
Cairo#copy running-config startup-config
Destination filename [startup-config]?[Enter]

Moscow#copy running-config startup-config
Destination filename [startup-config]?[Enter]
```

Why save the running configuration to the startup configuration?

Saving the configuration will allow the router to keep the configuration after a reload or power down.

Step 3 Configure the hosts with the proper IP address, subnet mask and default gateway

a. Each workstation should be able to ping the attached router. Troubleshoot as necessary. Remember to assign a specific IP address and default gateway to the workstation. If running Windows 9x/ME, check by using **Start** > **Run** > **`winipcfg`**. If running Windows NT/2000/XP, check by using the **`ipconfig`** command in a Command Prompt window.

b. At this point the workstations will not be able to communicate with each other. The following steps will demonstrate the process required to get communication working using OSPF as the routing protocol.

```
Host connected to router Cairo
IP Address:              192.168.1.130
Subnet mask:             255.255.255.192
Default gateway:         192.168.1.129

Host connected to router Moscow
IP Address:              192.168.0.2
Subnet mask:             255.255.255.0
Default gateway:         192.168.0.1
```

Step 4 View the routers configuration and interface information

a. At the privileged EXEC mode type:

```
Cairo#show running-config
[…]
hostname Cairo
!
enable secret 5 $1$hGOQ$I7bGdq5INLFy2ZT4.5CdY/

!
ip subnet-zero
!
interface Ethernet0
 ip address 192.168.1.129 255.255.255.192
 speed auto
!
interface Serial0
 ip address 192.168.1.1 255.255.255.252
 clockrate 64000
!
interface Serial1
 no ip address
 shutdown
!
ip classless
no ip http server
!
!
line con 0
 password cisco
 login
line aux 0
line vty 0 4
 password cisco
 login
!
```



```
no scheduler allocate
end
```

b. Using the **show ip interface brief** command, check the status of each interface.

c. What is the state of the interfaces on each router?

Cairo:

Ethernet 0: Up

Serial 0: Up

Moscow:

Ethernet 0: Up

Serial 0: Up

d. On a router, `ping` the serial interface of the other router.

e. Was the ping successful? Yes

f. If the `ping` was not successful, troubleshoot the router configuration until the `ping` is successful.

Step 5 Configure OSPF routing on router Cairo

a. Configure OSPF routing on each router. Use OSPF process number 1 and ensure all networks are in area 0.

```
Cairo(config)#router ospf 1
Cairo(config-router)#network 192.168.1.128 0.0.0.63 area 0
Cairo(config-router)#network 192.168.1.0 0.0.0.3 area 0
Cairo(config-router)#end
```

b. Examine the running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes

d. What did it add? log-adjacency-changes

e. If there were no changes to the running configuration, type the following commands:

```
Cairo(config)#router ospf 1
Cairo(config-router)#log-adjacency-changes
Cairo(config-router)#end
```

f. Show the routing table for the Cairo router.

```
Cairo#show ip route
```

g. Are there any entries in the routing table? No

h. Why? The other router has not been configured to send OSPF routing updates yet.

Step 6 Configure OSPF routing on router Moscow

a. Configure OSPF routing on each router. Use OSPF process number 1 and ensure all networks are in area 0.

```
Moscow(config)#router ospf 1
Moscow(config-router)#network 192.168.0.0 0.0.0.255 area 0
Moscow(config-router)#network 192.168.1.0 0.0.0.3 area 0
Moscow(config-router)#end
```


b. Examine the running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes

d. If there were no changes to the running configuration, type the following commands:

```
Moscow(config)#router ospf 1
Moscow(config-router)#log-adjacency-changes
Moscow(config-router)#end
```

Step 7 Show the routing table entries

a. Show the routing table entries for the Cairo router.

```
Cairo#show ip route
```

b. Are there any OSPF entries in the routing table now? Yes

c. What is the metric value of the OSPF route? 110

d. What is the VIA address in the OSPF route? 192.168.1.2

e. Are routes to all networks shown in the routing table? Yes

f. What does the O mean in the first column of the routing table? OSPF route

Step 8 Test network connectivity

a. Ping the Cairo host from the Moscow host. Was it successful? Yes

b. If not troubleshoot as necessary.

Step 9 Look at the OSPF cost on the Cairo router interfaces

Link Bandwidth	Default OSPF Cost
56 Kbps	**1785**
T1	**65**
10-Mbps	**10**
16-Mbps Token-ring	**6**
FDDI/Ethernet	**1**

a. Show the properties of the Cairo router serial and FastEthernet interfaces using the **show interfaces** command.

b. What is the default bandwidth of the interfaces?

c. Serial Interface: BW 1544 Kbit

d. FastEthernet Interface: BW 100000 Kbit

e. Calculate the OSPF cost.

f. Serial Interface: 64

g. FastEthernet Interface: 10

Step 10 Record the OSPF cost of the serial and FastEthernet interfaces

a. Using the **show ip ospf interface** command, record the OSPF cost of the serial and Fast Ethernet interfaces.

b. OSPF cost of Serial Interface: 64

c. OSPF cost of Ethernet Interface: 10

d. Do these agree with the calculations? Yes

e. The clock rate set for the interface should have been 64000. This is what has been used as a default to this point and specified in the lab, "Review of Basic Configuration including RIP". To calculate the cost of this actual bandwidth divide 10^8 by 64000.

Step 11 Manually set the cost on the serial interface

On the Serial interface of the Cairo router, set the OSPF cost to 1562 by typing **ip ospf cost 1562** at the serial interface configuration mode prompt.

```
Cairo(config)#interface serial 0
Cairo(config-if)#ip ospf cost 1562
Cairo(config-if)#end
```

Step 12. Verify cost

a. Note that it is essential that all connected links agree about the cost for consistent calculation of the shortest path first algorithm (SPF) in an area.

b. Verify that the interface OSPF cost was successfully modified.

```
Cairo#show ip ospf interface
Serial0 is up, line protocol is up
   Internet Address 192.168.1.1/30, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type POINT_TO_POINT
   Cost: 1562
   Transmit Delay is 1 sec, State POINT_TO_POINT,
```

c. Reverse the effect of this command by entering in interface configuration mode the command **no ip ospf cost.**

d. Verify that the default cost for the interface has returned.

```
Serial0 is up, line protocol is up
   Internet Address 192.168.1.1/30, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type POINT_TO_POINT,
   Cost: 64
   Transmit Delay is 1 sec, State POINT_TO_POINT,
```

e. Enter the command **bandwidth 2000** at the serial 0 interface configuration mode.

f. Record the new OSPF cost of the Serial interface. 50

g. Can the OSPF cost of an Ethernet interface be modified in this way? Yes

h. The speed can be set on an Ethernet interface. Will this affect the OSPF cost of that interface?

Yes

i. Verify or explain the above answer.

```
Ethernet0 is up, line protocol is up
   Internet Address 192.168.1.129/25, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type BROADCAST, Cost:
   50
   Transmit Delay is 1 sec, State DR, Priority 1
```


j. Reset the bandwidth on the serial interface using the **`no bandwidth 2000`** at the serial 0 interface configuration mode.

Once completion previous steps are completed, logoff by typing **`exit`** and turn the router off. Then remove and store the cables and adapters.

Erasing and reloading the router

Enter into the privileged EXEC mode by typing **enable**.

If prompted for a password, enter **class**. If that does not work, ask the instructor for assistance.

```
Router>enable
```

At the privileged EXEC mode, enter the command **erase startup-config**.

```
Router#erase startup-config
```

The responding line prompt will be:

```
Erasing the nvram filesystem will remove all files! Continue?
[confirm]
```

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

Now at the privileged EXEC mode, enter the command **reload**.

```
Router#reload
```

The responding line prompt will be:

```
System configuration has been modified. Save? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Proceed with reload? [confirm]
```

Press **Enter** to confirm.

In the first line of the response will be:

```
Reload requested by console.
```

After the router has reloaded the line prompt will be:

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

Type **n** and then press **Enter**.

The responding line prompt will be:

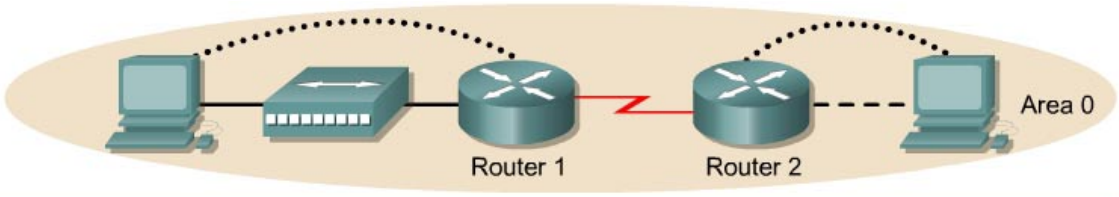
```
Press RETURN to get started!
```

Press **Enter**.

Now the router is ready for the assigned lab to be performed.

Router Interface Summary				
Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
800 (806)	Ethernet 0 (E0)	Ethernet 1 (E1)		
1600	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
1700	FastEthernet 0 (FA0)	FastEthernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)
2500	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
2600	FastEthernet 0/0 (FA0/0)	FastEthernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)
In order to find out exactly how the router is configured, look at the interfaces. This will identify what type and how many interfaces the router has. There is no way to effectively list all of the combinations of configurations for each router class. What is provided are the identifiers for the possible combinations of interfaces in the device. This interface chart does not include any other type of interface even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in IOS command to represent the interface.				

Lab 2.3.3 Modifying OSPF Cost Metric – 2600 Series



Router Designation	Router Name	Enable Secret Password	Enable, VTY, and Console Passwords	Routing Protocol	Network Statements
Router 1	Cairo	class	cisco	OSPF	192.168.1.0
Router 2	Moscow	class	cisco	OSPF	192.168.1.0 192.168.0.0

Router Designation	IP Host Table Entry	FastEthernet 0 Address/ Subnet Mask	Interface Type Serial 0	Serial 0 Address/Subnet Mask	Interface Type Serial 1	Serial 1 Address/Subnet Mask
Router 1	Moscow	192.168.1.129/26	DCE	192.168.1.1/30	NA	No address
Router 2	Cairo	192.168.0.1/24	DTE	192.168.1.2/30	NA	No address

Note: The IP Host Table Entry column contents indicate the name(s) of the other router(s) in the IP host table.

Straight-through cable		Console (Rollover)	
Serial cable		Crossover cable	

Objective

- Setup an IP addressing scheme for Open Shortest Path First (OSPF) area.
- Configure and verify OSPF routing.
- Modify OSPF cost metric on an interface.

Background/Preparation

Cable a network similar to the one shown in the diagram. Any router that meets the interface requirements displayed on the above diagram may be used. For example, router series 800, 1600, 1700, 2500, and 2600 or any such combination can be used. Please refer to the chart at the end of the lab to correctly identify the interface identifiers to be used based on the equipment in the lab. The configuration output used in this lab is produced from 1721 series routers. Any other router used may produce slightly different output. Perform the following steps on each router unless specifically instructed otherwise.

Start a HyperTerminal session.

Note: Go to the erase and reload instructions at the end of this lab. Perform those steps on all routers in this lab assignment before continuing.

Step 1 Configure the routers

On the routers, enter the global configuration mode and configure the hostname, console, virtual terminal, and enable secret passwords. Next configure the interfaces and IP hostnames according to

the chart. Do not configure the routing protocol until specifically told to. If there are any problems configuring the router basics, refer to the lab “Review of Basic Router Configuration with RIP”.

Router 1

```
Router>enable
Router#configure terminal
Router(config)#hostname Cairo

Cairo(config)#enable secret class
Cairo(config)#line console 0
Cairo(config-line)#password cisco
Cairo(config-line)#login
Cairo(config-line)#line vty 0 4
Cairo(config-line)#password cisco
Cairo(config-line)#login
Cairo(config-line)#exit
Cairo(config)#interface serial 0/0
Cairo(config-if)#ip address 192.168.1.1 255.255.255.252
Cairo(config-if)#clockrate 64000
Cairo(config-if)#no shutdown
Cairo(config-if)#interface fastethernet 0/0
Cairo(config-if)#ip address 192.168.1.129 255.255.255.128
Cairo(config-if)#no shutdown
Cairo(config-if)#exit
Cairo(config)#ip host Moscow 192.168.0.1 192.168.1.2
Cairo(config)#exit
```

Router 2

```
Router>enable
Router#configure terminal
Router(config)#hostname Moscow
Moscow(config)#enable password cisco
Moscow(config)#enable secret class
Moscow(config)#line console 0
Moscow(config-line)#password cisco
Moscow(config-line)#login
Moscow(config-line)#line vty 0 4
Moscow(config-line)#password cisco
Moscow(config-line)#login
Moscow(config-line)#exit
Moscow(config)#interface serial 0/0
Moscow(config-if)#ip address 192.168.1.2 255.255.255.252
Moscow(config-if)#no shutdown
Moscow(config-if)#interface fastethernet 0/0
Moscow(config-if)#ip address 192.168.0.1  255.255.255.0
Moscow(config-if)#no shutdown
Moscow(config-if)#exit
Moscow(config)#ip host Cairo 192.168.1.129 192.168.1.1
Moscow(config)#exit
```

Step 2 Save the configuration information from the privileged EXEC command mode

```
Cairo#copy running-config startup-config
Destination filename [startup-config]?[Enter]

Moscow#copy running-config startup-config
Destination filename [startup-config]?[Enter]
```

Why save the running configuration to the startup configuration?

Saving the configuration will allow the router to keep the configuration after a reload or power down.

Step 3 Configure the hosts with the proper IP address, subnet mask and default gateway

a. Each workstation should be able to ping the attached router. Troubleshoot as necessary. Remember to assign a specific IP address and default gateway to the workstation. If running Windows 9x/ME, check by using **Start** > **Run** > **`winipcfg`**. If running Windows NT/2000/XP, check by using the **`ipconfig`** command in a Command Prompt window.

b. At this point the workstations will not be able to communicate with each other. The following steps will demonstrate the process required to get communication working using OSPF as the routing protocol.

```
Host connected to router Cairo
IP Address:              192.168.1.130
Subnet mask:             255.255.255.192
Default gateway:         192.168.1.129

Host connected to router Moscow
IP Address:              192.168.0.2
Subnet mask:             255.255.255.0
Default gateway:         192.168.0.1
```

Step 4 View the routers configuration and interface information

a. At the privileged EXEC mode type:

```
Cairo#show running-config
[…]
hostname Cairo
!
enable secret 5 $1$hGOQ$I7bGdq5INLFy2ZT4.5CdY/
enable password cisco
!
ip subnet-zero
!
interface FastEthernet0/0
 ip address 192.168.1.129 255.255.255.192
 speed auto
!
interface Serial0/0
 ip address 192.168.1.1 255.255.255.252
 clockrate 64000
!
interface Serial1/0
 no ip address
 shutdown
!
ip classless
no ip http server
!
!
line con 0
 password cisco
 login
line aux 0
line vty 0 4
 password cisco
 login
!
```



```
no scheduler allocate
end
```

b. Using the **show ip interface brief** command, check the status of each interface.

c. What is the state of the interfaces on each router?

Cairo:

FastEthernet 0: Up

Serial 0: Up

Moscow:

FastEthernet 0: Up

Serial 0: Up

d. On a router, `ping` the serial interface of the other router.

e. Was the ping successful? Yes

f. If the `ping` was not successful, troubleshoot the router configuration until the `ping` is successful.

Step 5 Configure OSPF routing on router Cairo

a. Configure OSPF routing on each router. Use OSPF process number 1 and ensure all networks are in area 0.

```
Cairo(config)#router ospf 1
Cairo(config-router)#network 192.168.1.128 0.0.0.63 area 0
Cairo(config-router)#network 192.168.1.0 0.0.0.3 area 0
Cairo(config-router)#end
```

b. Examine the running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes

d. What did it add? log-adjacency-changes

e. If there were no changes to the running configuration, type the following commands:

```
Cairo(config)#router ospf 1
Cairo(config-router)#log-adjacency-changes
Cairo(config-router)#end
```

f. Show the routing table for the Cairo router.

```
Cairo#show ip route
```

g. Are there any entries in the routing table? No

h. Why? The other router has not been configured to send OSPF routing updates yet.

Step 6 Configure OSPF routing on router Moscow

a. Configure OSPF routing on each router. Use OSPF process number 1 and ensure all networks are in area 0.

```
Moscow(config)#router ospf 1
Moscow(config-router)#network 192.168.0.0 0.0.0.255 area 0
Moscow(config-router)#network 192.168.1.0 0.0.0.3 area 0
```



```
Moscow(config-router)#end
```

b. Examine the running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes

d. If there were no changes to the running configuration, type the following commands:

```
Moscow(config)#router ospf 1
Moscow(config-router)#log-adjacency-changes
Moscow(config-router)#end
```

Step 7 Show the routing table entries

a. Show the routing table entries for the Cairo router.

```
Cairo#show ip route
```

b. Are there any OSPF entries in the routing table now? Yes

c. What is the metric value of the OSPF route? 110

d. What is the VIA address in the OSPF route? 192.168.1.2

e. Are routes to all networks shown in the routing table? Yes

f. What does the O mean in the first column of the routing table? OSPF route

Step 8 Test network connectivity

a. Ping the Cairo host from the Moscow host. Was it successful? Yes

b. If not troubleshoot as necessary.

Step 9 Look at the OSPF cost on the Cairo router interfaces

Link Bandwidth	Default OSPF Cost
56 Kbps	**1785**
T1	**65**
10-Mbps	**10**
16-Mbps Token-ring	**6**
FDDI/Fast Ethernet	**1**

a. Show the properties of the Cairo router serial and FastEthernet interfaces using the **show interfaces** command.

b. What is the default bandwidth of the interfaces?

c. Serial Interface: BW 1544 Kbit

d. FastEthernet Interface: BW 100000 Kbit

e. Calculate the OSPF cost.

f. Serial Interface: 64

g. FastEthernet Interface: 1

Step 10 Record the OSPF cost of the serial and FastEthernet interfaces

a. Using the **show ip ospf interface** command, record the OSPF cost of the serial and Fast Ethernet interfaces.

b. OSPF cost of Serial Interface: 64

c. OSPF cost of Ethernet Interface: 1

d. Do these agree with the calculations? Yes

e. The clock rate set for the interface should have been 64000. This is what has been used as a default to this point and specified in the lab, "Review of Basic Configuration including RIP". To calculate the cost of this actual bandwidth divide 10^8 by 64000.

Step 11 Manually set the cost on the serial interface

On the Serial interface of the Cairo router, set the OSPF cost to 1562 by typing **ip ospf cost 1562** at the serial interface configuration mode prompt.

```
Cairo(config)#interface serial 0/0
Cairo(config-if)#ip ospf cost 1562
Cairo(config-if)#end
```

Step 12. Verify cost

a. Note that it is essential that all connected links agree about the cost for consistent calculation of the shortest path first algorithm (SPF) in an area.

b. Verify that the interface OSPF cost was successfully modified.

```
Cairo#show ip ospf interface
Serial0/0 is up, line protocol is up
   Internet Address 192.168.1.1/30, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type POINT_TO_POINT
   Cost: 1562
   Transmit Delay is 1 sec, State POINT_TO_POINT,
```

c. Reverse the effect of this command by entering in interface configuration mode the command **no ip ospf cost.**

d. Verify that the default cost for the interface has returned.

```
Serial0/0 is up, line protocol is up
   Internet Address 192.168.1.1/30, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type POINT_TO_POINT,
   Cost: 64
   Transmit Delay is 1 sec, State POINT_TO_POINT,
```

e. Enter the command **bandwidth 2000** at the serial 0 interface configuration mode.

f. Record the new OSPF cost of the Serial interface. 50

g. Can the OSPF cost of an Ethernet interface be modified in this way? Yes

h. The speed can be set on an Ethernet interface. Will this affect the OSPF cost of that interface?

Yes

i. Verify or explain the above answer.

```
FastEthernet0/0 is up, line protocol is up
   Internet Address 192.168.1.129/25, Area 0
   Process ID 1, Router ID 192.168.1.129, Network Type BROADCAST, Cost:
   50
   Transmit Delay is 1 sec, State DR, Priority 1
```


j. Reset the bandwidth on the serial interface using the **`no bandwidth 2000`** at the serial 0 interface configuration mode.

Once completion previous steps are completed, logoff by typing **`exit`** and turn the router off. Then remove and store the cables and adapters.

Erasing and reloading the router

Enter into the privileged EXEC mode by typing **enable**.

If prompted for a password, enter **class**. If that does not work, ask the instructor for assistance.

```
Router>enable
```

At the privileged EXEC mode, enter the command **erase startup-config**.

```
Router#erase startup-config
```

The responding line prompt will be:

```
Erasing the nvram filesystem will remove all files! Continue?
[confirm]
```

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

Now at the privileged EXEC mode, enter the command **reload**.

```
Router#reload
```

The responding line prompt will be:

```
System configuration has been modified. Save? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Proceed with reload? [confirm]
```

Press **Enter** to confirm.

In the first line of the response will be:

```
Reload requested by console.
```

After the router has reloaded the line prompt will be:

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

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Press RETURN to get started!
```

Press **Enter**.

Now the router is ready for the assigned lab to be performed.

Router Interface Summary				
Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
800 (806)	Ethernet 0 (E0)	Ethernet 1 (E1)		
1600	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
1700	FastEthernet 0 (FA0)	FastEthernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)
2500	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
2600	FastEthernet 0/0 (FA0/0)	FastEthernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)
In order to find out exactly how the router is configured, look at the interfaces. This will identify what type and how many interfaces the router has. There is no way to effectively list all of the combinations of configurations for each router class. What is provided are the identifiers for the possible combinations of interfaces in the device. This interface chart does not include any other type of interface even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in IOS command to represent the interface.				

