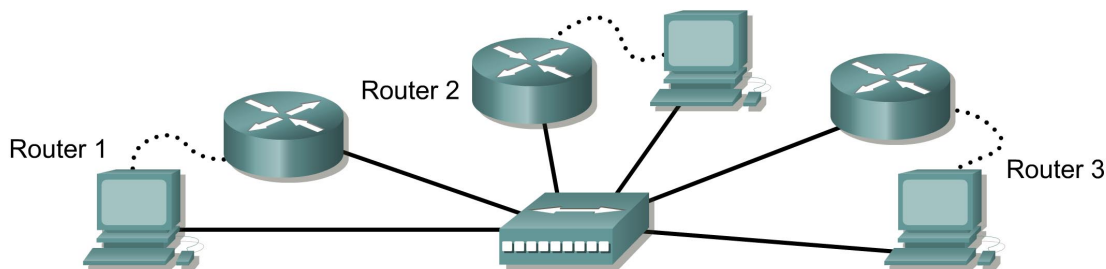# Lab 2.3.2 Configuring OSPF with Loopback Addresses – 2500 Series

Router Designation	Router Name	Enable Secret Password	Enable, VTY, and Console Passwords	Routing Protocol	OSPF Priority	Network Statements
Router 1	London	class	cisco	OSPF	1	192.168.1.0
Router 2	Ottawa	class	cisco	OSPF	1	192.168.1.0
Router 3	Brasilia	class	cisco	OSPF	1	192.168.1.0

Router Designation	IP Host Table Entry	FastEthernet 0 Address/Subnet Mask	Loopback Interface/Subnet Mask
Router 1	Ottawa Brasilia	192.168.1.1/24	192.168.31.11/32
Router 2	London Brasilia	192.168.1.2/24	192.168.31.22/32
Router 3	London Ottawa	192.168.1.3/24	192.168.31.33/32

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

- Configure routers with a Class C IP addressing scheme.

- Observe the election process for designated routers (DR) and backup designated routers (BDR) on the multiaccess network.

- Configure loopback addresses for Open Shortest Path First (OSPF) stability.

- Assign each OSPF interface a priority to force the election of a specific router as DR.

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 as shown in the chart. Then configure the console, virtual terminal and enable secret passwords. Next configure the interfaces according and the IP hostnames. Do not configure loopback interfaces and routing protocol yet. If there are any problems configuring the router basics, refer to the lab "Review of Basic Router Configuring with RIP".

```
Router1
Router>enable
Router#configure terminal
Router(config)#hostname LONDON

LONDON(config)#enable secret class
LONDON(config)#line console 0
LONDON(config-line)#password cisco
LONDON(config-line)#login
LONDON(config-line)#line vty 0 4
LONDON(config-line)#password cisco
LONDON(config-line)#login
LONDON(config-line)#exit
LONDON(config)#interface ethernet 0
LONDON(config-if)#ip address 192.168.1.1 255.255.255.0
LONDON(config-if)#no shutdown
LONDON(config-if)#exit
LONDON(config)#ip host OTTAWA 192.168.1.2
LONDON(config)#ip host BRASILIA 192.168.1.3

Router2
Router>enable
Router#configure terminal
Router(config)#hostname OTTAWA

OTTOWA(config)#enable secret class
OTTOWA(config)#line console 0
OTTOWA(config-line)#password cisco
OTTOWA(config-line)#login
OTTOWA(config-line)#line vty 0 4
OTTOWA(config-line)#password cisco
OTTOWA(config-line)#login
OTTOWA(config-line)#exit
OTTOWA(config)#interface ethernet 0
OTTOWA(config-if)#ip address 192.168.1.2 255.255.255.0
OTTOWA(config-if)#no shutdown
OTTOWA(config-if)#exit
OTTOWA(config)#ip host LONDON 192.168.1.1
OTTOWA(config)#ip host BRASILIA 192.168.1.3

Router3
Router>enable
Router#configure terminal
Router(config)#hostname BRASILIA

BRASILIA(config)#enable secret class
BRASILIA(config)#line console 0
BRASILIA(config-line)#password cisco
BRASILIA(config-line)#login
BRASILIA(config-line)#line vty 0 4
BRASILIA(config-line)#password cisco
```

```
BRASILIA(config-line)#login
BRASILIA(config-line)#exit
BRASILIA(config)#interface ethernet 0
BRASILIA(config-if)#ip address 192.168.0.1 255.255.255.0
BRASILIA(config-if)#no shutdown
BRASILIA(config-if)#exit
BRASILIA(config)#ip host LONDON 192.168.1.1
BRASILIA(config)#ip host OTTAWA 192.168.1.2
```

Step 2 Save the configuration information for all the routers

Why save the running configuration to the startup configuration?

So that the router will keep the configuration when it is reset.

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

Each workstation should be able to ping all of the attached routers. That is because they are all part of the same subnetwork. Troubleshoot as necessary. Remember to assign a specific IP address and default gateway to the workstation. If running Windows 98, check by using **Start** > **Run** > **winipcfg**. If running Windows 2000, check by using the **ipconfig** command in a DOS window.

```
Host with gateway London
IP Address:        192.168.1.4
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.1

Host with gateway Ottawa
IP Address:        192.168.1.5
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.2

Host with gateway Brasilia
IP Address:        192.168.1.6
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.3
```

Step 4 View the routers configuration and interface information

a.   At the privileged EXEC mode prompt type: **show running-config**

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?

London:

Ethernet 0: Up

Serial 0: Down

Serial 1: Down

Ottawa:

Ethernet 0: Up

Serial 0: Down

Serial 1: Down

Brasilia:

Ethernet 0: Up

Serial 0: Down

Serial 1: Down

Step 5 Verify connectivity of the routers

a. Ping all of the connected FastEthernet interfaces from each other.

b. Were the pings successful? Yes

c. If the pings were not successful, troubleshoot the router configuration, until the `ping` is successful.

Step 6 Configure OSPF routing on router London

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

```
London(config)#router ospf 1
London(config-router)#network 192.168.1.0 0.0.0.255 area 0
London(config-router)#end
```

b. Examine the London router running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

e. Show the routing table for router:

```
London#show ip route
```

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

g. Why? No other routers have been configured with OSPF.

Step 7 Configure OSPF routing on router Ottawa

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

```
Ottawa(config)#router ospf 1
Ottawa(config-router)#network 192.168.1.0 0.0.0.255 area 0
Ottawa(config-router)#end
```

b. Examine the Ottawa running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

Step 8 Configure OSPF routing on router Brasilia

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

```
Brasilia(config)#router ospf 1
Brasilia(config-router)#network 192.168.1.0 0.0.0.255 area 0
Brasilia(config-router)#end
```

b. Examine the Brasilia router running configuration file.

Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

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

Step 9 Test network connectivity

a. Ping the Brasilia router from the London router. Was it successful? Yes/No

b. If not troubleshoot as necessary.

Step 10 Show OSPF adjacencies

a. Type the command `show ip ospf neighbor` on all routers to verify that the OSPF routing has formed adjacencies.

b. Is there a designated router identified? Yes

c. Is there a backup designated router? Yes

d. Type the command `show ip ospf neighbor detail` for more information.

e. What is the neighbor priority of 192.168.1.1 from router Brasilia? 1

f. What interface is Identified as being part of Area 0? Ethernet0

Step 11 Configure the loopback interfaces

Configure the loopback interface on each router to allow for an interface that will not go down due to network change or failure. This task is performed by typing `interface loopback #` at the global configuration mode prompt, where the # represents the number of the loopback interface from 0 - 2,147,483,647.

```
London(config)#interface loopback 0
London(config-if)#ip address 192.168.31.11 255.255.255.255
London(config-router)#end

Ottawa(config)#interface loopback 0
Ottawa(config-if)#ip address 192.168.31.22 255.255.255.255
Ottawa(config-router)#end

Brasilia(config)#interface loopback 0
Brasilia(config-if)#ip address 192.168.31.33 255.255.255.255
Brasilia(config-router)#end
```

Step 12 Save the configuration information for all the routers

After saving the configurations on all of the routers, power them down and back up again.

Step 13 Show OSPF adjacencies

a. Type the command `show ip ospf neighbor` on all routers to verify that the OSPF routing has formed adjacencies.

b. Is there a designated router identified? Yes

c. Write down the router ID and link address of the DR. 192.168.31.33 and 192.168.1.3

d. Is there a backup designated router? Yes

e. Write down the router ID and link address of the BDR. 192.168.31.22 and 192.168.1.2

f. What is the third router referred to as? DROTHER

g. Write down that Routers ID and link address. 192.168.31.11_and_192.168.1.1

h. Type the command `show ip ospf neighbor detail` for more information.

i. What is the neighbor priority of 192.168.1.1 from router Brasilia? 1

j. What interface is Identified as being part of Area 0? Ethernet0

Step 14 Verify OSPF interface configuration

a. Type `show ip ospf interface fastethernet 0` on the London router.

b. What is the OSPF state of the interface? DROTHER

c. What is the default priority of the interface? 1

d. What is the network type of the interface? Broadcast

Step 15 Configure London to always be the DR

To ensure that the London router always becomes the DR for this multi-access segment, the OSPF priority must be set. London is the most powerful router in the network and so best suited to become DR. To assign the London loopback a higher IP address is not advised, as the numbering system has advantages for troubleshooting. Also London is not to act as DR for all segments to which it may belong. Set the priority of the interface to 50 on the London router only.

```
London(config)#interface ethernet 0
London(config-if)#ip ospf priority 50
London(config-if)#end
```

Display the priority for Interface ethernet 0

```
London#show ip ospf interface ethernet 0
```

Step 16 Watch election process

a. To watch the OSPF election process restart all of the routers using the `reload` command. Be sure to save the running config before restarting the routers. As soon as the router prompt is available type:

```
Ottawa>enable
Ottawa#debug ip ospf events
```

b. Which router was elected DR? London

c. Which router was elected BDR? Brasilia

d. Why? It has the higher Priority.

e. To turn off all debugging type `undebug all`.

Step 17 Show OSPF Adjacencies

a. Type the command `show ip ospf neighbor` on the Ottawa router to verify that the OSPF routing has formed adjacencies.

b. What is the priority of the DR? 50

Once the previous steps are completed log off by typing `exit` and turn the router off. Then remove and store the cables and adapter.

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**.
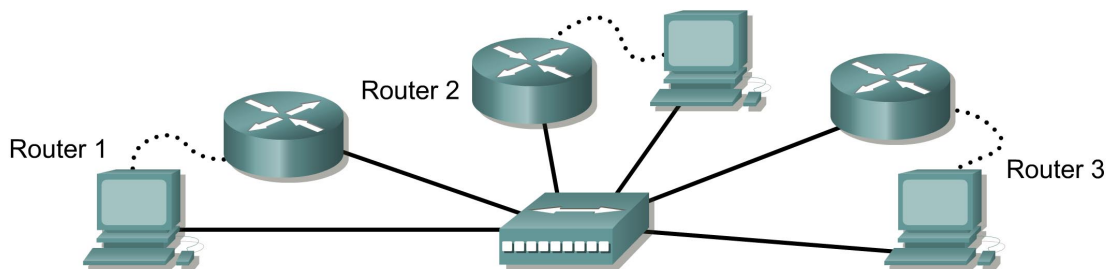
The responding line prompt will be:

```
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 2.3.2 Configuring OSPF with Loopback Addresses – 2600 Series

Router Designation	Router Name	Enable Secret Password	Enable, VTY, and Console Passwords	Routing Protocol	OSPF Priority	Network Statements
Router 1	London	class	cisco	OSPF	1	192.168.1.0
Router 2	Ottawa	class	cisco	OSPF	1	192.168.1.0
Router 3	Brasilia	class	cisco	OSPF	1	192.168.1.0

Router Designation	IP Host Table Entry	FastEthernet 0 Address/Subnet Mask	Loopback Interface/Subnet Mask
Router 1	Ottawa Brasilia	192.168.1.1/24	192.168.31.11/32
Router 2	London Brasilia	192.168.1.2/24	192.168.31.22/32
Router 3	London Ottawa	192.168.1.3/24	192.168.31.33/32

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

- Configure routers with a Class C IP addressing scheme.

- Observe the election process for designated routers (DR) and backup designated routers (BDR) on the multiaccess network.

- Configure loopback addresses for Open Shortest Path First (OSPF) stability.

- Assign each OSPF interface a priority to force the election of a specific router as DR.

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 as shown in the chart. Then configure the console, virtual terminal and enable secret passwords. Next configure the interfaces according and the IP hostnames. Do not configure loopback interfaces and routing protocol yet. If there are any problems configuring the router basics, refer to the lab "Review of Basic Router Configuring with RIP".

Router1
Router>**enable**
Router#**configure terminal**
Router(config)#**hostname LONDON**

LONDON(config)#**enable secret class**
LONDON(config)#**line console 0**
LONDON(config-line)#**password cisco**
LONDON(config-line)#**login**
LONDON(config-line)#**line vty 0 4**
LONDON(config-line)#**password cisco**
LONDON(config-line)#**login**
LONDON(config-line)#**exit**
LONDON(config)#**interface fastethernet 0/0**
LONDON(config-if)#**ip address 192.168.1.1 255.255.255.0**
LONDON(config-if)#**no shutdown**
LONDON(config-if)#**exit**
LONDON(config)#**ip host OTTAWA 192.168.1.2**
LONDON(config)#**ip host BRASILIA 192.168.1.3**

Router2
Router>**enable**
Router#**configure terminal**
Router(config)#**hostname OTTAWA**

OTTOWA(config)#**enable secret class**
OTTOWA(config)#**line console 0**
OTTOWA(config-line)#**password cisco**
OTTOWA(config-line)#**login**
OTTOWA(config-line)#**line vty 0 4**
OTTOWA(config-line)#**password cisco**
OTTOWA(config-line)#**login**
OTTOWA(config-line)#**exit**
OTTOWA(config)#**interface fastethernet 0/0**
OTTOWA(config-if)#**ip address 192.168.1.2 255.255.255.0**
OTTOWA(config-if)#**no shutdown**
OTTOWA(config-if)#**exit**
OTTOWA(config)#**ip host LONDON 192.168.1.1**
OTTOWA(config)#**ip host BRASILIA 192.168.1.3**

Router3
Router>**enable**
Router#**configure terminal**
Router(config)#**hostname BRASILIA**

BRASILIA(config)#**enable secret class**
BRASILIA(config)#**line console 0**
BRASILIA(config-line)#**password cisco**
BRASILIA(config-line)#**login**
BRASILIA(config-line)#**line vty 0 4**
BRASILIA(config-line)#**password cisco**

```
BRASILIA(config-line)#login
BRASILIA(config-line)#exit
BRASILIA(config)#interface fastethernet 0/0
BRASILIA(config-if)#ip address 192.168.0.1 255.255.255.0
BRASILIA(config-if)#no shutdown
BRASILIA(config-if)#exit
BRASILIA(config)#ip host LONDON 192.168.1.1
BRASILIA(config)#ip host OTTAWA 192.168.1.2
```

Step 2 Save the configuration information for all the routers

Why save the running configuration to the startup configuration?

So that the router will keep the configuration when it is reset.

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

Each workstation should be able to ping all of the attached routers. That is because they are all part of the same subnetwork. Troubleshoot as necessary. Remember to assign a specific IP address and default gateway to the workstation. If running Windows 98, check by using **Start** > **Run** > `winipcfg`. If running Windows 2000, check by using the `ipconfig` command in a DOS window.

```
Host with gateway London
IP Address:        192.168.1.4
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.1

Host with gateway Ottawa
IP Address:        192.168.1.5
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.2

Host with gateway Brasilia
IP Address:        192.168.1.6
Subnet mask:       255.255.255.0
Default gateway:   192.168.1.3
```

Step 4 View the routers configuration and interface information

a. At the privileged EXEC mode prompt type: `show running-config`

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?

London:

   FastEthernet 0: Up

   Serial 0: Down

   Serial 1: Down

Ottawa:

   FastEthernet 0: Up

   Serial 0: Down

   Serial 1: Down

Brasilia:

   FastEthernet 0: Up

   Serial 0: Down

Serial 1: Down

Step 5 Verify connectivity of the routers

a. Ping all of the connected FastEthernet interfaces from each other.

b. Were the pings successful? Yes

c. If the pings were not successful, troubleshoot the router configuration, until the `ping` is successful.

Step 6 Configure OSPF routing on router London

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

```
London(config)#router ospf 1
London(config-router)#network 192.168.1.0 0.0.0.255 area 0
London(config-router)#end
```

b. Examine the London router running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

e. Show the routing table for router:

```
London#show ip route
```

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

g. Why? No other routers have been configured with OSPF.

Step 7 Configure OSPF routing on router Ottawa

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

```
Ottawa(config)#router ospf 1
Ottawa(config-router)#network 192.168.1.0 0.0.0.255 area 0
Ottawa(config-router)#end
```

b. Examine the Ottawa running configuration file.

c. Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

Step 8 Configure OSPF routing on router Brasilia

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

```
Brasilia(config)#router ospf 1
Brasilia(config-router)#network 192.168.1.0 0.0.0.255 area 0
Brasilia(config-router)#end
```

b. Examine the Brasilia router running configuration file.

Did the IOS version automatically add any lines under router OSPF 1? Yes/No

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

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

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

Step 9 Test network connectivity

a. Ping the Brasilia router from the London router. Was it successful? Yes/No

b. If not troubleshoot as necessary.

Step 10 Show OSPF adjacencies

a. Type the command `show ip ospf neighbor` on all routers to verify that the OSPF routing has formed adjacencies.

b. Is there a designated router identified? Yes

c. Is there a backup designated router? Yes

d. Type the command `show ip ospf neighbor detail` for more information.

e. What is the neighbor priority of 192.168.1.1 from router Brasilia? 1

f. What interface is Identified as being part of Area 0? fastethernet0/0

Step 11 Configure the loopback interfaces

Configure the loopback interface on each router to allow for an interface that will not go down due to network change or failure. This task is performed by typing `interface loopback #` at the global configuration mode prompt, where the # represents the number of the loopback interface from 0 - 2,147,483,647.

```
London(config)#interface loopback 0
London(config-if)#ip address 192.168.31.11 255.255.255.255
London(config-router)#end

Ottawa(config)#interface loopback 0
Ottawa(config-if)#ip address 192.168.31.22 255.255.255.255
Ottawa(config-router)#end

Brasilia(config)#interface loopback 0
Brasilia(config-if)#ip address 192.168.31.33 255.255.255.255
Brasilia(config-router)#end
```

Step 12 Save the configuration information for all the routers

After saving the configurations on all of the routers, power them down and back up again.

Step 13 Show OSPF adjacencies

a. Type the command `show ip ospf neighbor` on all routers to verify that the OSPF routing has formed adjacencies.

b. Is there a designated router identified? Yes

c. Write down the router ID and link address of the DR. 192.168.31.33 and 192.168.1.3

d. Is there a backup designated router? Yes

e. Write down the router ID and link address of the BDR. 192.168.31.22 and 192.168.1.2

f. What is the third router referred to as? DROTHER

g. Write down that Routers ID and link address. 192.168.31.11 and 192.168.1.1

h. Type the command `show ip ospf neighbor detail` for more information.

i. What is the neighbor priority of 192.168.1.1 from router Brasilia? 1

j. What interface is Identified as being part of Area 0? fastethernet0/0

Step 14 Verify OSPF interface configuration

a. Type `show ip ospf interface fastethernet 0` on the London router.

b. What is the OSPF state of the interface? DROTHER

c. What is the default priority of the interface? 1

d. What is the network type of the interface? Broadcast

Step 15 Configure London to always be the DR

To ensure that the London router always becomes the DR for this multi-access segment, the OSPF priority must be set. London is the most powerful router in the network and so best suited to become DR. To assign the London loopback a higher IP address is not advised, as the numbering system has advantages for troubleshooting. Also London is not to act as DR for all segments to which it may belong. Set the priority of the interface to 50 on the London router only.

```
London(config)#interface Fastethernet 0/0
London(config-if)#ip ospf priority 50
London(config-if)#end
```

Display the priority for Interface fastethernet 0/0.

```
London#show ip ospf interface fastethernet 0/0
```

Step 16 Watch election process

a. To watch the OSPF election process restart all of the routers using the `reload` command. Be sure to save the running config before restarting the routers. As soon as the router prompt is available type:

```
Ottawa>enable
Ottawa#debug ip ospf events
```

b. Which router was elected DR? London

c. Which router was elected BDR? Brasilia

d. Why? It has the higher Priority.

e. To turn off all debugging type `undebug all`.

Step 17 Show OSPF Adjacencies

a. Type the command `show ip ospf neighbor` on the Ottawa router to verify that the OSPF routing has formed adjacencies.

b. What is the priority of the DR? 50

Once the previous steps are completed log off by typing `exit` and turn the router off. Then remove and store the cables and adapter.

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.