OSPF Over Frame-Relay

# Frame-Relay Configuration:

1. Configure the serial interfaces on the frame-relay switch as cisco with the DLCIs as shown in the network diagram.
2. Configure the frame-relay map on the frame-relay switch as shown in the network diagram.

# Basic Router Configuration:

1. Configure the hostname on all routers and switches as shown in the network diagram.
2. Configure the enable secret password to be cisco on all routers and switches.
3. Configure the enable password to be free on all routers and switches.
4. Configure the VTY password to be cisco on all routers and switches
5. Configure Serial 0/0/0 on R1, 2 and 3 to use Frame-Relay Encapsulation
6. Using ping verify that conectivity via the Frame-Relay
7. Configure the IP address on all routers and switches as shown in the network diagram.
8. Configure all router not to do domain lookup.
9. Configure the console on all routers not to timeout.

# Configure the server and PC workstations:

1. Configure the IP address address and subnet mask on all PC workstation as shown in the network diagram.
2. Configure the gatewy address on all PC workstation as shown in the network diagram.
3. Configure the IP address address and subnet mask on the server as shown in the network diagram.
4. Configure the gatewy address on the server as shown in the network diagram.

# Enable OSPF:

1. Enable OSPF routing protocol on all routers using process 200.
2. Configure the Network interface on all routers to be part of the OSPF Area 0 routing process shown in the network diagram.

# Verify the Configurationk:

1. Display the IP Protocol on R1 and verify the OSPF protocol is enabled.

Routing Protocol is "ospf 200"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 192.168.1.1

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

10.1.1.0 0.0.0.255 area 0

192.168.1.0 0.0.0.255 area 0

Routing Information Sources:

Gateway Distance Last Update

10.1.1.100 110 00:05:32

192.168.1.3 110 00:05:35

192.168.1.2 110 00:05:34

Distance: (default is 110)

1. Display the OSPF interfaces on R2.

FastEthernet0/1 is up, line protocol is up

Internet address is 172.20.1.254/24, Area 0

Process ID 200, Router ID 192.168.1.2, Network Type BROADCAST, Cost: 1

Transmit Delay is 1 sec, State DR, Priority 1

Designated Router (ID) 192.168.1.2, Interface address 172.20.1.254

No backup designated router on this network

Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

Hello due in 00:00:01

Index 1/1, flood queue length 0

Next 0x0(0)/0x0(0)

Last flood scan length is 1, maximum is 1

Last flood scan time is 0 msec, maximum is 0 msec

Neighbor Count is 0, Adjacent neighbor count is 0

Suppress hello for 0 neighbor(s)

Serial0/0/0 is up, line protocol is up

Internet address is 192.168.1.2/29, Area 0

Process ID 200, Router ID 192.168.1.2, Network Type BROADCAST, Cost: 781

Transmit Delay is 1 sec, State DR, Priority 1

Designated Router (ID) 192.168.1.2, Interface address 192.168.1.2

Backup Designated Router (ID) 192.168.1.1, Interface address 192.168.1.1

Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

Hello due in 00:00:06

Index 2/2, flood queue length 0

Next 0x0(0)/0x0(0)

Last flood scan length is 1, maximum is 1

Last flood scan time is 0 msec, maximum is 0 msec

Neighbor Count is 1, Adjacent neighbor count is 1

Adjacent with neighbor 192.168.1.1 (Backup Designated Router)

Suppress hello for 0 neighbor(s)

1. Display routing table for R2

Gateway of last resort is not set

10.0.0.0/24 is subnetted, 1 subnets

O 10.1.1.0 [110/1562] via 192.168.1.1, 00:18:13, Serial0/0/0

172.16.0.0/24 is subnetted, 2 subnets

O 172.16.10.0 [110/1563] via 192.168.1.1, 00:11:43, Serial0/0/0

O 172.16.11.0 [110/1563] via 192.168.1.1, 00:11:33, Serial0/0/0

172.20.0.0/24 is subnetted, 1 subnets

C 172.20.1.0 is directly connected, FastEthernet0/1

172.22.0.0/24 is subnetted, 1 subnets

O 172.22.1.0 [110/1562] via 192.168.1.3, 00:14:05, Serial0/0/0

172.30.0.0/24 is subnetted, 1 subnets

O 172.30.1.0 [110/782] via 192.168.1.3, 00:14:28, Serial0/0/0

172.31.0.0/24 is subnetted, 2 subnets

O 172.31.20.0 [110/1563] via 192.168.1.3, 00:09:49, Serial0/0/0

O 172.31.21.0 [110/1563] via 192.168.1.3, 00:09:39, Serial0/0/0

192.168.1.0/29 is subnetted, 1 subnets

C 192.168.1.0 is directly connected, Serial0/0/0

Using ping verify full conectivity of all connections.

This concludes this Lab Activity: