**Basic using OSPF and ACL (Solution).**

***The solution is marked as bold an italic.***

The goal is practicing with the basic commands of OSPF and standard ACLs. You must do the next configurations:

1. - Configure the IP addresses as:

- Host A: 10.1.1.1/24. Gateway: 10.1.1.3

***IP: 10.1.1.1***

***Mask: 255.255.255.0***

***Gateway: 10.1.1.3***

- Host B: 10.1.1.2/24. Gateway: 10.1.1.3

***IP: 10.1.1.2***

***Mask: 255.255.255.0***

***Gateway: 10.1.1.3***

- R1´s G0/0: 10.1.1.3/24

***Router>enable***

***Router#configure terminal***

***Router (config)#interface g0/0***

***Router (config-if)#ip address 10.1.1.3 255.255.255.0***

***Router (config-if)#no shutdown***

***Router (config-if)#end***

- Host C: 10.3.3.3/25. Gateway: 10.3.3.1

***IP: 10.3.3.3***

***Mask: 255.255.255.128***

***Gateway: 10.3.3.1***

- R1´s G0/1: 10.3.3.1/25

***Router#configure terminal***

***Router (config)#interface g0/1***

***Router (config-if)#ip address 10.3.3.1 255.255.255.128***

***Router (config-if)#no shutdown***

***Router (config-if)#end***

- S1: 10.2.2.1/24. Gateway: 10.2.2.3

***IP: 10.2.2.1***

***Mask: 255.255.255.0***

***Gateway: 10.2.2.3***

- S2: 10.2.2.2/24. Gateway: 10.2.2.3

***IP: 10.2.2.2***

***Mask: 255.255.255.0***

***Gateway: 10.2.2.3***

- R2´s G0/0: 10.2.2.3/24

***Router>enable***

***Router#configure terminal***

***Router (config)#interface g0/0***

***Router (config-if)#ip address 10.2.2.3 255.255.255.0***

***Router (config-if)#no shutdown***

***Router (config-if)#end***

- R1´s S0/3/0: 10.4.4.1/30

***Router#configure terminal***

***Router (config)#interface s0/3/0***

***Router (config-if)#ip address 10.4.4.1 255.255.255.252***

***Router (config-if)#no shutdown***

***Router (config-if)#end***

- R2´s S0/3/0: 10.4.4.2/30

***Router#configure terminal***

***Router (config)#interface s0/3/0***

***Router (config-if)#ip address 10.4.4.2 255.255.255.252***

***Router (config-if)#no shutdown***

***Router (config-if)#end***

Check that you can ping between hosts in the same subnet:

- From Host A to Host B.

- From Host C to R1´s G0/1 interface.

- From S1 to S2.

- From R1´s S0/3/0 interface to R2´s S0/3/0 interface.

Note that you can´t ping between hosts in different subnets because the routers don´t have any entry in their routing table.

2. – Enable OSPF in all interfaces both R1 and R2 (area 0) with only one subcommand in the OSPF configuration.

***R1:***

***Router#configure terminal***

***Router (config)#router ospf 1***

***Router (config-router)#network 10.0.0.0 0.255.255.255 area 0***

***Router (config-router)#end***

***R2:***

***Router#configure terminal***

***Router (config)#router ospf 1***

***Router (config-router)#network 10.0.0.0 0.255.255.255 area 0***

***Router (config-router)#end***

Check that the neighboring relationships have been created between R1 and R2.

***R1:***

***Router#show ip ospf neighbor***

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***R2:***

***Router#show ip ospf neighbor***



Check that, after configuring OSPF, you can ping between hosts in different subnets.

- From Host A to Host C.

- From Host C to S1.

- From Host A to S1.

2. – Configure ACL on the right routers, interfaces and directions based on these requirements:

- Permit packets from S1 going to subnet of hosts A and B.

- Deny packets from S2 going to subnet of host A and B.

- Permit packets from S2 going to subnet of host C.

- Deny packets from S1 going to subnet of host C.

***Using an outbound ACL on R1´s G0/0, permit packets from S1 and deny all other packets.***

***Using an outbound ACL on R1´s G0/1, permit packets from S2 and deny all other packets.***

***R1:***

***Router#configure terminal***

***Router (config)#access-list 1 permit 10.2.2.1***

***Router (config)#access-list 2 permit 10.2.2.2***

***Router (config)#interface G0/0***

***Router (config-if)#ip access-group 1 out***

***Router (config-if)#interface G0/1***

***Router (config-if)#ip access-group 2 out***

***Router (config-if)#end***

After configuring ACL, check that:

- You can ping from S1 to host A and B, but not to host C.

- You can ping from S2 to host C, but not to hosts A and B.