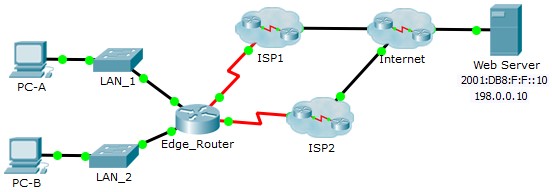
**Packet Tracer - Configuring Floating Static Routes**

# Topology



# Objectives

**Part 1: Configure an IPv4 Floating Static Route**

**Part 2: Test Failover to the IPv4 Floating Static Route**

**Part 3: Configure and Test Failover for an IPv6 Floating Static Route**

# Background

In this activity, you will configure IPv4 and IPv6 floating static routes. These routes are manually configured with an administrative distance greater than that of the primary route and, therefore, would not be in the routing table until the primary route fails. You will test failover to the backup routes, and then restore connectivity to the primary route.



# Part 1: Configure an IPv4 Floating Static Route

**Step 1: Configure an IPv4 static default route.**

1. Configure a directly connected static default route from **Edge\_Router** to the Internet. The primary default route should be through **ISP1**.

ip route 0.0.0.0 0.0.0.0 s0/0/0

1. Display the contents of the routing table. Verify that the default route is visible in the routing table.

show ip route

S\* 0.0.0.0/0 [1/0] via 10.10.10.1 is directly connected, Serial0/0/0

1. What command is used to trace a path from a PC to a destination? tracert

From **PC-A**, trace the route to the **Web Server**. The route should start at the default gateway

192.168.10.1 and go through the 10.10.10.1 address. If not, check your static default route configuration.

Tracing route to 198.0.0.10 over a maximum of 30 hops:

1 0 ms 0 ms 1 ms 192.168.10.1

2 0 ms 0 ms 0 ms 10.10.10.1

3 \* 0 ms 0 ms 198.0.0.10

Trace complete.

**Step 2: Configure an IPv4 floating static route.**

1. What is the administrative distance of a static route? direct 0 recursive 1
2. Configure a directly connected floating static default route with an administrative distance of 5. The route should point to **ISP2**.

ip route 0.0.0.0 0.0.0.0 s0/0/1 5

1. View the running configuration and verify that the IPv4 floating static default route is there, as well as the IPv4 static default route.

Building configuration...

Current configuration : 1240 bytes

!

version 15.1

no service timestamps log datetime msec

no service timestamps debug datetime msec

no service password-encryption

!

hostname Edge\_Router

!

!

!

!

!

!

!

!

ip cef

ipv6 unicast-routing

!

no ipv6 cef

!

!

!

!

license udi pid CISCO1941/K9 sn FTX1524LV4H

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

!

!

!

!

!

!

interface GigabitEthernet0/0

ip address 192.168.10.1 255.255.255.0

duplex auto

speed auto

ipv6 address FE80::E link-local

ipv6 address 2001:DB8:1:10::1/64

!

interface GigabitEthernet0/1

ip address 192.168.11.1 255.255.255.0

duplex auto

speed auto

ipv6 address FE80::E link-local

ipv6 address 2001:DB8:1:11::1/64

!

interface Serial0/0/0

ip address 10.10.10.2 255.255.255.252

ipv6 address FE80::E link-local

ipv6 address 2001:DB8:A:1::2/64

!

interface Serial0/0/1

ip address 10.10.10.6 255.255.255.252

ipv6 address FE80::E link-local

ipv6 address 2001:DB8:A:2::2/64

!

interface Vlan1

no ip address

shutdown

!

ip classless

ip route 0.0.0.0 0.0.0.0 10.10.10.1

ip route 0.0.0.0 0.0.0.0 Serial0/0/0

ip route 0.0.0.0 0.0.0.0 Serial0/0/1 5

!

ip flow-export version 9

!

ipv6 route ::/0 2001:DB8:A:1::1

ipv6 route ::/0 2001:DB8:ACAD:6::1 5

!

!

!

!

!

!

!

line con 0

!

line aux 0

!

line vty 0 4

login

!

!

!

end

**Packet Tracer - Configuring Floating Static Routes**

1. Display the contents of the routing table. Is the IPv4 floating static route visible in the routing table? Explain

No it is not the main route.

Codes: L - local, C - connected, S - static, 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 0.0.0.0 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks

C 10.10.10.0/30 is directly connected, Serial0/0/0

L 10.10.10.2/32 is directly connected, Serial0/0/0

C 10.10.10.4/30 is directly connected, Serial0/0/1

L 10.10.10.6/32 is directly connected, Serial0/0/1

192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.10.0/24 is directly connected, GigabitEthernet0/0

L 192.168.10.1/32 is directly connected, GigabitEthernet0/0

192.168.11.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.11.0/24 is directly connected, GigabitEthernet0/1

L 192.168.11.1/32 is directly connected, GigabitEthernet0/1

S\* 0.0.0.0/0 [1/0] via 10.10.10.1

is directly connected, Serial0/0/0

# Part 2: Test Failover to the IPv4 Floating Static Route

1. On **Edge\_Router**, administratively disable the exit interface of the primary route.
2. Verify that the IPv4 floating static route is now in the routing table.
3. Trace the route from **PC-A** to the **Web Server**.

Did the backup route work? If not, wait a few more seconds for convergence and then re-test. If the backup route is still not working, investigate your floating static route configuration.

1. Restore connectivity to the primary route.
2. Trace the route from **PC-A** to the **Web Server** to verify that the primary route is restored.

# Part 3: Configure and Test Failover to an IPv6 Floating Static Route

**Step 1: Configure an IPv6 floating static route.**

1. The IPv6 static default route to **ISP1** is already configured. Configure an IPv6 floating static default route with an administrative distance of 5. The route should point to IPv6 address (**2001:DB8:A:2::1**) of **ISP2**.
2. View the running configuration to verify that the IPv6 floating static default route is now listed under the IPv6 static default route.

**Step 2: Test Failover to the IPv6 Floating Static Route.**

1. On **Edge\_Router**, administratively disable the exit interface of the primary route.
2. Verify that the IPv6 floating static route is now in the routing table.
3. Trace the route from **PC-A** to the **Web Server**.

Did the backup route work? If not, wait a few more seconds for convergence and then re-test. If the backup route is still not working, investigate your floating static route configuration.

1. Restore connectivity to the primary route.
2. Trace the route from **PC-A** to the **Web Server** to verify that the primary route is restored.

**Packet Tracer - Configuring Floating Static Routes**

## Suggested Scoring Rubric

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity Section** | **Question Location** | **Possible Points** | **Earned Points** |
| Part 1: Configuring a Floating Static Route | Step 1c | 2 |  |
| Step 2a | 3 |  |
| Step 2d | 5 |  |
|  | **Part 1 Total** | **10** |  |
| **P** | **acket Tracer Score** | **90** |  |
|  | **Total Score** | **100** |  |