

ISIS Redistribute OSPF

Purpose	Redistribute OSPF learned routes via ISIS to neighbor.
Test setup	<p>The diagram illustrates a network topology with three routers: R1, R2, and R3. R1 is connected to R2 via interface G0/1 (192.168.2.1/24). R2 is connected to R3 via interface G0/2 (192.168.1.1/24). R2 also has a loopback interface Loopback 10 (10.10.10.10). R1 is in OSPF Area 0 with Loopback 0 (1.1.1.1/32). R2 and R3 are in ISIS Area 1. R3 has Loopback 1 (2.2.2.1/32) and Loopback 5 (5.5.5.5).</p>
Test configuration	<pre> Router 1 interface Loopback0 ip address 1.1.1.1 255.255.255.255 no ip directed-broadcast ! interface GigaEthernet0/1 ip address 192.168.2.1 255.255.255.0 no ip directed-broadcast ipv6 enable ipv6 address 10::1/64 ipv6 dhcp server IPv6 ip http firewalltype 0 ! ip route 192.168.1.0 255.255.255.0 192.168.2.10 ! router ospf 1 router-id 1.1.1.1 network 192.168.2.0 255.255.255.0 area 1 network 1.1.1.1 255.255.255.255 area 0 Router 2 interface Loopback0 ip address 10.10.10.10 255.255.255.255 no ip directed-broadcast ip router isis 1 ! interface GigaEthernet0/1 ip address 192.168.2.10 255.255.255.0 no ip directed-broadcast ip http firewalltype 0 ! interface GigaEthernet0/2 ip address 192.168.1.1 255.255.255.0 </pre>

	<pre> no ip directed-broadcast ip router isis 1 ip http firewalltype 0 ! router isis 1 net 00.0001.0000.0000.0001.00 redistribute ospf 1 level-1-2 ! ! router ospf 1 router-id 192.168.2.10 network 192.168.2.0 255.255.255.0 area 1 ! Router 3 interface Loopback5 ip address 5.5.5.5 255.255.255.255 no ip directed-broadcast ip router isis 1 ! interface GigaEthernet0/2 ip address 192.168.1.2 255.255.255.0 no ip directed-broadcast ip router isis 1 ip http firewalltype 0 ! router isis 1 net 00.0001.0000.0000.0002.00 </pre>
Procedure	<p>Connect two routers on ethernet port, configure Router ISIS protocol, enable isis routing on interested interfaces, define NET ID on each router under ISIS process. Redistribute OSPF learned routes on R2 via ISIS for R3. Verify ISIS routing table on R3 receives static route advertised by R2. Ping from R3 toward R1 network.</p>
Test result	<p>R3 router learns R1's network via R2</p> <pre> Router_3_62#sh isis route Codes: C - connected, E - external, L1 - IS-IS level-1, L2 - IS-IS level-2 ia - IS-IS inter area, D - discard, e - external metric INSTANCE 1 :: Destination Metric Next-Hop Interface L1 1.1.1.1 12 192.168.1.1 GigaEthernet0/2 C 5.5.5.5 10 -- -- L1 10.10.10.10 20 192.168.1.1 GigaEthernet0/2 C 192.168.1.0 10 -- -- Router_3_62#traceroute 1.1.1.1 traceroute to 1.1.1.1 (1.1.1.1), 30 hops max, 36 byte packets 1 192.168.1.1 0 ms 0 ms 0 ms 2 1.1.1.1 10 ms 0 ms 0 ms Router_3_62# </pre>

	<p>R1 Ping to R3</p> <pre> Router_1_10#ping -i 1.1.1.1 192.168.1.2 PING 192.168.1.2 (192.168.1.2): 56 data bytes !!!! --- 192.168.1.2 ping statistics --- 5 packets transmitted, 5 packets received, 0% packet loss round-trip min/avg/max = 0/0/0 ms Router_1_10# </pre>
<p>Result Logs</p>	<pre> Router_1_10#sh ip route Codes: C - connected, S - static, R - RIP, B - BGP, BC - BGP connected D - BEIGRP, DEX - external BEIGRP, O - OSPF, OIA - OSPF inter area ON1 - OSPF NSSA external type 1, ON2 - OSPF NSSA external type 2 OE1 - OSPF external type 1, OE2 - OSPF external type 2, L - Local DHCP - DHCP type, L1 - IS-IS level-1, L2 - IS-IS level-2 IA - ISIS inter-level, I - IPSEC type VRF ID: 0 C 1.1.1.1/32 is directly connected, Loopback0 S 172.16.253.0/24 [1,0] via 172.16.254.1 (on GigaEthernet0/2) C 172.16.254.0/24 is directly connected, GigaEthernet0/2 S 192.168.1.0/24 [1,0] via 192.168.2.10 (on GigaEthernet0/1) C 192.168.2.0/24 is directly connected, GigaEthernet0/1 Router_1_10# Router_2_20#sh isis route Codes: C - connected, E - external, L1 - IS-IS level-1, L2 - IS-IS level-2 ia - IS-IS inter area, D - discard, e - external metric INSTANCE 1 :: Destination Metric Next-Hop Interface E 1.1.1.1 2 -- -- L1 5.5.5.5 20 192.168.1.2 GigaEthernet0/2 L2 5.5.5.5 20 192.168.1.2 GigaEthernet0/2 C 10.10.10.10 10 -- -- C 192.168.1.0 10 -- -- Router_2_20# </pre>
<p>Status</p>	<p>If configured correctly, Router 2 to redistribute OSPF routes via ISIS, neighbor R3 will learn OSPF routes configured on R2.</p>