

ISIS Basic Protocol

Purpose	Basic function of ISIS routing protocol.
Test setup	
Test configuration	<pre> Router 2 interface Loopback0 ip address 10.10.10.10 255.255.255.255 no ip directed-broadcast ip router isis 1 ! interface GigaEthernet0/2 ip address 192.168.1.1 255.255.255.0 no ip directed-broadcast ip router isis 1 ip http firewalltype 0 ! router isis 1 net 00.0001.0000.0000.0001.00 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	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. Verify ISIS neighborhood, ISIS route table, ping networks learned via ISIS routing.
Test result	R2 ISIS Routing table – Discovered R3 ISIS advertised networks.

```

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
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          --            --

```

R3 pinging to R2 Loopback IP

```

Router_3_62#ping 10.10.10.10
PING 10.10.10.10 (10.10.10.10): 56 data bytes
!!!!
--- 10.10.10.10 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0/1/5 ms
Router_3_62#
Router_3_62#

```

Result Logs

Show isis interface

```

Router_2_20#sh isis interface
GigaEthernet0/2 is up, line protocol is up
  OSI enable
  Routing Protocol: IS-IS (1)
  Network Type: broadcast
  Circuit Type: level-1-2
  Local circuit ID: 0x01
  Extended Local circuit ID: 0x00000004
  Local SNPA: 5ccc.ff01.54c0
  IP interface address:
    192.168.1.1
  IPv6 interface address:
    Level-1 Metric: 10/10, Priority: 64, Circuit ID: 0000.0000.0001.01
    Number of active level-1 adjacencies: 1
    Level-2 Metric: 10/10, Priority: 64, Circuit ID: 0000.0000.0001.01
    Number of active level-2 adjacencies: 1
    Next IS-IS LAN Level-1 Hello in 1 seconds
    Next IS-IS LAN Level-2 Hello in 1 seconds

Loopback0 is up, line protocol is up
  OSI enable
  Routing Protocol: IS-IS (1)
  Network Type: loopback
  Circuit Type: level-1-2
  Local circuit ID: 0x02
  Extended Local circuit ID: 0x0000000A
  IP interface address:
    10.10.10.10
  IPv6 interface address:
    Level-1 Metric: 10/10, Priority: 64, Circuit ID: 0000.0000.0000.00
    Number of active level-1 adjacencies: 0
    Level-2 Metric: 10/10, Priority: 64, Circuit ID: 0000.0000.0000.00
    Number of active level-2 adjacencies: 0

```

Show isis neighbors

```
Router_3_62#sh isis neighbors

INSTANCE 1 ::
System Id      Interface      State  Type  Priority  Circuit Id
0000.0000.0001 GigaEthernet0/2  Up    L1    64        0000.0000.0001.01
                                Up    L2    64        0000.0000.0001.01
Router_3_62#
```

Status

If configured correctly, Router 2 and Router 3 will form ISIS neighborship and will be able to route networks advertised through ISIS.