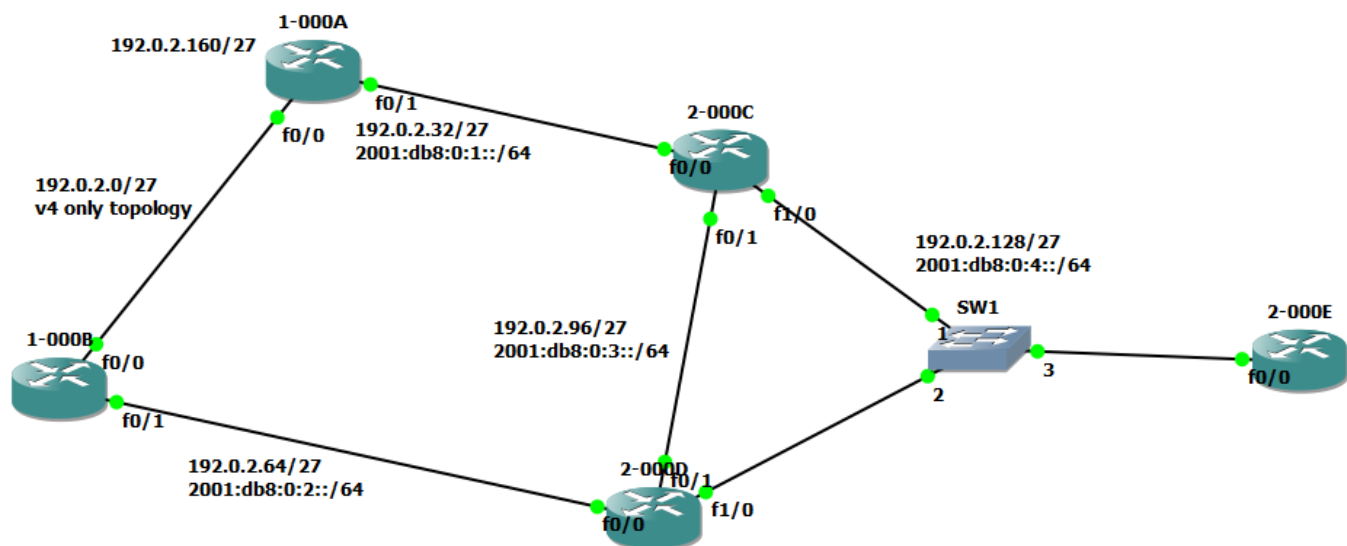


IS-IS Multitopology Lab



Show Output

```
1-000A#show isis neighbor
```

System Id	Type	Interface	IP Address	State	Holdtime	Circuit Id
2-000C	L2	Fa0/1	192.0.2.34	UP	25	00
1-000B	L1	Fa0/0	192.0.2.2	UP	28	00

```
1-000A#show clns neighbor
```

System Id	Interface	SNPA	State	Holdtime	Type	Protocol
2-000C	Fa0/1	c404.0a7c.0000	Up	26	L2	M-ISIS
1-000B	Fa0/0	c401.1d94.0000	Up	27	L1	IS-IS

```
1-000A#
```

```
1-000A#show clns neighbor detail
```

System Id	Interface	SNPA	State	Holdtime	Type	Protocol
2-000C	Fa0/1	c404.0a7c.0000	Up	21	L2	M-ISIS

```
Area Address(es): 49.2222
```

```
IP Address(es): 192.0.2.34*
```

```
IPv6 Address(es): FE80::C604:AFF:FE7C:0
```

```
Uptime: 00:01:09
```

```
NSF capable
```

```
Topology: IPv4, IPv6
```

1-000B	Fa0/0	c401.1d94.0000	Up	22	L1	IS-IS
--------	-------	----------------	----	----	----	-------

```
Area Address(es): 49.1111
```

```
IP Address(es): 192.0.2.2*
```

```
Uptime: 00:01:09
```

```
NSF capable
```

```
1-000A#
```

1-000A#show isis database detail

IS-IS Level-1 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holddtime	ATT/P/OL
1-000A.00-00	* 0x00000003	0x5824	1065	1/0/0

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x4002 ATT)

NLPID: 0xCC 0x8E

Hostname: 1-000A

IP Address: 192.0.2.161

Metric: 10 IP 192.0.2.0/27

Metric: 10 IP 192.0.2.160/27

Metric: 10 IS-Extended 1-000B.00

1-000B.00-00	0x00000003	0x802C	1063	1/0/0
--------------	------------	--------	------	-------

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x4002 ATT)

NLPID: 0xCC 0x8E

Hostname: 1-000B

IP Address: 192.0.2.2

Metric: 10 IP 192.0.2.0/27

Metric: 10 IS-Extended 1-000A.00

IS-IS Level-2 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holddtime	ATT/P/OL
1-000A.00-00	* 0x00000003	0x67AB	1061	0/0/0

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x2)

NLPID: 0xCC 0x8E

Hostname: 1-000A

IP Address: 192.0.2.161

Metric: 10 IP 192.0.2.32/27

IPv6 Address: 2001:DB8:0:1::1

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:1::/64

Metric: 10 IS-Extended 2-000C.00

Metric: 10 IS (MT-IPv6) 2-000C.00

Metric: 10 IP 192.0.2.0/27

Metric: 10 IP 192.0.2.160/27

2-000C.00-00	0x00000003	0x7A3C	1059	0/0/0
--------------	------------	--------	------	-------

Area Address: 49.2222

Topology: IPv4 (0x0) IPv6 (0x2)

NLPID: 0xCC 0x8E

Hostname: 2-000C

IP Address: 192.0.2.34

Metric: 10 IP 192.0.2.32/27

IPv6 Address: 2001:DB8:0:1::2

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:1::/64

Metric: 10 IS-Extended 1-000A.00

Metric: 10 IS (MT-IPv6) 1-000A.00

Metric: 10 IP 192.0.2.96/27

Metric: 10 IP 192.0.2.128/27

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:3::/64

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64

1-000A#show ip route

Codes: 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

i - IS-IS, su - IS-IS summary, 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 not set

192.0.2.0/27 is subnetted, 5 subnets

i L2 192.0.2.128 [115/20] via 192.0.2.34, FastEthernet0/1

C 192.0.2.160 is directly connected, Loopback0

i L2 192.0.2.96 [115/20] via 192.0.2.34, FastEthernet0/1

C 192.0.2.0 is directly connected, FastEthernet0/0

C 192.0.2.32 is directly connected, FastEthernet0/1

1-000A#show ipv6 route

IPv6 Routing Table - 6 entries

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP

U - Per-user Static route

I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary

O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2

ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2

C 2001:DB8:0:1::/64 [0/0]

via ::, FastEthernet0/1

L 2001:DB8:0:1::1/128 [0/0]

via ::, FastEthernet0/1

I2 2001:DB8:0:3::/64 [115/20]

via FE80::C604:AFF:FE7C:0, FastEthernet0/1

I2 2001:DB8:0:4::/64 [115/20]

via FE80::C604:AFF:FE7C:0, FastEthernet0/1

L FE80::/10 [0/0]

via ::, Null0

L FF00::/8 [0/0]

via ::, Null0

1-000A#show isis topology

IS-IS paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	--			
1-000B	10	1-000B	Fa0/0	c401.1d94.0000

IS-IS paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	--			
2-000C	10	2-000C	Fa0/1	c404.0a7c.0000

1-000A#show isis ipv6 topology

IS-IS IPv6 paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	--			
1-000B	**			

IS-IS IPv6 paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	--			
2-000C	10	2-000C	Fa0/1	c404.0a7c.0000
1-000A#				

1-000B#show isis neighbor

System Id	Type	Interface	IP Address	State	Holdtime	Circuit Id
2-000D	L2	Fa0/1	192.0.2.66	UP	26	00
1-000A	L1	Fa0/0	192.0.2.1	UP	26	00

1-000B#show isis database detail

IS-IS Level-1 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holdtime	ATT/P/OL
1-000A.00-00	0x00000003	0x5824	1025	1/0/0

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x4002 ATT)

NLPID: 0xCC 0x8E

Hostname: 1-000A

IP Address: 192.0.2.161

Metric: 10 IP 192.0.2.0/27

Metric: 10 IP 192.0.2.160/27

Metric: 10 IS-Extended 1-000B.00

1-000B.00-00	* 0x00000003	0x802C	1027	1/0/0
--------------	--------------	--------	------	-------

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x4002 ATT)

NLPID: 0xCC 0x8E

Hostname: 1-000B

IP Address: 192.0.2.2

Metric: 10 IP 192.0.2.0/27

Metric: 10 IS-Extended 1-000A.00

IS-IS Level-2 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holdtime	ATT/P/OL
1-000B.00-00	* 0x00000004	0x0D35	1023	0/0/0

Area Address: 49.1111

Topology: IPv4 (0x0) IPv6 (0x2)

NLPID: 0xCC 0x8E

Hostname: 1-000B

IP Address: 192.0.2.65

Metric: 10 IP 192.0.2.64/27

IPv6 Address: 2001:DB8:0:2::1

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:2::/64

Metric: 10 IS-Extended 2-000D.00

Metric: 10 IS (MT-IPv6) 2-000D.00

```

Metric: 10          IP 192.0.2.0/27
Metric: 20          IP 192.0.2.160/27
2-000D.00-00      0x00000003    0xF27D          1018          0/0/0
Area Address: 49.2222
Topology:         IPv4 (0x0) IPv6 (0x2)
NLPID:           0xCC 0x8E
Hostname: 2-000D
IP Address:       192.0.2.66
Metric: 10          IP 192.0.2.64/27
IPv6 Address: 2001:DB8:0:2::2
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:2::/64
Metric: 10          IS-Extended 1-000B.00
Metric: 10          IS (MT-IPv6) 1-000B.00
Metric: 10          IP 192.0.2.96/27
Metric: 10          IP 192.0.2.128/27
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:4::/64

```

1-000B#show ip route

```

Codes: 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
       i - IS-IS, su - IS-IS summary, 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 not set

```

192.0.2.0/27 is subnetted, 5 subnets
i L2   192.0.2.128 [115/20] via 192.0.2.66, FastEthernet0/1
i L1   192.0.2.160 [115/20] via 192.0.2.1, FastEthernet0/0
C       192.0.2.64 is directly connected, FastEthernet0/1
i L2   192.0.2.96 [115/20] via 192.0.2.66, FastEthernet0/1
C       192.0.2.0 is directly connected, FastEthernet0/0

```

1-000B#show ipv6 route

IPv6 Routing Table - 6 entries

```

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
C 2001:DB8:0:2::/64 [0/0]
   via ::, FastEthernet0/1
L 2001:DB8:0:2::1/128 [0/0]
   via ::, FastEthernet0/1
I2 2001:DB8:0:3::/64 [115/20]
   via FE80::C603:21FF:FE8C:0, FastEthernet0/1
I2 2001:DB8:0:4::/64 [115/20]
   via FE80::C603:21FF:FE8C:0, FastEthernet0/1
L FE80::/10 [0/0]

```

```

    via ::, Null0
L   FF00::/8 [0/0]
    via ::, Null0
1-000B#show isis topology

```

IS-IS paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	10	1-000A	Fa0/0	c402.24ec.0000
1-000B	--			

IS-IS paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000B	--			
2-000D	10	2-000D	Fa0/1	c403.218c.0000

1-000B#show isis ipv6 topology

IS-IS IPv6 paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	**			
1-000B	--			

IS-IS IPv6 paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000B	--			
2-000D	10	2-000D	Fa0/1	c403.218c.0000

1-000B#

2-000C#show isis neighbor

System Id	Type	Interface	IP Address	State	Holdtime	Circuit Id
2-000D	L1	Fa1/0	192.0.2.130	UP	25	2-000E.01
2-000E	L1	Fa1/0	192.0.2.131	UP	8	2-000E.01
2-000D	L1	Fa0/1	192.0.2.98	UP	27	01
1-000A	L2	Fa0/0	192.0.2.33	UP	29	01

2-000C#show isis database detail

IS-IS Level-1 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holdtime	ATT/P/OL
2-000C.00-00	* 0x00000004	0xB6D1	984	1/0/0

Area Address: 49.2222
 Topology: IPv4 (0x0) IPv6 (0x4002 ATT)
 NLPID: 0xCC 0x8E
 Hostname: 2-000C
 IP Address: 192.0.2.129
 Metric: 10 IP 192.0.2.96/27
 Metric: 10 IP 192.0.2.128/27
 IPv6 Address: 2001:DB8:0:4::1
 Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:3::/64
 Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64
 Metric: 10 IS-Extended 2-000E.01

```

Metric: 10          IS-Extended 2-000D.00
Metric: 10          IS (MT-IPv6) 2-000E.01
Metric: 10          IS (MT-IPv6) 2-000D.00
2-000D.00-00        0x000000004    0x6323          979          1/0/0
Area Address: 49.2222
Topology:    IPv4 (0x0) IPv6 (0x4002 ATT)
NLPID:       0xCC 0x8E
Hostname: 2-000D
IP Address:   192.0.2.130
Metric: 10    IP 192.0.2.96/27
Metric: 10    IP 192.0.2.128/27
IPv6 Address: 2001:DB8:0:4::2
Metric: 10    IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10    IPv6 (MT-IPv6) 2001:DB8:0:4::/64
Metric: 10    IS-Extended 2-000C.00
Metric: 10    IS-Extended 2-000E.01
Metric: 10    IS (MT-IPv6) 2-000C.00
Metric: 10    IS (MT-IPv6) 2-000E.01
2-000E.00-00        0x000000002    0x4F53          974          0/0/0
Area Address: 49.2222
Topology:    IPv4 (0x0) IPv6 (0x2)
NLPID:       0xCC 0x8E
Hostname: 2-000E
IP Address:   192.0.2.131
Metric: 10    IP 192.0.2.128/27
IPv6 Address: 2001:DB8:0:4::3
Metric: 10    IPv6 (MT-IPv6) 2001:DB8:0:4::/64
Metric: 10    IS-Extended 2-000E.01
Metric: 10    IS (MT-IPv6) 2-000E.01
2-000E.01-00        0x000000001    0xE223          970          0/0/0
Metric: 0      IS-Extended 2-000E.00
Metric: 0      IS-Extended 2-000C.00
Metric: 0      IS-Extended 2-000D.00
IS-IS Level-2 Link State Database:
LSPID          LSP Seq Num  LSP Checksum  LSP Holddtime  ATT/P/OL
1-000A.00-00    0x000000003    0x67AB        970            0/0/0
Area Address: 49.1111
Topology:    IPv4 (0x0) IPv6 (0x2)
NLPID:       0xCC 0x8E
Hostname: 1-000A
IP Address:   192.0.2.161
Metric: 10    IP 192.0.2.32/27
IPv6 Address: 2001:DB8:0:1::1
Metric: 10    IPv6 (MT-IPv6) 2001:DB8:0:1::/64
Metric: 10    IS-Extended 2-000C.00
Metric: 10    IS (MT-IPv6) 2-000C.00
Metric: 10    IP 192.0.2.0/27
Metric: 10    IP 192.0.2.160/27
2-000C.00-00      * 0x000000003    0x7A3C        968            0/0/0
Area Address: 49.2222

```

Topology: IPv4 (0x0) IPv6 (0x2)
NLPID: 0xCC 0x8E
Hostname: 2-000C
IP Address: 192.0.2.34
Metric: 10 IP 192.0.2.32/27
IPv6 Address: 2001:DB8:0:1::2
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:1::/64
Metric: 10 IS-Extended 1-000A.00
Metric: 10 IS (MT-IPv6) 1-000A.00
Metric: 10 IP 192.0.2.96/27
Metric: 10 IP 192.0.2.128/27
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64

2-000C#show ip route

Codes: 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
i - IS-IS, su - IS-IS summary, 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 not set

192.0.2.0/27 is subnetted, 5 subnets

C 192.0.2.128 is directly connected, FastEthernet1/0
i L2 192.0.2.160 [115/20] via 192.0.2.33, FastEthernet0/0
C 192.0.2.96 is directly connected, FastEthernet0/1
i L2 192.0.2.0 [115/20] via 192.0.2.33, FastEthernet0/0
C 192.0.2.32 is directly connected, FastEthernet0/0

2-000C#show ipv6 route

IPv6 Routing Table - 8 entries

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
U - Per-user Static route
I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
C 2001:DB8:0:1::/64 [0/0]
via ::, FastEthernet0/0
L 2001:DB8:0:1::2/128 [0/0]
via ::, FastEthernet0/0
C 2001:DB8:0:3::/64 [0/0]
via ::, FastEthernet0/1
L 2001:DB8:0:3::1/128 [0/0]
via ::, FastEthernet0/1
C 2001:DB8:0:4::/64 [0/0]
via ::, FastEthernet1/0
L 2001:DB8:0:4::1/128 [0/0]
via ::, FastEthernet1/0
L FE80::/10 [0/0]


```

    via ::, Null0
L   FF00::/8 [0/0]
    via ::, Null0
2-000C#show isis topology

```

IS-IS paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	--			
2-000D	10	2-000D	Fa0/1	c403.218c.0001
		2-000D	Fa1/0	c403.218c.0010
2-000E	10	2-000E	Fa1/0	c405.0900.0000

IS-IS paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	10	1-000A	Fa0/0	c402.24ec.0001
2-000C	--			

```
2-000C#show isis ipv6 topology
```

IS-IS IPv6 paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	--			
2-000D	10	2-000D	Fa0/1	c403.218c.0001
		2-000D	Fa1/0	c403.218c.0010
2-000E	10	2-000E	Fa1/0	c405.0900.0000

IS-IS IPv6 paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000A	10	1-000A	Fa0/0	c402.24ec.0001
2-000C	--			

```
2-000C#
```

```
2-000D#show isis neighbor
```

System Id	Type	Interface	IP Address	State	Holdtime	Circuit Id
2-000C	L1	Fa1/0	192.0.2.129	UP	24	2-000E.01
2-000C	L1	Fa0/1	192.0.2.97	UP	23	01
2-000E	L1	Fa1/0	192.0.2.131	UP	6	2-000E.01
1-000B	L2	Fa0/0	192.0.2.65	UP	25	01

```
2-000D#show isis database detail
```

IS-IS Level-1 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holdtime	ATT/P/OL
2-000C.00-00	0x00000004	0xB6D1	925	1/0/0

```

Area Address: 49.2222
Topology:     IPv4 (0x0) IPv6 (0x4002 ATT)
NLPID:       0xCC 0x8E
Hostname: 2-000C
IP Address:   192.0.2.129
Metric: 10    IP 192.0.2.96/27
Metric: 10    IP 192.0.2.128/27

```

```

IPv6 Address: 2001:DB8:0:4::1
Metric: 10      IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10      IPv6 (MT-IPv6) 2001:DB8:0:4::/64
Metric: 10      IS-Extended 2-000E.01
Metric: 10      IS-Extended 2-000D.00
Metric: 10      IS (MT-IPv6) 2-000E.01
Metric: 10      IS (MT-IPv6) 2-000D.00
2-000D.00-00    * 0x000000004    0x6323          927          1/0/0
Area Address: 49.2222
Topology:      IPv4 (0x0) IPv6 (0x4002 ATT)
NLPID:        0xCC 0x8E
Hostname: 2-000D
IP Address:    192.0.2.130
Metric: 10     IP 192.0.2.96/27
Metric: 10     IP 192.0.2.128/27
IPv6 Address: 2001:DB8:0:4::2
Metric: 10     IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10     IPv6 (MT-IPv6) 2001:DB8:0:4::/64
Metric: 10     IS-Extended 2-000C.00
Metric: 10     IS-Extended 2-000E.01
Metric: 10     IS (MT-IPv6) 2-000C.00
Metric: 10     IS (MT-IPv6) 2-000E.01
2-000E.00-00    0x000000002    0x4F53          921          0/0/0
Area Address: 49.2222
Topology:      IPv4 (0x0) IPv6 (0x2)
NLPID:        0xCC 0x8E
Hostname: 2-000E
IP Address:    192.0.2.131
Metric: 10     IP 192.0.2.128/27
IPv6 Address: 2001:DB8:0:4::3
Metric: 10     IPv6 (MT-IPv6) 2001:DB8:0:4::/64
Metric: 10     IS-Extended 2-000E.01
Metric: 10     IS (MT-IPv6) 2-000E.01
2-000E.01-00    0x000000001    0xE223          919          0/0/0
Metric: 0       IS-Extended 2-000E.00
Metric: 0       IS-Extended 2-000C.00
Metric: 0       IS-Extended 2-000D.00
IS-IS Level-2 Link State Database:
LSPID          LSP Seq Num   LSP Checksum   LSP Holddtime   ATT/P/OL
1-000B.00-00    0x000000004   0x0D35         922             0/0/0
Area Address: 49.1111
Topology:      IPv4 (0x0) IPv6 (0x2)
NLPID:        0xCC 0x8E
Hostname: 1-000B
IP Address:    192.0.2.65
Metric: 10     IP 192.0.2.64/27
IPv6 Address: 2001:DB8:0:2::1
Metric: 10     IPv6 (MT-IPv6) 2001:DB8:0:2::/64
Metric: 10     IS-Extended 2-000D.00
Metric: 10     IS (MT-IPv6) 2-000D.00

```

```

Metric: 10          IP 192.0.2.0/27
Metric: 20          IP 192.0.2.160/27
2-000D.00-00      * 0x000000003    0xF27D          920          0/0/0
Area Address: 49.2222
Topology:         IPv4 (0x0) IPv6 (0x2)
NLPID:           0xCC 0x8E
Hostname: 2-000D
IP Address:       192.0.2.66
Metric: 10          IP 192.0.2.64/27
IPv6 Address: 2001:DB8:0:2::2
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:2::/64
Metric: 10          IS-Extended 1-000B.00
Metric: 10          IS (MT-IPv6) 1-000B.00
Metric: 10          IP 192.0.2.96/27
Metric: 10          IP 192.0.2.128/27
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:3::/64
Metric: 10          IPv6 (MT-IPv6) 2001:DB8:0:4::/64

```

2-000D#show ip route

```

Codes: 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
       i - IS-IS, su - IS-IS summary, 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 not set

```

192.0.2.0/27 is subnetted, 5 subnets
C      192.0.2.128 is directly connected, FastEthernet1/0
i L2   192.0.2.160 [115/30] via 192.0.2.65, FastEthernet0/0
C      192.0.2.64 is directly connected, FastEthernet0/0
C      192.0.2.96 is directly connected, FastEthernet0/1
i L2   192.0.2.0 [115/20] via 192.0.2.65, FastEthernet0/0

```

2-000D#show ipv6 route

IPv6 Routing Table - 8 entries

```

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
C 2001:DB8:0:2::/64 [0/0]
   via ::, FastEthernet0/0
L 2001:DB8:0:2::2/128 [0/0]
   via ::, FastEthernet0/0
C 2001:DB8:0:3::/64 [0/0]
   via ::, FastEthernet0/1
L 2001:DB8:0:3::2/128 [0/0]
   via ::, FastEthernet0/1
C 2001:DB8:0:4::/64 [0/0]

```

```

    via ::, FastEthernet1/0
L   2001:DB8:0:4::2/128 [0/0]
    via ::, FastEthernet1/0
L   FE80::/10 [0/0]
    via ::, Null0
L   FF00::/8 [0/0]
    via ::, Null0

```

2-000D#show isis topology

IS-IS paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	10	2-000C	Fa0/1	c404.0a7c.0001
		2-000C	Fa1/0	c404.0a7c.0010
2-000D	--			
2-000E	10	2-000E	Fa1/0	c405.0900.0000

IS-IS paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000B	10	1-000B	Fa0/0	c401.1d94.0001
2-000D	--			

2-000D#show isis ipv6 topology

IS-IS IPv6 paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	10	2-000C	Fa0/1	c404.0a7c.0001
		2-000C	Fa1/0	c404.0a7c.0010
2-000D	--			
2-000E	10	2-000E	Fa1/0	c405.0900.0000

IS-IS IPv6 paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
1-000B	10	1-000B	Fa0/0	c401.1d94.0001
2-000D	--			

2-000D#

2-000D#sho isis spf

level 1 SPF log

When	Duration	Nodes	Count	First trigger LSP	Triggers
00:01:55	4	4	15	2-000D.00-00	PERIODIC ATTACHFLAG NEWADJ
					ADJADDRCHG NEWLSP TLVCODE TLVCONTENT
00:01:45	4	4	2	2-000D.00-00	TLVCODE

level 2 SPF log

When	Duration	Nodes	Count	First trigger LSP	Triggers
00:01:57	0	2	8	2-000D.00-00	PERIODIC NEWADJ ADJADDRCHG NEWLSP
					TLVCODE

2-000D#show isis ipv6 spf-log

IPv6 level 1 SPF log

When	Duration	Nodes	Count	First trigger LSP	Triggers
00:02:00	8	4	18	2-000D.00-00	PERIODIC ATTACHFLAG NEWADJ
ADJADDRCHG ADJMTIDCHG NEWLSP TLVCODE TLVCONTENT					
00:01:50	4	4	2	2-000D.00-00	TLVCODE

IPv6 level 2 SPF log

When	Duration	Nodes	Count	First trigger LSP	Triggers
00:02:02	0	2	9	2-000D.00-00	PERIODIC NEWADJ ADJADDRCHG
ADJMTIDCHG NEWLSP TLVCODE					

terminal length 0-000E#show isis neighbor

System Id	Type	Interface	IP Address	State	Holdtime	Circuit Id
2-000C	L1	Fa0/0	192.0.2.129	UP	24	2-000E.01
2-000D	L1	Fa0/0	192.0.2.130	UP	24	2-000E.01

2-000E#show isis database detail

IS-IS Level-1 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holdtime	ATT/P/OL
2-000C.00-00	0x000000004	0xB6D1	893	1/0/0
Area Address: 49.2222				
Topology: IPv4 (0x0) IPv6 (0x4002 ATT)				
NLPID: 0xCC 0x8E				
Hostname: 2-000C				
IP Address: 192.0.2.129				
Metric: 10 IP 192.0.2.96/27				
Metric: 10 IP 192.0.2.128/27				
IPv6 Address: 2001:DB8:0:4::1				
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:3::/64				
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64				
Metric: 10 IS-Extended 2-000E.01				
Metric: 10 IS-Extended 2-000D.00				
Metric: 10 IS (MT-IPv6) 2-000E.01				
Metric: 10 IS (MT-IPv6) 2-000D.00				
2-000D.00-00	0x000000004	0x6323	893	1/0/0
Area Address: 49.2222				
Topology: IPv4 (0x0) IPv6 (0x4002 ATT)				
NLPID: 0xCC 0x8E				
Hostname: 2-000D				
IP Address: 192.0.2.130				
Metric: 10 IP 192.0.2.96/27				
Metric: 10 IP 192.0.2.128/27				
IPv6 Address: 2001:DB8:0:4::2				
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:3::/64				
Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64				
Metric: 10 IS-Extended 2-000C.00				
Metric: 10 IS-Extended 2-000E.01				
Metric: 10 IS (MT-IPv6) 2-000C.00				
Metric: 10 IS (MT-IPv6) 2-000E.01				

2-000E.00-00 * 0x00000002 0x4F53 890 0/0/0

Area Address: 49.2222

Topology: IPv4 (0x0) IPv6 (0x2)

NLPID: 0xCC 0x8E

Hostname: 2-000E

IP Address: 192.0.2.131

Metric: 10 IP 192.0.2.128/27

IPv6 Address: 2001:DB8:0:4::3

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64

Metric: 10 IS-Extended 2-000E.01

Metric: 10 IS (MT-IPv6) 2-000E.01

2-000E.01-00 * 0x00000001 0xE223 889 0/0/0

Metric: 0 IS-Extended 2-000E.00

Metric: 0 IS-Extended 2-000C.00

Metric: 0 IS-Extended 2-000D.00

IS-IS Level-2 Link State Database:

LSPID	LSP Seq Num	LSP Checksum	LSP Holddtime	ATT/P/OL
-------	-------------	--------------	---------------	----------

2-000E.00-00	* 0x00000002	0x8E63	892	0/0/0
--------------	--------------	--------	-----	-------

Area Address: 49.2222

Topology: IPv4 (0x0) IPv6 (0x2)

NLPID: 0xCC 0x8E

Hostname: 2-000E

Metric: 20 IP 192.0.2.96/27

Metric: 10 IP 192.0.2.128/27

Metric: 20 IPv6 (MT-IPv6) 2001:DB8:0:3::/64

Metric: 10 IPv6 (MT-IPv6) 2001:DB8:0:4::/64

2-000E#show ip route

Codes: 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

i - IS-IS, su - IS-IS summary, 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 192.0.2.130 to network 0.0.0.0

192.0.2.0/27 is subnetted, 2 subnets

C 192.0.2.128 is directly connected, FastEthernet0/0

i L1 192.0.2.96 [115/20] via 192.0.2.130, FastEthernet0/0

[115/20] via 192.0.2.129, FastEthernet0/0

i*L1 0.0.0.0/0 [115/10] via 192.0.2.130, FastEthernet0/0

[115/10] via 192.0.2.129, FastEthernet0/0

2-000E#show ipv6 route

IPv6 Routing Table - 6 entries

Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP

U - Per-user Static route

I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary

O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2

ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2

```

I1  ::/0 [115/10]
    via FE80::C604:AFF:FE7C:10, FastEthernet0/0
    via FE80::C603:21FF:FE8C:10, FastEthernet0/0
I1  2001:DB8:0:3::/64 [115/20]
    via FE80::C603:21FF:FE8C:10, FastEthernet0/0
    via FE80::C604:AFF:FE7C:10, FastEthernet0/0
C   2001:DB8:0:4::/64 [0/0]
    via ::, FastEthernet0/0
L   2001:DB8:0:4::3/128 [0/0]
    via ::, FastEthernet0/0
L   FE80::/10 [0/0]
    via ::, Null0
L   FF00::/8 [0/0]
    via ::, Null0
2-000E#show isis topology

```

IS-IS paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	10	2-000C	Fa0/0	c404.0a7c.0010
2-000D	10	2-000D	Fa0/0	c403.218c.0010
2-000E	--			

IS-IS paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000E	--			

2-000E#show isis ipv6 topology

IS-IS IPv6 paths to level-1 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000C	10	2-000C	Fa0/0	c404.0a7c.0010
2-000D	10	2-000D	Fa0/0	c403.218c.0010
2-000E	--			

IS-IS IPv6 paths to level-2 routers

System Id	Metric	Next-Hop	Interface	SNPA
2-000E	--			

2-000E#

Configurations

```

!

hostname 1-000A
!
ipv6 unicast-routing
!
interface Loopback0
 ip address 192.0.2.161 255.255.255.224
 ip router isis

```

```
!  
interface FastEthernet0/0  
 ip address 192.0.2.1 255.255.255.224  
 ip router isis  
 duplex auto  
 speed auto  
 isis circuit-type level-1  
 isis network point-to-point  
!  
interface FastEthernet0/1  
 ip address 192.0.2.33 255.255.255.224  
 ip router isis  
 duplex auto  
 speed auto  
 ipv6 address 2001:DB8:0:1::1/64  
 ipv6 router isis  
 isis circuit-type level-2-only  
 isis network point-to-point  
!  
router isis  
 net 49.1111.0000.0000.000a.00  
 metric-style wide  
!  
 address-family ipv6  
   multi-topology  
 exit-address-family  
!  
End  
  
!  
hostname 1-000B  
!  
ipv6 unicast-routing  
!  
interface FastEthernet0/0  
 ip address 192.0.2.2 255.255.255.224  
 ip router isis  
 duplex auto  
 speed auto  
 isis circuit-type level-1  
 isis network point-to-point  
!  
interface FastEthernet0/1  
 ip address 192.0.2.65 255.255.255.224  
 ip router isis  
 duplex auto  
 speed auto  
 ipv6 address 2001:DB8:0:2::1/64  
 ipv6 router isis  
 isis circuit-type level-2-only
```



```
    isis network point-to-point
!
router isis
    net 49.1111.0000.0000.000b.00
    metric-style wide
!
    address-family ipv6
        multi-topology
    exit-address-family
!
End

!
hostname 2-000C
!
ipv6 unicast-routing
!
interface FastEthernet0/0
    ip address 192.0.2.34 255.255.255.224
    ip router isis
    duplex auto
    speed auto
    ipv6 address 2001:DB8:0:1::2/64
    ipv6 router isis
    isis circuit-type level-2-only
    isis network point-to-point
!
interface FastEthernet0/1
    ip address 192.0.2.97 255.255.255.224
    ip router isis
    duplex auto
    speed auto
    ipv6 address 2001:DB8:0:3::1/64
    ipv6 router isis
    isis circuit-type level-1
    isis network point-to-point
!
interface FastEthernet1/0
    ip address 192.0.2.129 255.255.255.224
    ip router isis
    duplex auto
    speed auto
    ipv6 address 2001:DB8:0:4::1/64
    ipv6 router isis
    isis circuit-type level-1
!
router isis
    net 49.2222.0000.0000.000c.00
    metric-style wide
!
```

```

address-family ipv6
  multi-topology
exit-address-family
!
End

!
hostname 2-000D
!
ipv6 unicast-routing
!
interface FastEthernet0/0
  ip address 192.0.2.66 255.255.255.224
  ip router isis
  duplex auto
  speed auto
  ipv6 address 2001:DB8:0:2::2/64
  ipv6 router isis
  isis circuit-type level-2-only
  isis network point-to-point
!
interface FastEthernet0/1
  ip address 192.0.2.98 255.255.255.224
  ip router isis
  duplex auto
  speed auto
  ipv6 address 2001:DB8:0:3::2/64
  ipv6 router isis
  isis circuit-type level-1
  isis network point-to-point
!
interface FastEthernet1/0
  ip address 192.0.2.130 255.255.255.224
  ip router isis
  duplex auto
  speed auto
  ipv6 address 2001:DB8:0:4::2/64
  ipv6 router isis
  isis circuit-type level-1
!
router isis
  net 49.2222.0000.0000.000d.00
  metric-style wide
!
address-family ipv6
  multi-topology
exit-address-family
!
end

```

```
!  
hostname 2-000E  
!  
ipv6 unicast-routing  
!  
interface FastEthernet0/0  
  ip address 192.0.2.131 255.255.255.224  
  ip router isis  
  duplex auto  
  speed auto  
  ipv6 address 2001:DB8:0:4::3/64  
  ipv6 router isis  
  isis circuit-type level-1  
!  
router isis  
  net 49.2222.0000.0000.000e.00  
  metric-style wide  
  !  
  address-family ipv6  
    multi-topology  
  exit-address-family  
!  
end
```