Chapter 11

OSPF Version 3 for IPv6

OSPF version 2, introduced as RFC 2328 in 1998, has been one of the most widely deployed interior gateway protocols (IGPs) for intradomain routing. The protocol is extended in version 3 (RFC 2740) to support OSPF in IPv6 networks. Most of the functionality of OSPFv2 carries over into OSPFv3, but there are some significant changes to explore.

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Overview

OSPFv3 adds support for IPv6 in the Open Shortest Path First (OSPF) routing protocol, as detailed in RFC 2740. Most configuration and operational commands function essentially the same as in OSPFv2:

All OSPFv3 operational and configuration commands include the identifier ospf3 in place of the familiar ospf option. For example, show ospf database in OSPFv2 becomes show ospf3 database in OSPFv3.

OSPFv3 Router IDs, Area IDs, and LSA link-state IDs remain at the OSPFv2 IPv4 size of 32 bits.

All the optional capabilities in OSPFv2 for IPv4, such as not-so-stubby-areas (NSSA), are supported in OSPFv3 for IPv6.

However, there are many significant changes to note about OSPFv3 for IPv6:

Router link-state advertisements (LSAs) and Network LSAs no longer carry prefix information. In OSPFv3, these LSAs only carry topology information.


Note

Because addressing information in the LSA header, Router LSA, and Network LSA (Type 2) has been removed, the OSPFv3 protocol is designed to be network protocol independent.

New and modified LSAs have been created to handle the flow of IPv6 addresses and prefixes in an OSPFv3 network. As a result, some show command output appears in a different format for OSPFv3. The LSAs that have been modified are:

Inter-Area-Prefix LSA—This replaces the Network Summary or Type 3 LSA.

Inter-Area-Router—This replaces the Autonomous System Boundary Router (ASBR) Summary or Type 4 LSA.

New LSAs introduced in OSPFv3 are:

Link LSA—This LSA has local scope and does not extend beyond the link it is associated with. The purpose of a link LSA is to provide the router's IPv6 link-local address to neighbors, inform other routers of the associated IPv6 prefixes available on the link, and provide information to the Network LSA. On all OSPF interfaces except virtual links, OSPF packets are sent using the interface's link-local address as the source address.


Note

A link-local address is an IPv6 address that starts with the first 10 bits set to 1111111010. This is often displayed in hexadecimal as fe80.

Juniper Networks routers automatically generate link-local addresses when IPv6 is enabled. The router selects one interface MAC address (derived from the available interfaces) and appends this to the fe80 prefix with some additional bit stuffing. For more information about link-local addresses, see RFC 2373.

Intra-Area-Prefix LSA—This carries all IPv6 prefix information to all OSPFv3 routers within an area (this information in IPv4 is carried by the Router and Network LSAs).

OSPFv3 now runs on a per-link basis, instead of on a per-IP-subnet basis.

IPv6 link-local addresses are used for OSPFv3 neighbor exchanges (except over virtual links).

The flooding scope for LSAs has been generalized into three categories for OSPFv3:

Link-local scope—The OSPFv3 packet is flooded to the members of a link.

Area scope—The OSPFv3 packet is flooded to all members of an OSPFv3 area.

AS scope—The OSPFv3 packet is flooded to all members of an AS.

Authentication has been removed from the OSPFv3 protocol itself and relies on the Authentication Header (AH) and Encapsulating Security Payload (ESP) portions of the IP Security protocol (IPSec) for all authentication tasks in IPv6.

Label-switched paths (LSPs) and traffic engineering are not supported in OSPFv3.

Neighboring routers are always identified by the 32-bit router ID in OSPFv3.

System Requirements

To implement OSPFv3 for IPv6, your system must meet these minimum requirements:

JUNOS Release 5.5 or later

Two Juniper Networks M-series or T-series routing platforms

Terms and Acronyms

OSPFv3—The IPv6-enabled version of the OSPF protocol.

OSPF (Open Shortest Path First)—A link-state IGP that makes routing decisions based on the shortest-path-first (SPF) algorithm (also referred to as the *Dijkstra algorithm*).

LSA (link-state advertisement)—A multitiered message format for OSPFv2 and OSPFv3 that carries information about the OSPF network to OSPF-enabled routers. The collection of LSAs forms the link-state database used by the routers to select optimum paths. Different LSA levels limit the scope of OSPF protocol message delivery to links, areas, or autonomous systems (ASs).

Configure OSPFv3 for IPv6

To implement OSPFv3 for IPv6, you must configure the following:

Configure OSPFv3 as the Routing Protocol on page 388

Configure Interfaces in OSPFv3 Areas on page 388

Configure Virtual Links for OSPFv3 on page 388

To apply your knowledge, see the following sections:

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Configure OSPFv3 as the Routing Protocol

You enable OSPFv3 almost the same way you enable OSPFv2. The only difference is that you use the statement ospf3 in place of ospf at the [edit protocols] hierarchy level.

```
[edit]
   protocols {
      ospf3 {
         ...
      }
   }
}
```

Configure Interfaces in OSPFv3 Areas

To place selected interfaces in an OSPFv3 area, use the interface statement at the [edit protocols ospf3 area *area-number*] hierarchy level.

```
[edit]
   protocols {
      ospf3 {
         area 0 {
            interface at-0/0/0.0
            interface fe-1/1/1;
         }
      }
   }
}
```

Configure Virtual Links for OSPFv3

Virtual links can connect discontiguous sections of the OSPF backbone Area 0 or extend backbone access to areas not directly adjacent to Area 0 (a requirement of the OSPF protocol). To configure a virtual link, configure the virtual-link statement at the [edit protocols ospf3 area 0] hierarchy level. In the statement, specify the router ID of your neighbor (often the loopback interface IP address) and the OSPFv3 area that the virtual link travels across to reach Area 0.

```
[edit]
protocols {
   ospf3 {
      area 0.0.0.0 {
         virtual-link neighbor-id neighbor-router-id transit-area area;
      }
   }
}
```

Example: OSPFv3 for IPv6 Configuration

Figure 41: OSPFv3 for IPv6 Topology Diagram

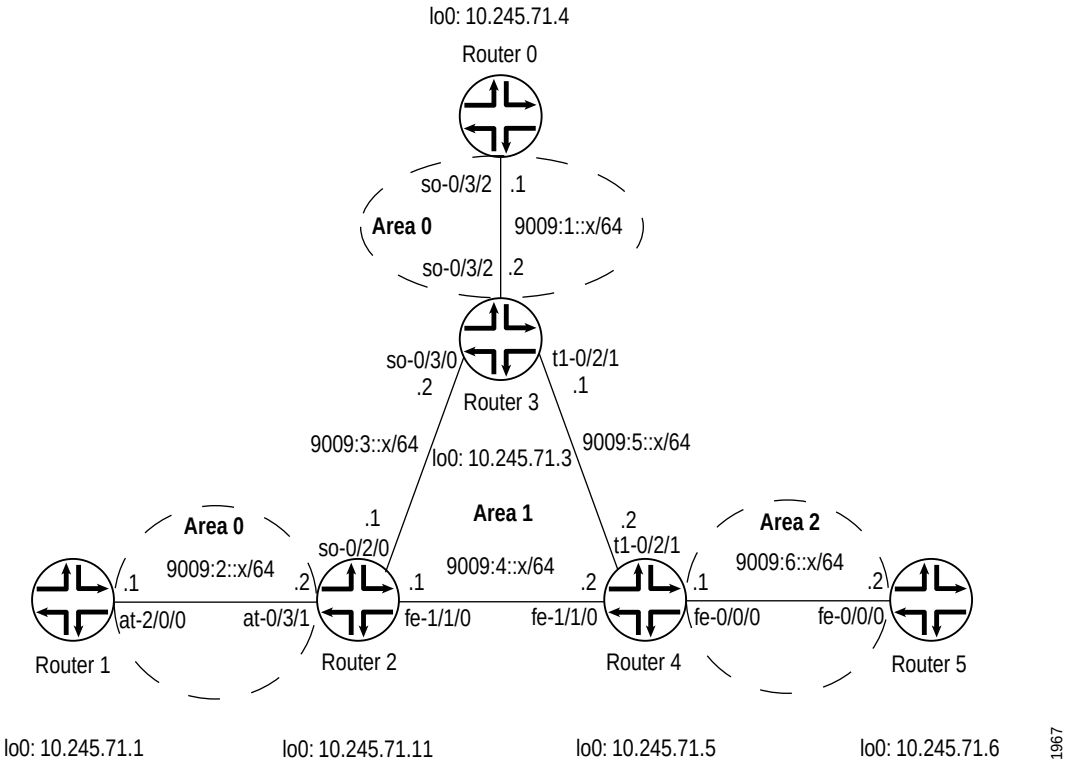

Figure 41 shows an OSPFv3 topology. Routers 0, 1, 2, and 3 are connected to the OSPFv3 backbone Area 0; routers 2, 3, and 4 connect to each other across Area 1; and Area 2 is located between routers 4 and 5. Because router 5 does not have a direct adjacency to Area 0, a virtual link is required across Area 1 between routers 3 and 4. Similarly, because routers 0 and 1 have two separate Area 0 backbone sections, you need to configure a second virtual link across Area 1 between routers 2 and 3.

On router 0, add the so-0/3/2 interface into Area 0 of the OSPFv3 process.

Router 0

```
[edit]
interfaces {
   so-0/3/2 {
      unit 0 {
         family inet {
            address 10.19.1.1/24;
         }
         family inet6 {
            address 9009:1::1/64;
         }
      }
   }
```

```
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.4/32;
            }
            family inet6 {
                address feee::10:255:71:4/128;
            }
        }
    }
}
protocols {
    ospf3 {
        area 0.0.0.0 {
            interface so-0/3/2.0;
            interface lo0.0 {
                passive;
            }
        }
    }
}
```

On router 1, add the at-2/0/0 interface into Area 0 of the OSPFv3 process.

Router 1

```
[edit]
interfaces {
    at-2/0/0 {
        atm-options {
            vpi 0;
        }
        unit 0 {
            vci 0.77;
            family inet {
                address 10.19.2.1/24;
            }
            family inet6 {
                address 9009:2::1/64;
            }
        }
    }
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.1/32;
            }
            family inet6 {
                address feee::10:255:71:1/128;
            }
        }
    }
}
```

```
protocols {
   ospf3 {
      area 0.0.0.0 {
         interface at-2/0/0.0;
         interface lo0.0 {
            passive;
         }
      }
   }
}
```

On router 2, add the interfaces connected to routers 1, 3, and 4 into the OSPFv3 process. You must also complete the virtual link to router 3 through Area 1 so that router 1 can access the discontiguous portion of the OSPF backbone found on router 0.

Router 2

```
[edit]
interfaces {
   so-0/2/0 {
      unit 0 {
         family inet {
            address 10.19.3.1/24;
         }
         family inet6 {
            address 9009:3::1/64;
         }
      }
   }
   at-0/3/1 {
      atm-options {
         vpi 0 {
            maximum-vcs 1200;
         }
      }
      unit 0 {
         vci 0.77;
         family inet {
            address 10.19.2.2/24;
         }
         family inet6 {
            address 9009:2::2/64;
         }
      }
   }
   fe-1/1/0 {
      unit 0 {
         family inet {
            address 10.19.4.1/24;
         }
         family inet6 {
            address 9009:4::1/64;
         }
      }
   }
```

```
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.11/32;
            }
            family inet6 {
                address feee::10:255:71:11/128;
            }
        }
    }
}
protocols {
    ospf3 {
        area 0.0.0.0 {
            virtual-link neighbor-id 10.245.71.3 transit-area 0.0.0.1;
            interface at-0/3/1.0;
        }
        area 0.0.0.1 {
            interface so-0/2/0.0 {
                metric 1;
            }
            interface fe-1/1/0.0 {
                metric 10;
            }
            interface lo0.0 {
                passive;
            }
        }
    }
}
```

For the OSPFv3 process on router 3, configure the interfaces connected to routers 2 and 4 into Area 1 and the interface connected to router 0 into Area 0. You must also configure two virtual links through Area 1—one connecting to router 2 and the second connecting to router 4. The virtual links allow router 5 to access the OSPF backbone, and connect the discontiguous sections of Area 0 located at routers 0 and 1.

Router 3

```
[edit]
interfaces {
    t1-0/2/1 {
        unit 0 {
            family inet {
                address 10.19.5.1/24;
            }
            family inet6 {
                address 9009:5::1/64;
            }
        }
    }
    so-0/3/0 {
        unit 0 {
            family inet {
                address 10.19.3.2/24;
            }
            family inet6 {
                address 9009:3::2/64;
            }
        }
    }
```

```
    so-0/3/2 {
        unit 0 {
            family inet {
                address 10.19.1.2/24;
            }
            family inet6 {
                address 9009:1::2/64;
            }
        }
    }
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.3/32;
            }
            family inet6 {
                address feee::10:255:71:3/128;
            }
        }
    }
}
protocols {
    ospf3 {
        area 0.0.0.0 {
            virtual-link neighbor-id 10.245.71.11 transit-area 0.0.0.1;
            virtual-link neighbor-id 10.245.71.5 transit-area 0.0.0.1;
            interface so-0/3/2.0;
        }
        area 0.0.0.1 {
            interface so-0/3/0.0 {
                metric 1;
            }
            interface t1-0/2/1.0 {
                metric 1;
            }
            interface lo0.0 {
                passive;
            }
        }
    }
}
```

On router 4, add the connected interfaces into the OSPFv3 process. You must also complete the virtual link to router 3 through Area 1 so that router 5 can access the OSPF backbone.

Router 4

```
[edit]
interfaces {
    fe-0/0/0 {
        unit 0 {
            family inet {
                address 10.19.6.1/24;
            }
            family inet6 {
                address 9009:6::1/64;
            }
        }
    }
```

```
    t1-0/2/1 {
        unit 0 {
            family inet {
                address 10.19.5.2/24;
            }
            family inet6 {
                address 9009:5::2/64;
            }
        }
    }
    fe-1/1/0 {
        unit 0 {
            family inet {
                address 10.19.4.2/24;
            }
            family inet6 {
                address 9009:4::2/64;
            }
        }
    }
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.5/32;
            }
            family inet6 {
                address feee::10:255:71:5/128;
            }
        }
    }
}
protocols {
    ospf3 {
        area 0.0.0.1 {
            interface fe-1/1/0.0 {
                metric 10;
            }
            interface t1-0/2/1.0 {
                metric 1;
            }
            interface lo0.0 {
                passive;
            }
        }
        area 0.0.0.0 {
            virtual-link neighbor-id 10.245.71.3 transit-area 0.0.0.1;
        }
        area 0.0.0.2 {
            interface fe-0/0/0.0;
        }
    }
}
```

On router 5, add the fe-0/0/0 interface into the OSPFv3 process to complete this example.

Router 5

```
[edit]
interfaces {
    fe-0/0/0 {
        unit 0 {
            family inet {
                address 10.19.6.2/24;
            }
            family inet6 {
                address 9009:6::2/64;
            }
        }
    }
    lo0 {
        unit 0 {
            family inet {
                address 10.245.71.6/32;
            }
            family inet6 {
                address feee::10:255:71:6/128;
            }
        }
    }
}
protocols {
    ospf3 {
        area 0.0.0.2 {
            interface fe-0/0/0.0;
            interface lo0.0 {
                passive;
            }
        }
    }
}
```

Check Your Work

To verify proper operation of OSPFv3 for IPv6, use the following commands:

show ospf3 interface

show ospf3 neighbor

show ospf3 database

show ospf3 route

show interfaces terse (to see the IPv6 link local address assigned to the lo0 interface)

To view prefix information, you must use the extensive option with the show ospf3 database command.

The following sections show the output of these commands used with the configuration example:

Router 0 Status on page 396

Router 1 Status on page 399

Router 2 Status on page 401

Router 3 Status on page 404

Router 4 Status on page 408

Router 5 Status on page 411

Router 0 Status

```
user@router0> show ospf3 interface
Interface             State     Area            DR-ID           BDR-ID
Nbrs
lo0.0                 DRother   0.0.0.0         0.0.0.0         0.0.0.0
0
so-0/3/2.0            PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1

user@router0> show ospf3 neighbor
ID              Interface             State     Pri   Dead
10.245.71.3     so-0/3/2.0            Full      128   34
  Neighbor-address fe80::201:afff:fe00:86ca

user@router0> show ospf3 database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.1     0x80000005   764  0x89ce  40
Router      0.0.0.1          10.245.71.3     0x80000006  1360  0x2357  72
Router     *0.0.0.1          10.245.71.4     0x80000004   758  0xc09c  40
Router      0.0.0.1          10.245.71.5     0x80000003  1891  0xf774  40
Router      0.0.0.1          10.245.71.11    0x80000005  1393  0x7f6b  56
InterArPfx  0.0.0.1          10.245.71.3     0x80000003   758  0x9f52  36
InterArPfx  0.0.0.2          10.245.71.3     0x80000003   616  0xb13d  36
InterArPfx  0.0.0.3          10.245.71.3     0x80000003   473  0x1da2  36
InterArPfx  0.0.0.4          10.245.71.3     0x80000003   458  0x99f0  44
InterArPfx  0.0.0.5          10.245.71.3     0x80000004  1058  0xbf22  36
InterArPfx  0.0.0.6          10.245.71.3     0x80000002  1958  0x5c67  36
InterArPfx  0.0.0.7          10.245.71.3     0x80000002  1816  0xf088  44
InterArPfx  0.0.0.8          10.245.71.3     0x80000002  1673  0xd3d6  36
InterArPfx  0.0.0.9          10.245.71.3     0x80000002  1658  0xa3df  44
InterArPfx  0.0.0.1          10.245.71.5     0x80000004   479  0xd50f  36
InterArPfx  0.0.0.2          10.245.71.5     0x80000003   310  0xa547  36
InterArPfx  0.0.0.3          10.245.71.5     0x80000003   913  0x1cbb  36
InterArPfx  0.0.0.5          10.245.71.5     0x80000003   163  0xddcd  36
InterArPfx  0.0.0.6          10.245.71.5     0x80000003    13  0xadd6  44
InterArPfx  0.0.0.7          10.245.71.5     0x80000002  2633  0x5f8a  36
InterArPfx  0.0.0.8          10.245.71.5     0x80000002  2488  0x427c  36
InterArPfx  0.0.0.9          10.245.71.5     0x80000002  2338  0xdcda  36
InterArPfx  0.0.0.10         10.245.71.5     0x80000002  2188  0x5929  44
InterArPfx  0.0.0.11         10.245.71.5     0x80000002  2038  0xc2af  44
InterArPfx  0.0.0.12         10.245.71.5     0x80000002   763  0x664   44
InterArPfx  0.0.0.1          10.245.71.11    0x80000003   463  0x6f7a  36
```

```
InterArPfx  0.0.0.2          10.245.71.11     0x80000003   328  0xa935  36
InterArPfx  0.0.0.3          10.245.71.11     0x80000003   193  0x427c  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000003   163  0xd69d  44
InterArPfx  0.0.0.5          10.245.71.11     0x80000002  1993  0x6b78  36
InterArPfx  0.0.0.6          10.245.71.11     0x80000002  1963  0xd6dd  36
InterArPfx  0.0.0.7          10.245.71.11     0x80000002  1828  0x532c  44
InterArPfx  0.0.0.8          10.245.71.11     0x80000002  1663  0xa9f7  36
InterArPfx  0.0.0.9          10.245.71.11     0x80000002  1528  0x7901  44
InterArRtr  0.0.0.1          10.245.71.5      0x80000002   620  0xc69c  32
IntraArPfx  0.0.0.1          10.245.71.1      0x80000005   464  0x3f8   76
IntraArPfx  0.0.0.1          10.245.71.3      0x80000005  1509  0x5cc1  64
IntraArPfx *0.0.0.1          10.245.71.4      0x80000004   458  0xba44  64
IntraArPfx  0.0.0.1          10.245.71.11     0x80000003  1693  0xd835  64
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern     *0.0.0.1          10.245.71.4      0x80000003  1058  0x8449  36
Extern      0.0.0.1          10.245.71.6      0x80000003  1064  0xdc9e  36

    OSPF Link-Local link state database, interface so-0/3/2.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.6          10.245.71.3      0x80000004   158  0xae30  56
Link       *0.0.0.2          10.245.71.4      0x80000004   158  0x9e80  56

user@router0> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.1                             Intra  Router      IP   25
  NH-interface so-0/3/2.0
10.245.71.3                             Intra  Area BR     IP   12
  NH-interface so-0/3/2.0
10.245.71.5                             Intra  Area BR     IP   13
  NH-interface so-0/3/2.0
10.245.71.6                             Inter  AS BR       IP   33
  NH-interface so-0/3/2.0
10.245.71.11                            Intra  Area BR     IP   13
  NH-interface so-0/3/2.0
9009:1::/64                             Intra  Network     IP   12
  NH-interface so-0/3/2.0
9009:1::2/128                           Intra  Network     IP   12
  NH-interface so-0/3/2.0
9009:2::/64                             Intra  Network     IP   25
  NH-interface so-0/3/2.0
9009:2::2/128                           Intra  Network     IP   13
  NH-interface so-0/3/2.0
9009:3::/64                             Inter  Network     IP   13
  NH-interface so-0/3/2.0
9009:4::/64                             Inter  Network     IP   23
  NH-interface so-0/3/2.0
9009:5::/64                             Inter  Network     IP   13
  NH-interface so-0/3/2.0
9009:6::/64                             Inter  Network     IP   33
  NH-interface so-0/3/2.0
9009:110::/64                           Intra  Network     IP   27
  NH-interface so-0/3/2.0
9009:120::/64                           Inter  Network     IP   25
  NH-interface so-0/3/2.0
9009:130::/64                           Inter  Network     IP   15
  NH-interface so-0/3/2.0
9009:140::/64                           Inter  Network     IP   16
  NH-interface so-0/3/2.0
9009:150::/64                           Ext2   Network     IP   0
  NH-interface so-0/3/2.0
```

```
feee::10:255:71:1/128                       Intra  Network     IP   25
  NH-interface so-0/3/2.0
feee::10:255:71:3/128                       Inter  Network     IP   12
  NH-interface so-0/3/2.0
feee::10:255:71:4/128                       Intra  Network     IP   0
  NH-interface lo0.0
feee::10:255:71:5/128                       Inter  Network     IP   13
  NH-interface so-0/3/2.0
feee::10:255:71:6/128                       Inter  Network     IP   33
  NH-interface so-0/3/2.0
feee::10:255:71:11/128                      Inter  Network     IP   13
  NH-interface so-0/3/2.0

user@router0> show interfaces terse
Interface       Admin Link Proto Local                 Remote
...
so-0/3/2        up    up
so-0/3/2.0      up    up   inet  10.19.1.1/24
                          inet6 9009:1::1/64
                                fe80::201:afff:fe03:6fa1/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.4         --> 0/0
                                127.0.0.1           --> 0/0
                          inet6 fe80::201:afff:fe03:6fa1
                                feee::10:255:71:4
...
```

To provide a comparison between OSPFv3 show commands and legacy OSPFv2 show commands, the following is some sample output of the OSPFv2 connection between routers 0 and 3:

```
user@router0> show ospf interface
Interface             State     Area            DR ID           BDR ID
Nbrs
lo0.0                 DRother   0.0.0.0         0.0.0.0         0.0.0.0
0
lo0.0                 DRother   0.0.0.0         0.0.0.0         0.0.0.0
0
so-0/3/2.0            PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1

user@router0> show ospf neighbor
  Address         Interface             State      ID              Pri  Dead
10.19.1.2        so-0/3/2.0            Full      10.245.71.3      128   35

user@router0> show ospf database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Opt  Cksum  Len
Router   10.245.71.3      10.245.71.3      0x80000002   636  0x2  0x5c45  60
Router  *10.245.71.4      10.245.71.4      0x80000002   640  0x2  0x267a  60

user@router0> show ospf route
Prefix              Path   Route       NH   Metric  NextHop       Nexthop
                    Type   Type        Type         Interface     addr/label
10.245.71.3         Intra  Router      IP   1       so-0/3/2.0
10.19.1.0/24        Intra  Network     IP   1       so-0/3/2.0
10.245.71.3/32      Intra  Network     IP   1       so-0/3/2.0
10.245.71.4/32      Intra  Network     IP   0       lo0.0
```

Router 1 Status

```
user@router1> show ospf3 interface
Interface             State     Area            DR-ID           BDR-ID
Nbrs
at-2/0/0.0            PtToPt   0.0.0.0         0.0.0.0         0.0.0.0
1
ge-1/1/0.0            DRother  0.0.0.0         0.0.0.0         0.0.0.0
0
lo0.0                 DRother  0.0.0.0         0.0.0.0         0.0.0.0
0

user@router1> show ospf3 neighbor
ID              Interface              State     Pri   Dead
10.245.71.11    at-2/0/0.0             Full      128   36
  Neighbor-address fe80::2a0:a5ff:fe3d:56

user@router1> show ospf3 database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router     *0.0.0.1          10.245.71.1      0x80000005   574  0x89ce  40
Router      0.0.0.1          10.245.71.3      0x80000006  1174  0x2357  72
Router      0.0.0.1          10.245.71.4      0x80000004   574  0xc09c  40
Router      0.0.0.1          10.245.71.5      0x80000003  1706  0xf774  40
Router      0.0.0.1          10.245.71.11     0x80000005  1205  0x7f6b  56
InterArPfx  0.0.0.1          10.245.71.3      0x80000003   572  0x9f52  36
InterArPfx  0.0.0.2          10.245.71.3      0x80000003   430  0xb13d  36
InterArPfx  0.0.0.3          10.245.71.3      0x80000003   288  0x1da2  36
InterArPfx  0.0.0.4          10.245.71.3      0x80000003   273  0x99f0  44
InterArPfx  0.0.0.5          10.245.71.3      0x80000004   873  0xbf22  36
InterArPfx  0.0.0.6          10.245.71.3      0x80000002  1773  0x5c67  36
InterArPfx  0.0.0.7          10.245.71.3      0x80000002  1630  0xf088  44
InterArPfx  0.0.0.8          10.245.71.3      0x80000002  1488  0xd3d6  36
InterArPfx  0.0.0.9          10.245.71.3      0x80000002  1473  0xa3df  44
InterArPfx  0.0.0.1          10.245.71.5      0x80000004   293  0xd50f  36
InterArPfx  0.0.0.2          10.245.71.5      0x80000003   124  0xa547  36
InterArPfx  0.0.0.3          10.245.71.5      0x80000003   727  0x1cbb  36
InterArPfx  0.0.0.5          10.245.71.5      0x80000002  2695  0xdfcc  36
InterArPfx  0.0.0.6          10.245.71.5      0x80000002  2601  0xafd5  44
InterArPfx  0.0.0.7          10.245.71.5      0x80000002  2448  0x5f8a  36
InterArPfx  0.0.0.8          10.245.71.5      0x80000002  2302  0x427c  36
InterArPfx  0.0.0.9          10.245.71.5      0x80000002  2152  0xdcda  36
InterArPfx  0.0.0.10         10.245.71.5      0x80000002  2002  0x5929  44
InterArPfx  0.0.0.11         10.245.71.5      0x80000002  1852  0xc2af  44
InterArPfx  0.0.0.12         10.245.71.5      0x80000002   577  0x664   44
InterArPfx  0.0.0.1          10.245.71.11     0x80000003   275  0x6f7a  36
InterArPfx  0.0.0.2          10.245.71.11     0x80000003   140  0xa935  36
InterArPfx  0.0.0.3          10.245.71.11     0x80000003     5  0x427c  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000002  2105  0xd89c  44
InterArPfx  0.0.0.5          10.245.71.11     0x80000002  1805  0x6b78  36
InterArPfx  0.0.0.6          10.245.71.11     0x80000002  1775  0xd6dd  36
InterArPfx  0.0.0.7          10.245.71.11     0x80000002  1640  0x532c  44
InterArPfx  0.0.0.8          10.245.71.11     0x80000002  1475  0xa9f7  36
InterArPfx  0.0.0.9          10.245.71.11     0x80000002  1340  0x7901  44
InterArRtr  0.0.0.1          10.245.71.5      0x80000002   434  0xc69c  32
IntraArPfx *0.0.0.1          10.245.71.1      0x80000005   274  0x3f8   76
IntraArPfx  0.0.0.1          10.245.71.3      0x80000005  1323  0x5cc1  64
IntraArPfx  0.0.0.1          10.245.71.4      0x80000004   275  0xba44  64
IntraArPfx  0.0.0.1          10.245.71.11     0x80000003  1505  0xd835  64
```

```
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern      0.0.0.1          10.245.71.4      0x80000003   874  0x8449  36
Extern      0.0.0.1          10.245.71.6      0x80000003   877  0xdc9e  36

    OSPF Link-Local link state database, interface at-2/0/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.3          10.245.71.1      0x80000004   874  0x296b  56
Link        0.0.0.6          10.245.71.11     0x80000003   605  0xaf4f  56

user@router1> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.3                             Intra  Area BR     IP   13
  NH-interface at-2/0/0.0
10.245.71.4                             Intra  AS BR       IP   25
  NH-interface at-2/0/0.0
10.245.71.5                             Intra  Area BR     IP   14
  NH-interface at-2/0/0.0
10.245.71.6                             Inter  AS BR       IP   34
  NH-interface at-2/0/0.0
10.245.71.11                            Intra  Area BR     IP   12
  NH-interface at-2/0/0.0
9009:1::/64                             Intra  Network     IP   25
  NH-interface at-2/0/0.0
9009:1::2/128                           Intra  Network     IP   13
  NH-interface at-2/0/0.0
9009:2::/64                             Intra  Network     IP   12
  NH-interface at-2/0/0.0
9009:2::2/128                           Intra  Network     IP   12
  NH-interface at-2/0/0.0
9009:3::/64                             Inter  Network     IP   13
  NH-interface at-2/0/0.0
9009:4::/64                             Inter  Network     IP   22
  NH-interface at-2/0/0.0
9009:5::/64                             Inter  Network     IP   14
  NH-interface at-2/0/0.0
9009:6::/64                             Inter  Network     IP   34
  NH-interface at-2/0/0.0
9009:100::/64                           Ext2   Network     IP   0
  NH-interface at-2/0/0.0
9009:110::/64                           Intra  Network     IP   2
  NH-interface ge-1/1/0.0
9009:120::/64                           Inter  Network     IP   24
  NH-interface at-2/0/0.0
9009:130::/64                           Inter  Network     IP   16
  NH-interface at-2/0/0.0
9009:140::/64                           Inter  Network     IP   17
  NH-interface at-2/0/0.0
9009:150::/64                           Ext2   Network     IP   0
  NH-interface at-2/0/0.0
feee::10:255:71:1/128                   Intra  Network     IP   0
  NH-interface lo0.0
feee::10:255:71:3/128                   Inter  Network     IP   13
  NH-interface at-2/0/0.0
feee::10:255:71:4/128                   Intra  Network     IP   25
  NH-interface at-2/0/0.0
feee::10:255:71:5/128                   Inter  Network     IP   14
  NH-interface at-2/0/0.0
feee::10:255:71:6/128                   Inter  Network     IP   34
  NH-interface at-2/0/0.0
feee::10:255:71:11/128                  Inter  Network     IP   12
  NH-interface at-2/0/0.0
```

```
user@router1> show interfaces terse
Interface       Admin Link Proto Local                 Remote
...
at-2/0/0        up    up
at-2/0/0.0      up    up   inet  10.19.2.1/24
                           inet6 9009:2::1/64
                                 fe80::2a0:a5ff:fe3d:dbf/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.1         --> 0/0
                                 127.0.0.1           --> 0/0
                           inet6 fe80::2a0:a5ff:fe3d:dbf
                                 feee::10:255:71:1
...
```

Router 2 Status

```
user@router2> show ospf3 interface
Interface             State     Area            DR-ID           BDR-ID
Nbrs
at-0/3/1.0            PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1
vl-10.245.71.3        PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1
at-0/3/0.0            PtToPt    0.0.0.1         0.0.0.0         0.0.0.0
0
fe-1/1/0.0            DR        0.0.0.1         10.245.71.11    10.245.71.5
1
lo0.0                 DRother   0.0.0.1         0.0.0.0         0.0.0.0
0
so-0/2/0.0            PtToPt    0.0.0.1         0.0.0.0         0.0.0.0
1

user@router2> show ospf3 neighbor
ID              Interface             State     Pri   Dead
10.245.71.1     at-0/3/1.0            Full      128   36
  Neighbor-address fe80::2a0:a5ff:fe3d:dbf
10.245.71.3     vl-10.245.71.3        Full        0   33
  Neighbor-address 9009:3::2
10.245.71.5     fe-1/1/0.0            Full      128   36
  Neighbor-address fe80::290:69ff:fe98:909d
10.245.71.3     so-0/2/0.0            Full      128   33
  Neighbor-address fe80::201:afff:fe00:86ca

user@router2> show ospf3 database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.1      0x80000005   277  0x89ce  40
Router      0.0.0.1          10.245.71.3      0x80000006   875  0x2357  72
Router      0.0.0.1          10.245.71.4      0x80000004   275  0xc09c  40
Router      0.0.0.1          10.245.71.5      0x80000003  1407  0xf774  40
Router     *0.0.0.1          10.245.71.11     0x80000005   906  0x7f6b  56
InterArPfx  0.0.0.1          10.245.71.3      0x80000003   273  0x9f52  36
InterArPfx  0.0.0.2          10.245.71.3      0x80000003   131  0xb13d  36
InterArPfx  0.0.0.3          10.245.71.3      0x80000002  2225  0x1fa1  36
InterArPfx  0.0.0.4          10.245.71.3      0x80000002  2076  0x9bef  44
InterArPfx  0.0.0.5          10.245.71.3      0x80000004   574  0xbf22  36
InterArPfx  0.0.0.6          10.245.71.3      0x80000002  1474  0x5c67  36
InterArPfx  0.0.0.7          10.245.71.3      0x80000002  1331  0xf088  44
```

```
InterArPfx  0.0.0.8          10.245.71.3      0x80000002  1189  0xd3d6  36
InterArPfx  0.0.0.9          10.245.71.3      0x80000002  1174  0xa3df  44
InterArPfx  0.0.0.1          10.245.71.5      0x80000003  2923  0xd70e  36
InterArPfx  0.0.0.2          10.245.71.5      0x80000002  2537  0xa746  36
InterArPfx  0.0.0.3          10.245.71.5      0x80000003   428  0x1cbb  36
InterArPfx  0.0.0.5          10.245.71.5      0x80000002  2396  0xdfcc  36
InterArPfx  0.0.0.6          10.245.71.5      0x80000002  2302  0xafd5  44
InterArPfx  0.0.0.7          10.245.71.5      0x80000002  2149  0x5f8a  36
InterArPfx  0.0.0.8          10.245.71.5      0x80000002  2003  0x427c  36
InterArPfx  0.0.0.9          10.245.71.5      0x80000002  1853  0xdcda  36
InterArPfx  0.0.0.10         10.245.71.5      0x80000002  1703  0x5929  44
InterArPfx  0.0.0.11         10.245.71.5      0x80000002  1553  0xc2af  44
InterArPfx  0.0.0.12         10.245.71.5      0x80000002   278  0x664   44
InterArPfx *0.0.0.1          10.245.71.11     0x80000002  2108  0x7179  36
InterArPfx *0.0.0.2          10.245.71.11     0x80000002  2076  0xab34  36
InterArPfx *0.0.0.3          10.245.71.11     0x80000002  1941  0x447b  36
InterArPfx *0.0.0.4          10.245.71.11     0x80000002  1806  0xd89c  44
InterArPfx *0.0.0.5          10.245.71.11     0x80000002  1506  0x6b78  36
InterArPfx *0.0.0.6          10.245.71.11     0x80000002  1476  0xd6dd  36
InterArPfx *0.0.0.7          10.245.71.11     0x80000002  1341  0x532c  44
InterArPfx *0.0.0.8          10.245.71.11     0x80000002  1176  0xa9f7  36
InterArPfx *0.0.0.9          10.245.71.11     0x80000002  1041  0x7901  44
InterArRtr  0.0.0.1          10.245.71.5      0x80000002   135  0xc69c  32
IntraArPfx  0.0.0.1          10.245.71.1      0x80000004   877  0x5f7   76
IntraArPfx  0.0.0.1          10.245.71.3      0x80000005  1024  0x5cc1  64
IntraArPfx  0.0.0.1          10.245.71.4      0x80000003  1176  0xbc43  64
IntraArPfx *0.0.0.1          10.245.71.11     0x80000003  1206  0xd835  64

    OSPF link state database, area 0.0.0.1
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.3      0x80000006   574  0xad3f  56
Router      0.0.0.1          10.245.71.5      0x80000006   577  0xde02  56
Router     *0.0.0.1          10.245.71.11     0x80000007   576  0x8853  56
Network    *0.0.0.4          10.245.71.11     0x80000003   606  0xfd16  32
InterArPfx  0.0.0.1          10.245.71.3      0x80000002  1774  0xc722  36
InterArPfx  0.0.0.2          10.245.71.3      0x80000002  1624  0x7b2f  44
InterArPfx  0.0.0.3          10.245.71.3      0x80000002   874  0x877   44
InterArPfx  0.0.0.1          10.245.71.5      0x80000003   352  0x30a9  36
InterArPfx  0.0.0.3          10.245.71.5      0x80000002   205  0x6013  44
InterArPfx *0.0.0.1          10.245.71.11     0x80000003   141  0xa33c  36
InterArPfx *0.0.0.2          10.245.71.11     0x80000003     6  0x5749  44
InterArPfx *0.0.0.3          10.245.71.11     0x80000002  1776  0x6f5e  36
InterArPfx *0.0.0.4          10.245.71.11     0x80000002  1641  0x7ff9  44
InterArRtr  0.0.0.1          10.245.71.3      0x80000002   724  0x6609  32
InterArRtr  0.0.0.1          10.245.71.5      0x80000002    64  0xc69c  32
IntraArPfx  0.0.0.1          10.245.71.3      0x80000004   424  0x4a98  88
IntraArPfx  0.0.0.1          10.245.71.5      0x80000004   502  0x3691  76
IntraArPfx *0.0.0.1          10.245.71.11     0x80000005   441  0x2c5   76
IntraArPfx *0.0.0.5          10.245.71.11     0x80000003   741  0xfa59  44
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern      0.0.0.1          10.245.71.4      0x80000003   575  0x8449  36
Extern      0.0.0.1          10.245.71.6      0x80000003   578  0xdc9e  36

    OSPF Link-Local link state database, interface at-0/3/1.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.3          10.245.71.1      0x80000004   577  0x296b  56
Link       *0.0.0.6          10.245.71.11     0x80000003   306  0xaf4f  56

    OSPF Link-Local link state database, interface fe-1/1/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.5          10.245.71.5      0x80000003   727  0x40dc  56
Link       *0.0.0.4          10.245.71.11     0x80000004   876  0x73ab  56
```

```
    OSPF Link-Local link state database, interface so-0/2/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.4          10.245.71.3      0x80000003  2074  0x9d6   56
Link       *0.0.0.3          10.245.71.11     0x80000004   276  0xed12  56

user@router2> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.1                             Intra  Router      IP   12
  NH-interface at-0/3/1.0
10.245.71.3                             Intra  Area BR     IP   1
  NH-interface so-0/2/0.0
10.245.71.4                             Intra  AS BR       IP   13
  NH-interface so-0/2/0.0
10.245.71.5                             Intra  Area BR     IP   2
  NH-interface so-0/2/0.0
10.245.71.6                             Inter  AS BR       IP   22
  NH-interface so-0/2/0.0
10.245.71.11;0.0.0.4                    Intra  Transit     IP   10
  NH-interface fe-1/1/0.0
9009:1::/64                             Intra  Network     IP   13
  NH-interface so-0/2/0.0
9009:1::2/128                           Intra  Network     IP   1
  NH-interface so-0/2/0.0
9009:2::/64                             Intra  Network     IP   12
  NH-interface at-0/3/1.0
9009:2::2/128                           Intra  Network     IP   0
  NH-interface at-0/3/1.0
9009:3::/64                             Intra  Network     IP   1
  NH-interface so-0/2/0.0
9009:4::/64                             Intra  Network     IP   10
  NH-interface fe-1/1/0.0
9009:5::/64                             Intra  Network     IP   2
  NH-interface so-0/2/0.0
9009:6::/64                             Inter  Network     IP   22
  NH-interface so-0/2/0.0
9009:100::/64                           Ext2   Network     IP   0
  NH-interface so-0/2/0.0
9009:110::/64                           Intra  Network     IP   14
  NH-interface at-0/3/1.0
9009:120::/64                           Intra  Network     IP   12
  NH-interface at-0/3/0.0
9009:130::/64                           Intra  Network     IP   4
  NH-interface so-0/2/0.0
9009:140::/64                           Intra  Network     IP   5
  NH-interface so-0/2/0.0
9009:150::/64                           Ext2   Network     IP   0
  NH-interface so-0/2/0.0
feee::10:255:71:1/128                   Intra  Network     IP   12
  NH-interface at-0/3/1.0
feee::10:255:71:3/128                   Intra  Network     IP   1
  NH-interface so-0/2/0.0
feee::10:255:71:4/128                   Intra  Network     IP   13
  NH-interface so-0/2/0.0
feee::10:255:71:5/128                   Intra  Network     IP   2
  NH-interface so-0/2/0.0
feee::10:255:71:6/128                   Inter  Network     IP   22
  NH-interface so-0/2/0.0
feee::10:255:71:11/128                  Intra  Network     IP   0
  NH-interface lo0.0
```

```
user@router2> show interfaces terse
Interface       Admin Link Proto Local                 Remote
...
so-0/2/0        up    up
so-0/2/0.0      up    up   inet  10.19.3.1/24
                           inet6 9009:3::1/64
                                 fe80::2a0:a5ff:fe3d:56/64
...
at-0/3/1        up    up
at-0/3/1.0      up    up   inet  10.19.2.2/24
                           inet6 9009:2::2/64
                                 fe80::2a0:a5ff:fe3d:56/64
...
fe-1/1/0        up    up
fe-1/1/0.0      up    up   inet  10.19.4.1/24
                           inet6 9009:4::1/64
                                 fe80::290:69ff:fea0:809d/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.11        --> 0/0
                                 127.0.0.1           --> 0/0
                           inet6 fe80::2a0:a5ff:fe3d:56
                                 feee::10:255:71:11
...
```

Router 3 Status

```
user@router3> show ospf3 interface
Interface             State     Area            DR-ID           BDR-ID
Nbrs
so-0/3/2.0            PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1
vl-10.245.71.11       PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1
vl-10.245.71.5        PtToPt    0.0.0.0         0.0.0.0         0.0.0.0
1
at-1/2/0.0            PtToPt    0.0.0.1         0.0.0.0         0.0.0.0
0
lo0.0                 DRother   0.0.0.1         0.0.0.0         0.0.0.0
0
so-0/3/0.0            PtToPt    0.0.0.1         0.0.0.0         0.0.0.0
1
t1-0/2/1.0            PtToPt    0.0.0.1         0.0.0.0         0.0.0.0
1

user@router3> show ospf3 neighbor
ID              Interface             State     Pri   Dead
10.245.71.4     so-0/3/2.0            Full      128   38
  Neighbor-address fe80::201:afff:fe03:6fa1
10.245.71.11    vl-10.245.71.11       Full        0   36
  Neighbor-address 9009:3::1
10.245.71.5     vl-10.245.71.5        Full        0   35
  Neighbor-address 9009:5::2
10.245.71.11    so-0/3/0.0            Full      128   37
  Neighbor-address fe80::2a0:a5ff:fe3d:56
10.245.71.5     t1-0/2/1.0            Full      128   39
  Neighbor-address fe80::2a0:a5ff:fe3d:b63
```

```
user@router3> show ospf3 database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.1      0x80000005    94  0x89ce  40
Router     *0.0.0.1          10.245.71.3      0x80000006   690  0x2357  72
Router      0.0.0.1          10.245.71.4      0x80000004    90  0xc09c  40
Router      0.0.0.1          10.245.71.5      0x80000003  1222  0xf774  40
Router      0.0.0.1          10.245.71.11     0x80000005   723  0x7f6b  56
InterArPfx *0.0.0.1          10.245.71.3      0x80000003    88  0x9f52  36
InterArPfx *0.0.0.2          10.245.71.3      0x80000002  2188  0xb33c  36
InterArPfx *0.0.0.3          10.245.71.3      0x80000002  2040  0x1fa1  36
InterArPfx *0.0.0.4          10.245.71.3      0x80000002  1891  0x9bef  44
InterArPfx *0.0.0.5          10.245.71.3      0x80000004   388  0xbf22  36
InterArPfx *0.0.0.6          10.245.71.3      0x80000002  1288  0x5c67  36
InterArPfx *0.0.0.7          10.245.71.3      0x80000002  1146  0xf088  44
InterArPfx *0.0.0.8          10.245.71.3      0x80000002  1003  0xd3d6  36
InterArPfx *0.0.0.9          10.245.71.3      0x80000002   988  0xa3df  44
InterArPfx  0.0.0.1          10.245.71.5      0x80000003  2738  0xd70e  36
InterArPfx  0.0.0.2          10.245.71.5      0x80000002  2352  0xa746  36
InterArPfx  0.0.0.3          10.245.71.5      0x80000003   243  0x1cbb  36
InterArPfx  0.0.0.5          10.245.71.5      0x80000002  2211  0xdfcc  36
InterArPfx  0.0.0.6          10.245.71.5      0x80000002  2117  0xafd5  44
InterArPfx  0.0.0.7          10.245.71.5      0x80000002  1964  0x5f8a  36
InterArPfx  0.0.0.8          10.245.71.5      0x80000002  1818  0x427c  36
InterArPfx  0.0.0.9          10.245.71.5      0x80000002  1668  0xdcda  36
InterArPfx  0.0.0.10         10.245.71.5      0x80000002  1518  0x5929  44
InterArPfx  0.0.0.11         10.245.71.5      0x80000002  1368  0xc2af  44
InterArPfx  0.0.0.12         10.245.71.5      0x80000002    93  0x664   44
InterArPfx  0.0.0.1          10.245.71.11     0x80000002  1925  0x7179  36
InterArPfx  0.0.0.2          10.245.71.11     0x80000002  1893  0xab34  36
InterArPfx  0.0.0.3          10.245.71.11     0x80000002  1758  0x447b  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000002  1623  0xd89c  44
InterArPfx  0.0.0.5          10.245.71.11     0x80000002  1323  0x6b78  36
InterArPfx  0.0.0.6          10.245.71.11     0x80000002  1293  0xd6dd  36
InterArPfx  0.0.0.7          10.245.71.11     0x80000002  1158  0x532c  44
InterArPfx  0.0.0.8          10.245.71.11     0x80000002   993  0xa9f7  36
InterArPfx  0.0.0.9          10.245.71.11     0x80000002   858  0x7901  44
InterArRtr  0.0.0.1          10.245.71.5      0x80000001  2743  0xc89b  32
IntraArPfx  0.0.0.1          10.245.71.1      0x80000004   694  0x5f7   76
IntraArPfx *0.0.0.1          10.245.71.3      0x80000005   839  0x5cc1  64
IntraArPfx  0.0.0.1          10.245.71.4      0x80000003   990  0xbc43  64
IntraArPfx  0.0.0.1          10.245.71.11     0x80000003  1023  0xd835  64

    OSPF link state database, area 0.0.0.1
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router     *0.0.0.1          10.245.71.3      0x80000006   389  0xad3f  56
Router      0.0.0.1          10.245.71.5      0x80000006   393  0xde02  56
Router      0.0.0.1          10.245.71.11     0x80000007   393  0x8853  56
Network     0.0.0.4          10.245.71.11     0x80000003   423  0xfd16  32
InterArPfx *0.0.0.1          10.245.71.3      0x80000002  1588  0xc722  36
InterArPfx *0.0.0.2          10.245.71.3      0x80000002  1438  0x7b2f  44
InterArPfx *0.0.0.3          10.245.71.3      0x80000002   688  0x877   44
InterArPfx  0.0.0.1          10.245.71.5      0x80000003   168  0x30a9  36
InterArPfx  0.0.0.3          10.245.71.5      0x80000002    21  0x6013  44
InterArPfx  0.0.0.1          10.245.71.11     0x80000002  2193  0xa53b  36
InterArPfx  0.0.0.2          10.245.71.11     0x80000002  2059  0x5948  44
InterArPfx  0.0.0.3          10.245.71.11     0x80000002  1593  0x6f5e  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000002  1458  0x7ff9  44
InterArRtr *0.0.0.1          10.245.71.3      0x80000002   538  0x6609  32
InterArRtr  0.0.0.1          10.245.71.5      0x80000001  2743  0xc89b  32
IntraArPfx *0.0.0.1          10.245.71.3      0x80000004   238  0x4a98  88
IntraArPfx  0.0.0.1          10.245.71.5      0x80000004   318  0x3691  76
```

```
IntraArPfx  0.0.0.1          10.245.71.11     0x80000005   258  0x2c5   76
IntraArPfx  0.0.0.5          10.245.71.11     0x80000003   558  0xfa59  44
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern      0.0.0.1          10.245.71.4      0x80000003   390  0x8449  36
Extern      0.0.0.1          10.245.71.6      0x80000003   394  0xdc9e  36

    OSPF Link-Local link state database, interface so-0/3/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.4          10.245.71.3      0x80000003  1888  0x9d6   56
Link        0.0.0.3          10.245.71.11     0x80000004    93  0xed12  56

    OSPF Link-Local link state database, interface so-0/3/2.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.6          10.245.71.3      0x80000003  1589  0xb02f  56
Link        0.0.0.2          10.245.71.4      0x80000003   690  0xa07f  56

    OSPF Link-Local link state database, interface t1-0/2/1.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.5          10.245.71.3      0x80000003  1738  0x4399  56
Link        0.0.0.3          10.245.71.5      0x80000002  2423  0x618c  56

user@router3> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.1                             Intra  Router      IP   13
  NH-interface (null), NH-addr feee::10:255:71:11
10.245.71.4                             Intra  AS BR       IP   12
  NH-interface so-0/3/2.0
10.245.71.5                             Intra  Area BR     IP   1
  NH-interface t1-0/2/1.0
10.245.71.6                             Inter  AS BR       IP   21
  NH-interface t1-0/2/1.0
10.245.71.11                            Intra  Area BR     IP   1
  NH-interface so-0/3/0.0
10.245.71.11;0.0.0.4                    Intra  Transit     IP   11
  NH-interface so-0/3/0.0
  NH-interface t1-0/2/1.0
9009:1::/64                             Intra  Network     IP   12
  NH-interface so-0/3/2.0
9009:1::2/128                           Intra  Network     IP   0
  NH-interface so-0/3/2.0
9009:2::/64                             Intra  Network     IP   13
  NH-interface so-0/3/0.0
9009:2::2/128                           Intra  Network     IP   1
  NH-interface so-0/3/0.0
9009:3::/64                             Intra  Network     IP   1
  NH-interface so-0/3/0.0
9009:4::/64                             Intra  Network     IP   11
  NH-interface so-0/3/0.0
  NH-interface t1-0/2/1.0
9009:5::/64                             Intra  Network     IP   1
  NH-interface t1-0/2/1.0
9009:6::/64                             Inter  Network     IP   21
  NH-interface t1-0/2/1.0
9009:100::/64                           Ext2   Network     IP   0
  NH-interface so-0/3/2.0
9009:110::/64                           Intra  Network     IP   15
  NH-interface so-0/3/0.0
9009:120::/64                           Intra  Network     IP   13
  NH-interface so-0/3/0.0
9009:130::/64                           Intra  Network     IP   3
  NH-interface at-1/2/0.0
```

```
9009:140::/64                              Intra  Network     IP   4
  NH-interface t1-0/2/1.0
9009:150::/64                              Ext2   Network     IP   0
  NH-interface t1-0/2/1.0
feee::10:255:71:1/128                      Intra  Network     IP   13
  NH-interface so-0/3/0.0
feee::10:255:71:3/128                      Intra  Network     IP   0
  NH-interface lo0.0
feee::10:255:71:4/128                      Intra  Network     IP   12
  NH-interface so-0/3/2.0
feee::10:255:71:5/128                      Intra  Network     IP   1
  NH-interface t1-0/2/1.0
feee::10:255:71:6/128                      Inter  Network     IP   21
  NH-interface t1-0/2/1.0
feee::10:255:71:11/128                     Intra  Network     IP   1
  NH-interface so-0/3/0.0

user@router3> show interfaces terse
Interface       Admin Link Proto Local                 Remote
...
t1-0/2/1.0      up    up   inet  10.19.5.1/24
                           inet6 9009:5::1/64
                                 fe80::201:afff:fe00:86ca/64
...
so-0/3/0        up    up
so-0/3/0.0      up    up   inet  10.19.3.2/24
                           inet6 9009:3::2/64
                                 fe80::201:afff:fe00:86ca/64
so-0/3/1        up    up
so-0/3/2        up    up
so-0/3/2.0      up    up   inet  10.19.1.2/24
                           inet6 9009:1::2/64
                                 fe80::201:afff:fe00:86ca/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.3         --> 0/0
                                 127.0.0.1           --> 0/0
                           inet6 fe80::201:afff:fe00:86ca
                                 feee::10:255:71:3
...
```

To provide a comparison between OSPFv3 show commands and legacy OSPFv2 show commands, the following is some sample output of the OSPFv2 connection between routers 0 and 3:

```
user@router3> show ospf interface
Interface             State     Area            DR ID           BDR ID
Nbrs
lo0.0                 DRother  0.0.0.0         0.0.0.0         0.0.0.0
0
lo0.0                 DRother  0.0.0.0         0.0.0.0         0.0.0.0
0
so-0/3/2.0            PtToPt   0.0.0.0         0.0.0.0         0.0.0.0
1

user@router3> show ospf neighbor
  Address         Interface             State      ID              Pri  Dead
10.19.1.1        so-0/3/2.0            Full      10.245.71.4      128   38
```

```
user@router3> show ospf database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Opt  Cksum  Len
Router  *10.245.71.3      10.245.71.3      0x80000002    67  0x2  0x5c45  60
Router   10.245.71.4      10.245.71.4      0x80000002    74  0x2  0x267a  60

user@router3> show ospf route
Prefix               Path   Route       NH   Metric  NextHop       Nexthop
                     Type   Type        Type         Interface     addr/label
10.245.71.4          Intra  Router      IP   1       so-0/3/2.0
10.19.1.0/24         Intra  Network     IP   1       so-0/3/2.0
10.245.71.3/32       Intra  Network     IP   0       lo0.0
10.245.71.4/32       Intra  Network     IP   1       so-0/3/2.0
```

Router 4 Status

```
user@router4> show ospf3 interface
Interface              State     Area            DR-ID           BDR-ID
Nbrs
vl-10.245.71.3         PtToPt   0.0.0.0         0.0.0.0         0.0.0.0
1
at-0/3/0.0             PtToPt   0.0.0.1         0.0.0.0         0.0.0.0
0
fe-1/1/0.0             BDR      0.0.0.1         10.245.71.11    10.245.71.5
1
lo0.0                  DRother  0.0.0.1         0.0.0.0         0.0.0.0
0
t1-0/2/1.0             PtToPt   0.0.0.1         0.0.0.0         0.0.0.0
1
fe-0/0/0.0             BDR      0.0.0.2         10.245.71.6     10.245.71.5
1

user@router4> show ospf3 neighbor
ID              Interface              State     Pri   Dead
10.245.71.3     vl-10.245.71.3         Full        0   32
  Neighbor-address 9009:5::1
10.245.71.11    fe-1/1/0.0             Full      128   37
  Neighbor-address fe80::290:69ff:fea0:809d
10.245.71.3     t1-0/2/1.0             Full      128   32
  Neighbor-address fe80::201:afff:fe00:86ca
10.245.71.6     fe-0/0/0.0             Full      128   35
  Neighbor-address fe80::290:69ff:fe94:c400

user@router4> show ospf3 database

    OSPF link state database, area 0.0.0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.1      0x80000004   894  0x8bcd  40
Router      0.0.0.1          10.245.71.3      0x80000006   590  0x2357  72
Router      0.0.0.1          10.245.71.4      0x80000003  1190  0xc29b  40
Router     *0.0.0.1          10.245.71.5      0x80000003  1120  0xf774  40
Router      0.0.0.1          10.245.71.11     0x80000005   623  0x7f6b  56
InterArPfx  0.0.0.1          10.245.71.3      0x80000002  2114  0xa151  36
InterArPfx  0.0.0.2          10.245.71.3      0x80000002  2089  0xb33c  36
InterArPfx  0.0.0.3          10.245.71.3      0x80000002  1940  0x1fa1  36
InterArPfx  0.0.0.4          10.245.71.3      0x80000002  1791  0x9bef  44
InterArPfx  0.0.0.5          10.245.71.3      0x80000004   289  0xbf22  36
InterArPfx  0.0.0.6          10.245.71.3      0x80000002  1188  0x5c67  36
InterArPfx  0.0.0.7          10.245.71.3      0x80000002  1046  0xf088  44
InterArPfx  0.0.0.8          10.245.71.3      0x80000002   904  0xd3d6  36
```

```
InterArPfx  0.0.0.9          10.245.71.3      0x80000002   888  0xa3df  44
InterArPfx *0.0.0.1          10.245.71.5      0x80000003  2636  0xd70e  36
InterArPfx *0.0.0.2          10.245.71.5      0x80000002  2250  0xa746  36
InterArPfx *0.0.0.3          10.245.71.5      0x80000003   141  0x1cbb  36
InterArPfx *0.0.0.5          10.245.71.5      0x80000002  2109  0xdfcc  36
InterArPfx *0.0.0.6          10.245.71.5      0x80000002  2015  0xafd5  44
InterArPfx *0.0.0.7          10.245.71.5      0x80000002  1862  0x5f8a  36
InterArPfx *0.0.0.8          10.245.71.5      0x80000002  1716  0x427c  36
InterArPfx *0.0.0.9          10.245.71.5      0x80000002  1566  0xdcda  36
InterArPfx *0.0.0.10         10.245.71.5      0x80000002  1416  0x5929  44
InterArPfx *0.0.0.11         10.245.71.5      0x80000002  1266  0xc2af  44
InterArPfx *0.0.0.12         10.245.71.5      0x80000001  2641  0x863   44
InterArPfx  0.0.0.1          10.245.71.11     0x80000002  1825  0x7179  36
InterArPfx  0.0.0.2          10.245.71.11     0x80000002  1793  0xab34  36
InterArPfx  0.0.0.3          10.245.71.11     0x80000002  1658  0x447b  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000002  1523  0xd89c  44
InterArPfx  0.0.0.5          10.245.71.11     0x80000002  1223  0x6b78  36
InterArPfx  0.0.0.6          10.245.71.11     0x80000002  1193  0xd6dd  36
InterArPfx  0.0.0.7          10.245.71.11     0x80000002  1058  0x532c  44
InterArPfx  0.0.0.8          10.245.71.11     0x80000002   893  0xa9f7  36
InterArPfx  0.0.0.9          10.245.71.11     0x80000002   758  0x7901  44
InterArRtr *0.0.0.1          10.245.71.5      0x80000001  2641  0xc89b  32
IntraArPfx  0.0.0.1          10.245.71.1      0x80000004   594  0x5f7   76
IntraArPfx  0.0.0.1          10.245.71.3      0x80000005   739  0x5cc1  64
IntraArPfx  0.0.0.1          10.245.71.4      0x80000003   890  0xbc43  64
IntraArPfx  0.0.0.1          10.245.71.11     0x80000003   923  0xd835  64

    OSPF link state database, area 0.0.0.1
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.3      0x80000006   289  0xad3f  56
Router     *0.0.0.1          10.245.71.5      0x80000006   291  0xde02  56
Router      0.0.0.1          10.245.71.11     0x80000007   292  0x8853  56
Network     0.0.0.4          10.245.71.11     0x80000003   322  0xfd16  32
InterArPfx  0.0.0.1          10.245.71.3      0x80000002  1488  0xc722  36
InterArPfx  0.0.0.2          10.245.71.3      0x80000002  1339  0x7b2f  44
InterArPfx  0.0.0.3          10.245.71.3      0x80000002   589  0x877   44
InterArPfx *0.0.0.1          10.245.71.5      0x80000003    66  0x30a9  36
InterArPfx *0.0.0.3          10.245.71.5      0x80000001  2641  0x6212  44
InterArPfx  0.0.0.1          10.245.71.11     0x80000002  2092  0xa53b  36
InterArPfx  0.0.0.2          10.245.71.11     0x80000002  1958  0x5948  44
InterArPfx  0.0.0.3          10.245.71.11     0x80000002  1492  0x6f5e  36
InterArPfx  0.0.0.4          10.245.71.11     0x80000002  1357  0x7ff9  44
InterArRtr  0.0.0.1          10.245.71.3      0x80000002   439  0x6609  32
InterArRtr *0.0.0.1          10.245.71.5      0x80000001  2641  0xc89b  32
IntraArPfx  0.0.0.1          10.245.71.3      0x80000004   139  0x4a98  88
IntraArPfx *0.0.0.1          10.245.71.5      0x80000004   216  0x3691  76
IntraArPfx  0.0.0.1          10.245.71.11     0x80000005   157  0x2c5   76
IntraArPfx  0.0.0.5          10.245.71.11     0x80000003   457  0xfa59  44

    OSPF link state database, area 0.0.0.2
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router     *0.0.0.1          10.245.71.5      0x80000004   366  0x252e  40
Router      0.0.0.1          10.245.71.6      0x80000004  1492  0x64d   40
Network     0.0.0.2          10.245.71.6      0x80000003   892  0xfd22  32
InterArPfx *0.0.0.1          10.245.71.5      0x80000003  2636  0xd70e  36
InterArPfx *0.0.0.2          10.245.71.5      0x80000002  2179  0xa746  36
InterArPfx *0.0.0.3          10.245.71.5      0x80000002  2091  0xf3ba  36
InterArPfx *0.0.0.4          10.245.71.5      0x80000002  1938  0xc3c3  44
InterArPfx *0.0.0.5          10.245.71.5      0x80000002  1791  0x7378  36
InterArPfx *0.0.0.6          10.245.71.5      0x80000002  1641  0x566a  36
InterArPfx *0.0.0.7          10.245.71.5      0x80000002  1491  0xf0c8  36
InterArPfx *0.0.0.8          10.245.71.5      0x80000002  1341  0x6d17  44
InterArPfx *0.0.0.9          10.245.71.5      0x80000002  1191  0xd69d  44
```

```
InterArPfx *0.0.0.10         10.245.71.5      0x80000002  1049  0x6776  36
InterArPfx *0.0.0.11         10.245.71.5      0x80000002   979  0x1b83  44
InterArPfx *0.0.0.12         10.245.71.5      0x80000002   908  0x6772  36
InterArPfx *0.0.0.13         10.245.71.5      0x80000002   891  0x1b7f  44
InterArPfx *0.0.0.14         10.245.71.5      0x80000002   815  0x3195  36
InterArPfx *0.0.0.15         10.245.71.5      0x80000002   738  0x4131  44
InterArPfx *0.0.0.16         10.245.71.5      0x80000002   662  0x7fef  44
InterArRtr *0.0.0.1          10.245.71.5      0x80000002   591  0x6408  32
IntraArPfx  0.0.0.1          10.245.71.6      0x80000005  1192  0x42b9  52
IntraArPfx  0.0.0.3          10.245.71.6      0x80000003   592  0xfe61  44
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern      0.0.0.1          10.245.71.4      0x80000003   290  0x8449  36
Extern      0.0.0.1          10.245.71.6      0x80000003   292  0xdc9e  36

    OSPF Link-Local link state database, interface fe-0/0/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.4          10.245.71.5      0x80000003   516  0x3b6   56
Link        0.0.0.2          10.245.71.6      0x80000004  1792  0x782   56

    OSPF Link-Local link state database, interface fe-1/1/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link       *0.0.0.5          10.245.71.5      0x80000003   441  0x40dc  56
Link        0.0.0.4          10.245.71.11     0x80000004   592  0x73ab  56

    OSPF Link-Local link state database, interface t1-0/2/1.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.5          10.245.71.3      0x80000003  1639  0x4399  56
Link       *0.0.0.3          10.245.71.5      0x80000002  2321  0x618c  56

user@router4> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.1                             Intra  Router      IP   14
  NH-interface (null), NH-addr feee::10:255:71:3
10.245.71.3                             Intra  Area BR     IP   1
  NH-interface t1-0/2/1.0
10.245.71.4                             Intra  AS BR       IP   13
  NH-interface t1-0/2/1.0
10.245.71.6                             Intra  AS BR       IP   20
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe94:c400
10.245.71.6;0.0.0.2                     Intra  Transit     IP   20
  NH-interface fe-0/0/0.0
10.245.71.11                            Intra  Area BR     IP   2
  NH-interface t1-0/2/1.0
10.245.71.11;0.0.0.4                    Intra  Transit     IP   10
  NH-interface fe-1/1/0.0
9009:1::/64                             Intra  Network     IP   13
  NH-interface t1-0/2/1.0
9009:1::2/128                           Intra  Network     IP   1
  NH-interface t1-0/2/1.0
9009:2::/64                             Intra  Network     IP   14
  NH-interface t1-0/2/1.0
9009:2::2/128                           Intra  Network     IP   2
  NH-interface t1-0/2/1.0
9009:3::/64                             Intra  Network     IP   2
  NH-interface t1-0/2/1.0
9009:4::/64                             Intra  Network     IP   10
  NH-interface fe-1/1/0.0
9009:5::/64                             Intra  Network     IP   1
  NH-interface t1-0/2/1.0
9009:6::/64                             Intra  Network     IP   20
  NH-interface fe-0/0/0.0
```

```
9009:100::/64                                Ext2   Network     IP   0
  NH-interface t1-0/2/1.0
9009:110::/64                                Intra  Network     IP   16
  NH-interface t1-0/2/1.0
9009:120::/64                                Intra  Network     IP   14
  NH-interface t1-0/2/1.0
9009:130::/64                                Intra  Network     IP   4
  NH-interface t1-0/2/1.0
9009:140::/64                                Intra  Network     IP   3
  NH-interface at-0/3/0.0
9009:150::/64                                Ext2   Network     IP   0
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe94:c400
feee::10:255:71:1/128                        Intra  Network     IP   14
  NH-interface t1-0/2/1.0
feee::10:255:71:3/128                        Intra  Network     IP   1
  NH-interface t1-0/2/1.0
feee::10:255:71:4/128                        Intra  Network     IP   13
  NH-interface t1-0/2/1.0
feee::10:255:71:5/128                        Intra  Network     IP   0
  NH-interface lo0.0
feee::10:255:71:6/128                        Intra  Network     IP   20
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe94:c400
feee::10:255:71:11/128                       Intra  Network     IP   2
  NH-interface t1-0/2/1.0

user@router4> show interfaces terse
Interface       Admin Link Proto Local                 Remote
fe-0/0/0        up    up
fe-0/0/0.0      up    up   inet  10.19.6.1/24
                           inet6 9009:6::1/64
                                 fe80::290:69ff:fe98:9000/64
...
t1-0/2/1        up    up
t1-0/2/1.0      up    up   inet  10.19.5.2/24
                           inet6 9009:5::2/64
                                 fe80::2a0:a5ff:fe3d:b63/64
...
fe-1/1/0        up    up
fe-1/1/0.0      up    up   inet  10.19.4.2/24
                           inet6 9009:4::2/64
                                 fe80::290:69ff:fe98:909d/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.5         --> 0/0
                                 127.0.0.1           --> 0/0
                           inet6 fe80::2a0:a5ff:fe3d:b63
                                 feee::10:255:71:5
...
```

Router 5 Status

```
user@router5> show ospf3 interface
Interface             State     Area            DR-ID           BDR-ID
Nbrs
fe-0/0/0.0            DR       0.0.0.2         10.245.71.6     10.245.71.5
1
lo0.0                 DRother  0.0.0.2         0.0.0.0         0.0.0.0
0
```

```
user@router5> show ospf3 neighbor
ID              Interface             State     Pri   Dead
10.245.71.5     fe-0/0/0.0            Full      128   33
  Neighbor-address fe80::290:69ff:fe98:9000

user@router5> show ospf3 database

    OSPF link state database, area 0.0.0.2
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Router      0.0.0.1          10.245.71.5       0x80000003  2237  0x272d  40
Router     *0.0.0.1          10.245.71.6       0x80000004  1082  0x64d   40
Network    *0.0.0.2          10.245.71.6       0x80000003   482  0xfd22  32
InterArPfx  0.0.0.1          10.245.71.5       0x80000003  2228  0xd70e  36
InterArPfx  0.0.0.2          10.245.71.5       0x80000002  1771  0xa746  36
InterArPfx  0.0.0.3          10.245.71.5       0x80000002  1683  0xf3ba  36
InterArPfx  0.0.0.4          10.245.71.5       0x80000002  1530  0xc3c3  44
InterArPfx  0.0.0.5          10.245.71.5       0x80000002  1383  0x7378  36
InterArPfx  0.0.0.6          10.245.71.5       0x80000002  1233  0x566a  36
InterArPfx  0.0.0.7          10.245.71.5       0x80000002  1083  0xf0c8  36
InterArPfx  0.0.0.8          10.245.71.5       0x80000002   933  0x6d17  44
InterArPfx  0.0.0.9          10.245.71.5       0x80000002   783  0xd69d  44
InterArPfx  0.0.0.10         10.245.71.5       0x80000002   641  0x6776  36
InterArPfx  0.0.0.11         10.245.71.5       0x80000002   570  0x1b83  44
InterArPfx  0.0.0.12         10.245.71.5       0x80000002   500  0x6772  36
InterArPfx  0.0.0.13         10.245.71.5       0x80000002   483  0x1b7f  44
InterArPfx  0.0.0.14         10.245.71.5       0x80000002   406  0x3195  36
InterArPfx  0.0.0.15         10.245.71.5       0x80000002   330  0x4131  44
InterArPfx  0.0.0.16         10.245.71.5       0x80000002   253  0x7fef  44
InterArRtr  0.0.0.1          10.245.71.5       0x80000002   183  0x6408  32
IntraArPfx *0.0.0.1          10.245.71.6       0x80000005   782  0x42b9  52
IntraArPfx *0.0.0.3          10.245.71.6       0x80000003   182  0xfe61  44
    OSPF AS SCOPE link state database
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Extern      0.0.0.1          10.245.71.4       0x80000002  1082  0x8648  36
Extern     *0.0.0.1          10.245.71.6       0x80000002  1682  0xde9d  36

    OSPF Link-Local link state database, interface fe-0/0/0.0
 Type       ID               Adv Rtr           Seq      Age  Cksum  Len
Link        0.0.0.4          10.245.71.5       0x80000003   108  0x3b6   56
Link       *0.0.0.2          10.245.71.6       0x80000004  1382  0x782   56

user@router5> show ospf3 route
Prefix                                  Path   Route       NH   Metric
                                        type   type        type
10.245.71.4                             Inter  AS BR       IP   33
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
10.245.71.5                             Intra  Area BR     IP   20
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
10.245.71.6;0.0.0.2                     Intra  Transit     IP   20
  NH-interface fe-0/0/0.0
9009:1::/64                             Inter  Network     IP   33
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:1::2/128                           Inter  Network     IP   21
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:2::/64                             Inter  Network     IP   34
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:2::2/128                           Inter  Network     IP   22
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:3::/64                             Inter  Network     IP   22
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:4::/64                             Inter  Network     IP   30
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
```

```
9009:5::/64                                  Inter  Network     IP   21
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:6::/64                                  Intra  Network     IP   20
  NH-interface fe-0/0/0.0
9009:100::/64                                Ext2   Network     IP   0
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:110::/64                                Inter  Network     IP   36
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:120::/64                                Inter  Network     IP   34
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:130::/64                                Inter  Network     IP   24
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
9009:140::/64                                Inter  Network     IP   23
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
feee::10:255:71:1/128                        Inter  Network     IP   34
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
feee::10:255:71:3/128                        Inter  Network     IP   21
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
feee::10:255:71:4/128                        Inter  Network     IP   33
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
feee::10:255:71:5/128                        Inter  Network     IP   20
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000
feee::10:255:71:6/128                        Intra  Network     IP   0
  NH-interface lo0.0
feee::10:255:71:11/128                       Inter  Network     IP   22
  NH-interface fe-0/0/0.0, NH-addr fe80::290:69ff:fe98:9000

user@router5> show interfaces terse
Interface       Admin Link Proto Local                 Remote
...
fe-0/0/0        up    up
fe-0/0/0.0      up    up   inet  10.19.6.2/24
                           inet6 9009:6::2/64
                                 fe80::290:69ff:fe94:c400/64
...
lo0             up    up
lo0.0           up    up   inet  10.245.71.6         --> 0/0
                                 127.0.0.1           --> 0/0
                           inet6 fe80::2a0:a5ff:fe12:33a2
                                 feee::10:255:71:6
...
```

For More Information

For additional information about OSPFv3 for IPv6, see the following resources:

JUNOS Internet Software Configuration Guide: Routing and Routing Protocols

J. Moy, "*OSPF Version 2*," RFC 2328, April 1998

S. Deering/R. Hinden, "*IP Version 6 Addressing Architecture*," RFC 3513, April 2003

S. Deering/R. Hinden, "*Internet Protocol, Version 6 (IPv6) Specification*," RFC 2460, December 1998

R. Coltun/D. Ferguson/J. Moy, "*OSPF for IPv6*," RFC 2740, December 1999

Revision History

30 June 2003—6.0R1 Release. Richard Hendricks.

2 April 2003—5.7R1 Release. Richard Hendricks.

27 December 2002—5.6R1 Release. Richard Hendricks.

30 September 2002—5.5R1 Release. Richard Hendricks.

27 August 2002—Initial document written. Richard Hendricks.