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OSPF Version 3 for IPv6

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Table of Contents

OSPF Version 3 for IPv6

OSPF Version 3 for IPv6 Concepts and Reference Materials

About This Network Configuration Example

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.

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:

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

  - Interarea Router LSA—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 M Series Multiservice Edge Routers, Juniper Networks MX Series Ethernet Services Routers, and Juniper Networks T Series Core Routers automatically generate link-local addresses when IPv6 is enabled. The routing platform 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 (IPsec) protocol for all authentication tasks in IPv6. For more information about configuring IPsec, see the *Junos IPsec Feature Guide*.

- 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.

Related Documentation
- Example: Configuring OSPFv3 for IPv6 on page 9

OSPF Version 3 for IPv6 System Requirements

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

- Junos OS Release 8.2 or later for MX Series routing platforms

- Junos OS Release 7.2 or later for J Series Services Routers

- Junos OS Release 5.5 or later for M Series and T Series routers

- Two J Series, M Series, MX Series, or T Series routers

Related Documentation
- Example: Configuring OSPFv3 for IPv6 on page 9

OSPF Version 3 for IPv6 Terms and Acronyms

L

link-state advertisement (LSA)
A multi-tiered 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).

O

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

OSPFv3
The IPv6-enabled version of the OSPF protocol.

CHAPTER 2

OSPF Version 3 for IPv6 Configuration Example

Configuring OSPFv3 as the Routing Protocol

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

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

Related Documentation
- Example: Configuring OSPFv3 for IPv6 on page 9

Configuring 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;
    }
  }
}
```

Related Documentation
- Example: Configuring OSPFv3 for IPv6 on page 9

Configuring 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;
    }
  }
}
```

Related
Documentation
- Example: Configuring OSPFv3 for IPv6 on page 9

OSPF Version 3 for IPv6 Configuration Example

- Example: Configuring OSPFv3 for IPv6 on page 9

Example: Configuring OSPFv3 for IPv6

Figure 1: OSPFv3 for IPv6 Topology Diagram
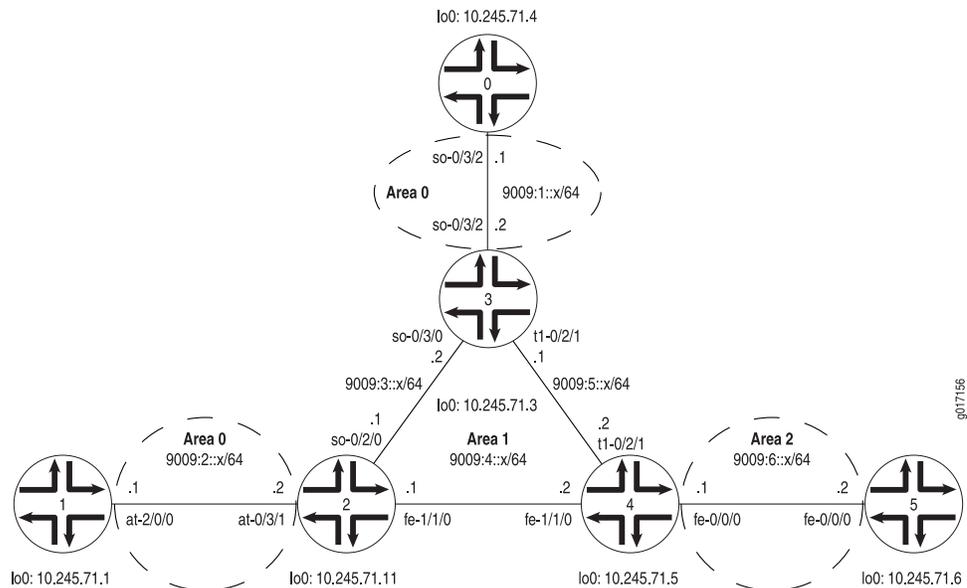
Figure 1 on page 9 shows an OSPFv3 topology. Routers 0, 1, 2, and 3 are connected to the OSPFv3 backbone Area 0; Routers 2, 3, and 4 connect to each other across Area 1; and Area 2 is located between Router 4 and Router 5. Because Router 5 does not have a direct adjacency to Area 0, a virtual link is required across Area 1 between Router 3 and Router 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 Router 2 and
Router 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 Router 0 and Router 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;
      }
    }
  }
}
```

Verifying 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)

NOTE: 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.

NOTE: In the below sample output, the stars indicate the "best" routes. These routes are the routes that are installed in the routing table.

Router 0 Status

```
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 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 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
...
```

Related Documentation

- About This Network Configuration Example on page 3

- Configuring Interfaces in OSPFv3 Areas on page 7

- Configuring OSPFv3 as the Routing Protocol on page 7

- Configuring Virtual Links for OSPFv3 on page 8