

## Chapter 13

# 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

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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.

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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 M-series and T-series routing platforms 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.

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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

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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

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**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.

**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).

## Configuring OSPFv3 for IPv6

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

Configuring OSPFv3 as the Routing Protocol on page 544

Configuring Interfaces in OSPFv3 Areas on page 544

Configuring Virtual Links for OSPFv3 on page 545

To apply your knowledge, see the following sections:

Example: OSPFv3 for IPv6 Configuration on page 545

Checking Your Work on page 552

### **Configuring 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 {
      ...
    }
  }
```

### **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;
      }
    }
  }
```

## Configuring Virtual Links for OSPFv3

Virtual links can connect discontinuous 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 46: OSPFv3 for IPv6 Topology Diagram

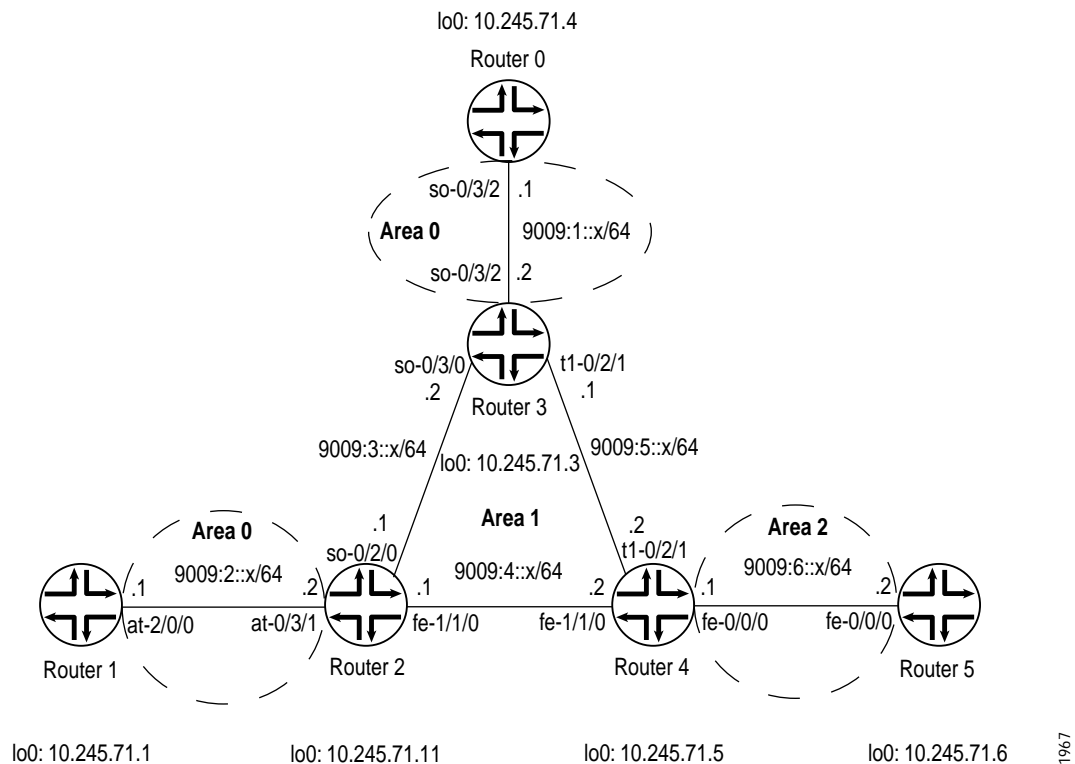


Figure 46 shows an OSPFv3 topology. Routers 0, 1, 2, and 3 are connected to the OSPFv3 backbone Area 0; routers 2, 3, and 4 connect to each other across Area 1; and Area 2 is located between routers 4 and 5. Because Router 5 does not have a direct adjacency to Area 0, a virtual link is required across 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 discontinuous 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 discontinuous 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;
      }
    }
  }
}
}

```

### Checking 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:

Router 0 Status on page 553

Router 1 Status on page 555

Router 2 Status on page 558

Router 3 Status on page 562

Router 4 Status on page 567

Router 5 Status on page 571

## 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 0xdcd4 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:aff:fe00:86ca

user@router0> **show ospf3 route**

Prefix	Path type	Route type	NH type	Metric
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				
fee::10:255:71:1/128		Intra Network	IP	25
NH-interface so-0/3/2.0				
fee::10:255:71:3/128		Inter Network	IP	12
NH-interface so-0/3/2.0				
fee::10:255:71:4/128		Intra Network	IP	0
NH-interface lo0.0				
fee::10:255:71:5/128		Inter Network	IP	13
NH-interface so-0/3/2.0				
fee::10:255:71:6/128		Inter Network	IP	33
NH-interface so-0/3/2.0				
fee::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:aff: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:aff: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
fee::10:255:71:1/128 Intra Network  IP 0
NH-interface lo0.0
fee::10:255:71:3/128 Inter Network  IP 13
NH-interface at-2/0/0.0
fee::10:255:71:4/128 Intra Network  IP 25
NH-interface at-2/0/0.0
fee::10:255:71:5/128 Inter Network  IP 14
NH-interface at-2/0/0.0
fee::10:255:71:6/128 Inter Network  IP 34
NH-interface at-2/0/0.0
fee::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
           fee::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
v1-10.245.71.3 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 v1-10.245.71.3 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
fee::10:255:71:1/128 Intra Network IP 12
  NH-interface at-0/3/1.0
fee::10:255:71:3/128 Intra Network IP 1
  NH-interface so-0/2/0.0
fee::10:255:71:4/128 Intra Network IP 13
  NH-interface so-0/2/0.0
fee::10:255:71:5/128 Intra Network IP 2
  NH-interface so-0/2/0.0
fee::10:255:71:6/128 Inter Network IP 22
  NH-interface so-0/2/0.0
fee::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
v1-10.245.71.11 PtToPt 0.0.0.0     0.0.0.0     0.0.0.0     1
v1-10.245.71.5 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:aff:fe03:6fa1
10.245.71.11 v1-10.245.71.11 Full 0 36
Neighbor-address 9009:3::1
10.245.71.5 v1-10.245.71.5 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:aff: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:aff: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:aff: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:aff: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    PToPt  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
v1-10.245.71.3	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	v1-10.245.71.3	Full	0	32
Neighbor-address 9009::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:aff: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	0xdced	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::/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::/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          DRoher 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

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

*JUNOS Routing Protocols Configuration Guide*

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

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

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

## Revision History

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2 February 2005—7.1R1 Release. Richard Hendricks.

6 October 2004—7.0R1 Release. Richard Hendricks.

6 July 2004—6.4R1 Release. Richard Hendricks.

5 April 2004—6.3R1 Release. Richard Hendricks.

22 December 2003—6.2R1 Release. Richard Hendricks.

22 September 2003—6.1R1 Release. Richard Hendricks.

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.