Configuring OSPFv3 External Path Preference Option

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OSPFv3 External Path Preference Option

The Open Shortest Path First version 3 (OSPFv3) external path preference option feature provides a way to calculate external path preferences per RFC 5340.

Information About OSPFv3 External Path Preference Option

OSPFv3 External Path Preference Option

Per RFC 5340, the following rules indicate which paths are preferred when multiple intra-AS paths are available to ASBRs or forwarding addresses:

- Intra-area paths using nonbackbone areas are always the most preferred.
- The other paths, intraarea backbone paths and interarea paths, are of equal preference.

These rules apply when the same ASBR is reachable through multiple areas, or when trying to decide which of several AS-external-LSAs should be preferred. In the former case the paths all terminate at the same ASBR, and in the latter the paths terminate at separate ASBRs or forwarding addresses. In either case, each path is represented by a separate routing table entry. This feature applies only when RFC 1583 compatibility is set to disabled using the **no compatibility rfc1583** command (RFC 5340 provides an update to RFC 1583).

Caution To minimize the chance of routing loops, set identical RFC compatibility for all OSPF routers in an OSPF routing domain.

How to Calculate OSPFv3 External Path Preference Option

Calculating OSPFv3 External Path Preferences per RFC 5340

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3** [*process-id*]
4. **no compatible rfc1583**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**router ospfv3** [*process-id*] **Example:** `Device(config)# router ospfv3 1`	Enables OSPFv3 router configuration mode for the IPv4 or IPv6 address family.
Step 4	**no compatible rfc1583** **Example:** `Device(config-router)# no compatible rfc1583`	Changes the method used to calculate external path preferences per RFC 5340.

Configuration Examples for OSPFv3 External Path Preference Option

Example: Calculating OSPFv3 External Path Preferences per RFC 5340

```
show ospfv3

Routing Process "ospfv3 1" with ID 10.1.1.1
 SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
 Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
 LSA group pacing timer 240 secs
 Interface flood pacing timer 33 msecs
 Retransmission pacing timer 66 msecs
 Number of external LSA 0. Checksum Sum 0x000000
 Number of areas in this router is 1. 1 normal 0 stub 0 nssa
```

```
Reference bandwidth unit is 100 mbps
RFC 1583 compatibility disabled
   Area BACKBONE(0) (Inactive)
       Number of interfaces in this area is 1
       SPF algorithm executed 1 times
       Number of LSA 1. Checksum Sum 0x00D03D
       Number of DCbitless LSA 0
       Number of indication LSA 0
       Number of DoNotAge LSA 0
       Flood list length 0
```

Additional References

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	*IPv6 Configuration Guide*
OSPFv3 External Path Preference Option	*Configuring OSPF* module

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	IPv6 RFCs

Feature Information for OSPFv3 External Path Preference Option

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to https://cfnng.cisco.com/. An account on Cisco.com is not required.

Table 1: Feature Information for OSPFv3 External Path Preference Option

Feature Name	Releases	Feature Information
OSPFv3 External Path Preference Option	Cisco IOS XE Fuji 16.8.1a	This feature provides a way to calculate external path preferences per RFC 5340. The feature was introduced.