Configuring OSPFv3 Max-Metric Router LSA

OSPFv3 Max-Metric Router LSA

The Open Shortest Path First version 3 (OSPFv3) max-metric router link-state advertisement (LSA) feature enables OSPFv3 to advertise its locally generated router LSAs with a maximum metric. The feature allows OSPFv3 processes to converge but not attract transit traffic through the device if there are better alternate paths.

Information About OSPFv3 Max-Metric Router LSA

OSPFv3 Max-Metric Router LSA

The OSPFv3 max-metric router LSA feature enables OSPFv3 to advertise its locally generated router LSAs with a maximum metric. The feature allows OSPFv3 processes to converge but not attract transit traffic through the device if there are better alternate paths. After a specified timeout or a notification from Border Gateway Protocol (BGP), OSPFv3 advertises the LSAs with normal metrics.

The max-metric LSA control places the OSPFv3 router into the stub router role using its LSA advertisement. A stub router only forwards packets destined to go to its directly connected links. In OSPFv3 networks, a device could become a stub router by advertising large metrics for its connected links, so that the cost of a path through this device becomes larger than that of an alternative path. OSPFv3 stub router advertisement allows a device to advertise the infinity metric (0xFFFF) for its connected links in router LSAs and advertise the normal interface cost if the link is a stub network.

How to Configure OSPFv3 Max-Metric Router LSA

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SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3** *process-id*

4. **address-family ipv6 unicast**
5. **max-metric router-lsa** [**external-lsa** [*max-metric-value*]] [**include-stub**] [**inter-area-lsas** [*max-metric-value*]] [**on-startup** {*seconds* | **wait-for-bgp**}] [**prefix-lsa**] [**stub-prefix-lsa** [*max-metric-value*]] [**summary-lsa** [*max-metric-value*]]
6. **end**
7. **show ospfv3** [*process-id*] **max-metric**

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.
Step 4	**address-family ipv6 unicast** **Example:** `Device(config)# address-family ipv6 unicast`	Configures an instance of the OSPFv3 process in the IPv6 address family.
Step 5	**max-metric router-lsa** [**external-lsa** [*max-metric-value*]] [**include-stub**] [**inter-area-lsas** [*max-metric-value*]] [**on-startup** {*seconds*	**wait-for-bgp**}] [**prefix-lsa**] [**stub-prefix-lsa** [*max-metric-value*]] [**summary-lsa** [*max-metric-value*]] **Example:** `Device(config-router-af)# max-metric router-lsa on-startup wait-for-bgp`	Configures a device that is running the OSPFv3 protocol to advertise a maximum metric so that other devices do not prefer the device as an intermediate hop in their SPF calculations.
Step 6	**end** **Example:** `Device(config-router-af)# end`	Exits address family configuration mode and returns to privileged EXEC mode.
Step 7	**show ospfv3** [*process-id*] **max-metric** **Example:** `Device# show ospfv3 1 max-metric`	Displays OSPFv3 maximum metric origination information.

Configuration Examples for OSPFv3 Max-Metric Router LSA

Example: Verifying the OSPFv3 Max-Metric Router LSA

```
Router# show ipv6 ospf max-metric

            OSPFv3 Router with ID (192.1.1.1) (Process ID 1)

 Start time: 00:00:05.886, Time elapsed: 3d02h
 Originating router-LSAs with maximum metric
    Condition: always, State: active
```

Additional References

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	*IPv6 Configuration Guide*
OSPFv3 Max-Metric Router LSA	"*OSPF Link-State Advertisement Throttling* " module

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	IPv6 RFCs

Feature Information for OSPFv3 Max-Metric Router LSA

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 www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for OSPFv3 Max-Metric Router LSA

Feature Name	Releases	Feature Information
OSPFv3 Max-Metric Router LSA	Cisco IOS XE Fuji 16.8.1a	The OSPFv3 max-metric router LSA feature enables OSPF to advertise its locally generated router LSAs with a maximum metric. The feature was introduced.