OSPFv3 ABR Type 3 LSA Filtering

This feature extends the ability of an Area Border Router (ABR) that is running the Open Shortest Path First version 3 (OSPFv3) protocol to filter type 3 link-state advertisements (LSAs) that are sent between different OSPFv3 areas. This feature allows only packets with specified prefixes to be sent from one area to another area and restricts all packets with other prefixes. This type of area filtering can be applied out of a specific OSPFv3 area, into a specific OSPFv3 area, or into and out of the same OSPFv3 areas at the same time.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

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.

OSPFv3 ABR Type 3 LSA Filtering

Only type 3 LSAs that originate from an ABR are filtered.

Information About OSPFv3 ABR Type 3 LSA Filtering

Area Filter Support

OSPFv3 area filters allow the filtering of inter-area prefix LSAs on the ABRs. The filter, based on IPv6 prefix lists, can be applied in both directions. In the "in" direction, it filters out the LSAs coming from all other areas when sending the inter-area prefix LSAs into the specified area. In the "out" direction, it filters out the inter-area prefix LSAs generated for the specified area.

The Area Filter Support feature gives the administrator improved control of route distribution between OSPFv3 areas.

How to Configure OSPFv3 ABR Type 3 LSA Filtering

Configuring Area Filter Support for OSPFv3

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3** *process-id*
4. **area** *area-id* **filter-list prefix** *prefix-list-name* {**in** | **out**}
5. **end**
6. **ipv6 prefix-list** *list-name* [**seq** *seq-number*] {**deny** *ipv6-prefix*/*prefix-length* | **permit** *ipv6-prefix*/*prefix-length* | **description** *text*} [**ge** *ge-value*] [**le** *le-value*]

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.

	Command or Action	Purpose
Step 3	**router ospfv3** *process-id* **Example:** `Device(config)# router ospfv3 1`	Configures the router to run an OSPFv3 process.
Step 4	**area** *area-id* **filter-list prefix** *prefix-list-name* {**in** | **out**} **Example:** `Device(config-router)# area 1 filter-list prefix test_ipv6 out`	Configures the router to filter interarea routes out of the specified area.
Step 5	**end** **Example:** `Device(config-router)# end`	Returns to global configuration mode.
Step 6	**ipv6 prefix-list** *list-name* [**seq** *seq-number*] {**deny** *ipv6-prefix*/*prefix-length* | **permit** *ipv6-prefix*/*prefix-length* | **description** *text*} [**ge** *ge-value*] [**le** *le-value*] **Example:** `Device(config)# ipv6 prefix-list test_ipv6 seq 5 permit 2011::1/128`	Creates a prefix list with the name specified for the *list-name* argument.

Configuration Examples for OSPFv3 ABR Type 3 LSA Filtering

Example: Area Filter Support for OSPFv3

The following example shows how to configure Area Filter Support for OSPFv3:

```
router ospfv3 1
!
address-family ipv4 unicast
 area 2 filter-list prefix test_ipv4 in
exit-address-family
!
address-family ipv6 unicast
 area 2 filter-list prefix test_ipv6 in
exit-address-family
!
ip prefix-list test_ipv4 seq 5 permit 2.2.2.2/32
!
!
ipv6 prefix-list test_ipv6 seq 5 deny 2011::1/128
```

Additional References for OSPFv3 ABR Type 3 LSA Filtering

Related Documents

Related Topic	Document Title
Configuring OSPF	"Configuring OSPF"
OSPF commands	*Cisco IOS IP Routing: OSPF Command Reference*
Cisco IOS master command list, all releases	Cisco IOS Master Command List, All Releases

Standards

Standard	Title
No new or modified standards are supported and support for existing standards has not been modified.	—

RFCs

RFC	Title
No new or modified RFCs are supported and support for existing RFCs has not been modified.	—

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for OSPFv3 ABR Type 3 LSA Filtering

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 . An account on Cisco.com is not required.

Table 1: Feature Information for OSPFv3 ABR Type 3 LSA Filtering

Feature Name	Releases	Feature Information
OSPFv3 ABR Type 3 LSA Filtering	15.3(1)S 15.2(1)E	The OSPFv3 ABR Type 3 LSA Filtering feature extends the ability of an ABR that is running the OSPFv3 protocol to filter type 3 LSAs that are sent between different OSPFv3 areas. This feature allows only packets with specified prefixes to be sent from one area to another area and restricts all packets with other prefixes. This type of area filtering can be applied out of a specific OSPFv3 area, into a specific OSPFv3 area, or into and out of the same OSPFv3 areas at the same time.