

Fast Convergence Default Optimize

The fast convergence default optimize feature modifies the default settings of all the protocols to recommended defaults for fast convergence.

- Feature Information for Fast Convergence Default Optimize, on page 1
- Information About Fast Convergence Default Optimize, on page 1

Feature Information for Fast Convergence Default Optimize

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 Fast Convergence Default Optimize

Feature Name	Releases	Feature Information
Fast Convergence Default Optimize	Cisco IOS XE Amsterdam 17.3.2	The fast convergence default optimize feature modifies the default settings of all the protocols to recommended defaults for fast convergence. No new commands were added or modified.

Information About Fast Convergence Default Optimize

The fast convergence default optimize feature modifies the default settings of all the protocols to recommended defaults for fast convergence. To revert the defaults to pre-fast-convergence settings for both IS-IS and OSPF, **no routing-default-optimize** command is used. This command sends signals to IS-IS and OSPF and modifies the default configuration for these protocols.

By default, the fast convergence settings is enabled which means when you upgrade the software, you can automatically see the new behavior. This makes easier integration of the devices in a multi-vendor deployment and reduces support cases for poor convergence.

When default optimize is disabled, existing protocol default configuration is used. When default optimize is enabled, new protocol defaults are used. The show running configurations does not display configuration lines for default settings even when default settings are being used.

A configuration of a protocol overrides the default, but a change to default optimize does not override any configuration.

The following is the sample output of **spf-interval** command in IS-IS:

```
Device(config-if)# router isis
Device(config-router)# spf-interval 10 5500 5500
```

If a non-default value is configured, it will be displayed in show running configuration output:

```
Device(config-router)# spf-interval 5 50 200
Device(config-router)# do show run | inc spf-interval
 spf-interval 5 50 200
```

You can revert to the default values by configuring the default values or by removing the non-default configuration.

Default Optimize Values for IS-IS

The following table summarizes the configuration impacted by default optimize:

IS-IS command	Parameters	Default optimize disabled	Default optimize enabled
fast-flood			
	# of lsps flooded back-back	Disabled	10
spf-interval			
	Initial (milliseconds)	5500	50
	Secondary (milliseconds)	5500	200
	max (seconds)	10	5
prc-interval			
	Initial (milliseconds)	2000	50
	Secondary (milliseconds)	5000	200
	max (seconds)	5	5
lsp-gen-interval			
	Initial (milliseconds)	50	50
	Secondary (milliseconds)	5000	200
	max (seconds)	5	5

IS-IS command	Parameters	Default optimize disabled	Default optimize enabled
log-adjacency-changes		disabled	enabled

Default Optimize Values for OSPF

The following table summarizes the configuration impacted by default optimize for OSPFv2/v3:

OSPF command	Parameters	Default optimize disabled	Default optimize enabled
timers throttle spf			
	Initial (milliseconds)	5000	50
	Secondary (milliseconds)	10000	200
	max (milliseconds)	10	5
timers throttle lsa all			
	Initial (milliseconds)	0	50
	Secondary (milliseconds)	5000	200
	max (milliseconds)	5	5
timers lsa arrival			
	milliseconds	1000	100

The following is the sample output of **show ip ospf** command for OSPFv2 with the default-optimize values.

```
Device# show ip ospf
 Routing Process "ospf 10" with ID 10.1.1.1
 Start time: 00:00:01.471, Time elapsed: 03:00:34.706
 Supports only single TOS(TOS0) routes
 Supports opaque LSA
 Supports Link-local Signaling (LLS)
 Supports area transit capability
 Supports NSSA (compatible with RFC 3101)
 Supports Database Exchange Summary List Optimization (RFC 5243)
 Event-log enabled, Maximum number of events: 1000, Mode: cyclic
 Router is not originating router-LSAs with maximum metric
 Initial SPF schedule delay 50 msecs
 Minimum hold time between two consecutive SPFs 200 msecs
 Maximum wait time between two consecutive SPFs 5000 msecs
 Incremental-SPF disabled
 Initial LSA throttle delay 50 msecs
 Minimum hold time for LSA throttle 200 msecs
 Maximum wait time for LSA throttle 5000 msecs
Minimum LSA arrival 100 msecs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msecs
Retransmission pacing timer 66 msecs
EXCHANGE/LOADING adjacency limit: initial 300, process maximum 300
Number of external LSA 18. Checksum Sum 0x075EB2
Number of opaque AS LSA 0. Checksum Sum 0x000000
```

```
Number of DCbitless external and opaque AS LSA 0
Number of DoNotAge external and opaque AS LSA 0
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Number of areas transit capable is 0
External flood list length 0
IETF NSF helper support enabled
Cisco NSF helper support enabled
Reference bandwidth unit is 100 mbps
    Area BACKBONE(0)
        Number of interfaces in this area is 4 (2 loopback)
        Area has RRR enabled
        Area has no authentication
        SPF algorithm last executed 02:27:23.736 ago
        SPF algorithm executed 20 times
        Area ranges are
        Number of LSA 94. Checksum Sum 0x321DCF
        Number of opaque link LSA 0. Checksum Sum 0x000000
        Number of DCbitless LSA 0
        Number of indication LSA 0
        Number of DoNotAge LSA 0
        Flood list length 0
```

The following is the sample output of **show ospf** command for OSPFv3 with the default-optimize values.

```
Device# show ospfv3
 OSPFv3 10 address-family ipv6
 Router ID 10.11.11.11
 Supports NSSA (compatible with RFC 3101)
Supports Database Exchange Summary List Optimization (RFC 5243)
Event-log enabled, Maximum number of events: 1000, Mode: cyclic
Router is not originating router-LSAs with maximum metric
Initial SPF schedule delay 50 msecs
Minimum hold time between two consecutive SPFs 200 msecs
Maximum wait time between two consecutive SPFs 5000 msecs
Initial LSA throttle delay 50 msecs
Minimum hold time for LSA throttle 200 msecs
Maximum wait time for LSA throttle 5000 msecs
Minimum LSA arrival 100 msecs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msecs
Retransmission pacing timer 66 msecs
Retransmission limit dc 24 non-dc 24
EXCHANGE/LOADING adjacency limit: initial 300, process maximum 300
Number of external LSA 0. Checksum Sum 0x000000
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Graceful restart helper support enabled
Reference bandwidth unit is 100 mbps
RFC1583 compatibility enabled
    Area BACKBONE(0)
        Number of interfaces in this area is 2
        SPF algorithm executed 7 times
        Number of LSA 3. Checksum Sum 0x012426
        Number of DCbitless LSA 0
        Number of indication LSA 0
        Number of DoNotAge LSA 0
        Flood list length 0
```