# show call-home through vrrp sso


- show cef nsf, page 2
- show cef state, page 4
- show ip ospf nsf, page 7
- vrrp sso, page 8

# show cef nsf

To show the current Cisco nonstop forwarding (NSF) state of Cisco Express Forwarding on both the active and standby Route Processors (RPs), use the **s how cef nsf**command in privileged EXEC mode.

**show cef nsf**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

| Release | Modification |
|---|---|
| 12.0(22)S | This command was introduced. |
| 12.2(18)S | This command was integrated into Cisco IOS Release 12.2(18)S. |
| 12.2(20)S | Support for the Cisco 7304 router was added. |
| 12.2(28)SB | This command was integrated into Cisco IOS Release 12.2(28)SB. |

## Command History

| | |
|---|---|
| 12.2(33)SRA | This command was integrated into Cisco IOS Release 12.2(33)SRA. |
| 12.2(33)SXH | This command was integrated into Cisco IOS Release 12.2(33)SXH. |

## Usage Guidelines

If you enter the **show cef nsf** command before a switchover occurs, no switchover activity is reported. After a switchover occurs, you can enter the **show cef nsf** command to display details about the switchover as reported by the newly active RP. On the Cisco 12000 and 7500 series Internet routers, details about line card switchover are also provided.

## Examples

The following example shows the current NSF state:

```
Router# show cef nsf
Last switchover occurred:        00:01:30.088 ago
 Routing convergence duration:   00:00:34.728
 FIB stale entry purge durations:00:00:01.728 - Default
                                  00:00:00.088 - Red
          Switchover
 Slot    Count   Type   Quiesce Period
 1           2    sso   00:00:00.108
 2           1   rpr+   00:00:00.948
 3           2    sso   00:00:00.152
 5           2    sso   00:00:00.092
```

```
6           1    rpr+    00:00:00.632
No NSF stats available for the following linecards:4 7
```

The table below describes the significant fields shown in the display.

***Table 1: show cef nsf Field Descriptions***

| Field | Description |
|---|---|
| Last switchover occurred | Time since the last system switchover. |
| Routing convergence duration | Time taken after the switchover before the routing protocol signaled Cisco Express Forwarding that they had converged. |
| Stale entry purge | Time taken by Cisco Express Forwarding to purge any stale entries in each FIB table. In the example, these are the FIB tables names “Default” and “Red.” |
| Switchover | Per-line card NSF statistics. |
| Slot | Line card slot number. |
| Count | Number of times the line card has switched over. This value will always be 1, unless the type is SSO. |
| Type | Type of switchover the line card performed last. The type can be SSO, RPR+ or RPR. |
| Quiesce Period | Period of time when the line card was disconnected from the switching fabric. During this time, no packet forwarding can take place.<br>Other system restart requirements may add additional delay until the line card can start forwarding packets. |

## Related Commands

| Command | Description |
|---|---|
| **clear ip cef epoch** | Begins a new epoch and increments the epoch number for a Cisco Express Forwarding table. |
| **show cef state** | Displays the state of Cisco Express Forwarding on a networking device. |

# show cef state

To display the state of Cisco Express Forwarding on a networking device, use the **show cef state**command in privileged EXEC mode.

**show cef state**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC (#)

## Command History

| Release | Modification |
|---|---|
| 12.0(22)S | This command was introduced on Cisco 7500, 10000, and 12000 series Internet routers. |
| 12.2(18)S | This command was integrated into Cisco IOS Release 12.2(18)S on Cisco 7500 series routers. |
| 12.2(20)S | Support for the Cisco 7304 router was added. The Cisco 7500 series router is not supported in Cisco IOS Release 12.2(20)S. |
| 12.2(28)SB | This command was integrated into Cisco IOS Release 12.2(28)SB. |
| 12.2(33)SRA | This command was integrated into Cisco IOS Release 12.2(33)SRA. |
| 12.2(33)SXH | This command was integrated into Cisco IOS Release 12.2(33)SXH. |
| 12.4(20)T | This command was integrated into Cisco IOS Release 12.4(20)T. |

## Examples

## Examples

The following example shows the state of Cisco Express Forwarding on the active Route Processor (RP):

```
Router# show cef state
CEF Status:
 RP instance
 common CEF enabled
IPv4 CEF Status:
 CEF enabled/running
 dCEF disabled/not running
 CEF switching enabled/running
 universal per-destination load sharing algorithm, id A189DD49
IPv6 CEF Status:
 CEF enabled/running
 dCEF disabled/not running
 original per-destination load sharing algorithm, id A189DD49
```

The table below describes the significant fields shown in the display.

*Table 2: show cef state Field Description (New)*

| Field | Description |
|---|---|
| RP instance | Cisco Express Forwarding status is for the RP. |
| common CEF enabled | Common Cisco Express Forwarding is enabled. |
| IPv4 CEF Status | Cisco Express Forwarding mode and status is for IPv4. |
| universal per-destination load sharing algorithm | IPv4 is using the universal per-destination load sharing algorithm for Cisco Express Forwarding traffic. |
| IPv6 CEF Status | Cisco Express Forwarding mode and status is for IPV6. |
| original per-destination load sharing algorithm | IPv6 is using the original per-destination load sharing algorithm for Cisco Express Forwarding traffic. |

## Examples

The following example shows the state of Cisco Express Forwarding on the active Route Processor (RP):

```
Router# show cef state
RRP state:
     I am standby RRP:          no
     RF Peer Presence:          yes
     RF PeerComm reached:       yes
     Redundancy mode:           SSO(7)
     CEF NSF:                   enabled/running
```

The table below describes the significant fields shown in the display.

*Table 3: show cef state Field Descriptions*

| Field | Description |
|---|---|
| I am standby RRP: no | This RP is not the standby. |
| RF Peer Presence: yes | This RP does have RF peer presence. |
| RF PeerComm reached: yes | This RP has reached RF peer communication. |
| Redundancy mode: SSO(&) | Type of redundancy mode on this RP. |
| CEF NSF: enabled/running | States whether Cisco Express Forwarding nonstop forwarding (NSF) is running or not. |

The following example shows the state of Cisco Express Forwarding on the standby RP:

```
Router# show cef state
```

```
RRP state:
     I am standby RRP:          yes
     My logical slot:           0
     RF Peer Presence:          yes
     RF PeerComm reached:       yes
     CEF NSF:                   running
```

## Related Commands

| Command | Description |
|---|---|
| **clear ip cef epoch** | Begins a new epoch and increments the epoch number for a Cisco Express Forwarding table. |
| **show cef nsf** | Displays the current NSF state of Cisco Express Forwarding on both the active and standby RPs. |

# show ip ospf nsf

To display IP Open Shortest Path First (OSPF) nonstop forwarding (NSF) state information, use the **show ip ospf nsf** command in user EXEC or privileged EXEC mode.

**show ip ospf nsf**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

User EXEC (>) Privileged EXEC (#)

## Command History

| Mainline Release | Modification |
|---|---|
| 12.2(33)SXI | This command was introduced in a release earlier than Cisco IOS Release 12.2(33)SXI. |
| 12.2(33)SRE | This command was integrated into Cisco IOS Release 12.2(33)SRE. |

## Examples

The following is sample output from the **show ip ospf nsf**command. The fields are self-explanatory.

```
Router# show ip ospf
 nsf
Routing Process "ospf 2"
 Non-Stop Forwarding enabled
 IETF NSF helper support enabled
 Cisco NSF helper support enabled
 OSPF restart state is NO_RESTART
Handle 1786466308, Router ID 192.0.2.1, checkpoint Router ID 0.0.0.0
Config wait timer interval 10, timer not running
Dbase wait timer interval 120, timer not running
```

# vrrp sso

To enable Virtual Router Redundancy Protocol (VRRP) support of Stateful Switchover (SSO) if it has been disabled, use the **vrrp sso** command in global configuration mode. To disable VRRP support of SSO, use the **no** form of this command.

**vrrp sso**

**no vrrp sso**

## Syntax Description

This command has no arguments or keywords.

## Command Default

VRRP support of SSO is enabled by default.

## Command Modes

Global configuration (config)

## Command History

| Release | Modification |
|---|---|
| 12.2(33)SRC | This command was introduced. |
| Cisco IOS XE Release 2.1 | This command was integrated into Cisco IOS XE Release 2.1. |
| 12.2(33)SXI | This command was integrated into Cisco IOS Release 12.2(33)SXI. |

## Usage Guidelines

Use this command to enable VRRP support of SSO if it has been manually disabled by the **no vrrp sso** command.

## Examples

The following example shows how to disable VRRP support of SSO:

```
Router(config)# no vrrp sso
```

## Related Commands

| Command | Description |
|---|---|
| **debug vrrp all** | Displays debugging messages for VRRP errors, events, and state transitions. |
| **debug vrrp ha** | Displays debugging messages for VRRP high availability. |
| **show vrrp** | Displays a brief or detailed status of one or all configured VRRP groups. |