



## mail-server through service image-version efsu

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## nsf (OSPF)

**Note**

Effective with Cisco IOS Release 12.0(32)S, the **nsf** (OSPF) command has been replaced by the **nsf cisco** command. See the **nsf cisco** command for more information.

To configure Cisco nonstop forwarding (NSF) operations for Open Shortest Path First (OSPF), use the **nsf** command in router configuration mode. To disable Cisco NSF for OSPF, use the **no** form of this command.

**nsf** [**enforce global**]

**no nsf** [**enforce global**]

**Syntax Description**

<b>enforce global</b>	(Optional) Cancels NSF restart when non-NSF-aware neighboring networking devices are detected.
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**Command Default**

This command is disabled by default; therefore, NSF operations for OSPF is not configured.

**Command Modes**

Router configuration (config-router)

**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	This command was implemented on the Cisco 7304 router.
12.0(32)S	This command was replaced by the <b>nsf cisco</b> command.

**Usage Guidelines**

The user must configure NSF operation for OSPF only if a router is expected to perform NSF during restart. For users to have full NSF benefits, all OSPF neighbors of the specified router must be NSF-aware.

If neighbors that are not NSF-aware are detected on a network interface, NSF restart is aborted on the interface; however, NSF restart will continue on other interfaces. This functionality applies to the default NSF mode of operation when NSF is configured.

If the user configures the optional **enforce global** keywords, NSF restart will be canceled for the entire process when neighbors that are not NSF-aware are detected on any network interface during restart. NSF restart will also be canceled for the entire process if a neighbor adjacency reset is detected on any interface or if an OSPF interface goes down. To revert to the default NSF mode, enter the **no nsf enforce global** command.

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The following example enters router configuration mode and cancels the NSF restart for the entire OSPF process if neighbors that are not NSF-aware are detected on any network interface during restart:

```
Router(config)# router ospf 1  
Router(config-router)# nsf cisco enforce global
```

**Related Commands**

Command	Description
<b>debug ip ospf nsf</b>	Displays debugging messages related to OSPF NSF commands.
<b>router ospf</b>	Enables OSPF routing and places the router in router configuration mode.

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## nsf cisco

To enable Cisco nonstop forwarding (NSF) operations on a router that is running Open Shortest Path First (OSPF), use the **nsf cisco** command in router configuration mode. To return to the default, use the **no** form of this command.

**nsf cisco** [**enforce global**| **helper** [**disable**]]

**no nsf cisco** [**enforce global**| **helper** **disable**]

**Syntax Description**

<b>enforce global</b>	(Optional) Cancels NSF restart on all interfaces when neighboring networking devices that are not NSF-aware are detected on any interface during the restart process.
<b>helper</b>	(Optional) Configures Cisco NSF helper mode.
<b>disable</b>	(Optional) Disables helper mode.

**Command Default**

Cisco NSF restarting mode is disabled. Cisco NSF helper mode is enabled.

**Command Modes**

Router configuration (config-router)

**Command History**

Release	Modification
12.0(32)S	This command was introduced. This command replaces the <b>nsf</b> (OSPF) command.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2(33)SXH.

**Usage Guidelines**

For Cisco IOS Release 12.0(32)S and later releases, this command replaces the **nsf** (OSPF) command.

This command enables Cisco NSF on an OSPF router. When NSF is enabled on a router, the router is NSF-capable and will operate in restarting mode.

If a router is expected to cooperate with a neighbor that is doing an NSF graceful restart only, the neighbor router must be running a Cisco software release that supports NSF but NSF need not be configured on the router. When a router is running a Cisco software release that supports NSF, the router is NSF-aware.

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By default, neighboring NSF-aware routers will operate in NSF helper mode during a graceful restart. To disable Cisco NSF helper mode on an NSF-aware router, use this command with the **disable** keyword. To reen able helper mode after explicitly disabling helper mode on an NSF-aware router, use the **no nsf cisco helper disable** command.

If neighbors that are not NSF-aware are detected on a network interface during an NSF graceful restart, restart is aborted on that interface only and graceful restart will continue on other interfaces. To cancel restart for the entire OSPF process when neighbors that are not NSF-aware are detected during restart, configure this command with the **enforce global** keywords.

**Note**

The NSF graceful restart will also be canceled for the entire process when a neighbor adjacency reset is detected on any interface or when an OSPF interface goes down.

**Examples**

The following example enables Cisco NSF restarting mode on a router and causes the NSF restart to be canceled for the entire OSPF process if neighbors that are not NSF-aware are detected on any network interface during the restart.

```
router ospf 24
 nsf cisco enforce global
```

**Related Commands**

Command	Description
<b>nsf ietf</b>	Enables IETF NSF.

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## nsf ietf

To configure Internet Engineering Task Force (IETF) nonstop forwarding (NSF) operations on a router that is running Open Shortest Path First (OSPF), use the **nsf ietf** command in router configuration mode. To return to the default, use the **no** form of this command.

**nsf ietf** [**restart-interval** *seconds*] **helper** [**disable**| **strict-lsa-checking**]

**no nsf ietf** [**restart-interval** *seconds*] **helper** [**disable**| **strict-lsa-checking**]

### Syntax Description

<b>restart-interval</b> <i>seconds</i>	(Optional) Specifies length of the graceful restart interval, in seconds. The range is from 1 to 1800. The default is 120.
<b>helper</b>	(Optional) Configures NSF helper mode.
<b>disable</b>	(Optional) Disables helper mode on an NSF-aware router.
<b>strict-lsa-checking</b>	(Optional) Enables strict link-state advertisement (LSA) checking for helper mode.

### Command Default

IETF NSF graceful restart mode is disabled. IETF NSF helper mode is enabled.

### Command Modes

Router configuration (config-router)

### Command History

Release	Modification
12.0(32)S	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2(33)SXH.

### Usage Guidelines

This command enables IETF NSF on an OSPF router. When NSF is enabled on a Cisco router, the router is NSF-capable and will operate in restarting mode.

If a router is expected to cooperate with a neighbor that is doing an NSF graceful restart only, the neighbor router must be running a Cisco software release that supports NSF but NSF need not be configured on the router. When a router is running a Cisco software release that supports NSF, the router is NSF-aware.

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By default, neighboring NSF-aware routers will operate in NSF helper mode during a graceful restart. To disable IETF NSF helper mode on an NSF-aware router, use this command with the **disable** keyword. To reen able helper mode after explicitly disabling helper mode on an NSF-aware router, use the **no nsf ietf helper disable** command.

Strict LSA checking allows a router in IETF NSF helper mode to terminate the graceful restart process if it detects a changed LSA that would cause flooding during the graceful restart process. You can configure strict LSA checking on NSF-aware and NSF-capable routers but it is effective only when the router is in helper mode.

### Examples

The following example enables IETF NSF restarting mode on a router and changes the graceful restart interval from default (120 seconds) to 200 seconds:

```
router ospf 24
 nsf ietf restart-interval 200
```

### Related Commands

Command	Description
<b>nsf cisco</b>	Enables Cisco NSF.

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