SAF Commands: eigrp log-neighbor-changes through hold-time

eigrp log-neighbor-changes

To enable the logging of changes in Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor adjacencies, use the **eigrp log-neighbor-changes** command in router configuration mode, address-family configuration mode, or service-family configuration mode. To disable the logging of changes in EIGRP neighbor adjacencies, use the **no**form of thiscommand.

eigrp log-neighbor-changes

no eigrp log-neighbor-changes

Syntax Description

This command has no arguments or keywords.

Command Default

Adjacency changes are logged.

Command Modes

Router configuration (config-router) Address-family configuration (config-router-af) Service-family configuration (config-router-sf)

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.

Usage Guidelines

This command enables the logging of neighbor adjacency changes to monitor the stability of the routing system and to help detect problems. Logging is enabled by default. To disable the logging of neighbor adjacency changes, use the **no** form of this command.

To enable the logging of changes for EIGRP address-family neighbor adjacencies, use the **eigrp log-neighbor-changes**command in address-family configuration mode.

To enable the logging of changes for EIGRP service-family neighbor adjacencies, use the **eigrp log-neighbor-changes**command in service-family configuration mode.

Examples

The following configuration disables logging of neighbor changes for EIGRP process 209:

```
Router(config)# router eigrp 209
Router(config-router)# no eigrp log-neighbor-changes
```

The following configuration enables logging of neighbor changes for EIGRP process 209:

```
Router(config)# router eigrp 209
Router(config-router)# eigrp log-neighbor-changes
```

The following example shows how to disable logging of neighbor changes for EIGRP address-family with autonomous-system 4453:

```
Router(config)# router eigrp virtual-name
Router(config-router)# address-family ipv4 autonomous-system 4453
Router(config-router-af)# no eigrp log-neighbor-changes
Router(config-router-af)# exit-address-family
```

The following configuration enables logging of neighbor changes for EIGRP service-family process 209:

```
Router(config)# router eigrp 209
Router(config-router)# service-family ipv4 autonomous-system 4453
Router(config-router-sf)# eigrp log-neighbor-changes
Router(config-router-sf)# exit-service-family
```

Related Commands

Command	Description
address-family (EIGRP)	Enters address-family configuration mode to configure an EIGRP routing instance.
exit-address-family	Exits address-family configuration mode.
exit-service-family	Exits service-family configuration mode.
router eigrp	Configures the EIGRP routing process.
service-family	Specifies service-family configuration mode.

eigrp log-neighbor-warnings

To enable the logging of Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor warning messages, use the **eigrp log-neighbor-warnings** command in router configuration mode, address-family configuration mode, or service-family configuration mode. To disable the logging of EIGRP neighbor warning messages, use the **no**form of thiscommand.

eigrp log-neighbor-warnings commandeigrp log-neighbor-warnings [*seconds*]

no eigrp log-neighbor-warnings

Syntax Description

seconds	(Optional) The time interval (in seconds) between repeated neighbor warning messages. The range is from 1 to 65535. The default is 10.

Command Default

Neighbor warning messages are logged at 10-second intervals.

Command Modes

Router configuration (config-router) Address-family configuration (config-router-af) Service-family configuration (config-router-sf)

Command History

Release	Modification
12.0(5)	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was modified. Address-family and service-family configuration modes were added.
12.2(33)SRE	This command was modified. Address-family and service-family configuration modes were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.

Usage Guidelines

When neighbor warning messages occur, they are logged by default. With this command, you can disable and enable neighbor warning messages, and you can configure the interval between repeated neighbor warning messages.

To enable the logging of warning messages for an EIGRP address family, use the **eigrp log-neighbor-warnings** command in address-family configuration mode.

To enable the logging of warning messages for an EIGRP service family, use the **eigrp log-neighbor-warnings** command in service-family configuration mode.

Examples

The following command will log neighbor warning messages for EIGRP process 209 and repeat the warning messages in 5-minute (300 seconds) intervals:

```
Router(config)# router eigrp 209
Router(config-router)# eigrp log-neighbor-warnings 300
```

The following example logs neighbor warning messages for the service family with autonomous system number 4453 and repeats the warning messages in five-minute (300 second) intervals:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4453
Router(config-router-sf)# eigrp log-neighbor-warnings 300
```

The following example logs neighbor warning messages for the address family with autonomous system number 4453 and repeats the warning messages in five-minute (300 second) intervals:

```
Router(config)# router eigrp virtual-name
Router(config-router)# address-family ipv4 autonomous-system 4453
Router(config-router-af)# eigrp log-neighbor-warnings 300
```

Related Commands

Command	Description
address-family (EIGRP)	Enters address-family configuration mode to configure an EIGRP routing instance.
exit-address-family	Exits address-family configuration mode.
exit-service-family	Exits service-family configuration mode.
router eigrp	Configures the EIGRP routing process.
service-family	Specifies service-family configuration mode.

eigrp router-id

To set the router ID used by Enhanced Interior Gateway Routing Protocol (EIGRP) when communicating with its neighbors, use the **eigrp router-id**command in router configuration mode, address-family configuration mode, or service-family configuration mode. To remove the configured router ID, use the **no**form of thiscommand.

eigrp router-id *router-id*

no eigrp router-id [*router-id*]

Syntax Description

router-id	EIGRP router ID in IP address format.

Command Default

EIGRP automatically selects an IP address to use as the router ID when an EIGRP process is started. The highest local IP address is selected and loopback interfaces are preferred. The router ID is not changed unless the EIGRP process is removed with the **no router eigrp** command or if the router ID is manually configured with the **eigrp router-id** command.

Command Modes

Router configuration (config-router) Address-family configuration (config-router-af) Service-family configuration (config-router-sf)

Command History

Release	Modification
12.1	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.

Usage Guidelines

The router ID is used to identify the originating router for external routes. If an external route is received with the local router ID, the route is discarded. The router ID can be configured with any IP address with two exceptions; 0.0.0.0 and 255.255.255.255 are not legal values and cannot be entered. A unique value should be configured for each router.

In EIGRP named IPv4, named IPv6, and Cisco Service Advertisement Framework (SAF) configurations, the *router-id* is also included for identifying internal routes and loop detection.

Examples

The following example configures 172.16.1.3 as a fixed router ID:

```
Router(config)# router eigrp 209
Router(config-router)# eigrp router-id 172.16.1.3
```

The following example configures 172.16.1.3 as a fixed router ID for service-family autonomous-system 4533:

```
Router(config)# router eigrp 209
Router(config-router)# service-family ipv4 autonomous-system 4453
Router(config-router-sf)# eigrp router-id 172.16.1.3
```

The following example configures 172.16.1.3 as a fixed router ID for address-family autonomous-system 4533:

```
Router(config)# router eigrp virtual-name
Router(config-router)# address-family ipv4 autonomous-system 4453
Router(config-router-af)# eigrp router-id 172.16.1.3
```

Related Commands

Command	Description
address-family (EIGRP)	Enters address-family configuration mode to configure an EIGRP routing instance.
router eigrp	Configures the EIGRP routing process.
service-family	Specifies service-family configuration mode.

eigrp stub (service-family)

To configure a router as an Enhanced Interior Gateway Routing Protocol (EIGRP) stub, use the **eigrp stub** command in service-family configuration mode. To disable the EIGRP stub routing feature, use the **no** form of this command.

eigrp stub [**receive-only**| **connected**]

no eigrp stub

Syntax Description

receive-only	(Optional) Sets the router as a receive-only neighbor.
connected	(Optional) Advertises connected routes.

Command Default

Stub routing is not enabled.

Command Modes

Service-family configuration (config-router-sf)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

Use the **eigrp stub command to configure a router as a stub that does not advertise all of its services to other routers.**

The **eigrp stub** command can be modified with several options. The **receive-only** keyword will restrict the router from sharing any of its services with any other router in that EIGRP autonomous system.

The **connected** keyword permits the EIGRP stub routing feature to send only connected services.

If no keywords are used with the **eigrp stub** command, the **eigrp stub connected** is configured, by default.

Note Multi-access interfaces, such as ATM, Ethernet, Frame Relay, ISDN PRI, and X.25, are supported by the EIGRP Stub Routing feature only when all routers on that interface, except the hub, are configured as stub routers.

Examples

The following example configures a router as a receive-only stub that advertises no services:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# eigrp stub receive-only
```

The following example configures a router as a stub that advertises only connected services:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# eigrp stub connected
```

The following example also configues a router as a stub that advertises only connected services:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# eigrp stub
```

Related Commands

Command	Description
router eigrp	Configures the EIGRP routing process.
service-family	Specifies service-family configuration mode.

exit-service-family

To exit Enhanced Interior Gateway Routing Protocol (EIGRP) service-family configuration mode, use the **exit-service-family**command in service-family configuration mode.

exit-service-family

Syntax Description

This command has no arguments or keywords.

Command Modes

Service-family configuration (config-router-sf)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

Use the **exit-service-family** command to exit service-family configuration mode and return to router configuration mode.

Examples

The following example exits service-family configuration mode:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# exit-service-family
Router(config-router)#
```

Related Commands

Command	Description
router eigrp	Configures the EIGRP process.
service-family	Specifies service-family configuration mode.

exit-sf-interface

To exit Enhanced Interior Gateway Routing Protocol (EIGRP) service-family interface configuration mode, use the **exit-sf-interface**command in service-family interface configuration mode.

exit-sf-interface

Syntax Description

This command has no arguments or keywords.

Command Modes

Service-family interface configuration (config-router-sf-interface)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

Use the **exit-sf-interface** command to exit service-family interface configuration mode and return to service-family configuration mode.

Examples

The following example exits service-family interface configuration mode:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# sf-interface default
Router(config-router-sf-interface)# no shutdown
Router(config-router-sf-interface)# exit-sf-interface
Router(config-router-sf)#
```

Related Commands

Command	Description
exit-service-family	Exits service-family configuration mode.
router eigrp	Configures the EIGRP process.
service-family	Specifies service-family configuration mode.

Command	Description
sf-interface	Configures interface-specific commands under a service family.
shutdown	Disables a service family on the interface.

exit-sf-topology

To exit Enhanced Interior Gateway Routing Protocol (EIGRP) service-family topology configuration mode, use the **exit-sf-topology**command in service-family topology configuration mode.

exit-sf-topology

Syntax Description

This command has no arguments or keywords.

Command Modes

Service-family topology configuration (config-router-sf-topology)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

Use the **exit-sf-topology** command to exit service-family topology configuration mode and return to service-family configuration mode.

Examples

The following example exits service-family topology configuration mode:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# topology base
Router(config-router-sf-topology)# exit-sf-topology
Router(config-router-sf)#
```

Related Commands

Command	Description
exit-service-family	Exits service-family configuration mode.
exit-sf-interface	Exits service-family interface configuration mode.
router eigrp	Configures the EIGRP process.

Command	Description
service-family	Specifies service-family configuration mode.
sf-interface	Configures interface-specific commands undera service family.
topology	Enables topology configuration mode.

external-client

To configure a Cisco Service Advertisement Framework (Cisco SAF) External Client, use the **external-client** command in external-client configuration mode. To configure a Cisco SAF External Client to a topology, use the **external-client** command in service-family topology configuration mode. To remove the associated external-client configuration, use the **no** form of this command.

The **basename** keyword is only available in external-client configuration mode.

external-client *client-label* **basename**

no external-client

Syntax Description

client-label	A client label. The client label can be a maximum of 64 characters.
basename	Available only in external-client configuration mode. Specify the **basename** keyword in external-client configuration mode to allow SAF external clients to use a naming convention based on the client-label. The naming convention takes the form of *client-label*@[1-1024]. You can specify a maximum of 1024 SAF external clients. For example, if the **external-client** command specifies a client label of *example*, then the basename for a SAF external client would be *example@1*. Another SAF external client would be *example@2*, and so on up to a maximum of 1024 basenames (*@1024*).

Command Default

No service-family external-client configurations exist.

Command Modes

External-client configuration (config-external-client) Service-family topology (config-router-sf-topology)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was modified. Address-family configuration mode and service-family configuration mode were added.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.

Release	Modification
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.
15.1(3)S	The maximum number of external clients was increased from 50 to 1024 in Cisco IOS Release 15.1(3)S.
15.2(1)S	This command was deprecated in Cisco IOS Release 15.2(1)S and replaced by the client (XMCP) command.
Cisco IOS XE Release 3.5S	This command was deprecated in Cisco IOS XE Release 3.5S and replaced by the client (XMCP) command.
15.2(2)T	This command was deprecated in Cisco IOS Release 15.2(2)T and replaced by the client (XMCP) command.

Usage Guidelines

Use the **external-client** command in service-family topology configuration mode to share the configuration with multiple clients. The **no** form of this command in service-family topology configuration mode removes a client in that topology. The **no** form of this command in external-client configuration mode removes the TCP connection from the clients to the forwarder.

Use the **service-family external-client listen** command in router configuration mode to configure a Cisco SAF External-Client listen port to which the external client can connect.

Note Using the **service-family external-client listen ipv6** commands requires an IPv6-enabled SAF client, which currently does not exist.

Examples

The following example assigns a Cisco SAF External Client with the username “example” to the topology base:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# sf-interface default
Router(config-router-sf-interface)# no shutdown
Router(config-router-sf-interface)# exit sf-interface
Router(config-router-sf)# topology base
Router(config-router-sf-topology)# external-client example
```

Related Commands

Command	Description
service-family external-client listen	Configures a Cisco SAF Forwarder listen TCP port.
service-family	Specifies service-family configuration mode.
sf-interface	Configures interface-specific commands under a service family.

Command	Description
shutdown	Disables a specific routing instance without removing any existing configuration parameters for a service family.
topology	Configures service topology-specific commands for a service family.

hello-interval

To configure the hello interval for the Enhanced Interior Gateway Routing Protocol (EIGRP) address-family or service-family configurations, use the **hello-interval** command in address-family interface configuration mode or service-family interface configuration mode. To configure the default hello interval, use the **no** form of this command.

hello-interval *seconds*

no hello-interval

Syntax Description

seconds	Hello interval in seconds. The range is 1 to 65535. The default is 60 for low-speed nonbroadcast multiaccess (NBMA) networks, and 5 for all other networks.

Command Default

The EIGRP hello interval is 60 seconds for low-speed NBMA networks and 5 seconds for all other networks.

Command Modes

Address-family interface configuration (config-router-af-interface) Service-family interface configuration (config-router-sf-interface)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was integrated into Cisco IOS Release 12.2(33)SRE.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

The 60-second default applies only to low-speed, NBMA media. Low speed is considered a rate of T1 or slower, as specified by the **bandwidth** command in interface configuration mode.

For the purposes of EIGRP, Frame Relay and Switched Multimegabit Data Service (SMDS) networks are considered to be NBMA if the interface has not been configured to use physical multicasting. Otherwise, Frame Relay and SMDS networks are not considered to be NBMA.

Examples

The following example configures a 10-second hello interval for address-family Ethernet interface 0/0:

```
Router(config)# router eigrp virtual-name
Router(config-router)# address-family ipv4 autonomous-system 4453

Router(config-router-af-interface)# af-interface ethernet0/0
Router(config-router-af-interface)# hello-interval 10
```

The following example sets a 10 second hello-interval for service-family Ethernet interface 0/0:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# sf-interface Ethernet 0/0
Router(config-router-sf-interface)# hello-interval 10
```

Related Commands

Command	Description
address-family (EIGRP)	Enters address-family configuration mode to configure an EIGRP routing instance.
af-interface	Enters address-family interface configuration mode to configure interface-specific EIGRP commands.
hold-time	Configures the hold time for EIGRP address-family or service-family configurations.
router eigrp	Configures the EIGRP address-family process.
service-family	Specifies service-family configuration mode.
sf-interface	Configures interface-specific commands under a service family.

hold-time

To configure the hold time for Enhanced Interior Gateway Routing Protocol (EIGRP) address-family or service-family configurations, use the **hold-time** command in address-family interface configuration mode or service-family interface configuration mode. To configure the default hold time, use the **no** form of this command.

hold-time *seconds*

no hold-time

Syntax Description

seconds	Interval, in seconds, before a neighbor is considered down. Valid range is 1 to 65535 seconds (approximately 18 hours). The default is 180 seconds for low-speed nonbroadcast multiaccess (NBMA) networks and 15 seconds for all other networks.

Command Default

The EIGRP hold time is 180 seconds for NBMA networks and 15 seconds for all other networks.

Command Modes

Address-family interface configuration (config-router-af-interface) Service-family interface configuration (config-router-sf-interface)

Command History

Release	Modification
15.0(1)M	This command was introduced.
12.2(33)SRE	This command was integrated into Cisco IOS Release 12.2(33)SRE.
12.2(33)XNE	This command was integrated into Cisco IOS Release 12.2(33)XNE.
Cisco IOS XE Release 2.5	This command was integrated into Cisco IOS XE Release 2.5.
12.2(33)SXI4	This command was integrated into Cisco IOS Release 12.2(33)SXI4.

Usage Guidelines

On very congested and large networks, the default hold time may not be sufficient for all routers and access servers to receive hello packets from neighbors. In this case, increase the hold time duration. The hold time should be at least three times the hello interval. If a router does not receive a hello packet within the specified hold time, services through this router are considered unavailable. Increasing the hold time will delay route convergence across the network.

Examples

The following example sets a 50-second hold time for address-family Ethernet interface 0/0:

```
Router(config)# router eigrp virtual-name

Router(config-router)# address-family ipv4 autonomous-system 4453

Router(config-router-af-interface)# af-interface ethernet0/0
Router(config-router-af-interface)# hold-time 50
```

The following example sets a 40-second hold time for service-family Ethernet interface 0/0:

```
Router(config)# router eigrp virtual-name
Router(config-router)# service-family ipv4 autonomous-system 4533
Router(config-router-sf)# sf-interface Ethernet 0/0
Router(config-router-sf-interface)# hold-time 40
```

Related Commands

Command	Description
address-family (EIGRP)	Enters address-family configuration mode to configure an EIGRP routing instance.
af-interface	Enters address-family interface configuration mode to configure interface-specific EIGRP commands.
router eigrp	Configures the EIGRP routing process.
hello-interval	Configures the hello interval for EIGRP address-family or service-family configurations.
router eigrp	Configures the EIGRP address-family process.
service-family	Specifies service-family configuration mode.
sf-interface	Configures interface-specific commands under service-family.