

EIGRP Commands

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address-family ipv4 vrf autonomous-system

To enter router address family configuration mode to configure the Enhanced Interior Gateway Routing Protocol (EIGRP) for Multitopology Routing (MTR), use the **address-family ipv4 vrf autonomous-system** command in router configuration mode. To remove the address family from the EIGRP configuration, use the **no** form of this command.

address-family ipv4 vrf *vrf-number*[**unicast** | **multicast**] **autonomous-system** *as-number*
no address-family ipv4 vrf *vrf-number*[**unicast** | **multicast**] **autonomous-system** *as-number*

Syntax Description

unicast	(Optional) Specifies the unicast subaddress family.
multicast	(Optional) Specifies the multicast subaddress family.
vrf *vrf-number*	Specifies the number for VRF.
autonomous-system *as-number*	Specifies the autonomous system number.

Command Default This command is disabled by default.

Command Modes Router configuration (config-router)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines The **address-family ipv4 vrf autonomous-system** command is used to enter router address family or subaddress family configuration mode to configure the exchange of address-family and subaddress-family prefixes.

For usage guidelines, see the Cisco IOS XE `address-family ipv4` command.

Examples The following example shows how to configure an IPv4 address family to associate with the MTR topology named base:

```
Device(config)# router eigrp mtr
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 5 topology base
```

af-interface

To enter address-family interface configuration mode and to configure interface-specific Enhanced Interior Gateway Routing Protocol (EIGRP) commands, use the **af-interface** command in address-family configuration mode. To reset the address-family interface setting to factory values, use the **no** form of this command.

af-interface { **default** | *interface-type* *interface-number* }
no af-interface

{ **default** | *interface-type* *interface -number* }

Syntax Description

default	Specifies the default address-family interface configuration mode. Commands applied under this mode affect all interfaces used by this address-family instance.
interface-type interface-number	Interface type and number of the interface that the address-family submode commands will affect.

Command Default Address-family interface configuration mode is not entered.

Command Modes Address-family configuration (config-router-af)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `af-interface` command.

Examples

The following example shows how to enter address-family interface configuration mode and to configure EIGRP interface-specific commands:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 5
Device(config-router-af)# af-interface interface-name
```

dampening-change

To set a threshold percentage to minimize or dampen the effect of frequent routing changes through an interface in an Enhanced Interior Gateway Routing Protocol (EIGRP) address family or service family, use the **dampening-change** command in address-family interface configuration mode or service-family interface configuration mode. To restore the default value, use the **no** form of this command.

dampening-change [*change-percentage*]
no dampening-change

Syntax Description

change-percentage	(Optional) The percentage a metric must change before the value is stored for future decisions on advertisements. Value range is 1 to 100. If a *change-percentage* value is not specified, the default is 50 percent of the computed metric.

Command Default

No threshold percentage is configured.

Command Modes

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

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `dampening-change` command.

Examples

The following example configures an EIGRP address family to accept a peer metric change if the change is greater than 75 percent of the last updated value:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 5400
Device(config-router-af)# af-interface ethernet0/0
Device(config-router-af-interface)# dampening-change 75
```

dampening-interval

To set a threshold time interval to minimize or dampen the effect of frequent routing changes through an interface in an Enhanced Interior Gateway Routing Protocol (EIGRP) address family or service family, use the **dampening-interval** command in address-family interface configuration mode or service-family interface configuration mode. To restore to the default value, use the **no** form of this command.

dampening-interval [*interval*]
no dampening-interval [*interval*]

Syntax Description

interval	(Optional) Time interval, in seconds, that must elapse before a route change will cause an update to occur. Value range is 1 to 65535. If an *interval* value is not specified, the default is 30 seconds.

Command Default

A dampening interval is not enabled.

Command Modes

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

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `dampening-interval` command.

Examples

The following example configures EIGRP address-family Ethernet interface 0/0 to limit the metric change frequency to no more than one change in a 45-second interval:

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

Device(config-router)# address-family ipv4 vrf 1 autonomous-system 5400
Device(config-router-af)# af-interface ethernet0/0
Device(config-router-af-interface)# dampening-interval 45
```

exit-address-family

To exit from address-family configuration mode, use the **exit-address-family** command in address-family configuration mode.

exit-address-family

Syntax Description

This command has no arguments or keywords.

Command Default

The router remains in address-family configuration mode.

Command Modes

Address-family configuration (config-router-af) VRF address-family configuration (config-vrf-af)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

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

This command can be abbreviated to **exit**.

For usage guidelines, see the Cisco IOS XE `exit-address-family` command.

Examples

The following example shows how to exit address-family configuration mode and return to router configuration mode:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453

Device(config-router-af)# exit-address-family

Device(config-router)#
```

The following example shows how to exit VRF address-family configuration mode and return to VRF configuration mode:

```
Device(config)# vrf definition vrf1
Device(config-vrf)# address-family ipv6
Device(config-vrf-af)# exit-address-family

Device(config-vrf)#
```

exit-af-interface

To exit address-family interface configuration mode, use the **exit-af-interface** command in address-family interface configuration mode.

exit-af-interface

Syntax Description

This command has no arguments or keywords.

Command Default

The router remains in address-family interface configuration mode.

Command Modes

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

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

Use the **exit-af-interface** command to exit address-family interface configuration mode and return to address-family configuration mode.

For usage guidelines, see the Cisco IOS XE `exit-af-interface` command.

Examples

The following example shows how to exit address-family interface configuration mode:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af)# af-interface af-interface-name
Device(config-router-af-interface)# exit-af-interface
Device(config-router-af)#
```

exit-af-topology

To exit address-family topology configuration mode, use the **exit-af-topology** command in address-family topology configuration mode.

exit-af-topology

Syntax Description

This command has no arguments or keywords.

Command Default

The router remains in address-family topology configuration mode.

Command Modes

Address-family topology configuration (config-router-af-topology)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

Use the **exit-af-topology** command to exit address-family topology configuration mode and return to address-family configuration mode.

For usage guidelines, see the Cisco IOS XE `exit-af-topology` command.

Examples

The following example shows how to exit address-family topology configuration mode:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af)# topology base
Device(config-router-af-topology)# exit-af-topology
Device(config-router-af)#
```

hello-interval

To configure the hello interval for the Enhanced Interior Gateway Routing Protocol (EIGRP) address-family configuration, use the **hello-interval** command in address-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)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `hello-interval` command.

Examples

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

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af-interface)# af-interface ethernet0/0
Device(config-router-af-interface)# hello-interval 10
```

hold-time

To configure the hold time for Enhanced Interior Gateway Routing Protocol (EIGRP) address-family, use the **hold-time** command in address-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)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

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.

For usage guidelines, see the Cisco IOS XE `hold-time` command.

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

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af-interface)# af-interface ethernet0/0
Device(config-router-af-interface)# hold-time 50
```

neighbor (EIGRP)

To define a neighboring device with which an Enhanced Interior Gateway Routing Protocol (EIGRP) device can exchange routing information, use the **neighbor** command in the address family configuration mode. To remove an entry, use the **no** form of this command.

neighbor {*ip-address ipv6-address*} *interface-type interface-number*
no neighbor {*ip-addressipv6-address*} *interface-type interface-number*

Syntax Description

ip-address	IP address of a peer router with which routing information will be exchanged.
ipv6-address	IPv6 address of a peer router with which routing information will be exchanged.
interface-type	Interface or subinterface through which peering sessions are established.
interface-number	Number of the interface or subinterface.

Command Default No neighboring routers are defined.

Command Modes Address family configuration (config-router-af)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

Multiple neighbor statements can be used to establish peering sessions with specific EIGRP neighbors. The interface through which EIGRP exchanges routing updates must be specified in the neighbor statement. The interfaces through which two EIGRP neighbors exchange routing updates must be configured with IP addresses from the same network.

For usage guidelines, see the Cisco IOS XE `neighbor` command.

Examples

The following example shows how to configure EIGRP peering sessions with neighbors 192.168.1.1 and 192.168.2.2:

The following named configuration example shows how to configure EIGRP to send address-family updates to specific neighbors:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af)# neighbor 192.168.1.10 1
Device(config-router-af)# neighbor 10.1.1.2 loopback 0 remote 10
```

network (EIGRP)

To specify the network for an Enhanced Interior Gateway Routing Protocol (EIGRP) routing process, use the **network** command in address-family configuration mode. To remove an entry, use the **no** form of this command.

network *ip-address* [*wildcard-mask*]
no network *ip-address*

Syntax Description

ip-address	IP address of the directly connected network.
wildcard-mask	(Optional) EIGRP wildcard bits. Wildcard mask indicates a subnetwork, bitwise complement of the subnet mask.

Command Default

No networks are specified.

Command Modes

Address-family configuration (config-router-af)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `network` command.

Examples

The following example configures EIGRP autonomous system 1 and establishes neighbors through network 172.16.0.0 and 192.168.0.0:

The following example configures EIGRP address-family autonomous system 4453 and establishes neighbors through network 172.16.0.0 and 192.168.0.0:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af)# network 172.16.0.0
Device(config-router-af)# network 192.168.0.0
```

redistribute omp metric

To redistribute OMP routes into EIGRP, use the **redistribute omp metric** command in (EIGRP Named Mode) Address-family Topology configuration mode. To disable redistribute OMP routes into EIGRP, use the **no** form of this command.

redistribute omp metric { *bandwidth* | *delay* | *reliability* | *load* | *MTU* }

no redistribute omp metric { *bandwidth* | *delay* | *reliability* | *load* | *MTU* }

Syntax Description

bandwidth	In units of kilobits per second; 10000 for Ethernet <1 .. 4294967295>
delay	In units of tens of microseconds; for Ethernet it is 100 x 10 microseconds = 1 ms <0..4294967295>
reliability	255 for 100 percent reliability <unsignedByte, 0 .. 255>
load	Effective load on the link expressed as a number from 1 to 255 (255 is 100 percent loading) <unsignedByte, 1 .. 255>
MTU	Minimum MTU of the path; usually equals that for the Ethernet interface, which is 1500 bytes <1 .. 65535>

Command Default

None

Command Modes

(EIGRP Named Mode) Address-family topology configuration (config-router-af-topology)

Release	Modification
Cisco IOS XE SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

By default, routes from other routing protocols are not redistributed into EIGRP. It can be useful for EIGRP to learn OMP routes, because OMP learns routes to destinations throughout the overlay network. This command can be used to redistribute omp routes into EIGRP.

Example

The following example shows redistributing omp into a named EIGRP process called INSTANCE1 with the following metrics - bandwidth = 1000000, delay = 100, reliability = 255, load = 1, MTU = 1500.

```
Device(config)# router eigrp INSTANCE1
Device(config-router)# address-family ipv4 unicast vrf 1 autonomous-system 100
Device(config-router-af)# topology base
Device(config-router-af-topology)# redistribute omp metric 1000000 100 255 1 1500
```

redistribute static

To redistribute IPv4 routes to Enhanced Interior Gateway Routing Protocol (EIGRP), use the **redistribute static** command in the address-family topology configuration mode. To disable the configuration, use the **no** form of this command

redistribute static

Syntax Description

static	Indicates static route redistribution in eigrp.

Command Default

Route redistribution is disabled.

Command Modes

Address-family topology configuration (config-router-af-topology)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `redistribute eigrp` command.

Examples

The following example shows the behavior of the **redistribute static** command.

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 4453
Device(config-router-af)# topology base
Device(config-router-af-topology)# redistribute static
```

router eigrp

To configure the Enhanced Interior Gateway Routing Protocol (EIGRP) routing process, use the **router eigrp** command in global configuration mode. To remove an EIGRP routing process, use the **no** form of this command.

router eigrp *virtual-instance-name*
no router eigrp *virtual-instance-name*

Syntax Description

virtual-instance-name	EIGRP virtual instance name. This name must be unique among all address-family router processes on a single router, but need not be unique among routers.

Command Default

No EIGRP processes are configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `router eigrp` command.

Examples

The following example configures an EIGRP address-family routing process and assigns it the name "virtual-name":

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

split-horizon (EIGRP)

To enable Enhanced Interior Gateway Routing Protocol (EIGRP) split-horizon, use the **split-horizon** command in address-family interface configuration mode or service-family interface configuration mode. To disable EIGRP split-horizon, use the **no** form of this command.

split-horizon
no split-horizon

Syntax Description

This command has no arguments or keywords.

Command Default

EIGRP split-horizon is enabled by default. However, for ATM interfaces and subinterfaces **split-horizon** is disabled by default.

Command Modes

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

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `split-horizon (EIGRP)` command.

Examples

The following example disables EIGRP split-horizon for serial interface 3/0 in address-family 5400:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 5400
Device(config-router-af)# af-interface serial3/0
Device(config-router-af-interface)# split-horizon
```

topology (EIGRP)

To configure an Enhanced Interior Gateway Routing Protocol (EIGRP) process to route IP traffic under the specified topology instance and to enter address-family topology configuration mode, use the **topology** command in address-family configuration mode.

topology base
no topology *topology-name*

Syntax Description

base	Specifies the base topology.

Command Default

EIGRP routing processes are not configured to route IP traffic under a topology instance.

Command Modes

Address-family configuration (config-router-af)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `topology` command.

Examples

The following example configures EIGRP process 1 to route traffic for the 192.168.0.0/16 network under the VOICE topology instance:

```
Device(config)# router eigrp virtual-name
Device(config-router)# address-family ipv4 vrf 1 autonomous-system 3
Device(config-router-af)# topology base
```