EIGRP Commands on Cisco ASR 9000 Series Routers

This module describes the commands used to configure and monitor the Enhanced Interior Gateway Routing Protocol (EIGRP) on Cisco ASR 9000 Series Aggregation Services Routers.

For detailed information about EIGRP concepts, configuration tasks, and examples, see Implementing EIGRP on Cisco ASR 9000 Series Routers in the Cisco ASR 9000 Series Aggregation Services Router Routing Configuration Guide.
address-family (EIGRP)

To enable an IPv4 address family under Enhanced Interior Gateway Routing Protocol (EIGRP), use the `address-family` command in the appropriate mode. To remove the address family from the EIGRP configuration, use the `no` form of this command.

```
address-family {ipv4}

no address-family {ipv4}
```

**Syntax Description**

`ipv4` Selects IPv4 address family.

**Defaults**

No default behavior or values

**Command Modes**

Router configuration
VRF configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `address-family` command to configure IPv4 address family sessions in EIGRP.

EIGRP Virtual Private Networks (VPNs) can be configured under IPv4 address family configuration modes after first entering VRF configuration mode. All commands in address family configuration mode can be configured in VRF address families except the `autonomous-system` and `maximum-prefix` commands.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure an IPv4 VRF address family session after defining the VRF named vrf1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# default-metric 1000 100 255 1 1500
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)#
```
<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>autonomous-system</td>
<td>Configures an EIGRP routing process to run within a VRF.</td>
</tr>
<tr>
<td></td>
<td>maximum-prefix</td>
<td>Limits the number of prefixes that are accepted under an address family by</td>
</tr>
<tr>
<td></td>
<td>(EIGRP)</td>
<td>EIGRP.</td>
</tr>
</tbody>
</table>
auto-summary (EIGRP)

To allow automatic summarization of subnet routes into network-level routes for an Enhanced Interior Gateway Routing Protocol (EIGRP) process, use the `auto-summary` command in the appropriate configuration mode. To disable this function and send subprefix routing information across classful network boundaries, use the `no` form of this command.

```plaintext
auto-summary

no auto-summary
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

The behavior of this command is disabled by default. (The software sends subnet routing information across classful network boundaries.)

**Command Modes**

IPv4 Address family configuration
IPv4 VRF address family configuration

**Command History**

<table>
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<tr>
<th>Release</th>
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</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Route summarization reduces the amount of routing information in the routing tables. Use the `auto-summary` command to allow the software to create summary subprefixes to the classful network boundary when crossing classful network boundaries.

EIGRP summary routes are given an administrative distance value of 5. You cannot configure this value.

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</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to enable automatic summarization for EIGRP 1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vpn-1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# auto-summary
```
<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>summary-address (EIGRP)</td>
<td>Configures a summary aggregate address for a specified interface.</td>
</tr>
</tbody>
</table>
autonomous-system

To configure an Enhanced Interior Gateway Routing Protocol (EIGRP) routing process to run within a VPN routing and forwarding instance (VRF), use the `autonomous-system` command in IPv4 VRF address family configuration mode.

```
autonomous-system as-number

no autonomous-system as-number
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>as-number</td>
<td>Autonomous system number of the EIGRP routing process. Range is from 1 to 65535.</td>
</tr>
</tbody>
</table>

### Defaults

No default behavior or values

### Command Modes

IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
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</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `autonomous-system` command in IPv4 VRF address family configuration mode.

### Examples

The following example shows how to configure autonomous system 101 under VRF VPN-1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vpn-1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# autonomous-system 101
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vrf (EIGRP)</td>
<td>Defines a VRF instance and to enters VRF configuration mode.</td>
</tr>
</tbody>
</table>
bandwidth-percent (EIGRP)

To configure the percentage of bandwidth that may be used by EIGRP on an interface, use the bandwidth-percent command in interface configuration mode. To restore the default value, use the no form of this command.

```
bandwidth-percent percent

no bandwidth-percent
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>percent</td>
<td>Percentage of bandwidth that EIGRP may use.</td>
</tr>
</tbody>
</table>

### Defaults

<table>
<thead>
<tr>
<th>Defaults</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>percent</td>
<td>50</td>
</tr>
</tbody>
</table>

### Command Modes

<table>
<thead>
<tr>
<th>Command Modes</th>
<th>Interface configuration</th>
</tr>
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</table>

### Command History

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<tbody>
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</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

EIGRP uses up to 50 percent of the bandwidth of a link, as defined by the bandwidth interface configuration command. This command may be used if some other fraction of the bandwidth is desired. Values greater than 100 percent may be configured. The configuration option may be useful if the bandwidth is set artificially low for other reasons.

### Task ID

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</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to configure EIGRP to use up to 75 percent (42 kbps) of an interface in autonomous system 209:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# router-id 10.1.1.1

RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# bandwidth-percent 75
```
**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>bandwidth (interface)</code></td>
<td>Sets a bandwidth value for an interface.</td>
</tr>
</tbody>
</table>
clear eigrp neighbors

To remove and reestablish Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor entries from the appropriate table, use the `clear eigrp neighbors` command in EXEC mode.

```plaintext
clear eigrp [as-number] [vrf {vrf | all}] [ipv4] neighbors [ip-address | interface-type interface-instance] [soft]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>as-number</code></td>
<td>(Optional) Autonomous system number. Range is from 1 to 65535.</td>
</tr>
<tr>
<td>`vrf {vrf</td>
<td>all}`</td>
</tr>
<tr>
<td><code>ipv4</code></td>
<td>(Optional) Specifies the IPv4 address family.</td>
</tr>
<tr>
<td><code>ip-address</code></td>
<td>(Optional) Address of the neighbor.</td>
</tr>
<tr>
<td><code>interface-type</code></td>
<td>(Optional) Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
<tr>
<td><code>interface-instance</code></td>
<td>(Optional) Either a physical interface instance or a virtual interface instance.</td>
</tr>
<tr>
<td><code>soft</code></td>
<td>(Optional) Specifies a soft reset.</td>
</tr>
</tbody>
</table>

Specifying these arguments removes the specified interface type from the neighbor table that all entries learned via this interface.

- **Physical interface instance.** Naming notation is `rack/slot/module/port` and a slash mark between values is required as part of the notation.
  - `rack`: Chassis number of the rack.
  - `slot`: Physical slot number of the line card.
  - `module`: Module number. A physical layer interface module (PLIM) is always 0.
  - `port`: Physical port number of the interface.
- **Virtual interface instance.** Number range varies depending on interface type.

For more information about the syntax for the router, use the question mark (?) online help function.

### Defaults

When no autonomous system number or VRF instance is specified, all EIGRP neighbor entries are cleared from the table.

### Command Modes

EXEC

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>
**clear eigrp neighbors**

**Usage Guidelines**
To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**
The following example shows how to clear all EIGRP VRF entries for neighbor Gigabit Ethernet interface 0/5/0/0:

```
RP/0/RSP0/CPU0:router# clear eigrp vrf customer_1 neighbors GigabitEthernet 0/5/0/0
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show eigrp interfaces</td>
<td>Displays information about interfaces configured for EIGRP.</td>
</tr>
<tr>
<td>show eigrp neighbors</td>
<td>Displays the neighbors discovered by EIGRP.</td>
</tr>
</tbody>
</table>
clear eigrp topology

To remove and relearn Enhanced Interior Gateway Routing Protocol (EIGRP) topology entries from the table, use the clear eigrp topology command in EXEC mode.

```
clear eigrp [as-number] [vrf {vrf | all}] [ipv4] topology {prefix mask | prefix/length}
```

Syntax Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>as-number</td>
<td>(Optional) Autonomous system number. Range is from 1 to 65535.</td>
</tr>
<tr>
<td>vrf {vrf</td>
<td>all}</td>
</tr>
<tr>
<td>ipv4</td>
<td>(Optional) Specifies the IPv4 address family.</td>
</tr>
<tr>
<td>prefix</td>
<td>IP prefix, which limits output to a specific route.</td>
</tr>
<tr>
<td>mask</td>
<td>IP address mask.</td>
</tr>
<tr>
<td>/length</td>
<td>Prefix length, which can be indicated as a slash (/) and number. For example, /8 indicates that the first eight bits in the IP prefix are network bits. If length is used, the slash is required.</td>
</tr>
</tbody>
</table>

Defaults

No EIGRP topology entries are cleared.

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
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Usage Guidelines

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Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

Examples

The following example shows how to clear EIGRP topology entries for a specific route:

```
RP/0/RSP0/CPU0:router# clear eigrp topology 10.1.0.0/8
```
default-information

To control the candidate default routing information for an Enhanced Interior Gateway Routing Protocol (EIGRP), use the `default-information` command in the appropriate configuration mode. To suppress EIGRP candidate default information in incoming or outgoing updates, use the `no` form of this command.

```
default-information allowed {in | out} [route-policy name]
no default-information allowed {in | out} [route-policy name]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>allowed</code></td>
<td>Specifies EIGRP to allow default routing information.</td>
</tr>
<tr>
<td><code>in</code></td>
<td>Specifies EIGRP to allow inbound default routing information.</td>
</tr>
<tr>
<td><code>out</code></td>
<td>Specifies EIGRP to allow outbound default routing information.</td>
</tr>
<tr>
<td><code>route-policy name</code></td>
<td>(Optional) Specifies a route policy.</td>
</tr>
</tbody>
</table>

### Defaults

Default routing information is not accepted or flagged.

### Command Modes

Address family configuration
IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
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### Usage Guidelines

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### Task ID

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<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to configure inbound default routes specified with route policy acme to be accepted by an EIGRP peer in autonomous system 1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# default-information accept in route-policy cme
```
default-metric (EIGRP)

To set metrics for an Enhanced Interior Gateway Routing Protocol (EIGRP), use the `default-metric` command in the appropriate configuration mode. To remove the metric values and restore the default state, use the `no` form of this command.

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>bandwidth</code></td>
<td>Minimum bandwidth of the route in kilobits per second. Range is 1 to 4294967295.</td>
</tr>
<tr>
<td><code>delay</code></td>
<td>Route delay in ten microsecond units. Range is 1 to 4294967295.</td>
</tr>
<tr>
<td><code>reliability</code></td>
<td>Likelihood of successful packet transmission expressed as a number between 0 and 255. The value 255 means 100-percent reliability; 0 means the link is not reliable.</td>
</tr>
<tr>
<td><code>loading</code></td>
<td>Effective bandwidth of the route expressed as a number from 1 to 255 (255 is 100-percent loading).</td>
</tr>
<tr>
<td><code>mtu</code></td>
<td>Minimum maximum transmission unit (MTU) size of the route in bytes. Range is from 1 to 65535.</td>
</tr>
</tbody>
</table>

**Defaults**

No default values

**Command Modes**

IPv4 address family configuration
IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
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</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `default-metric` command to provide default metric values while redistributing a protocol into EIGRP.

Metric defaults have been carefully set to work for a wide variety of networks. Take great care when changing these values.

**Task ID**

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</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
The following example shows how to take redistributed Routing Information Protocol (RIP) metrics and translate them into EIGRP metrics with values as follows: bandwidth = 1000, delay = 100, reliability = 250, loading = 100, and MTU = 1500.

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# redistribute rip
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# default-metric 1000 100 250 100 1500
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>redistribute</td>
<td>Redistributes routes from one routing domain into another routing domain.</td>
</tr>
</tbody>
</table>
distance (EIGRP)

To allow the use of one of two administrative distances—internal and external—that could provide a better route to a node, use the distance command in the appropriate configuration mode. To reset these values to their defaults, use the no form of this command.

```
distance internal-distance external-distance

no distance
```

**Syntax Description**

- **internal-distance**: Administrative distance for EIGRP internal routes. Internal routes are those that are learned from another entity within the same autonomous system (AS). The distance can be a value from 1 to 255.

- **external-distance**: Administrative distance for EIGRP external routes. External routes are those for which the best path is learned from a source external to the AS. The distance can be a value from 1 to 255.

**Defaults**

- **internal-distance**: 90
- **external-distance**: 170

**Command Modes**

IPv4 address family configuration

IPv4 VRF address family configuration

**Command History**

<table>
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</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

An administrative distance is a rating of the trustworthiness of a routing information source, such as an individual router or a group of routers. Numerically, an administrative distance is an integer from 0 to 255. In general, the higher the value, the lower the trust rating. An administrative distance of 255 means the routing information source cannot be trusted at all and should be ignored.

Use the distance command if another protocol is known to provide a better route to a node than was actually learned through the external Enhanced Interior Gateway Routing Protocol (EIGRP) or some internal routes should be preferred by EIGRP.

To display the default administrative distance for a specified routing process, use the show protocols EXEC command.

**Task ID**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
The following example shows how to set the administrative distance of all EIGRP 1 internal routes (within vrf vpn-1) to 80 and all EIGRP external routes to 130:

RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# distance 80 130

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show protocols (EIGRP)</td>
<td>Displays information about the Enhanced Interior Gateway Routing Protocol (EIGRP) running on the router.</td>
</tr>
</tbody>
</table>
hello-interval (EIGRP)

To configure the hello interval for an interface, use the **hello-interval** command in interface configuration mode. To restore the default value, use the **no** form of this command.

```
hello-interval **seconds**

no hello-interval
```

**Syntax Description**

- **seconds**
  - Hello interval (in seconds). Range is from 1 to 65535.

**Defaults**

- For low-speed, nonbroadcast multiaccess (NBMA) networks: 60 seconds
- For all other networks: 5 seconds

**Command Modes**

- Interface configuration

**Command History**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to set the hello interval to 10 seconds for the interface:

```bash
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp)# router-id 10.1.1.1
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# hello-interval 10
```
hold-time (EIGRP)

To configure the hold time for an interface, use the `hold-time` command in interface configuration mode. To restore the default value, use the `no` form of this command.

```
hold-time seconds

no hold-time
```

### Syntax Description

| seconds | Hold time (in seconds). Range is from 1 to 65535. |

### Defaults

Three times the default hello interval time of 15 seconds.

### Command Modes

Interface configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

On very congested and large networks, the default hold time might not be sufficient time for all routers to receive hello packets from their neighbors. In this case, you may want to increase the hold time.

We recommend that the hold time be at least three times the hello interval. If a router does not receive a hello packet within the specified hold time, routes through this router are considered unavailable.

Increasing the hold time delays route convergence across the network.

To ensure nonstop forwarding during RP failovers, we recommend that the hold time be increased to 30 seconds.

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
Examples

The following example shows how to set the hold time to 0 to 40 seconds for the interface:

RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp)# router-id 10.1.1.1
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# hold-time 40

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bandwidth (interface)</td>
<td>Sets a bandwidth value for an interface.</td>
</tr>
<tr>
<td>hello-interval (EIGRP)</td>
<td>Configures the hello interval for the EIGRP routing process designated by an autonomous system number.</td>
</tr>
</tbody>
</table>
interface (EIGRP)

To define the interfaces on which the Enhanced Interior Gateway Routing Protocol (EIGRP) routing protocol runs, use the `interface` command in the appropriate configuration mode. To disable EIGRP routing for interfaces, use the `no` form of this command.

```
interface type instance

no interface type instance
```

### Syntax Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
<tr>
<td>instance</td>
<td>Either a physical interface instance or a virtual interface instance:</td>
</tr>
<tr>
<td></td>
<td>• Physical interface instance. Naming notation is <code>rack/slot/module/port</code> and a slash mark between values is required as part of the notation.</td>
</tr>
<tr>
<td></td>
<td>• <code>rack</code>: Chassis number of the rack.</td>
</tr>
<tr>
<td></td>
<td>• <code>slot</code>: Physical slot number of the line card.</td>
</tr>
<tr>
<td></td>
<td>• <code>module</code>: Module number. A physical layer interface module (PLIM) is always 0.</td>
</tr>
<tr>
<td></td>
<td>• <code>port</code>: Physical port number of the interface.</td>
</tr>
<tr>
<td></td>
<td>• Virtual interface instance. Number range varies depending on interface type.</td>
</tr>
<tr>
<td></td>
<td>For more information about the syntax for the router, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>

### Defaults

When you do not specify this command in configuration mode, EIGRP routing for interfaces is not enabled.

### Command Modes

IPv4 address family configuration
IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `interface` command to associate a specific interface with an EIGRP process. The interface remains associated with the process even when the IPv4 address of the interface changes.
This command places the router in interface configuration mode, from which you can configure interface-specific settings. Commands configured under this mode (such as the **hello-interval** command) are automatically bound to that interface.

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to enter interface configuration mode for EIGRP process 1 and set the hello interval to 10 seconds for GigabitEthernet interface 0/1/0/0:

```bash
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp)# router-id 10.1.1.1
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# hello-interval 10
```
log-neighbor-changes

To enable the logging of changes in Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor adjacencies, use the **log-neighbor-changes** command in the appropriate configuration mode. To disable the logging of changes in EIGRP neighbor adjacencies, use the **no** form of this command.

```
log-neighbor-changes
no log-neighbor-changes
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

Adjacency changes are not logged.

**Command Modes**

IPv4 address family configuration

IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

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

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to enable logging of neighbor changes for EIGRP 1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# log-neighbor-changes
```
**log-neighbor-warnings**

To enable the logging of Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor warning messages, use the `log-neighbor-warnings` command in the appropriate configuration mode. To disable the logging of EIGRP neighbor warning messages, use the `no` form of this command.

```
log-neighbor-warnings
no log-neighbor-warnings
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

Neighbor warning messages are not logged.

**Command Modes**

IPv4 address family configuration  
IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `log-neighbor-warnings` command to disable and enable neighbor warning messages. When neighbor warning messages occur, they are not logged by default.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure log neighbor warning messages for EIGRP process 20:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 20
RP/0/RSP0/CPU0:router(config-eigrp) vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# log-neighbor-warnings
```
maximum-paths (EIGRP)

To control the maximum number of parallel routes that the Enhanced Interior Gateway Routing Protocol (EIGRP) can support, use the `maximum-paths` command in the appropriate configuration mode. To remove the `maximum-paths` command from the configuration file and restore the system to its default condition with respect to the routing protocol, use the `no` form of this command.

```
maximum-paths maximum

no maximum-paths
```

Syntax Description

<table>
<thead>
<tr>
<th>maximum</th>
<th>Maximum number of parallel routes that EIGRP can install in a routing table. Range is from 1 to 32 routes.</th>
</tr>
</thead>
</table>

Defaults

```
maximum: 4
```

Command Modes

IPv4 address family configuration
IPv4 VRF address family configuration

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `maximum-paths` command to allow the EIGRP protocol to install multiple paths into the routing table for each prefix. Multiple paths are installed for both internal and external routes, providing these routes are learned in the same autonomous system and that they are equal cost (according to the EIGRP best path algorithm).

For the Cisco ASR 9000 Series Routers, the maximum path range is from 1 to 32.

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td></td>
<td>read, write</td>
</tr>
</tbody>
</table>

Examples

The following example shows how to allow a maximum of 10 paths to a destination:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# maximum-paths 10
```
maximum-prefix (EIGRP)

To limit the number of prefixes that are accepted under a VRF address family by Enhanced Interior Gateway Routing Protocol (EIGRP), use the `maximum-prefix` command in IPv4 VRF address family configuration mode. To disable this function, use the `no` form of this command.

```
maximum-prefix maximum [threshold] [dampened] [reset-time minutes] [restart minutes]
[restart-count number] [warning-only]
```

```
no maximum-prefix maximum [threshold] [dampened] [reset-time minutes] [restart minutes]
[restart-count number] [warning-only]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
</table>
| `maximum` | Maximum number of prefixes allowed under an address family. Range is from 1 to 4294967295.  
  **Note** The number of prefixes that can be configured is limited only by the available system resources on the router. |
| `threshold` | (Optional) Syslog warning messages are specified as a percentage of the maximum prefix limit that was exceeded. The prefix percentage number range is from 1 to 100. The default is 75 percent. |
| `dampened` | (Optional) A decay penalty is applied to the restart time period each time the maximum prefix limit is exceeded. The half-life for the decay penalty is 150 percent of the default or user-defined restart time value in minutes. This keyword is disabled by default. |
| `reset-time minutes` | (Optional) The restart count is reset to 0 after the default or user-defined reset time period has expired. The range of values that can be applied with the `minutes` argument is from 1 to 65535 minutes. The default reset-time period is 15 minutes. |
| `restart minutes` | (Optional) A time period when router adjacencies are not formed or when redistributed routes are not accepted from the RIB after the maximum prefix limit has been exceeded. The value for the `minutes` argument is from 1 to 65535 minutes. The default restart time period is 5 minutes. |
| `restart-count number` | (Optional) Number of times a peering session is automatically reestablished after the peering session is torn down or after the redistribute route is cleared and relearned when the maximum prefix exceeds limits. The default restart count limit is 3.  
  **Caution** Once the restart count threshold is crossed, you need to use the `clear route` or `clear eigrp neighbors` command to reestablish normal peering and redistribution. |
| `warning-only` | (Optional) Configures the router to generate syslog messages only when the maximum prefix limit is reached, instead of terminating the peering session. |
maximum-prefix (EIGRP)

Defaults

- **threshold**: 75 percent
- **dampened**: False
- **reset-time**: 15 minutes
- **restart**: 5 minutes
- **restart-count**: 3
- **warning-only**: False

Command Modes

IPv4 VRF address family configuration

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **maximum-prefix** command to limit the number of prefixes that are accepted from all sources. When the maximum prefix limit is exceeded, sessions with remote peers are torn down, all routes learned from remote peers and through redistribution are removed from the topology and routing tables, and redistribution and peering are suspended for the default or user-defined time period.

Examples

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# maximum-prefix 50000
```

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear eigrp neighbors</td>
<td>Deletes EIGRP VPN neighbor entries from the table.</td>
</tr>
<tr>
<td>clear route</td>
<td>Deletes routes from the IP routing table.</td>
</tr>
</tbody>
</table>
**metric maximum-hops**

To advertise as unreachable those Enhanced Interior Gateway Routing Protocol (EIGRP) routes with a hop count higher than is specified by the command, use the `metric maximum-hops` command in the appropriate configuration mode. To reset the value to the default, use the `no` form of this command.

```
metric maximum-hops {hops-number}

no metric maximum-hops
```

**Syntax Description**

- `hops-number`: Maximum hop count. Range is from 1 to 255 hops.

**Defaults**

- `hops-number`: 100

**Command Modes**

- IPv4 address family configuration
- IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `metric maximum-hops` command to provide a safety mechanism that breaks any potential count-to-infinity problems. This command causes the EIGRP routing protocol to advertise as unreachable routes with a hop count greater than the value assigned to the hops-number argument.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure a hop count to 200 for a router that has a complex WAN generating a large hop count under normal (nonlooping) operations.

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# metric maximum-hops 200
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric weights</td>
<td>Allows the tuning of the EIGRP metric calculations.</td>
</tr>
</tbody>
</table>
metric weights

To allow the tuning of the Enhanced Interior Gateway Routing Protocol (EIGRP) metric calculations, use the **metric weights** command in the appropriate configuration mode. To reset the values to their defaults, use the **no** form of this command.

```plaintext
metric weights tos k1 k2 k3 k4 k5
no metric weights
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tos</td>
<td>Type of service (ToS) which must always be 0.</td>
</tr>
<tr>
<td>k1 k2 k3 k4 k5</td>
<td>Constants that convert an EIGRP metric vector into a scalar quantity. The range is 0 to 4294967295.</td>
</tr>
</tbody>
</table>

### Defaults

- **tos**: 0
- **k1**: 1
- **k2**: 0
- **k3**: 1
- **k4**: 0
- **k5**: 0

### Command Modes

- IPv4 address family configuration
- IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **metric weights** command to alter the default behavior of EIGRP routing and metric computation and allow the tuning of the EIGRP metric calculation for a particular ToS.

If k5 equals 0, the composite EIGRP metric is computed according to the following formula:

\[
\text{metric} = [k1 \times \text{bandwidth} + (k2 \times \text{bandwidth})/(256 - \text{load}) + k3 \times \text{delay}]
\]

If k5 does not equal zero, an additional operation is performed:

\[
\text{metric} = \text{metric} \times [k5/(\text{reliability} + k4)]
\]

Bandwidth is inverse minimum bandwidth of the path in BPS scaled by a factor of $2.56 \times 10^{12}$. The range is from a 1200-bps line to 10 terabits per second.
Delay is in units of 10 microseconds. The range of delay is from 10 microseconds to 168 seconds. A delay of all 1s indicates that the network is unreachable.

The delay parameter is stored in a 32-bit field, in increments of 39.1 nanoseconds. The range of delay is from 1 (39.1 nanoseconds) to hexadecimal FFFFFFFF (decimal 4,294,967,040 nanoseconds). A delay of all 1s (that is, a delay of hexadecimal FFFFFFFF) indicates that the network is unreachable.

Table 1 lists the default values used for several common media.

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Delay</th>
<th>Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite</td>
<td>5120 (2 seconds)</td>
<td>5120 (500 megabits)</td>
</tr>
<tr>
<td>Ethernet</td>
<td>25600 (1 milliseconds [ms])</td>
<td>256000 (10 megabits)</td>
</tr>
<tr>
<td>1.544 Mbps</td>
<td>512000 (20,000 ms)</td>
<td>1,657,856 bits</td>
</tr>
<tr>
<td>64 kbps</td>
<td>512000 (20,000 ms)</td>
<td>40,000,000 bits</td>
</tr>
<tr>
<td>56 kbps</td>
<td>512000 (20,000 ms)</td>
<td>45,714,176 bits</td>
</tr>
<tr>
<td>10 kbps</td>
<td>512000 (20,000 ms)</td>
<td>256,000,000 bits</td>
</tr>
<tr>
<td>1 kbps</td>
<td>512000 (20,000 ms)</td>
<td>2,560,000,000 bits</td>
</tr>
</tbody>
</table>

Reliability is given as a fraction of 255. That is, 255 is a reliability of 100 percent or a perfectly stable link. Load is given as a fraction of 255. A load of 255 indicates a completely saturated link.

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

The following example shows how to set the metric weights to change the default values:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# metric weights 0 2 0 2 0 0
```

<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric maximum-hops</td>
<td>Advertises as unreachable those EIGRP VPN routes with a hop count higher than is specified by the command.</td>
</tr>
</tbody>
</table>
neighbor (EIGRP)

To define a neighboring router with which to exchange Enhanced Interior Gateway Routing Protocol (EIGRP) information, use the `neighbor` command in interface configuration mode. To remove an entry, use the `no` form of this command.

```
neighbor ip-address

no neighbor ip-address
```

**Syntax Description**

- `ip-address` IP address of a peer router with which routing information is exchanged.

**Defaults**

No neighboring routers are defined.

**Command Modes**

Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `neighbor` command to permit the point-to-point (nonbroadcast) exchange of routing information. When it is used in combination with the `passive-interface` command in router configuration mode, routing information can be exchanged between a subset of routers and access servers on a LAN.

Multiple `neighbor` commands can be used to specify additional neighbors or peers.

**Task ID**

- `eigrp` read, write

**Examples**

The following example shows how to permit the sending of EIGRP updates to specific neighbors. One copy of the update is generated for each neighbor:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/1
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# neighbor 172.20.1.2
```
<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>passive-interface (EIGRP)</td>
<td>Suppresses routing updates on an EIGRP interface.</td>
</tr>
</tbody>
</table>
**neighbor maximum-prefix**

To limit the number of prefixes that are accepted from a single Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor or all EIGRP VPN neighbors, use the `neighbor maximum-prefix` command in IPv4 VRF address family configuration mode. To disable this function, use the no form of this command.

**Single-Neighbor Configuration CLI**

```
neighbor ip-address maximum-prefix maximum [threshold] [warning-only]
```

```
no neighbor ip-address maximum-prefix
```

**All-Neighbor Configuration CLI**

```
neighbor maximum-prefix maximum [threshold] [dampened] [reset-time minutes] [restart minutes] [restart-count number] [warning-only]
```

```
no neighbor maximum-prefix
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ip-address</code></td>
<td>(Optional) IP address of a single peer.</td>
</tr>
<tr>
<td><code>maximum</code></td>
<td>Maximum number of prefixes accepted. The range is from 1 to 4294967295.</td>
</tr>
<tr>
<td></td>
<td>Note  The number of prefixes that can be configured is limited only by the available system resources on the router.</td>
</tr>
<tr>
<td><code>threshold</code></td>
<td>(Optional) Syslog warning messages are specified as a percentage of the maximum prefix limit that was exceeded. The prefix percentage number range is from 1 to 100. The default is 75 percent.</td>
</tr>
<tr>
<td><code>dampened</code></td>
<td>(Optional) Configures a decay penalty to be applied to the restart time period each time the maximum prefix limit is exceeded. The half-life for the decay penalty is 150 percent of the default or user-defined restart time value in minutes. This keyword is disabled by default.</td>
</tr>
<tr>
<td><code>reset-time minutes</code></td>
<td>(Optional) Configures the router to reset the restart count to 0 after the default or configured reset time period has expired. The range is from 1 to 65535 minutes.</td>
</tr>
<tr>
<td><code>restart minutes</code></td>
<td>(Optional) Configures a time period in which the router does not form adjacencies or accept redistributed routes from the RIB after the maximum prefix limit has been exceeded. The range is from 1 to 65535 minutes.</td>
</tr>
</tbody>
</table>
**neighbor maximum-prefix**

(Required) Configures the number of times a peering session can be automatically reestablished after the peering session has been torn down or a redistribute route has been cleared and relearned because the maximum prefix limit has been exceeded.

⚠️ **Caution** After the restart count threshold is crossed, you need to use the `clear eigrp neighbors` command to reestablish normal peering, redistribution, or both.

**warning-only**

(Optional) Configures the router to generate syslog messages only when the maximum prefix limit is reached, instead of terminating the peering session.

**Defaults**

- **threshold:** 75 percent
- **dampened:** disabled
- **warning-only:** disabled
- **reset-time:** 15 minutes
- **restart:** 5 minutes
- **restart-count:** 3

**Command Modes**

IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The `neighbor maximum-prefix` command is configured to protect an individual peering session or all peering sessions. When this feature is enabled and the maximum prefix limit is exceeded, the router tears down the peering session, clears all routes that are learned from the peer, and then places the peer in a penalty state for the default or user-defined time period. After the penalty time period expires, normal peering is reestablished.

**Note**

In EIGRP, `neighbor` commands have been used traditionally to configure static neighbors. In the context of this feature, however, the `neighbor maximum-prefix` command can be used to configure the maximum prefix limit for both statically configured and dynamically discovered neighbors.

When configuring the `neighbor maximum-prefix` command to protect a single peering session, just the maximum prefix limit, percentage threshold, and warning only configuration options can be configured. Session dampening, restart, and reset timers are configured on a global basis.
neighbor maximum-prefix

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

**Configuring the Maximum Prefix Limit for a Single Peer**

The following example shows how to configure the maximum prefix limit for a single peer. The maximum limit is set to 1000 prefixes, and the warning threshold is set to 80 percent. When the maximum prefix limit is exceeded, the session with this peer is torn down, all routes learned from this peer are removed from the topology and routing tables, and this peer is placed in a penalty state for 5 minutes (default penalty value).

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# neighbor 10.0.0.1 maximum-prefix 1000 80
```

**Configuring the Maximum Prefix Limit for All Peers**

The following example shows how to configure the maximum prefix limit for all peers. The maximum limit is set to 10,000 prefixes, the warning threshold is set to 90 percent, the restart timer is set to 4 minutes, a decay penalty is configured for the restart timer with the *dampened* keyword, and all timers are configured to be reset to 0 every 60 minutes. When the maximum prefix limit is exceeded, all peering sessions are torn down, all routes learned from all peers are removed from the topology and routing tables, and all peers are placed in a penalty state for 4 minutes (user-defined penalty value). A dampening exponential decay penalty is also applied.

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vrf1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# neighbor maximum-prefix 10000 90 dampened
  reset-time 60 restart4
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear eigrp neighbors</td>
<td>Deletes EIGRP and VRF neighbor entries from the appropriate tables.</td>
</tr>
</tbody>
</table>
### next-hop-self disable

To instruct the Enhanced Interior Gateway Routing Protocol (EIGRP) process to use the received next-hop value when advertising these routes, use the `next-hop-self disable` command in interface configuration mode. To revert to the default, use the `no` form of this command.

```
next-hop-self disable

no next-hop-self disable
```

#### Syntax Description

This command has no arguments or keywords.

#### Defaults

EIGRP always sets the IP next-hop value to be itself.

#### Command Modes

Interface configuration

#### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

#### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

EIGRP, by default, sets the IP next-hop value to be itself for routes that it is advertising, even when advertising those routes on the same interface from which learned them. To change this default, you must use the `next-hop-self disable` interface configuration command to instruct EIGRP to use the received next-hop value when advertising these routes.

#### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

#### Examples

The following example shows how to change the default IP next-hop value and instruct EIGRP to use the received next-hop value:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# next-hop-self disable
```
passive-interface (EIGRP)

To suppress routing updates on an Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the `passive-interface` command in interface configuration mode. To reenable the sending of routing updates, use the `no` form of this command.

```
passive-interface
no passive-interface
```

**Syntax Description**
This command has no arguments or keywords.

**Defaults**
Routing updates are sent on the interface.

**Command Modes**
Interface configuration

**Command History**
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `passive-interface` command to disable the sending of routing updates on an interface. The particular subnet continues to advertise to other interfaces, and updates from other routers on that interface continue to be received and processed.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**
The following example shows how to send EIGRP routing updates to all interfaces except GigabitEthernet interface 0/1/0/0:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# passive-interface
```
**redistribute (EIGRP)**

To inject routes from one routing domain into Enhanced Interior Gateway Routing Protocol (EIGRP), use the `redistribute` command in the appropriate configuration mode. To remove the `redistribute` command from the configuration file and restore the system to its default condition in which the software does not redistribute routes, use the `no` form of this command.

```
redistribute { { bgp | connected | isis | ospf | rip | static } [ as-number | instance-name ] } [ route-policy name ]
```

```
no redistribute { { bgp | connected | isis | ospf | rip | static } [ as-number | instance-name ] }
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>bgp</code></td>
<td>Distributes routes from the BGP protocol.</td>
</tr>
<tr>
<td><code>connected</code></td>
<td>Distributes routes that are established automatically by virtue of having enabled IP on an interface.</td>
</tr>
<tr>
<td><code>isis</code></td>
<td>Distributes routes from the IS-IS protocol.</td>
</tr>
<tr>
<td><code>ospf</code></td>
<td>Distributes routes from the OSPF protocol. This protocol is supported in the IPv4 address family.</td>
</tr>
<tr>
<td><code>static</code></td>
<td>Redistributes IP static routes.</td>
</tr>
<tr>
<td><code>as-number</code></td>
<td>Represents one of the following three options:</td>
</tr>
<tr>
<td><code>instance-name</code></td>
<td>• For the <code>bgp</code> keyword, a 2-byte or 4-byte autonomous system number. Range for 2-byte numbers is 1 to 65535. Range for 4-byte numbers is 1.0 to 65535.65535.</td>
</tr>
<tr>
<td></td>
<td>• For the <code>isis</code> keyword, an IS-IS instance name from which routes are to be redistributed. The value takes the form of a string. A decimal number can be entered, but it is stored internally as a string.</td>
</tr>
<tr>
<td></td>
<td>• For the <code>ospf</code> keyword, an OSPF instance name from which routes are to be redistributed. The value takes the form of a string. A decimal number can be entered, but it is stored internally as a string.</td>
</tr>
<tr>
<td><code>route-policy name</code></td>
<td>(Optional) Specifies the identifier of a configured policy. A policy is used to filter the importation of routes from this source routing protocol to EIGRP.</td>
</tr>
</tbody>
</table>

**Defaults**

Route redistribution is disabled.

**Command Modes**

IPv4 address family configuration
IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>
Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Redistributed routing information should always be filtered by the `route-policy name` keyword and argument. This filtering ensures that only those routes intended by the administrator are redistributed by EIGRP.

A default metric is usually required to redistribute routes from another protocol into EIGRP. The metric is configured through the `default-metric` command or under the route policy configured with the `redistribute` command. The one exception to this requirement is when EIGRP redistributes BGP routes on a provider edge (PE) router in an MPLS-VPN scenario. If the originating protocol of the route is EIGRP with the same autonomous system (as in MPLS-VPN), the metric would be learned automatically from the extended communities of the BGP route.

For information about routing policies, see the `Routing Policy Commands on Cisco ASR 9000 Series Routers` module of the `Cisco ASR 9000 Series Aggregation Services Router Routing Command Reference`.

Task ID | Task ID | Operations
--- | --- | ---
eigrp | | read, write

Examples

The following example shows how to cause BGP routes to be redistributed into an EIGRP autonomous system:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# redistribute bgp 100
```

The following example shows how to redistribute the specified IS-IS process routes into an EIGRP autonomous system within a VPN routing and forwarding instance (VRF). The IS-IS routes are redistributed using route policy 3.

```
RP/0/RSP0/CPU0:router(config)# router eigrp 109
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vpn-1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# redistribute isis 108 route-policy 3
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>default-metric (EIGRP)</td>
<td>Sets metrics for an EIGRP.</td>
</tr>
</tbody>
</table>
redistribute maximum-prefix

To limit the number of prefixes redistributed into an Enhanced Interior Gateway Routing Protocol (EIGRP) process, use the `redistribute maximum-prefix` command in IPv4 VRF address family configuration mode. To disable this function, use the `no` form of this command.

```
redistribute maximum-prefix maximum [threshold] [[dampened] [reset-time minutes] [restart minutes] [restart-count number] | [warning-only]]
```

```
o redistribute maximum-prefix
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>maximum</code></td>
<td>Maximum number of prefixes that are redistributed into EIGRP under an address-family. The range is from 1 to 4294967295.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>The number of prefixes that can be configured is limited only by the available system resources on the router.</td>
</tr>
<tr>
<td><code>threshold</code></td>
<td>(Optional) Syslog warning messages are specified as a percentage of the maximum prefix limit that was exceeded. The prefix percentage number range is from 1 to 100. The default is 75 percent.</td>
</tr>
<tr>
<td><code>restart minutes</code></td>
<td>(Optional) Configures a time period in which the router will not form adjacencies or accept redistributed routes from the RIB after the maximum-prefix limit has been exceeded. The value for the minutes argument is from 1 to 65535 minutes.</td>
</tr>
<tr>
<td><code>restart-count number</code></td>
<td>(Optional) Configures the number of times a peering session can be automatically reestablished after the peering session has been torn down or after the redistribute route has been cleared and relearned because the maximum prefix limit has been exceeded.</td>
</tr>
<tr>
<td><code>reset-time minutes</code></td>
<td>(Optional) Configures the router to reset the restart count to 0 after the default or configured reset time period has expired. The value for the minutes argument is from 1 to 65535 minutes.</td>
</tr>
<tr>
<td><code>dampened</code></td>
<td>(Optional) Configures a decay penalty to be applied to the restart time period each time the maximum prefix limit is exceeded. The half-life for the decay penalty is 150 percent of the default or user-defined restart time value in minutes.</td>
</tr>
<tr>
<td><code>warning-only</code></td>
<td>(Optional) Configures the router to only generate syslog messages when the maximum prefix limit is reached, instead of suspending redistribution.</td>
</tr>
</tbody>
</table>

### Caution

After the restart count threshold has been crossed, you will need to enter the `process restart eigrp` command to reestablish normal peering, redistribution, or both.

### Defaults

- `threshold`: 75 percent
- `warning-only`: disabled
- `reset-time`: 15 minutes
**redistribute maximum-prefix**

**restart**: 5 minutes  
**restart-count**: 3  
**dampened**: disabled

**Command Modes**  
IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `redistribute maximum-prefix` command to configure limit prefixes learned through redistribution. When the maximum prefix limit is exceeded, all routes learned from the Routing Information Base (RIB) are discarded and redistribution is suspended for the default or user-defined time period. The maximum prefix limit that can be configured for redistributed prefixes is limited only by the available system resources on the router.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure the maximum prefix limit for routes learned through redistribution. The maximum limit is set to 5000 prefixes, and the warning threshold is set to 95 percent. When the number of prefixes learned through redistribution reaches 4750 (95 percent of 5000), warning messages are displayed in the console. Because the `warning-only` keyword is configured, the topology and routing tables are not cleared and route redistribution is not placed in a penalty state.

```
RP/0/0/CPU0:router(config)# router eigrp 100
RP/0/0/CPU0:router(config-eigrp)# vrf vpn-1
RP/0/0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/0/CPU0:router(config-eigrp-vrf-af)# redistribute maximum-prefix 5000 95 warning-only
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>process</td>
<td>To start, terminate, or restart a process.</td>
</tr>
</tbody>
</table>
route-policy (EIGRP)

To apply a routing policy to updates advertised to or received from an Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor, use the `route-policy` command in the appropriate configuration mode. To disable applying routing policy to updates, use the `no` form of this command.

```
route-policy route-policy-name {in | out}
```

```
no route-policy route-policy-name {in | out}
```

Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>route-policy-name</td>
<td>Name of route policy.</td>
</tr>
<tr>
<td>in</td>
<td>Applies policy to inbound routes.</td>
</tr>
<tr>
<td>out</td>
<td>Applies policy to outbound routes.</td>
</tr>
</tbody>
</table>

Defaults

No policy is applied.

Command Modes

IPv4 address family configuration
IPv4 VRF address family configuration
Interface configuration

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `route-policy` command to specify a routing policy for an inbound or outbound route. The policy can be used to filter routes or modify route attributes.

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

Examples

The following example shows how to apply the In-Ipv4 policy to inbound IP Version 4 (IPv4) routes:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# route-policy IN-IPv4 in
```
router eigrp

To configure a routing process and enter router configuration mode for Enhanced Interior Gateway Routing Protocol (EIGRP), use the `router eigrp` command in global configuration mode. To turn off the EIGRP routing process, use the `no` form of this command.

```
router eigrp as-number

no router eigrp as-number
```

**Syntax Description**

- `as-number` (Optional) Autonomous system number. Range is from 1 to 65535.

**Defaults**

No routing process is defined.

**Command Modes**

Global

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Only one instance of EIGRP is supported.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure a routing process for EIGRP:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)#
```
router-id (EIGRP)

To configure a router ID for an Enhanced Interior Gateway Routing Protocol (EIGRP) process, use the `router-id` command in the appropriate configuration mode. To cause the software to use the default method of determining the router ID, use the `no` form of this command.

```
router-id router-id
no router-id
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>router-id</code> 32-bit router ID value specified in four-part, dotted-decimal notation.</td>
</tr>
</tbody>
</table>

### Defaults

If this command is not configured, EIGRP chooses an IPv4 address as the router ID from one of its interfaces.

### Command Modes

IPv4 address family configuration
IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

It is good practice to use the `router-id` command to explicitly specify a unique 32-bit numeric value for the router ID. This action ensures that EIGRP can function regardless of the interface address configuration.

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to assign the IP address of 172.20.1.1 to the EIGRP process 1:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# router-id 172.20.1.1
```
show eigrp accounting

To display prefix accounting information for Enhanced Interior Gateway Routing Protocol (EIGRP) processes, use the `show eigrp accounting` command in EXEC mode.

```
show eigrp [as-number] [vrf {vrf-name | all}] [ipv4] accounting
```

**Syntax Description**

- `as-number` *(Optional)* Autonomous system number. This option is available when a VPN routing and forwarding (VRF) instance is not specified. Range is from 1 to 65535.

- `vrf {vrf-name | all}` *(Optional)* Specifies a particular VPN routing and forwarding instance (VRF) or all VRF instances.

- `[ipv4]` *(Optional)* Specifies the IPv4 address family.

**Defaults**

This command has no arguments or keywords.

**Command Modes**

EXEC

**Command History**

- **Release 3.7.2** This command was introduced on Cisco ASR 9000 Series Routers.

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

**Task ID**

- **Task ID** EIGRP
- **Operations** read

**Examples**

The following is sample output from the `show eigrp accounting` command:

```
RP/0/RSP0/CPU0:router# show eigrp accounting

IP-EIGRP accounting for AS(100)/ID(10.0.2.1) Routing Table: RED
Total Prefix Count: 4 States: A-Adjacency, P-Pending, D-Down

State Address/Source        Interface    Prefix Count  Restart Count  Restart/Reset(s)
---------------------------- ----------------- --------------- ----------------- -----------
P   Redistribution          ------          0              3               211
A   10.0.1.2                Gi0/6/0/0/0/    2              0               84
P   10.0.2.4                Gi0/2/0/3       0              2               114
D   10.0.1.3                Gi0/6/0/0/0/    0              3               0
```
Connected and summary routes are not listed individually in the output of this command but are counted in the total aggregate count for each process.

Table 2 describes the significant fields shown in the display.

**Table 2  ** * show eigrp accounting Field Descriptions *

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIGRP accounting for AS</td>
<td>Identifies the EIGRP instance along with the AS number, router ID and table ID.</td>
</tr>
<tr>
<td>Total Prefix Count</td>
<td>Shows the aggregate sum of the prefixes in an EIGRP instance topology table. The count includes prefixes learned from all neighbors or from redistribution.</td>
</tr>
<tr>
<td>States: A-Adjacency, P-Pending, D-Down</td>
<td>A-Adjacency: Indicates a stable adjacency with the neighbor or a normal redistribution state. P-Pending: Neighbor adjacency or redistribution is suspended or in a penalized state because the maximum prefix limit was exceeded. D-Down: Neighbor adjacency or redistribution is suspended permanently until a manual reset is performed with the <code>clear route</code> command.</td>
</tr>
<tr>
<td>Address/Source</td>
<td>Shows the peer IP address of the redistribution source.</td>
</tr>
<tr>
<td>Prefix Count</td>
<td>Displays the total number of learned prefixes by source. <em>Note</em> Routes can be learned for the same prefix from multiple sources, and the sum of all prefix counts in this column may be greater than the figure displayed in the Prefix Count field.</td>
</tr>
<tr>
<td>Restart Count</td>
<td>Number of times a route source exceeded the maximum prefix limit.</td>
</tr>
<tr>
<td>Restart Reset(s)</td>
<td>Displays the time, in seconds, that a route source is in a P (penalized) state. If the route source is in an A (stable or normal) state, the displayed time, in seconds, is the time period until penalization history is reset.</td>
</tr>
</tbody>
</table>
show eigrp interfaces

To display information about interfaces configured for Enhanced Interior Gateway Routing Protocol (EIGRP), use the `show eigrp interfaces` command in EXEC mode.

```
show eigrp [as-number] [vrf {vrf-name | all}] [ipv4] interfaces [type instance] [detail]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>as-number</code></td>
<td>(Optional) Autonomous system number. This option is available when a VPN routing and forwarding (VRF) instance is not specified. Range is from 1 to 65535.</td>
</tr>
<tr>
<td>`vrf {vrf-name</td>
<td>all}`</td>
</tr>
<tr>
<td><code>[ipv4]</code></td>
<td>(Optional) Specifies the IPv4 address family.</td>
</tr>
<tr>
<td><code>type</code></td>
<td>(Optional) Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
<tr>
<td><code>instance</code></td>
<td>(Optional) Either a physical interface instance or a virtual interface instance. Specifying these arguments removes the specified interface type from the neighbor table that all entries learned via this interface.</td>
</tr>
<tr>
<td><code>detail</code></td>
<td>(Optional) Displays detailed EIGRP interface information.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no arguments or keywords.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>
To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `show eigrp interfaces` command to determine on which interfaces EIGRP is active and learn information about EIGRP related to those interfaces.

If an interface is specified, only that interface is displayed. Otherwise, all interfaces on which EIGRP is running are displayed.

If an autonomous system is specified, only the routing process for the specified autonomous system is displayed. Otherwise, all EIGRP processes are displayed.

---

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIGRP</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

The following is sample output from the `show eigrp interfaces` command:

```
RP/0/RSP0/CPU0:router# show eigrp interfaces

IP EIGRP interfaces for process 1

<table>
<thead>
<tr>
<th>Interface</th>
<th>Peers</th>
<th>Xmit Queue Un/Reliable</th>
<th>Mean SRTT</th>
<th>Pacing Time Un/Reliable</th>
<th>Multicast Flow Timer</th>
<th>Pending Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gi0/6/0/2.212</td>
<td>0</td>
<td>0/0</td>
<td>0</td>
<td>11/434</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gi0/6/0/0</td>
<td>1</td>
<td>0/0</td>
<td>337</td>
<td>0/10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gi0/2/0/3</td>
<td>1</td>
<td>0/0</td>
<td>10</td>
<td>1/63</td>
<td>103</td>
<td>0</td>
</tr>
<tr>
<td>Gi0/6/2/5</td>
<td>1</td>
<td>0/0</td>
<td>330</td>
<td>0/16</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
```

RP/0/RSP0/CPU0:router#

Table 3 describes the significant fields shown in the display.

**Table 3** `show eigrp interfaces Field Descriptions`

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>Interface over which EIGRP is configured.</td>
</tr>
<tr>
<td>Peers</td>
<td>Number of directly connected EIGRP neighbors.</td>
</tr>
<tr>
<td>Xmit Queue Un/Reliable</td>
<td>Number of packets remaining in the unreliable and reliable transmit queues.</td>
</tr>
<tr>
<td>Mean SRTT</td>
<td>Mean smoothed round-trip time (SRTT) internal (in milliseconds).</td>
</tr>
<tr>
<td>Pacing Time Un/Reliable</td>
<td>Pacing time used to determine when EIGRP packets should be sent out the interface (unreliable and reliable packets).</td>
</tr>
<tr>
<td>Multicast Flow Timer</td>
<td>Maximum number of seconds in which the router sends multicast EIGRP packets.</td>
</tr>
<tr>
<td>Pending Routes</td>
<td>Number of routes in the packets in the transmit queue waiting to be sent.</td>
</tr>
</tbody>
</table>
The following is sample output from the `show eigrp interfaces` command when issued with the `detail` keyword:

```
RP/0/RSP0/CPU0:router# show eigrp interfaces detail

IP-EIGRP interfaces for AS 1

<table>
<thead>
<tr>
<th>Interface</th>
<th>Xmit Queue</th>
<th>Peers</th>
<th>Un/Reliable</th>
<th>Mean</th>
<th>Pacing Time</th>
<th>Un/Reliable</th>
<th>Multicast</th>
<th>Pending</th>
<th>Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gi0/6/0/0</td>
<td></td>
<td>1</td>
<td></td>
<td>0/0</td>
<td>3</td>
<td>0/10</td>
<td>50</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Hello interval is 5 sec, hold time is 15 sec
Next xmit serial <none>
Un/reliable mcasts: 0/4 Un/reliable ucasts: 6/3
Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 1
Retransmissions sent: 0 Out-of-sequence rcvd: 1
Bandwidth percent is 50
Authentication mode is not set

RP/0/RSP0/CPU0:router#
```

Table 4 describes the significant fields shown in the display.

### Table 4  show eigrp interfaces detail Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hello interval</td>
<td>Hello packet transmission interval.</td>
</tr>
<tr>
<td>hold time</td>
<td>Hold time announced to neighbors. If neighbors do not get hello packets from the router for this period, neighbors declare that the neighbor relationship is down.</td>
</tr>
<tr>
<td>Next xmit serial</td>
<td>Next transmission serial number.</td>
</tr>
<tr>
<td>Un/reliable mcasts</td>
<td>Number of unreliable and reliable multicast packets sent on this interface.</td>
</tr>
<tr>
<td>Un/reliable ucasts</td>
<td>Number of unreliable and reliable unicast packets sent on this interface.</td>
</tr>
<tr>
<td>Mcast exceptions</td>
<td>Number of multicast exceptions (sequence TLVs).</td>
</tr>
<tr>
<td>CR packets</td>
<td>Number of packets sent with the conditional receive bit set.</td>
</tr>
<tr>
<td>ACKs suppresses</td>
<td>Number of ACK packets suppressed.</td>
</tr>
<tr>
<td>Retransmissions</td>
<td>Number of retransmissions sent on this interface.</td>
</tr>
<tr>
<td>Out-of-sequence rcvd</td>
<td>Number of packets received out of sequence.</td>
</tr>
<tr>
<td>Bandwidth percent</td>
<td>Configured percent of bandwidth.</td>
</tr>
<tr>
<td>Authentication</td>
<td>Mode of authentication.</td>
</tr>
</tbody>
</table>

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>show eigrp neighbors</td>
<td>Displays the neighbors discovered by EIGRP.</td>
</tr>
</tbody>
</table>
**show eigrp neighbors**

To display information about neighbors discovered by Enhanced Interior Gateway Routing Protocol (EIGRP), use the `show eigrp neighbors` command in EXEC mode.

```
show eigrp [as-number] [vrf {vrf-name | all}] [ipv4] neighbors [detail] [interface-type interface-instance] [static]
```

**Syntax Description**

- `as-number` (Optional) Autonomous system number. This option is available when a VPN routing and forwarding (VRF) instance is not specified. Range is from 1 to 65535.

- `vrf {vrf-name | all}` (Optional) Specifies a particular VPN routing and forwarding instance (VRF) or all VRF instances.

- `[ipv4]` (Optional) Specifies the IPv4 address family.

- `detail` (Optional) Displays detailed EIGRP neighbor information.

- `interface-type` (Optional) Interface type. For more information, use the question mark (?) online help function.

- `interface-instance` (Optional) Either a physical interface instance or a virtual interface instance.

  Specifying these arguments removes the specified interface type from the neighbor table that all entries learned via this interface.

  - Physical interface instance. Naming notation is `rack/slot/module/port` and a slash mark between values is required as part of the notation.
    - `rack`: Chassis number of the rack.
    - `slot`: Physical slot number of the line card.
    - `module`: Module number. A physical layer interface module (PLIM) is always 0.
    - `port`: Physical port number of the interface.

  - Virtual interface instance. Number range varies depending on interface type.

  For more information about the syntax for the router, use the question mark (?) online help function.

- `static` (Optional) Displays static routes.

**Defaults**

No default behavior or values

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>
EIGRP Commands on Cisco ASR 9000 Series Routers

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `show eigrp neighbors` command to determine when neighbors become active and inactive. This command is also useful for debugging certain types of transport problems.

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIGRP</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

The following is sample output from the `show eigrp neighbors` command:

```
RP/0/RSP0/CPU0:router# show eigrp neighbors
IP-EIGRP Neighbors for process 77
Address             Interface     Holdtime (secs) Uptime (h:m:s)  Q Count Seq Num SRTT (ms) RTO (ms)
172.16.81.28        Gi0/2/0/3     13            0:00:41   0          11     4      20
172.16.80.28        Gi0/6/0/0      14           0:02:01   0          11     4      20
172.16.80.31        Gi0/6/2/5      12           0:02:02   0          10     12     24
RP/0/RSP0/CPU0:router#
```

Table 5 describes the significant fields shown in the display.

Table 5  `show eigrp neighbors` Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>process</td>
<td>Autonomous system number specified in the router configuration command.</td>
</tr>
<tr>
<td>Address</td>
<td>IP address of the EIGRP peer.</td>
</tr>
<tr>
<td>Interface</td>
<td>Interface on which the router is receiving hello packets from the peer.</td>
</tr>
<tr>
<td>Holdtime</td>
<td>Length of time (in seconds) that the Cisco IOS XR software waits to hear from the peer before declaring that the peer is down.</td>
</tr>
<tr>
<td>Uptime</td>
<td>Elapsed time (in hours, minutes, and seconds) since the local router first heard from this neighbor.</td>
</tr>
<tr>
<td>Q Count</td>
<td>Number of EIGRP packets (update, query, and reply) that the software waits to send.</td>
</tr>
<tr>
<td>Seq Num</td>
<td>Sequence number of the last update, query, or reply packet that was received from this neighbor.</td>
</tr>
</tbody>
</table>
The following is sample output from the `show eigrp neighbors` command when issued with the `detail` keyword:

```
RP/0/RSP0/CPU0:router# show eigrp neighbors detail
IP-EIGRP neighbors for AS 1
H   Address                Interface       Hold  Uptime   SRTT   RTO  Q  Seq
    (sec)                     (ms)          Cnt  Num
0   11.0.0.10               Gi0/6/0/0         14 01:00:52    3   200  0  10

Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 3
```

`Table 6` describes the significant fields shown in the display.

```text
Table 6  show eigrp neighbors detail Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>Version of EIGRP software (major.minor) running on the node and neighbor.</td>
</tr>
<tr>
<td>Retrans</td>
<td>Number of retransmissions sent to this neighbor.</td>
</tr>
<tr>
<td>Retries</td>
<td>Number of retransmissions sent to this neighbor since the last acknowledgement (ACK).</td>
</tr>
<tr>
<td>Prefixes</td>
<td>Number of prefixes learned from this neighbor.</td>
</tr>
</tbody>
</table>
```
show eigrp topology

To display the Enhanced Interior Gateway Routing Protocol (EIGRP) topology table, use the `show eigrp topology` command in EXEC mode.

```
show eigrp [as-number] [vrf {vrf-name | all}] [ipv4] topology [ip-address mask] [active | all-links | detail-links | pending | summary | zero-successors]
```

**Syntax Description**

- **as-number** (Optional) Autonomous system number. This option is available when a VPN routing and forwarding (VRF) instance is not specified. Range is from 1 to 65535.
- **vrf {vrf-name | all}** (Optional) Specifies a particular VPN routing and forwarding instance (VRF) or all VRF instances.
- **[ipv4]** (Optional) Specifies the IPv4 address family.
- **ip-address** (Optional) IP address in four-part, dotted-decimal notation.
- **mask** (Optional) Network mask specified in either of two ways:
  - Network mask can be a four-part, dotted decimal address. For example, 255.0.0.0 indicates that each bit equal to 1 means the corresponding address bit is a network address.
  - Network mask can be indicated as a slash (/) and number. For example, /8 indicates that the first 8 bits of the mask are 1s, and the corresponding bits of the address are the network address.
- **active** (Optional) Displays only active entries in the EIGRP topology table.
- **all-links** (Optional) Displays all entries in the EIGRP topology table.
- **detail-links** (Optional) Displays detailed information for all entries in the EIGRP topology table.
- **pending** (Optional) Displays all entries in the EIGRP topology table that are waiting for an update from a neighbor or are waiting to reply to a neighbor.
- **summary** (Optional) Displays a summary of the EIGRP topology table.
- **zero-successors** (Optional) Displays available routes in the EIGRP topology table.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When the `show eigrp topology` command is used without any keywords or arguments, only routes that are feasible successors are displayed.
The `show eigrp topology` command can be used to determine Diffusing Update Algorithm (DUAL) states and to debug possible DUAL problems.

### Examples

The following is sample output from the `show eigrp topology` command. The EIGRP metrics for specified internal routes and external routes are displayed.

```
RP/0/RSP0/CPU0:router# show eigrp topology 10.2.1.0/24

IP-EIGRP (AS 1): Topology entry for 10.2.1.0/24
State is Passive, Query origin flag is 1, 1 Successor(s), FD is 281600
Routing Descriptor Blocks:
  0.0.0.0 (GigabitEthernet0/6/0/0), from Connected, Send flag is 0x0
  Composite metric is (281600/0), Route is Internal
  This is the internal route.
  Vector metric:
    Minimum bandwidth is 10000 Kbit
    Total delay is 1000 microseconds
    Reliability is 255/255
    Load is 1/255
    Minimum MTU is 1500
    Hop count is 0

RP/0/RSP0/CPU0:router# show eigrp topology 10.4.80.0/20

IP-EIGRP (AS 1): Topology entry for 10.4.80.0/20
State is Passive, Query origin flag is 1, 1 Successor(s), FD is 409600
Routing Descriptor Blocks:
  10.2.1.1 (GigabitEthernet0/6/0/0), from 10.2.1.1, Send flag is 0x0
  Composite metric is (409600/128256), Route is External
  Vector metric:
    Minimum bandwidth is 10000 Kbit
    Total delay is 6000 microseconds
    Reliability is 255/255
    Load is 1/255
    Minimum MTU is 1500
    Hop count is 1
  External data:
    Originating router is 10.89.245.1
    AS number of route is 0
    External protocol is Connected, external metric is 0
    Administrator tag is 0 (0x00000000)

RP/0/RSP0/CPU0:router#
```

Table 7 describes the significant fields shown in the display.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query origin</td>
<td>Query origin state.</td>
</tr>
<tr>
<td>Successors</td>
<td>Number of feasible successors for this prefix.</td>
</tr>
<tr>
<td>FD</td>
<td>Feasible distance for this prefix.</td>
</tr>
<tr>
<td>10.2.1.1 (Gi0/0)</td>
<td>Next-hop and interface from which this path was learned.</td>
</tr>
</tbody>
</table>
### Table 7  show eigrp topology Field Descriptions (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>from 10.2.1.1</td>
<td>Information source for this path.</td>
</tr>
<tr>
<td>Send flag</td>
<td>Indicates if the sending of this prefix is pending to this neighbor.</td>
</tr>
<tr>
<td>Composite Metric</td>
<td>The first number is the EIGRP metric that represents the cost to the destination. The second number is the EIGRP metric that this peer advertised.</td>
</tr>
<tr>
<td>Route is</td>
<td>Type of route (internal or external).</td>
</tr>
<tr>
<td>Vector Metric</td>
<td>Shows the metric (bandwidth, delay, reliability, load, MTU, and hop count) advertised by the neighbor.</td>
</tr>
<tr>
<td>External Data</td>
<td>Shows the external information (originating router ID, AS number, external protocol, metric, and tag) advertised by the neighbor.</td>
</tr>
</tbody>
</table>
show eigrp traffic

To display the number of Enhanced Interior Gateway Routing Protocol (EIGRP) packets sent and received, use the `show eigrp traffic` command in EXEC mode.

```
show eigrp [as-number] [vrf {vrf-name | all}] [ipv4] traffic
```

**Syntax Description**

- **as-number** (Optional) Autonomous system number. This option is available when a VPN routing and forwarding (VRF) instance is not specified. Range is from 1 to 65535.
- **vrf {vrf-name | all}** (Optional) Specifies a particular VPN routing and forwarding instance (VRF) or all VRF instances.
- **ipv4** (Optional) Specifies the IPv4 address family.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `show eigrp traffic` command to find the number of packets sent and received.

In addition, this command is useful in determining whether packets from one node are not reaching the neighboring node due to connectivity or configuration problems.

**Examples**

The following is sample output from the `show eigrp traffic` command:

```
RP/0/RSP0/CPU0:router# show eigrp traffic

IP-EIGRP Traffic Statistics for AS 1

    Hellos sent/received: 736/797
    Updates sent/received: 6/6
    Queries sent/received: 0/1
    Replies sent/received: 1/0
    Acks sent/received: 6/6
    Input queue high water mark 0, 0 drops
    SIA-Queries sent/received: 0/0
    SIA- Replies sent/received: 0/0
```
Table 8 describes the significant fields shown in the display.

**Table 8  show eigrp traffic Field Descriptions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>Autonomous system number specified in the <code>router eigrp</code> command.</td>
</tr>
<tr>
<td>Hellos sent/received</td>
<td>Number of hello packets sent and received.</td>
</tr>
<tr>
<td>Updates sent/received</td>
<td>Number of update packets sent and received.</td>
</tr>
<tr>
<td>Queries sent/received</td>
<td>Number of query packets sent and received.</td>
</tr>
<tr>
<td>Replies sent/received</td>
<td>Number of reply packets sent and received.</td>
</tr>
<tr>
<td>Acks sent/received</td>
<td>Number of acknowledgment packets sent and received.</td>
</tr>
<tr>
<td>Input queue high water mark</td>
<td>Maximum number of packets in the input queue and number of drops.</td>
</tr>
<tr>
<td>SIA-Queries sent/received</td>
<td>Number of Stuck-in-Active query packets sent and received.</td>
</tr>
<tr>
<td>SIA-Replies sent/received</td>
<td>Number of Stuck-in-Active reply packets sent and received.</td>
</tr>
</tbody>
</table>
show protocols (EIGRP)

To display information about the Enhanced Interior Gateway Routing Protocol (EIGRP) process configuration, use the show protocols command in EXEC mode:

```
show protocols [ipv4| afi-all] [all | protocol] [default-context | vrf vrf-name] [private]
```

**Syntax Description**

- **ipv4** (Optional) Specifies an IPv4 address family.
- **afi-all** (Optional) Specifies all address families.
- **all** (Optional) Specifies all protocols for a given address family.
- **protocol** (Optional) Specifies a routing protocol.
  - Options are `eigrp`, `bgp`, `isis`, `ospf`, and `rip`.
- **default-context** (Optional) Displays default context information. This keyword is available when the `eigrp` or `rip` protocol is specified.
- **vrf vrf-name** (Optional) Displays VPN routing and forwarding (VRF) information for the specified process. This keyword is available when the `eigrp` or `rip` protocol is specified.
- **private** (Optional) Displays private EIGRP data. This keyword is available when the `eigrp` is specified.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `show protocols` command to get information about the protocols running on the router and to quickly determine which protocols are active. The command is designed to summarize the important characteristics of the running protocol, and command output varies depending on the specific protocol selected.

For EIGRP, the command output lists the instance number, default AS context, router ID, default networks, distance, maximum paths, and so on.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIGRP</td>
<td>read</td>
</tr>
</tbody>
</table>
**Examples**

The following is sample output from the `show protocols eigrp` command:

```
RP/0/RSP0/CPU0:router# show protocols eigrp

Routing Protocol: EIGRP, instance 1
Default context AS: 1, Router ID: 192.168.0.22
Address Family: IPv4
    Default networks not flagged in outgoing updates
    Default networks not accepted from incoming updates
    Distance: internal 90, external 170
    Maximum paths: 4
    EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
    EIGRP maximum hopcount 100
    EIGRP maximum metric variance 1
    EIGRP NSF: enabled
    NSF-aware route hold timer is 240s
    NSF signal timer is 20s
    NSF converge timer is 120s
    Time since last restart is 01:01:21
    SIA Active timer is 180s
    Interfaces:
        GigabitEthernet0/6/0/0
```

RP/0/RSP0/CPU0:router#

**Table 9** describes the significant fields shown in the display.

**Table 9  show protocols Field Descriptions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>instance</td>
<td>AS number of the instance.</td>
</tr>
<tr>
<td>AS</td>
<td>AS number of this context.</td>
</tr>
<tr>
<td>Address Family</td>
<td>Address family for which the configuration status is shown.</td>
</tr>
<tr>
<td>Default Networks Candidate</td>
<td>Default network acceptance and announcement behavior.</td>
</tr>
<tr>
<td>Distance</td>
<td>Administrative distance of EIGRP routes.</td>
</tr>
<tr>
<td>Maximum paths</td>
<td>Maximum paths installed in RIB for a route.</td>
</tr>
<tr>
<td>Metric Weight</td>
<td>Current metric weights used by EIGRP.</td>
</tr>
<tr>
<td>Maximum hopcount</td>
<td>Maximum hop count accepted by EIGRP.</td>
</tr>
<tr>
<td>Variance</td>
<td>Metric variance used to find feasible paths for a route.</td>
</tr>
<tr>
<td>Route hold time</td>
<td>Time duration for which routes learned from a neighbor are held without deletion while the neighbor is undergoing a graceful restart.</td>
</tr>
<tr>
<td>signal time</td>
<td>Nonstop forwarding signal time.</td>
</tr>
<tr>
<td>converge time</td>
<td>Nonstop forwarding convergence time.</td>
</tr>
<tr>
<td>SIA Active time</td>
<td>Active time period for SIA.</td>
</tr>
<tr>
<td>Interfaces</td>
<td>List of interfaces configured for EIGRP.</td>
</tr>
</tbody>
</table>
site-of-origin (EIGRP)

To configure the Site of Origin (SoO) filtering on an Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the `site-of-origin` command in interface configuration mode. To disable SoO filtering on an interface, use the `no` form of this command.

```
site-of-origin { as-number:number | ip-address:number }
```

To configure the Site of Origin (SoO) filtering on an Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the `site-of-origin` command in interface configuration mode. To disable SoO filtering on an interface, use the `no` form of this command.

```
site-of-origin { as-number:number | ip-address:number }
```

Syntax Description

<table>
<thead>
<tr>
<th>Syntax Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>as-number:</code></td>
<td>Autonomous system number. Range for 2-byte numbers is 1 to 65535. Range for 4-byte numbers is 1.0 to 65535.65535. The colon is used to separate the autonomous system number and network number.</td>
</tr>
<tr>
<td><code>number</code></td>
<td>Network number. Range is from 0 to 4294967295 when a 2-byte AS number is used. Range is from 0 to 65535 when a 4-byte AS number is used.</td>
</tr>
<tr>
<td><code>ip-address:</code></td>
<td>IP address in four-part, dotted-decimal notation. The colon is used to separate the IP address and network number.</td>
</tr>
</tbody>
</table>

Defaults

No default behavior or values

Command Modes

Interface configuration

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

An EIGRP process must be capable of retrieving the SoO attribute on routes redistributed from the Border Gateway Protocol (BGP) when required to support complex topologies that include MPLS VPN links between sites with backdoor links.

Use the `site-of-origin` command to set an SoO BGP extended community attribute that is used to identify routes that have originated from a site so that the readvertisement of that prefix back to the source site can be prevented. The SoO extended community uniquely identifies the site from which a provider edge (PE) router has learned a route.

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
Examples

The following example shows how to configure SoO filtering on an EIGRP interface:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) vrf customer1
RP/0/RSP0/CPU0:router(config-eigrp-vrf) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af-if)# site-of-origin 10.0.0.1:20
```
split-horizon disable (EIGRP)

To disable split horizon for an Enhanced Interior Gateway Routing Protocol (EIGRP) process, use the `split-horizon disable` command in interface configuration mode. To enable split horizon, use the `no` form of this command.

```
split-horizon disable

no split-horizon disable
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

Split horizon is enabled for an EIGRP process.

**Command Modes**

Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to disable split horizon:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# split-horizon disable
```
stub (EIGRP)

To configure a router as a stub for Enhanced Interior Gateway Routing Protocol (EIGRP), use the `stub` command in the appropriate configuration mode. To disable this function, use the `no` form of this command.

```
stub [receive-only | [connected] [redistributed] [static] [summary]]
no stub [receive-only | [connected] [redistributed] [static] [summary]]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>receive-only</td>
<td>(Optional) Sets the router as a receive-only neighbor.</td>
</tr>
<tr>
<td>connected</td>
<td>(Optional) Advertises connected routes.</td>
</tr>
<tr>
<td>redistributed</td>
<td>(Optional) Advertises redistributed routes from other protocols and autonomous systems.</td>
</tr>
<tr>
<td>static</td>
<td>(Optional) Advertises static routes.</td>
</tr>
<tr>
<td>summary</td>
<td>(Optional) Advertises summary routes.</td>
</tr>
</tbody>
</table>

### Defaults

Stub routing is disabled.
When stub routing is specified, connected and summary routes are advertised by default.

### Command Modes

- IPv4 address family configuration
- IPv4 VRF address family configuration

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `stub` command to configure a router as a stub in which the router directs all IP traffic to a distribution router.

The `stub` command can be modified with several options, and these options can be used in any combination except for the `receive-only` keyword.

The `receive-only` keyword restricts the router from sharing any of its routes with any other router in that EIGRP autonomous system and does not permit any other option to be specified because it prevents any type of route from being sent. The four other optional keywords (`connected`, `static`, `summary`, and `redistributed`) can be used in any combination but cannot be used with the `receive-only` keyword. If any of these four keywords is used with the `stub` command, only the route types specified by the particular keyword or keywords are sent. Route types specified by the nonused keyword or keywords are not sent.

The `connected` keyword permits EIGRP stub routing to send connected routes. If all the connected routes are not covered by EIGRP interfaces, it may be necessary to redistribute connected routes with the `redistribute connected` command under the EIGRP process. This option is enabled by default.
The **static** keyword permits EIGRP stub routing to send static routes. Without the configuration of this option, EIGRP does not send any static routes. You may still need to redistribute static routes with the `redistribute static` command.

The **summary** keyword permits EIGRP stub routing to send summary routes. Summary routes can be created manually with the `summary address` command or automatically at a major network border router with the `auto-summary` command enabled. This option is enabled by default.

The **redistributed** keyword permits EIGRP stub routing to send other routing protocols and autonomous systems. Without the configuration of this option, EIGRP does not advertise redistributed routes.

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to configure, as a stub, the router that advertises connected and summary routes:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# stub
```

The following example shows how to configure the router as a receive-only neighbor (connected, summary, and static routes are not sent):

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# stub receive-only
```

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>redistribute (EIGRP)</td>
<td>Redistributes routes from one routing domain into EIGRP.</td>
</tr>
<tr>
<td>summary-address (EIGRP)</td>
<td>Configures a summary aggregate address for the specified EIGRP interface.</td>
</tr>
<tr>
<td>auto-summary (EIGRP)</td>
<td>Allows automatic summarization of subnet routes into network-level routes for an EIGRP process.</td>
</tr>
</tbody>
</table>
summary-address (EIGRP)

To configure a summary aggregate address for the specified Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the `summary-address` command in interface configuration mode. To disable a configuration, use the `no` form of this command.

```
summary-address ip-address {/length | mask} [admin-distance]

no summary-address ip-address {/length | mask}
```

**Syntax Description**

- `ip-address` The IP address argument specifies the summary IP address to apply to an interface in four-part, dotted-decimal notation.
- `/length` Prefix length, which can be indicated as a slash (/) and number. For example, /8 indicates that the first eight bits in the IP prefix are network bits. If `length` is used, the slash is required.
- `mask` IP address mask.
- `admin-distance` (Optional) Administrative distance. A value from 1 to 255.

**Defaults**

An administrative distance of 5 is applied to EIGRP summary routes.

No summary addresses are predefined.

**Command Modes**

Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
</table>
| Release 3.7.2 | This command was introduced on Cisco ASR 9000 Series Routers.

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The `summary-address` command is used to configure interface-level address summarization. EIGRP summary routes are given an administrative distance of 5. The administrative distance is used to advertise a summary without installing it in the routing table.

By default, EIGRP summarizes subnet routes to the network level. The `no auto-summary` command can be entered to configure subnet level summarization.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
Examples

The following example shows how to configure an administrative distance of 95 on an EIGRP interface for the 192.168.0.0/16 summary address:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-eigrp-af-if)# summary-address 192.168.0.0/16 95
```

Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>auto-summary (EIGRP)</td>
<td>Allows automatic summarization of subnet routes into network-level routes for an EIGRP process.</td>
</tr>
</tbody>
</table>
timers active-time

To adjust the Enhanced Interior Gateway Routing Protocol (EIGRP) routing wait time, use the `timers active-time` command in the appropriate configuration mode. To disable this function, use the `no` form of the command.

```
timers active-time [time-limit | disabled]
```

```
no timers active-time
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>time-limit</code></td>
<td>Active time limit (in minutes). Range is from 1 to 4294967295 minutes.</td>
</tr>
<tr>
<td><code>disabled</code></td>
<td>Disables the timers and permits the routing wait time to remain active indefinitely.</td>
</tr>
</tbody>
</table>

**Defaults**

Disabled

**Command Modes**

- IPv4 address family configuration
- IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `timers active-time` command to control the time the router waits (after query is sent) before declaring the route to be in the stuck in active (SIA) state.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to configure an indefinite routing wait time on the specified EIGRP route:

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# timers active-time disabled
```
<table>
<thead>
<tr>
<th>Related Commands</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>show eigrp topology</td>
<td>Displays entries in the EIGRP topology table.</td>
</tr>
</tbody>
</table>
timers nsf route-hold (EIGRP)

To set the timer that determines how long an NSF-aware Enhanced Interior Gateway Routing Protocol (EIGRP) router holds routes for an inactive peer, use the `timers nsf route-hold` command in the appropriate configuration mode. To return the route hold timer to the default value, use the `no` form of this command.

```
timers nsf route-hold seconds
no timers nsf route-hold
```

**Syntax Description**
- `seconds`: Time, in seconds, that EIGRP holds routes for an inactive peer. Range is from 20 to 6000 seconds.

**Defaults**
- EIGRP NSF awareness is enabled.
  - `seconds`: 240

**Command Modes**
- IPv4 address family configuration
- IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `timers nsf route-hold` command to set the maximum period of time that the NSF-aware router holds known routes for an NSF-capable neighbor during a switchover operation or a well-known failure condition. The route hold timer is configurable so that you can tune network performance and avoid undesired effects, such as packet loss on routes if the switchover operation takes too much time. When this timer expires, the NSF-aware router scans the topology table and discards any stale routes, allowing EIGRP peers to find alternate routes instead of waiting during a long switchover operation.

**Examples**

The following example shows how to set the route hold timer value for an NSF-aware router to 2 minutes (120 seconds):

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# timers nsf route-hold 120
```
**variance**

To control load balancing in an Enhanced Interior Gateway Routing Protocol (EIGRP)-based internetwork, use the `variance` command in the appropriate configuration mode. To reset the variance to the default value, use the `no` form of this command.

```plaintext
variance multiplier

no variance
```

**Syntax Description**

| multiplier | Metric value used for load balancing. Range is from 1 to 128. |

**Defaults**

- `multiplier`: 1 (equal-cost load balancing)

**Command Modes**

- IPv4 address family configuration
- IPv4 VRF address family configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `variance` command to set a variance on the EIGRP router so that the router can determine the feasibility of a potential route. A route is feasible if the next router in the path is closer to the destination than the current router and the metric for the entire path is within the variance. Only paths that are feasible can be used for load balancing and included in the routing table.

If the following two conditions are met, the route is considered feasible and can be added to the routing table:

1. The local best metric must be greater than the metric learned from the next router.
2. The multiplier times the local best metric for the destination must be greater than or equal to the metric through the next router.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigrp</td>
<td>read, write</td>
</tr>
</tbody>
</table>
The following example shows how to set a variance of 4:

RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp) address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-af)# variance 4
vrf (EIGRP)

To define a VPN routing and forwarding (VRF) instance and enter VRF configuration mode, use the vrf command in router configuration mode. To remove a VRF instance, use the no form of this command.

```
vrf vrf-name
no vrf vrf-name
```

**Syntax Description**
- `vrf-name`: VPN routing and forwarding instance.

**Defaults**
No VRFs are defined.

**Command Modes**
Router configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.7.2</td>
<td>This command was introduced on Cisco ASR 9000 Series Routers.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the `vrf` command to configure a VRF instance. A VRF instance is a collection of VPN routing and forwarding tables maintained at the provider edge (PE) router.

From VRF configuration mode, you must enter address family configuration mode and then issue commands, such as the `auto-summary` command.

A single EIGRP routing process can support multiple VRFs. The number of VRFs that can be configured is limited by available system resources on the router, which is determined by the number of VRFs, running processes, and available memory. However, only a single VRF can be supported by each VPN. Redistribution between different VRFs is not supported.

MPLS VPN support between PE and customer edge (CE) routers is configured only on PE routers that provide VPN services over the service provider backbone. The customer site does not require any changes to equipment or configurations to support the EIGRP VPN. Typically, a metric must be configured for routes to be advertised to the CE router. The metric can be configured under the route-policy for the `redistribute` protocol command or configured with the `default-metric` command.

You must remove IPv4/IPv6 addresses from an interface prior to assigning, removing, or changing a VRF on an IP interface. If this is not done in advance, any attempt to change the VRF on an IP interface is rejected.

**Task ID**
- **eigrp**: read, write
The following example shows how to enter IPv4 VRF address family configuration mode and identify EIGRP commands that can be issued from that mode.

```
RP/0/RSP0/CPU0:router(config)# router eigrp 1
RP/0/RSP0/CPU0:router(config-eigrp)# vrf vpn-1
RP/0/RSP0/CPU0:router(config-eigrp-vrf)# address-family ipv4
RP/0/RSP0/CPU0:router(config-eigrp-vrf-af)# ?
```

- **auto-summary**  Auto summarisation
- **autonomous-system**  Set the autonomous system of VRF
- **commit**  Commit the configuration changes to running
- **default-information**  Handling of default route
- **default-metric**  Set metric of redistributed routes
- **describe**  Describe a command without taking real actions
- **distance**  Set distance for EIGRP routes
- **do**  Run an exec command
- **exit**  Exit from this submode
- **interface** EIGRP interface configuration submode
- **log-neighbor-changes**  Enable/Disable EIGRP neighbor logging
- **log-neighbor-warnings** Enable/Disable EIGRP neighbor warnings
- **maximum-paths**  Maximum paths
- **maximum-prefix**  Maximum number of IP prefixes acceptable in aggregate
- **metric** Modify EIGRP routing metrics and parameters
- **neighbor**  Neighbor prefix limits configuration
- **no**  Negate a command or set its defaults
- **redistribute**  Redistribute another protocol
- **route-policy**  Configure inbound/outbound policies
- **router-id**  Set router ID
- **show**  Show contents of configuration
- **stub**  EIGRP stub
- **timers**  Configure EIGRP timers
- **variance**  Control load balancing variance

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>default-metric (EIGRP)</td>
<td>Sets metrics for an EIGRP.</td>
</tr>
<tr>
<td>redistribute (EIGRP)</td>
<td>Injects routes from one routing domain EIGRP.</td>
</tr>
</tbody>
</table>