



D Commands

This chapter describes the Cisco NX-OS unicast routing commands that begin with the letter D.

dead-interval (OSPF virtual link)

To set the interval during which at least one hello packet must be received from a neighbor on an Open Shortest Path First (OSPF) virtual link before the router declares that neighbor as down, use the **dead-interval** command. To restore the default, use the **no** form of this command.

dead-interval *seconds*

no dead-interval

Syntax Description	<i>seconds</i>	Interval (in seconds) during which the router must receive at least one hello packet from a neighbor or that neighbor is removed from the peer list and does not participate in routing. The range is from 1 to 65535. The value must be the same for all nodes on the virtual link.
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Defaults	The default value for <i>seconds</i> is our times the interval set by the hello-interval command.
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Command Modes	Virtual link configuration
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SupportedUserRoles	network-admin vdc-admin
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Command History	Release	Modification
	4.0(1)	This command was introduced.

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Usage Guidelines

Use the **dead interval** command in virtual link configuration mode to configure the dead interval advertised in OSPF hello packets. This value must be the same for all networking devices on the virtual link.

You can configure a shorter dead interval (*seconds*) to detect a down neighbor faster and improve convergence. A shorter dead interval may lead to virtual link instability by incorrectly declaring a slow neighbor as down.

Use the **show ip ospf virtual-links** command to verify the dead interval.

This command requires the Enterprise Services license.

Examples

The following example shows how to configure the OSPF dead interval to 20 seconds:

```
switch(config)# ospf 201
switch(config-router)# area 99 virtual-link 192.0.2.4
switch(config-router-vlink)# dead-interval 20
```

Related Commands

Command	Description
hello-interval (OSPF virtual link)	Interval between hello packets that Cisco NX-OS sends on the virtual link.
show ip ospf virtual-link	Displays OSPF-related information for a virtual link.

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dead-interval (OSPFv3 virtual link)

To set the interval during which at least one hello packet must be received from a neighbor on an Open Shortest Path First version 3 (OSPFv3) virtual link before the router declares that neighbor as down, use the **dead interval** command. To restore the default, use the **no** form of this command.

dead-interval *seconds*

no dead-interval

Syntax Description

<i>seconds</i>	Interval (in seconds) during which the router must receive at least one hello packet from a neighbor or that neighbor is removed from the peer list and does not participate in routing. The range is from 1 to 65535. The value must be the same for all nodes on the virtual link.
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Defaults

The default value for *seconds* is four times the interval set by the **hello-interval** command.

Command Modes

Virtual link configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **dead interval** command in virtual link configuration mode to configure the dead interval advertised in OSPFv3 hello packets. This value must be the same for all networking devices on the virtual link.

You can configure a shorter dead interval (*seconds*) to detect a down neighbor faster and improve convergence. A shorter dead interval may lead to virtual link instability by incorrectly declaring a slow neighbor as down.

Use the **show ospfv3 virtual-links** command to verify the dead interval.

This command requires the Enterprise Services license.

Examples

This example shows how to configure the OSPFv3 dead interval to 20 seconds:

```
switch(config)# ospfv3 201
switch(config-router)# area 99 virtual-link 192.0.2.4
switch(config-router-vlink)# dead-interval 20
```

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Related Commands	Command	Description
	hello-interval (OSPFv3 virtual link)	Interval between hello packets that Cisco NX-OS sends on the virtual link.
	show ospfv3 virtual-link	Displays OSPFv3-related information for a virtual link.

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default-information originate (IS-IS)

To control the origination of a default route, use the **default-information originate** command.

```
default-information originate [always] [route-map name]
```

Syntax Description		
always		Always advertise the default route.
route-map <i>name</i>		Specifies the name of the routing rules route map to announce default routes. The name can be up to 63 characters.

Command Default The default route is not redistributed into the IS-IS routing domain.

Command Modes Router configuration
VRF configuration

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines You can force a default route into an IS-IS routing domain. Whenever you specifically configure redistribution of routes into an IS-IS routing domain, by default, the default route is not redistributed into the IS-IS routing domain. The **default-information originate route-map** command generates a default route into IS-IS, which can be controlled by a route map. You can use the route map to identify the level into which the default route is to be announced, and you can specify other filtering options configurable under a route map. You can use a route map to conditionally advertise the default route, depending on the existence of another route in the routing table of the router.

Examples The following example shows how to always advertise the default route:

```
switch(config)# router isis TEST1
switch(config-router)# default-information originate always
switch(config-router)#
```

The following example shows how to specify a route map to conditionally advertise the default route:

```
switch(config)# router isis TEST1
switch(config-router)# default-information originate route-map CORE1
switch(config-router)#
```

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Related Commands	Command	Description
	exit	Exits the current configuration mode.
	feature isis	Enables IS-IS on the router.
	no	Negates a command or sets its defaults.
	router isis	Enables IS-IS.

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default-information originate (EIGRP)

To generate a default route into the Enhanced Interior Gateway Routing Protocol (EIGRP), use the **default-information originate** command in the appropriate configuration mode. To disable this feature, use the **no** form of this command.

default-information originate [**always**] [**route-map** *map-name*]

no default-information originate

Syntax Description

always	(Optional) Generates the default route if the route is not in the EIGRP routing information base.
route-map <i>map-name</i>	(Optional) Generates the default route only if the route is permitted by the route map. The map name is an alphanumeric string of up to 63 characters.

Defaults

Disabled

Command Modes

Address-family configuration
Router configuration
Router VRF configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command requires the Enterprise Services license.

Examples

The following example shows how to originate a default route (0.0.0.0/0) to all routes that pass the Condition route map.

```
switch(config)# router eigrp 201
switch(config-router)# address-family ipv4 unicast
switch(config-router-af)# default-information originate route-map Condition
```

Related Commands

Command	Description
address-family	Enters address-family configuration mode.

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Command	Description
default-metric	Sets the metric for routes redistributed into EIGRP.
redistribute	Redistributes routes from other routing protocols into EIGRP.

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default-information originate (OSPF)

To generate a default external route into an Open Shortest Path First (OSPF) routing domain, use the **default-information originate** command. To disable this feature, use the **no** form of this command.

default-information originate [**always**] [**route-map** *map-name*]

no default-information originate [**always**] [**route-map** *map-name*]

Syntax Description

always	(Optional) Specifies to always advertise the default route regardless of whether the route table has a default route.
route-map <i>map-name</i>	(Optional) Specifies to advertise the default route if the route map is satisfied. The <i>map-name</i> argument can be any alphanumeric string up to 63 characters.

Defaults

Advertises the default route if the route is in the route table.

Command Modes

Router configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **default-information originate** command to assign a default route for redistributed routes. Whenever you use the **redistribute** command to redistribute routes into an OSPF routing domain, Cisco NX-OS automatically becomes an Autonomous System Boundary Router (ASBR). However, an ASBR does not, by default, generate a default route into the OSPF routing domain.

Use the **route-map** keyword to filter redistributed routes so that Cisco NX-OS generates a default route only for routes that pass the route map. Use the **always** keyword to generate the default route regardless of whether the default route is in the route table.

This command requires the Enterprise Services license.

Examples

The following example shows how to configure the default route redistributed into the OSPF routing domain for the Enhanced Interior Gateway Protocol (EIGRP):

```
switch(config)# router ospf 109
switch(config-router)# redistribute eigrp 108 route-map EigrpPolicy
switch(config-router)# default-information originate always
```

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Related Commands	Command	Description
	redistribute (OSPF)	Redistributes routes from one routing domain into OSPF.
	route-map	Defines a filter policy for routes.

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default-information originate (OSPFv3)

To generate a default external route into an Open Shortest Path First version 3 (OSPFv3) routing domain, use the **default-information originate** command. To disable this feature, use the **no** form of this command.

default-information originate [**always**] [**route-map** *map-name*]

no default-information originate [**always**] [**route-map** *map-name*]

Syntax Description

always	(Optional) Specifies to always advertise the default route regardless of whether the route table has a default route.
route-map <i>map-name</i>	(Optional) Specifies to advertise the default route if the route map is satisfied. The <i>map-name</i> argument can be any alphanumeric string up to 63 characters.

Defaults

Advertises the default route if the route is in the route table.

Command Modes

Address-family configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **default-information originate** command to assign a default route for redistributed routes. Whenever you use the **redistribute** command to redistribute routes into an OSPFv3 routing domain, Cisco NX-OS automatically becomes an Autonomous System Boundary Router (ASBR). However, an ASBR does not, by default, generate a default route into the OSPFv3 routing domain.

Use the **route-map** keyword to filter redistributed routes so that Cisco NX-OS generates a default route only for routes that pass the route map. Use the **always** keyword to generate the default route regardless of whether the default route is in the route table.

This command requires the Enterprise Services license.

Examples

This example shows how to configure the default route redistributed into the OSPFv3 routing domain for the Border Gateway Protocol (BGP):

```
switch(config)# router ospfv3 109
switch(config-router)# redistribute bgp 108 route-map bgpPolicy
switch(config-router)# address-family ipv6 unicast
switch(config-router-af)# default-information originate always
```

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Related Commands	Command	Description
	redistribute (OSPFv3)	Redistributes routes from one routing domain into OSPFv3.
	route-map	Defines a filter policy for routes.

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default-information originate (RIP)

To generate a default route into the the Routing Information Protocol (RIP), use the **default-information originate** command in router address-family configuration mode. To disable this feature, use the **no** form of this command.

default-information originate [**always**] [**route-map** *map-name*]

no default-information originate

Syntax Description	
always	(Optional) Generates the default route if the route is not in the RIP routing information base.
route-map <i>map-name</i>	(Optional) Generates the default route only if the route is permitted by the route map. The map name is any alphanumerical string up to 63 characters.

Defaults This command is disabled by default.

Command Modes Router address-family configuration

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples The following example shows how to originate a default route (0.0.0.0/0) to all routes that pass the Condition route map.

```
switch(config)# router rip Enterprise
switch(config-router)# address-family ipv4 unicast
switch(config-router-af)# default-information originate route-map Condition
```

Related Commands	Command	Description
	address-family	Enters address-family configuration mode.
	default-metric	Sets the metric for routes redistributed into RIP.
	redistribute	Redistributes routes from other routing protocols into RIP.

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default-metric (EIGRP)

To set metrics for an Enhanced Interior Gateway Routing Protocol (EIGRP), use the **default-metric** command. To remove the metric value and restore the default state, use the **no** form of this command.

default-metric *bandwidth delay reliability loading mtu*

no default-metric

Syntax Description	
<i>bandwidth</i>	Minimum bandwidth of the route in kilobits per second. The range is from 1 to 16777215. The default value is 100000.
<i>delay</i>	Route delay in tens of microseconds. The range is from 1 to 16777215. The default value is 100 (tens of microseconds).
<i>reliability</i>	Likelihood of successful packet transmission expressed as a number between 0 and 255. The value 255 means 100-percent reliability; 0 means no reliability. The default value is 255.
<i>loading</i>	Effective bandwidth of the route expressed as a number from 1 to 255 (255 is 100-percent loading). The default value is 1.
<i>mtu</i>	Minimum maximum transmission unit (MTU) size of the route in bytes. The range is from 1 to 4294967295. The default value is 1492.

Defaults

bandwidth: 100000
 delay: 100 (tens of microseconds)
 reliability: 255
 loading: 1
 MTU: 1500

Command Modes

Address-family configuration
 Router configuration
 Router VRF configuration

Supported User Roles

network-admin
 vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	Changed the default value for MTU to 1492.

Usage Guidelines

Use the **default-metric** command with the **redistribute** command to use the same metric value for all redistributed routes. A default metric helps solve the problem of redistributing routes with incompatible metrics. Whenever external metrics do not convert to EIGRP metrics, you can use a default metric to provide a reasonable substitute to the external metric and enable the redistribution to proceed.

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This command requires the Enterprise Services license.

Examples

The following example shows how to take redistributed Routing Information Protocol (RIP) metrics and translate them into EIGRP metrics with the following values: bandwidth = 1000, delay = 100, reliability = 250, loading = 100, and MTU = 1500.

```
switch(config)# router eigrp 1  
switch(config-router)# address-family ipv4 unicast  
switch(config-router-af)# redistribute rip 100 route-map filterRIP  
switch(config-router-af)# default-metric 1000 100 250 100 1500
```

Related Commands

Command	Description
redistribute	Redistributes routes from one routing domain into another routing domain.

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default-metric (OSPF)

To set default metric values for the Open Shortest Path First (OSPF) routing protocol, use the **default-metric** command. To return to the default state, use the **no** form of this command.

default-metric *metric-value*

no default-metric *metric-value*

Syntax Description

<i>metric-value</i>	Default metric value appropriate for the specified routing protocol. The range is from 1 to 1677214.
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Defaults

The metric for redistributed, connected, and static routes is set to 0.

Command Modes

Router configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **default-metric** command with the **redistribute** command to configure the same metric value for all redistributed routes. A default metric helps to redistribute routes with incompatible metrics. Whenever external route metrics do not convert to an OSPF metric, use a default metric to enable the redistribution to proceed.

This command requires the Enterprise Services license.

Examples

The following example shows how to configure OSPF to redistribute RIP and BGP and set the default metric to 10:

```
switch(config)# router ospf 201
switch(config-router)# default-metric 10
switch(config-router)# redistribute rip 109 route-map FilterRip
switch(config-router)# redistribute bgp 4 route-map FilterBgp
```

Related Commands

Command	Description
redistribute (OSPF)	Redistributes routes from another routing domain into OSPF.

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default-metric (OSPFv3)

To set default metric values for the Open Shortest Path First version 3 (OSPFv3) routing protocol, use the **default-metric** command. To return to the default state, use the **no** form of this command.

default-metric *metric-value*

no default-metric *metric-value*

Syntax Description	<i>metric-value</i>	Default metric value appropriate for the specified routing protocol. The range is from 1 to 1677214.
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Defaults	The metric for redistributed, connected, and static routes is set to 0.
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Command Modes	Address-family configuration
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Supported User Roles	network-admin vdc-admin
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Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines	Use the default-metric command with the redistribute command to configure the same metric value for all redistributed routes. A default metric helps to redistribute routes with incompatible metrics. Whenever external route metrics do not convert to an OSPFv3 metric, use a default metric to enable the redistribution to proceed.
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This command requires the Enterprise Services license.

Examples	This example shows how to configure OSPFv3 to redistribute RIP and BGP and set the default metric to 10:
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```
switch(config)# router ospfv3 201
switch(config-router)# address-family ipv6 unicast
switch(config-router-af)# default-metric 10
switch(config-router-af)# exit
switch(config-router)# redistribute rip 109 route-map FilterRip
switch(config-router)# redistribute bgp 4 route-map FilterBgp
```

Related Commands	Command	Description
	redistribute (OSPFv3)	Redistributes routes from another routing domain into OSPFv3.

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default-metric (RIP)

To set default metric values for the the Routing Information Protocol (RIP), use the **default-metric** command in router address-family configuration mode. To return to the default state, use the **no** form of this command.

default-metric *value*

no default-metric [*value*]

Syntax Description

<i>value</i>	Default metric value. The range is from 1 to 15.
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Defaults

value: 1

Command Modes

Router address-family configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **default-metric** command with the **redistribute** command to use the same metric value for all redistributed routes. A default metric helps solve the problem of redistributing routes with incompatible metrics. Whenever external metrics do not convert to RIP metrics, you can use a default metric to provide a reasonable substitute to the external metric and enable the redistribution to proceed.

This command does not require a license.

Examples

The following example shows how to advertise Open Shortest Path First (OSPF) routes using RIP and assign the OSPF-derived routes with a RIP metric of 10:

```
switch(config)# router rip Enterprise
switch(config-router)# address-family ipv4 unicast
switch(config-router-af)# default-metric 10
switch(config-router-af)# redistribute ospf 109 route-map filterTest
```

Related Commands

Command	Description
address-family	Enters address-family configuration mode.

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default-information originate	Generates a default route for routes redistributed into RIP.
redistribute	Redistributes routes from one routing domain into another routing domain.

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delay (HSRP)

To delay HSRP initialization after a reload or after an interface comes up, use the **forwarder preempt** command. To disable this function, use the **no** form of this command.

delay minimum [*min-delay*] **reload** [*reload-delay*]

no delay minimum [*min-delay*] **reload** [*reload-delay*]

Syntax Description

delay minimum [<i>min-delay</i>]	The minimum time (in seconds) to delay HSRP group initialization after an interface comes up. This period applies to all subsequent interface events. The default is 0 seconds.
reload <i>reload-delay</i>	The time period to delay HSRP group initialization after the router has reloaded. This period applies only to the first interface-up event after the router has reloaded. The default is 0 seconds.

Command Default

The HSRP delay default is 0 seconds.

Command Modes

Interface mode

Supported User Roles

Superuser
VDC administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use **delay hsrp** command to delay HSRP initialization either after a reload or after an interface comes up. This configuration allows the interface and router to stabilize after the interface comes up and helps prevent HSRP state flapping.

This command does not require a license.

Examples

This example shows how to configure a minimum delay of 3 seconds, and a group initialization delay of 10 seconds:

```
switch(config)# configure terminal
switch(config)# interface ethernet 0
switch(config)# ip address 172.16.6.5 255.255.255.0
switch(config)# hsrp 1
switch(config)# delay minimum 3 reload 10
switch(config)# ip 172.16.6.100
```

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Related Commands

Command	Description
feature hsrp	Enables HSRP configuration.

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distance (IS-IS)

To define an administrative distance for routes that are inserted into the routing table, use the **distance** configuration mode command. To return the administrative distance to its default distance definition, use the **no** form of this command.

distance *value*

no distance

Syntax Description

<i>value</i>	Administrative distance. Range: 1 to 255. Default: 115.
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Command Default

The default route is not redistributed into the IS-IS routing domain.

Command Modes

Router configuration
VRF configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

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.

This command requires the Enterprise Services license.

Examples

The following example shows how to set the administrative distance to 90:

```
switch(config)# router isis TEST1
switch(config-router)# distance 90
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
net	Specifies the Network Entity Title (NET) for an IS-IS process.
router isis	Enables IS-IS.

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distance (EIGRP)

To allow the use of two administrative distances—internal and external—for the Enhanced Interior Gateway Routing Protocol (EIGRP) that could provide a better route to a node, use the **distance** command. To reset to default, use the **no distance** form of this command.

distance *internal-distance external-distance*

no distance

Syntax Description

<i>internal-distance</i>	Administrative distance for EIGRP internal routes. Internal routes are routes that are learned from another entity within the same autonomous system (AS). The distance can be a value from 1 to 255. The default value is 90.
<i>external-distance</i>	Administrative distance for EIGRP external routes. External routes are routes for which the best path is learned from a source external to this autonomous system. The distance can be a value from 1 to 255. The default value is 170.

Defaults

internal-distance: 90
external-distance: 170

Command Modes

Address-family configuration
Router configuration
Router VRF configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

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 that the routing information source cannot be trusted 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 EIGRP or some internal routes should be preferred by EIGRP.

This command requires the Enterprise Services license.

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Examples

The following example shows how to set the administrative distance of all EIGRP 1 internal routes to 80 and all EIGRP external routes to 130:

```
switch(config)# router eigrp 1  
switch(config-router)# distance 80 130
```

Related Commands

Command	Description
show ip eigrp	Displays information about the Enhanced Interior Gateway Routing Protocol (EIGRP) running on the router.

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distance (OSPF)

To define the Open Shortest Path First (OSPF) route administrative distance, use the **distance** command. To restore the default, use the **no distance** command.

distance *distance*

no distance

Syntax Description	<i>distance</i>	Administrative distance for all routes local to this OSPF process. The range is from 1 to 255.
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Defaults	110
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Command Modes	Router configuration
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Supported User Roles	network-admin vdc-admin
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Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines Use the **distance** command to set a distance for an entire group of routes. Use the **distance** command when you configure multiple routing protocols, and you want to choose one set of routes over the other. This command requires the Enterprise Services license.

Examples The following example shows how to set the distance to 200, making the route less reliable:

```
switch(config)# router ospf 1
switch(config-router)# distance 200
switch(config-router)# router ospf 2
switch(config-router)# distance 20
```

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distance (OSPFv3)

To define the Open Shortest Path First version 3 (OSPFv3) route administrative distance, use the **distance** command. To restore the default, use the **no** form of this command.

distance *distance*

no distance

Syntax Description	<i>distance</i>	Administrative distance for all routes local to this OSPFv3 process. The range is from 1 to 255.
Defaults	110	
Command Modes	Address-family configuration	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.0(1)	This command was introduced.
Usage Guidelines	Use the distance command to set a distance for an entire group of routes. Use the distance command when you configure multiple routing protocols, and you want to choose one set of routes over the other. This command requires the Enterprise Services license.	
Examples	This example shows how to set the distance to 200, making the route less reliable: <pre>switch(config)# router ospfv3 1 switch(config-router)# address-family ipv6 unicast switch(config-router-af)# distance 200</pre>	

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distance (RIP)

To define the administrative distance assigned to routes discovered by the the Routing Information Protocol (RIP), use the **distance** command in the router address-family configuration mode. To remove the distance and restore the system to its default condition, use the **no** form of this command.

distance *admin-distance*

no distance *admin-distance*

Syntax Description

admin-distance Administrative distance to be assigned to RIP routes. The range is from 0 to 255.

Defaults

admin-distance: 120

Command Modes

Router address-family configuration

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **distance** command to change the preference of RIP routes over other protocol routes. Numerically, an administrative distance is an integer from 0 to 255. In general, a higher value indicates a lower trust rating. An administrative distance of 255 means that the routing information source cannot be trusted at all and should be ignored.

[Table 1-1](#) lists default administrative distances.

Table 1-1 Default Administrative Distances of Routing Protocols

Routing Protocols	Administrative Distance Value
Connected interface	0
Static route out an interface	0
Static route to next hop	1
EIGRP Summary Route	5
External BGP	20
Internal EIGRP	90
OSPF	110
IS-IS	115
RIP	120
External EIGRP	170

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Table 1-1 *Default Administrative Distances of Routing Protocols (continued)*

Routing Protocols	Administrative Distance Value
Internal BGP	200
Unknown	255

This command does not require a license.

Examples

The following example shows how to set the administrative distance for RIP:

```
switch(config)# router rip Enterprise
switch(config-router)# address-family ipv4 unicast
switch(config-router-af)# distance 85
```

Related Commands

Command	Description
address-family	Enters address-family configuration mode.
redistribute	Redistributes routes from one routing domain into RIP.

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distribute

To distribute routes between specific IS-IS levels, use the **distribute** command. To return to the default setting, use the **no** form of this command.

```
distribute {level-1 | level-2} into {level-1 | level-2} {all | route-map name}
```

Syntax Description

level-1	Distributes the interarea routes into level-1 of this IS-IS instance.
level-2	Distributes the interarea routes into level-2 of this IS-IS instance.
into	Specifies from one level to another level.
all	Distributes all route levels.
route-map <i>name</i>	Prevents distribution of a specific route-map. The name can be any alphanumeric string up to 63 characters.

Command Default

The default route is not distributed into the IS-S routing domain. If enabled, IS-IS allows distribution of route between level-1 and level-2 such that optimal inter-area routing could be obtained.

This command requires the Enterprise Services license.

Command Modes

Router configuration
VRF configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

level-1—Summarizes the IP address into the level-1 area. Only routes redistributed into Level 1 are summarized with the configured address and mask value.

level-2—Summarizes the IP address into the level-2 area. Routes learned by level-1 routing are summarized into the level-2 backbone with the configured address and mask value. Redistributed routes into level-2 IS-IS will be summarized also.

In IS-IS, all areas are stub areas, which means that no routing information is leaked from the backbone (level-2) into areas (level-1). Level-1-only routers use default routing to the closest level-1-level-2 router in their area. This command enables you to redistribute level-2 IP routes into level-1 areas. This redistribution enables level-1-only routers to pick the best path for an IP prefix to get out of the area. This is an IP-only feature, CLNS routing is still stub routing.

For more control and scalability, a distribute list or a route map can control which level-2 IP routes can be redistributed into level-1. This command allows large IS-IS-IP networks to use areas for better scalability.

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Examples

This example distributes level-1 routes into a level-2 network:

```
switch(config)# distribute level-1 into level-2
```