

FiberstoreOS V3.3

IPv6 Routing Command Line Reference

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1 OSPFv3 Commands

1.1 area default-cost

To specify a cost for the default summary route sent into a stub, use the area default-cost command in router configuration mode. To remove the assigned default route cost, use the no form of this command.

Command Syntax

area *AREA-ID* **default-cost** *COST*

no area *AREA-ID* **default-cost**

<i>AREA-ID</i>	Identifier of the area for which authentication is to be enabled. The identifier can be specified as either a decimal value or an IP address
<i>COST</i>	Cost for the default summary route used for a stub. The acceptable value is a 24-bit number

Command Mode

Router Configuration

Default

COST: 1

Usage

The command is used only on an Area Border Router (ABR) attached to a stub.

There are two stub area router configuration commands: the stub and default-cost options of the area command. In all routers and access servers attached to the stub area, the area should be configured as a stub area using the stub option of the area command. Use the default-cost option only on an ABR attached to the stub area. The default-cost option provides the metric for the summary default route generated by the ABR into the stub area.

Examples

The following example assigns a default cost of 20 to stub network 10.0.0.0:

```
Switch(config)#router ipv6 ospf 201
Switch(config-router)#area 10.0.0.0 stub
Switch(config-router)#area 10.0.0.0 default-cost 20
```

Related Commands

None

1.2 area range

To consolidate and summarize routes at an area boundary, use the `area range` command in router configuration mode. To disable this function, use the `no` form of this command.

Command Syntax

```
area AREA-ID range ADDRESS/PREFIX-LENGTH (advertise | not-advertise)
no area AREA-ID range ADDRESS/PREFIX-LENGTH
```

<i>AREA-ID</i>	Identifier of the area for which authentication is to be enabled. The identifier can be specified as either a decimal value or an IP address
<i>ADDRESS</i>	IPv4 address
<i>PREFIX-LENGTH</i>	Prefix length of the address
advertise	Advertise this range (default)
not-advertise	DoNotAdvertise this range

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

The `area range` command is used only with Area Border Routers (ABRs). It is used to consolidate or summarize routes for an area. The result is that a single summary route is advertised to other areas by the ABR. Routing information is condensed at area boundaries. External to the area, a single route is advertised for each address range. This behavior is called route summarization.

Multiple area router configuration commands specifying the range option can be configured. Thus, OSPF can summarize addresses for many different sets of address ranges.

Examples

The following example specifies one summary route to be advertised by the ABR to other areas for all subnets on area 10:

```
Switch(config)# router ipv6 ospf 201
```

```
Switch(config-router)#area 10 range 2004::1/16
```

Related Commands

None

1.3 area stub

To define an area as a stub area, use the area stub command in router configuration mode. To disable this function, use the no form of this command.

Command Syntax

```
area AREA-ID stub (no-summary)
```

```
no area AREA-ID stub (no-summary)
```

<i>AREA-ID</i>	Identifier of the area for which authentication is to be enabled. The identifier can be specified as either a decimal value or an IP address
no-summary	(Optional) Prevents an Area Border Router (ABR) from sending summary link advertisements into the stub area

Command Mode

Router Configuration

Default

No stub area is defined.

Usage

You must configure the area stub command on all routers and access servers in the stub area. Use the area router configuration command with the default-cost keyword to specify the cost of a default internal router sent into a stub area by an ABR.

There are two stub area router configuration commands: the stub and default-cost options of the area router configuration command. In all routers attached to the stub area, the area should

be configured as a stub area using the stub keyword of the area command. Use the default-cost keyword only on an ABR attached to the stub area. The default-cost keyword provides the metric for the summary default route generated by the ABR into the stub area.

To further reduce the number of link-state advertisements (LSAs) sent into a stub area, you can configure the no-summary keyword on the ABR to prevent it from sending summary LSAs (LSA type 3) into the stub area.

Examples

The following example assigns a default cost of 20 to stub network 10.0.0.0:

```
Switch(config)# router ipv6 ospf 201
Switch(config-router)#area 10.0.0.0 stub
Switch(config-router)#area 10.0.0.0 default-cost 20
```

Related Commands

None

1.4 auto-cost

To control how Open Shortest Path First Version3 (OSPFv3) calculates default metrics for the interface; use the auto-cost command in router configuration mode. To assign cost based only on the interface type, use the no form of this command.

Command Syntax

auto-cost reference-bandwidth *RATE*

no auto-cost reference-bandwidth

reference-bandwidth <i>RATE</i>	Rate in Mbps (bandwidth). The range is from 1 to 4294967; the default is 100
---	--

Command Mode

Router Configuration

Default

100 Mbps

Usage

The value set by the `ipv6 ospf cost` command overrides the cost resulting from the `auto-cost` command.

Examples

The following example changes the cost of the cost link to 1GBps.

```
Switch(config)# router ipv6 ospf 1
```

```
Switch(config-router)#auto-cost reference-bandwidth 1000
```

Related Commands

ipv6 ospf cost

1.5 clear ipv6 ospf

To clear routing information based on the Open Shortest Path First (OSPF) routing process ID, use the `clear ipv6 ospf` command in privileged EXEC mode.

Command Syntax

clear ipv6 ospf (*PID* |) **process**

<i>PID</i>	(Optional) Process ID
------------	-----------------------

Command Mode

Privileged EXEC

Default

None

Usage

Use the *PID* argument to clear only one OSPFv3 process. If the *PID* argument is not specified, all OSPFv3 processes are cleared.

Examples

The following example clears all OSPFv3 processes:

Switch# clear ipv6 ospf process

Related Commands

None

1.6 default-information originate (OSPFv3)

To generate a default external route into an Open Shortest Path First Version3 (OSPFv3) routing domain, use the default-information originate command in router configuration mode. To disable this feature, use the no form of this command.

Command Syntax

default-information originate [route-map *WORD*] | [always] | [metric *METRIC-VALUE*] | [metric-type *TYPE-VALUE*]

no default-information originate [always] | [metric] | [metric-type] | [route-map]

always	(Optional) Always advertises the default route regardless of whether the system has a default route
metric	metric-value (Optional) Metric used for generating the default route. If you omit a value and do not specify a value using the default-metric router configuration command, the default metric value is 10. The value used is specific to the protocol
metric-type	(Optional) External link type associated with the default route advertised into the OSPF routing domain. It can be one of the following values
route-map	Route map reference

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

Whenever you use the redistribute or the default-information router configuration command to redistribute routes into an OSPFv3 routing domain, the switch automatically becomes an autonomous System Boundary Router (ASBR). However, an ASBR does not, by default, generate a default route into the OSPFv3 routing domain. The system still must have a default route for itself before it generates one, except when you have specified the always keyword.

Examples

The following example specifies a metric of 100 for the default route redistributed into the OSPFv3 routing domain and an external metric type of Type 1:

```
Switch(config)# router ipv6 ospf 109
```

```
Switch(config-router)# redistribute rip metric 100
```

```
Switch(config-router)#default-information originate metric 100 metric-type 1
```

Related Commands

redistribute (OSPFv3)

1.7 default-metric (OSPFv3)

To set default metric values for the Open Shortest Path First Version3 (OSPFv3) routing protocol, use the `default-metric` command in router configuration mode. To return to the default state, use the `no` form of this command.

Command Syntax

default-metric *METRIC-VALUE*

no default-metric (*METRIC-VALUE*)

<i>METRIC-VALUE</i>	Default metric value appropriate for the specified routing protocol. Built-in, automatic metric translations, as appropriate for each routing protocol. The metric of redistributed connected and static routes is set to 0
---------------------	---

Command Mode

Router Configuration

Default

None

Usage

The `default-metric` command is used in conjunction with the `redistribute` router configuration command to cause the current routing protocol to use the same metric value for all redistributed routes. A default metric helps solve the problem of redistributing routes with incompatible metrics. Whenever metrics do not convert, using a default metric provides a reasonable substitute and enables the redistribution to proceed.

Examples

The following example shows a router in autonomous system using both the Routing Information Protocol (RIPng) and the OSPFv3 routing protocols. The example advertises OSPFv3-derived routes using RIPng and assigns the Internal Gateway Protocol (IGP)-derived routes a RIPng metric of 10.

```
Switch(config)# router ipv6 ospf
Switch(config-router)#default-metric 10
Switch(config-router)# redistribute ripng
```

Related Commands

redistribute (OSPFv3)

1.8 distance (OSPFv3)

To define Open Shortest Path First Version3 (OSPFv3) route administrative distances based on route type, use the distance command in router configuration mode. To restore the default value, use the no form of this command.

Command Syntax

distance {*DISTANCE* | **ospfv3** [**external** *DIST1*] [**inter-area** *DIST2*] | [**intra-area** *DIST3*]}
no distance (**ospfv3**)

<i>DISTANCE</i>	Administrative distance. An integer from 1 to 255. (Routes with a distance value of 255 are not installed in the routing table.)
external <i>DIST1</i>	(Optional) Sets the distance for routes from other routing domains, learned by redistribution. Range is 1 to 255. The default value is 110
inter-area <i>DIST2</i>	(Optional) Sets the distance for all routes from one area to another area. Range is 1 to 255. The default value is 110
intra-area <i>DIST3</i>	(Optional) Sets the distance for all routes within an area. Range is 1 to 255. The default value is 110

Command Mode

Router Configuration

Default

DIST1: 110

DIST2: 110

DIST3: 110

Usage

You may specify one of the keywords or use distance only to apply to all types of routes.

The distance command allows you to set a distance for an entire group of routes, rather than a specific route that passes an access list.

A common reason to use the distance command is when you have multiple OSPFv3 processes with mutual redistribution, and you want to prefer internal routes from one over external routes from the other.

Examples

The following example shows a router in autonomous system using both the Routing Information Protocol (RIPng) and the OSPFv3 routing protocols. The example advertises OSPFv3-derived routes using RIPng and assigns the Internal Gateway Protocol (IGP)-derived routes a RIPng distance of 90..

```
Switch(config)# router ipv6 ospf
```

```
Switch(config-router)#distance 90
```

```
Switch(config-router)# redistribute ripng
```

Related Commands

None

1.9 distribute-list (OSPFv3)

To filter networks received in updates or suppress networks from being advertised in updates, use the distribute-list command in router configuration mode. To cancel this function, use the no form of this command.

Command Syntax

distribute-list *ACCESSSS-LIST-NAME* (**in** | **out** (**bgp** | **connected** | **ospfv3** | **ripng** | **static**))

no distribute-list *ACCESSSS-LIST-NAME* (**in** | **out** (**bgp** | **connected** | **ospfv3** | **ripng** | **static**))

<i>ACCESSSS-LIST-NAME</i>	Name of an access list to be applied
in	Filter networks received in updates
out	Suppress networks from being advertised in updates

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

This command must specify an access list.

Examples

In the following example, OSPFv3 process 1 is configured to accept two prefixes, prefix 2001:1:1::1/32 and prefix 3001:1:1::1/32:

```
Switch(config)# ipv6 access-list filter-as-router
Switch(config-ip-acl)# permit any 2001:1:1::1/32 any
Switch(config-ip-acl)# permit any 3001:1:1::1/32 any
Switch(config-ip-acl)# deny any any any
Switch(config)# router ipv6 ospf 1
Switch(config-router)# distribute-list acl1 in
```

Related Commands

ipv6 access-list

1.10 enable db-summary-opt

Use this command to enable optimize the process when building ospfv3 neighborship.

Command Syntax

```
enable db-summary-opt
no enable db-summary-opt
```

Command Mode

Router Configuration

Default

Disable

Usage

None.

Examples

The following example enables this optimization:

```
Switch(config)# router ipv6 ospf 1
```

```
Switch(config-if)# enable db-summary-opt
```

Related Commands

None

1.11 ipv6 ospf cost

To explicitly specify the cost of sending a packet on an interface, use the `ipv6 ospf cost` command in interface configuration mode. To reset the path cost to the default value, use the `no` form of this command.

Command Syntax

ipv6 ospf cost *INTERFACE-COST*

no ipv6 ospf cost

<i>INTERFACE-COST</i>	Unsigned integer value expressed as the link-state metric. It can be a value in the range from 1 to 65535
-----------------------	---

Command Mode

Interface Configuration

Default

No default cost is predefined.

Usage

You can set the metric manually using this command, if you need to change the default. Using the `bandwidth` command changes the link cost as long as this command is not used.

The link-state metric is advertised as the link cost in the router link advertisement.

In general, the path cost is calculated using the following formula:

Reference Bandwidth / bandwidth

Examples

The following example sets the interface cost value to 65:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf cost 65
```

Related Commands

auto-cost reference bandwidth

1.12 ipv6 ospf dead-interval

To set the interval during which at least one hello packet must be received from a neighbor before the router declares that neighbor down, use the `ipv6 ospf dead-interval` command in interface configuration mode. To restore the default value, use the `no` form of this command.

Command Syntax

ipv6 ospf dead-interval *SECONDS* (**instance ID** |)

no ipv6 ospf dead-interval (**instance ID** |)

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

Command Mode

Interface Configuration

Default

SECONDS: The neighbor is considered as dead in 40s by default.

Usage

The dead interval is advertised in OSPFv3 hello packets. This value must be the same for all networking devices on a specific network.

Specifying a smaller dead interval (seconds) will give faster detection of a neighbor being down and improve convergence, but might cause more routing instability.

Examples

The following example sets the OSPFv3 dead interval to 20 seconds:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf dead-interval 20
```

Related Commands

```
ipv6 ospf hello-interval
show ipv6s ospf interface
```

1.13 ipv6 ospf hello-interval

To specify the interval between hello packets that the switch sends on the interface, use the `ip ospf hello-interval` command in interface configuration mode. To return to the default time, use the `no` form of this command.

Command Syntax

```
ip ospf hello-interval SECONDS (instance ID |)
no ip ospf hello-interval (instance ID |)
```

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

Command Mode

Interface Configuration

Default

10 seconds (Ethernet)
30 seconds (non-broadcast)

Usage

This value is advertised in the hello packets. The smaller the hello interval, the faster topological changes will be detected, but more routing traffic will ensue. This value must be the same for all routers and access servers on a specific network.

Examples

The following example sets the interval between hello packets to 15 seconds:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf hello-interval 15
```

Related Commands

ipv6 ospf dead-interval

1.14 ipv6 ospf mtu-ignore

To disable Open Shortest Path First Version3 (OSPFv3) maximum transmission unit (MTU) mismatch detection on receiving Database Descriptor (DBD) packets, use the `ipv6 ospf mtu-ignore` command in interface configuration mode. To reset to default, use the `no` form of this command.

Command Syntax

```
ipv6 ospf mtu-ignore
no ipv6 ospf mtu-ignore
```

Command Mode

Interface Configuration

Default

OSPFv3 MTU mismatch detection is enabled.

Usage

OSPFv3 checks whether neighbors are using the same MTU on a common interface. This check is performed when neighbors exchange DBD packets. If the receiving MTU in the DBD packet is higher than the IP MTU configured on the incoming interface, OSPFv3 adjacency will not be established.

Examples

The following example disables MTU mismatch detection on receiving DBD packets:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf mtu-ignore
```

Related Commands

None

1.15 ip ospf priority

To set the router priority, which helps determine the designated router for this network, use the `ip ospf priority` command in interface configuration mode. To return to the default value, use the `no` form of this command.

Command Syntax

ipv6 ospf priority *NUMBER-VALUE*

no ipv6 ospf priority

<i>NUMBER-VALUE</i>	A number value that specifies the priority of the router. The range is from 0 to 255
---------------------	--

Command Mode

Interface Configuration

Default

Priority of 1

Usage

When two routers attached to a network both attempt to become the designated router, the one with the higher router priority takes precedence. If there is a tie, the router with the higher router ID takes precedence. A router with a router priority set to zero is ineligible to become the designated router or backup designated router. Router priority is configured only for interfaces to multi-access networks (in other words, not to point-to-point networks).

This priority value is used when you configure Open Shortest Path First Version3 (OSPFv3) for non-broadcast networks using the `neighbor router configuration` command for OSPFv3.

Examples

The following example sets the router priority value to 4:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf priority 4
```

Related Commands

None

1.16 Ipv6 ospf retransmit-interval

To specify the time between link-state advertisement (LSA) retransmissions for adjacencies belonging to the interface, use the `ipv6 ospf retransmit-interval` command in interface configuration mode. To return to the default value, use the `no` form of this command.

Command Syntax

ipv6 ospf retransmit-interval *SECONDS*

no ipv6 ospf retransmit-interval

<i>SECONDS</i>	Time (in seconds) between retransmissions. It must be greater than the expected round-trip delay between any two routers on the attached network. The range is from 1 to 65535 seconds. The default is 5 seconds
----------------	--

Command Mode

Interface Configuration

Default

5 seconds

Usage

When a router sends an LSA to its neighbor, it keeps the LSA until it receives back the acknowledgment message. If the router receives no acknowledgment, it will resend the LSA. The setting of this parameter should be conservative, or needless retransmission will result. The value should be larger for serial lines and virtual links.

Examples

The following example sets the retransmit interval value to 8 seconds:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf retransmit-interval 8
```

Related Commands

None

1.17 ipv6 ospf transmit-delay

To set the estimated time required to send a link-state update packet on the interface, use the `ipv6 ospf transmit-delay` command in interface configuration mode. To return to the default value, use the `no` form of this command.

Command Syntax

ipv6 ospf transmit-delay *SECONDS*

no ipv6 ospf transmit-delay

<i>SECONDS</i>	Time (in seconds) between retransmissions. It must be greater than the expected round-trip delay between any two routers on the attached network. The range is from 1 to 65535 seconds. The default is 5 seconds
----------------	--

Command Mode

Interface Configuration

Default

1 second

Usage

Link-state advertisements (LSAs) in the update packet must have their ages incremented by the amount specified in the `seconds` argument before transmission. The value assigned should take into account the transmission and propagation delays for the interface.

If the delay is not added before transmission over a link, the time in which the LSA propagates over the link is not considered. This setting has more significance on very low-speed links.

Examples

The following example sets the retransmit delay value to 3 seconds:

```
Switch(config)# interface eth-0-1
Switch(config-if)# no switchport
Switch(config-if)# ipv6 ospf transmit-delay 3
```

Related Commands

None

1.18 passive-interface (OSPF)

To disable sending routing updates for the Open Shortest Path First Version3 (OSPFv3) on an interface, use the `passive-interface` command in router configuration mode. To re-enable the sending of routing updates, use the `no` form of this command.

Command Syntax

```
passive-interface INTERFACE-ID
no passive-interface INTERFACE-ID
```

<i>INTERFACE-ID</i>	The interface name
---------------------	--------------------

Command Mode

Router Configuration

Default

Routing updates are sent on the interface.

Usage

If you disable the sending of routing updates on an interface, the particular subnet will continue to be advertised to other interfaces, and updates from other switches on that interface continue to be received and processed.

Examples

The following example sets the interface eth-0-1 as passive:

```
Switch(config)# router ipv6 ospf 200
```

Switch(config-router)# passive-interface eth-0-1

Related Commands

router ipv6 ospf

1.19 redistribute (OSPFv3)

To redistribute routes from one routing domain into Open Shortest Path First Version3 (OSPFv3) routing domain, use the redistribute command in router configuration mode. To disable redistribution, use the no form of this command.

Command Syntax

redistribute *PROTOCOL* [**route-map** *WORD*] [**tag** *TAG-VALUE*] [**metric** *METRIC-VALUE*] [**metric-type** *TYPE-VALUE*]

no redistribute *PROTOCOL* [**route-map** *WORD*] [**tag** *TAG-VALUE*] [**metric** *METRIC-VALUE*] [**metric-type** *TYPE-VALUE*]

route-map <i>WORD</i>	Route map reference. <i>WORD</i> :Pointer to route-map entries tag tag-value Set tag for routes redistributed into OSPF.tag-value: <0-4294967295> 32-bit tag value
<i>PROTOCOL</i>	(Optional) The name of a routing protocol, or the keyword connected, or static. If you specify a routing protocol, use one of the following keywords: bgp, and ripng
tag <i>TAG-VALUE</i>	Set tag for routes redistributed into OSPF.tag-value: <0-4294967295> 32-bit tag value
metric <i>METRIC-VALUE</i>	(Optional) When redistributing other processes to an OSPF process, the default metric is 20 when no metric value is specified
metric-type <i>TYPE-VALUE</i>	For OSPF, the external link type associated with the default route advertised into the OSPF routing domain. It can be one of two values

Command Mode

Router Configuration

Default

Route redistribution is disabled.

metric metric-value: 20

metric-type *TYPE-VALUE*: Type 2 external route

Usage

The metric value specified in the redistribute command supersedes the metric value specified using the default-metric command.

Examples

The following example redistribute the static routes into OSPFv3 with metric 10:

```
Switch(config)# router ospf 119
```

```
Switch(config-router)# redistribute static metric 10
```

Related Commands

default-metric

1.20 router-id (OSPF)

To use a fixed router ID, use the router-id command in router configuration mode. To force Open Shortest Path First Version3 (OSPFv3) to use the previous OSPF router ID behavior, use the no form of this command.

Command Syntax

router-id *IP-ADDRESS*

no router-id

<i>IP-ADDRESS</i>	Router ID in IP address format
-------------------	--------------------------------

Command Mode

Router Configuration

Default

No OSPF routing process is defined.

Usage

You can configure an arbitrary value in the IP address format for each router. However, each router ID must be unique.

If this command is used on an OSPFv3 router process which is already active (has neighbors), the new router-ID is used at the next reload or at a manual OSPFv3 process restart. To manually restart the OSPFv3 process, use the `clear ip ospf` command.

Examples

The following example specifies a fixed router-id:

```
Switch(config)# router ipv6 ospf 119
```

```
Switch(config-router)# router-id 10.1.1.1
```

Related Commands

clear ipv6 ospf

router ipv6 ospf

1.21 router ipv6 ospf

To configure an Open Shortest Path First Version3 (OSPFv3) routing process, use the `router ipv6 ospf` command in global configuration mode. To terminate an OSPFv3s routing process, use the `no` form of this command.

Command Syntax

router ipv6 ospf [*PROCESS-ID*]

no router ipv6 ospf [*PROCESS-ID*]

<i>PROCESS-ID</i>	Internally used identification parameter for an OSPF routing process. It is locally assigned and can be any positive integer. A unique value is assigned for each OSPF routing process
-------------------	--

Command Mode

Global Configuration

Default

No OSPF routing process is defined.

Usage

You can specify multiple OSPFv3 routing processes in each router. If you do not specify the process-id, the process-id will be the default 0.

Examples

The following example configures an OSPFv3 routing process and assigns a process number of 109:

```
Switch(config)# router ipv6 ospf 109
```

Related Commands

None

1.22 summary-address (OSPFv3)

To create aggregate addresses for Open Shortest Path First Version3 (OSPFv3), use the `summary-address` command in router configuration mode. To restore the default, use the `no` form of this command.

Command Syntax

```
summary-address PREFIX / PREFIX-LENGTH (not-advertise | tag TAG-VALUE | )
```

```
no summary-address PREFIX / PREFIX-LENGTH (not-advertise | tag TAG-VALUE | )
```

<i>PREFIX</i>	IP route prefix for the destination
<i>PREFIX-LENGTH</i>	Prefix length for the network
not-advertise	(Optional) Suppress routes that match the specified prefix/mask pair. This keyword applies to OSPFv3 only
tag <i>TAG-VALUE</i>	<0-4294967295> Set tag. tag-value:32-bit tag value

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

Routes learned from other routing protocols can be summarized. The metric used to advertise the summary is the largest metric of all the more specific routes. This command helps reduce the size of the routing table.

Using this command for OSPFv3 causes an OSPFv3 Autonomous System Boundary Router (ASBR) to advertise one external route as an aggregate for all redistributed routes that are

covered by the address. For OSPFv3, this command summarizes only routes from other routing protocols that are being redistributed into OSPFv3. Use the `area range` command for route summarization between OSPF areas.

OSPFv3 does not support the `summary-address 0.0.0.0/0` command.

Examples

In the following example, the summary address `2001:1:1::/48` includes address `2001:1:1:1::/64`, `2001:1:1:2::/64`, and so on. Only the address `2001:1:1::/48` is advertised in an external link-state advertisement.

```
Switch(config)# router ipv6 ospf
```

```
Switch(config-router)# summary-address 2001:1:1::/48
```

Related Commands

area range

1.23 show ipv6 ospf

To display general information about Open Shortest Path First Version3 (OSPFv3) routing processes, use the `show ipv6 ospf` command in user EXEC or privileged EXEC mode.

Command Syntax

show ipv6 ospf (*PROCESS-ID*)

<i>PROCESS-ID</i>	Internally used identification parameter for an OSPFv3 routing process. It is locally assigned and can be any positive integer. A unique value is assigned for each OSPFv3 routing process
-------------------	--

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ipv6 ospf command when entered without a specific OSPFv3 process ID:

```
Switch# show ip ospf
```

```
Routing Process "OSPFv3 (65535)" with ID 1.1.1.1
Process uptime is 1 hour 52 minutes
SPF schedule delay min 0.500 secs, SPF schedule delay max 50.0 secs
Minimum LSA interval 5 secs, Minimum LSA arrival 1 secs
Number of incoming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 0. Checksum Sum 0x0000
Number of AS-Scoped Unknown LSA 0
Number of LSA originated 3
Number of LSA received 19
Number of areas in this router is 1
  Area BACKBONE (0)
    Number of interfaces in this area is 1(1)
    SPF algorithm executed 6 times
    Number of LSA 4. Checksum Sum 0x16569
    Number of Unknown LSA 0
```

Related Commands

None

1.24 show ipv6 ospf database

To display lists of information related to the Open Shortest Path First Version3 (OSPFv3) database for a specific router, use the show ip ospf database command in EXEC mode.

Command Syntax

show ipv6 ospf (PROCESS-ID) database

show ipv6 ospf (PROCESS-ID) database adv-router ROUTER-ID

show ipv6 ospf (PROCESS-ID) database (external | inter-prefix | inter-router | intra-prefix | link | network | router) [LINK-STATE-ID] [adv-router ROUTER-ID | self-originate]

show ipv6 ospf (PROCESS-ID) database max-age

show ipv6 ospf (PROCESS-ID) database self-originate

<i>PROCESS-ID</i>	Internally used identification parameter for an OSPFv3 routing process. It is locally assigned and can be any positive integer. A unique value is assigned for each OSPFv3 routing process
adv-router	(Optional) Displays all the LSAs of the specified router. If no IP address is included, the information is about the local router itself (in this case, the same

[IP-ADDRESS]	as self-originate)
LINK-STATE-ID	(Optional) Portion of the Internet environment that is being described by the advertisement. The value entered depends on the advertisement's LS type. It must be entered in the form of an IP address

Command Mode

Privileged EXEC

Default

None

Usage

The various forms of this command deliver information about different OSPFv3 link state advertisements.

Examples

The following is sample output from the show ipv6 ospf database command when no arguments or keywords are used:

Switch# show ip ospf database

```
OSPFv3 Router with ID (1.1.1.1) (Process 65535)
```

```
Link-LSA (Interface vlan1000)
```

Link State ID	ADV Router	Age	Seq#	CkSum	Prefix
0.0.19.232	1.1.1.1	1492	0x80000002	0x27e3	1
0.0.19.232	2.2.2.2	1488	0x80000002	0xcc94	1

```
Router-LSA (Area 0.0.0.0)
```

Link State ID	ADV Router	Age	Seq#	CkSum	Link
0.0.0.0	1.1.1.1	1452	0x80000003	0x42d6	1
0.0.0.0	2.2.2.2	1449	0x80000003	0x24fd	1

```
Network-LSA (Area 0.0.0.0)
```

Link State ID	ADV Router	Age	Seq#	CkSum
0.0.19.232	2.2.2.2	1453	0x80000001	0x7f99

```
Intra-Area-Prefix-LSA (Area 0.0.0.0)
```

Link State ID	ADV Router	Age	Seq#	CkSum	Prefix	Reference
0.0.0.2	2.2.2.2	1448	0x80000001	0x96fd	2	Network-LSA

Related Commands

None

1.25 show ipv6 ospf interface

To display Open Shortest Path First Version3 (OSPFv3)-related interface information; use the show ipv6 ospf interface command in EXEC mode.

Command Syntax

show ipv6 ospf interface [*INTERFACE-NAME*]

<i>INTERFACE-NAME</i>	(Optional) Interface name. If the interface-name argument is included, only information for the specified interface is included
-----------------------	---

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output of the show ipv6 ospf interface command when vlan12 is specified:

```
Switch# show ip ospf interface vlan12
vlan12 is up, line protocol is up
  Interface ID 4108
  IPv6 Prefixes
    fe80::8eb5:d5ff:fed9:ff00/10 (Link-Local Address)
    2004:12:0:12::1/96
  OSPFv3 Process (0), Area 0.0.0.0, Instance ID 0
    Router ID 1.1.1.1, Network Type BROADCAST, Cost: 1
    Transmit Delay is 1 sec, State Backup, Priority 1
    Designated Router (ID) 2.2.2.2
      Interface Address fe80::188f:bef:fe99:9800
    Backup Designated Router (ID) 1.1.1.1
      Interface Address fe80::8eb5:d5ff:fed9:ff00
```

```
Timer interval configured, Hello 10, Dead 40, Wait 40, Retransmit 5
Hello due in 00:00:06
Neighbor Count is 1, Adjacent neighbor count is 1
```

Related Commands

None

1.26 show ipv6 ospf neighbor

To display Open Shortest Path First Version3 (OSPFv3)-neighbor information on a per-interface basis, use the show ipv6 ospf neighbor command in privileged EXEC mode.

Command Syntax

show ipv6 ospf neighbor [*INTERFACE-NAME* (**detail**)] [*NEIGHBOR-ID*]

<i>INTERFACE-NAME</i>	(Optional) Interface name. If the interface-name argument is included, only information for the specified interface is included
<i>NEIGHBOR-ID</i>	(Optional) Neighbor ID
detail	(Optional) Displays all neighbors given in detail (lists all neighbors)

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ipv6 ospf neighbor command showing a single line of summary information for each neighbor:

Switch# show ip ospf neighbor

```
OSPFv3 Process (0)
Neighbor ID    Pri  State           Dead Time   Interface   Instance ID
2.2.2.2        1   Full/DR         00:00:31   vlan12      0
2.2.2.2        1   Full/DR         00:00:33   vlan1212    0
```

```
OSPFv3 Process (65535)
Neighbor ID    Pri  State           Dead Time   Interface  Instance ID
2.2.2.2        1   Full/DR         00:00:31   vlan1000   0
```

Related Commands

None

1.27 show ipv6 ospf database database-summary

To display the summary of database used by OSPFv3, use the show ip ospf database database-summary command in privileged EXEC mode.

Command Syntax

show ipv6 ospf (*PROCESS-ID*)database database-summary

<i>PROCESS-ID</i>	(Optional) Internal identification. It is locally assigned and can be any positive integer. The number used here is the number assigned administratively when enabling the OSPF routing process
-------------------	---

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to use show ipv6 ospf database database-summary command.

Switch# show ipv6 ospf 65535 database database-summary

```
OSPFv3 Router with ID (1.1.1.1) (Process ID 65535)
Area (0.0.0.0) database summary
LSA Type          Count  MaxAge
Router             2      0
Network            1      0
Inter-Prefix       0      0
```

Inter-Router	0	0
Intra-Prefix	1	0
Subtotal	4	0

Process 65535 database summary

LSA Type	Count	MaxAge
Router	2	0
Network	1	0
Inter-Prefix	0	0
Inter-Router	0	0
Type-5 Ext	0	0
Link	2	0
Intra-Prefix	1	0
Total	6	0

Related Commands

None

1.28 show ipv6 ospf route

To display the summary of routes used by OSPFv3, use the `show ipv6 ospf route summary` command in privileged EXEC mode.

Command Syntax

show ipv6 ospf (*PROCESS-ID*) route

<i>PROCESS-ID</i>	(Optional) Internal identification. It is locally assigned and can be any positive integer. The number used here is the number assigned administratively when enabling the OSPFv3 routing process
-------------------	---

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to use show ipv6 ospf route command.

```
Switch# show ipv6 ospf route
```

```
OSPFv3 Process (0)
Codes: C - connected, D - Discard, O - OSPF, IA - OSPF inter area
      E1 - OSPF external type 1, E2 - OSPF external type 2

  Destination                                Metric
  Next-hop
C 2004:1:0:10::/96                          1
  directly connected, vlan10, Area 0.0.0.0
C 2004:1:0:20::/96                          1
  directly connected, vlan20, Area 0.0.0.14
C 2004:1:0:100::/96                        1
  directly connected, vlan100, Area 0.0.0.0
C 2004:1:0:200::/96                        1
  directly connected, vlan200, Area 0.0.0.14
O 2004:2:0:10::/96                          2
  via fe80::188f:beff:fe99:9800, vlan1212, Area 0.0.0.0
  via fe80::188f:beff:fe99:9800, vlan12, Area 0.0.0.0
IA 2004:2:0:20::/96                         2
  via fe80::188f:beff:fe99:9800, vlan1212, Area 0.0.0.0
  via fe80::188f:beff:fe99:9800, vlan12, Area 0.0.0.0
```

Related Commands

None

1.29 show ipv6 ospf route summary

To display the summary of routes used by OSPFv3, use the show ipv6 ospf route summary command in privileged EXEC mode.

Command Syntax

```
show ipv6 ospf (PROCESS-ID) route summary
```

<i>PROCESS-ID</i>	(Optional) Internal identification. It is locally assigned and can be any positive integer. The number used here is the number assigned administratively when enabling the OSPFv3 routing process
-------------------	---

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to use show ipv6 ospf route summary command.

Switch# show ipv6 ospf route summary

```
OSPFv3 Router with ID (1.1.1.1) (Process ID 0)
```

Route Type	Count
(C)Connected	8
(D)Discard	0
(O)Intra area	2
(IA)Inter area	4
(E1)Ext type 1	0
(E2)Ext type 2	0
(N1)NSSA Ext type 1	0
(N2)NSSA Ext type 2	0
Total	14

```
OSPFv3 Router with ID (1.1.1.1) (Process ID 65535)
```

Route Type	Count
(C)Connected	1
(D)Discard	0
(O)Intra area	1
(IA)Inter area	0
(E1)Ext type 1	0
(E2)Ext type 2	0
(N1)NSSA Ext type 1	0
(N2)NSSA Ext type 2	0
Total	2

Related Commands

None

1.30 show ipv6 protocols ospf

To display IPv6 routing protocol process parameters and statistics of Open Shortest Path First Version3 (OSPFv3), use the show ipv6 ospf protocols ospf command in privileged EXEC mode.

Command Syntax

show ipv6 protocols ospf

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to use show ipv6 protocols ospf command.

Switch # show ipv6 protocols ospf

```
Routing Protocol is "OSPFv3 (0)" with ID 1.1.1.1
```

```
Redistributing:
```

```
Distance: (default is 110)
```

```
Routing Protocol is "OSPFv3 (65535)" with ID 1.1.1.1
```

```
Redistributing:
```

```
Distance: (default is 110)
```

Related Commands

None

1.31 timers spf

To turn on Open Shortest Path First Version3 (OSPFv3) shortest path first (SPF) throttling, use the timers spf command in router configuration mode. To turn off SPF throttling, use the no form of this command.

Command Syntax

timers spf exp *SPF-HOLD_MIN* *SPF-HOLD_MAX*

no timers spf exp

<i>SPF-HOLD_MIN</i>	Indicates the maximum hold time between two consecutive SPF calculations. Value range is 0 to 2147483647 milliseconds
---------------------	---

<i>SPF-HOLD_MAX</i>	Indicates the minimum hold time between two consecutive SPF calculations. Value range is 0 to 2147483647 milliseconds
---------------------	---

Command Mode

Router Configuration

Default

None

Usage

None

Examples

The following example shows how to configure SPF calculation parameters.

```
Switch(config)# router ipv6 ospf 1
Switch(config-router)# router-id 10.10.10.2
Switch(config-router)# timers spf exp 20 50
```

Related Commands

None

1.32 max-concurrent-dd

To specify Maximum number allowed to process DD concurrently, use the `max-concurrent-dd` command in router configuration mode. To restore default value, use the `no` form of this command

Command Syntax

```
max-concurrent-dd NUMBER-VALUE
no max-concurrent-dd
```

<i>NUMBER-VALUE</i>	<1-65535>Number of DD process
---------------------	-------------------------------

Command Mode

Router Configuration

Default

None

Usage

This command used to specify Maximum number allowed to process DD concurrently.

Examples

The following example shows how to use max-concurrent-dd command.

```
Switch(config)# router ipv6 ospf 100
```

```
Switch(config-router)# router-id 10.10.10.2
```

```
Switch(config-router)# max-concurrent-dd 10
```

Related Commands

None

1.33 debug ipv6 ospf

Use this command to specify all debugging options for OSPFv3. Use the no parameter with this command to disable this function.

Command Syntax

debug ipv6 ospf (all)

no debug ipv6 ospf (all)

all	enable all debugging
------------	----------------------

Command Mode

Privileged Exec

Default

None

Usage

The debug ospf all command enables the display of all debug information.

Examples

```
Switch# debug ipv6 ospf all
```

Related Commands

None

1.34 debug ipv6 ospf events

Use this command to specify debugging options for OSPFv3 event troubleshooting. Use this command without parameters to turn on all the options. Use the no parameter with this command to disable this function.

Command Syntax

```
debug ipv6 ospf events (abr|asbr|nssa|os|router|vlink)
```

```
no debug ipv6 ospf events (abr|asbr|nssa|os|router|vlink)
```

abr	shows ABR events
asbr	shows ASBR events
nssa	shows NSSA events
os	shows OS interaction events
router	shows others router events
vlink	shows virtual link events

Command Mode

Privileged EXEC

Default

None

Usage

The `debug ospf event` command enables the display of debug information related to OSPFv3 internal events.

Examples

```
Switch# debug ipv6 ospf events nssa
```

Related Commands

None

1.35 debug ipv6 ospf ifsm

Use this command to specify debugging options for OSPFv3 Interface Finite State Machine (IFSM) troubleshooting.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
debug ipv6 ospf ifsm (status) (events) (timers)
```

```
no debug ipv6 ospf ifsm (status) (events) (timers)
```

status	Displays IFSM status information
events	Displays IFSM event information
timers	Displays IFSM TIMER information

Command Mode

Privileged EXEC

Default

None

Usage

The `debug ospf ifsm` command enables the display of debug information related to the Interface Finite State Machine (IFSM).

Examples

```
Switch# debug ipv6 ospf ifsm timers
```

Related Commands

None

1.36 debug ipv6 ospf nfsm

Use this command to specify debugging options for OSPFv3 Neighbor Finite State Machine (NFSM) troubleshooting.

Use the no parameter with this command to disable this function.

Command Syntax

```
debug ipv6 ospf nfsm (status|events|timers|)
```

```
no debug ipv6 ospf nfsm (status|events|timers|)
```

status	Displays NFSM status information
events	Displays NFSM event information
timers	Displays NFSM TIMER information

Command Mode

Privileged EXEC

Default

None

Usage

The debug ospf nfsm command enables the display of debug information related to the Neighbor Finite State Machine (NFSM).

Examples

```
Switch# debug ipv6 ospf nfsm timers
```


Related Commands

None

1.37 debug ipv6 ospf lsa

Use this command to specify debugging options for OSPFv3 Link State Advertisements (LSA) troubleshooting.

Use the no parameter with this command to disable this function.

Command Syntax

debug ipv6 ospf lsa (flooding|generate|install|maxage|refresh)

no debug ipv6 ospf lsa (flooding|generate|install|maxage|refresh)

flooding	Displays LSA flooding
generate	Displays LSA generate
install	Displays LSA installation
maxage	Displays the maximum age of LSA in seconds
refresh	Displays LSA refresh

Command Mode

Privileged EXEC

Default

None

Usage

The debug ospf lsa command enables the display of debug information related to internal operations of LSAs.

Examples

```
Switch# debug ipv6 ospf lsa install
```

Related Commands

None

1.38 debug ipv6 ospf packet

Use this command to specify debugging options for OSPFv3 packets.

Use the no parameter with this command to disable this function..

Command Syntax

debug ipv6 ospf packet [*PARAMETERS*]

no debug ipv6 ospf packet [*PARAMETERS*]

PARAMETERS = **dd|detail|hello|ls-ack|ls-request|ls-update|recv|send**

dd	Specifies debugging for OSPF database descriptions
detail	Sets the debug option to detailed information
hello	Specifies debugging for OSPF hello packets
ls-ack	Specifies debugging for OSPF link state acknowledgments
ls-request	Specifies debugging for OSPF link state requests
ls-update	Specifies debugging for OSPF link state updates
recv	Specifies the debug option set for received packets
send	Specifies the debug option set for sent packets

Command Mode

Privileged EXEC

Default

None

Usage

The debug ospf packet command enables the display of debug information related to the sending and receiving of packets.

Examples

```
Switch# debug ipv6 ospf packet dd send detail
```

Related Commands

None

1.39 debug ipv6 ospf route

Use this command to specify which route calculation to debug. Use this command without parameters to turn on all the options.

Use the no parameter with this command to disable this function.

Command Syntax

debug ipv6 ospf route (ase|ia|install|spf)

no debug ipv6 ospf route (ase|ia|install|spf)

ase	Specifies the debugging of external route calculation
ia	Specifies the debugging of Inter-Area route calculation
install	Specifies the debugging of route installation
spf	Specifies the debugging of SPF calculation

Command Mode

Privileged EXEC

Default

None

Usage

The debug ospf route command enables the display of debug information related to route-calculation

Examples

```
Switch# debug ipv6 ospf route install
```

Related Commands

None

1.40 show debugging ipv6 ospf

Use this command to display the set OSPFv3 debugging option..

Command Syntax

show debugging ipv6 ospf

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This is a sample output from the show debugging ipv6 ospf command. Some lines in this output wrap around, they might not wrap around in the actual display.

```
Switch# show debugging ipv6 ospf
```

```
OSPFv3 debugging status:  
OSPFv3 all packet detail debugging is on  
OSPFv3 all IFSM debugging is on  
OSPFv3 all NFSM debugging is on  
OSPFv3 all LSA debugging is on  
OSPFv3 all route calculation debugging is on  
OSPFv3 all event debugging is on
```

Related Commands

None

1.41 show resource ipv6 ospf

Use this command to display the route resources used by OSPFv3 protocol.

Command Syntax

show resource ipv6 ospf

Command Mode

Privileged EXEC

Default

None

Usage

None.

Examples

The following is sample output from the show resource ipv6 ospf command:

Switch# show resource ipv6 ospf

```
OSPFv3
Resource                Used      Capability
=====
Routes                   16       1913
```

Related Commands

show ipv6 ospf route summary

2 RIPng Commands

2.1 router ipv6 rip

To enable or configure the Routing Information Protocol next generation (RIPng) routing process, use the `router ipv6 rip` command in global configuration mode. To disable the RIPng routing process, use the `no` form of this command.

Command Syntax

```
router ipv6 rip
no router ipv6 rip
```

Command Mode

Global Configuration

Default

No RIPng routing process is defined.

Usage

None

Examples

The following example shows how to begin the RIPng routing process:

```
Switch(config)# router ipv6 rip
```

Related Commands

None

2.2 ipv6 router rip

To enable RIPng routing process on specific interface, use the command `ipv6 router rip` in interface configuration mode. Use the `no` parameter with this command to disable RIPng routing process on interface.

Command Syntax

```
ipv6 router rip  
no ipv6 router rip
```

Command Mode

Interface configuration

Default

None.

Usage

Use this command to enable RIPng routing on the interface.

Examples

In the following example, enable RIPng routing on the interface eth-0-1.

```
Switch (config)# interface eth-0-1  
Switch (config-if)# no switchport  
Switch (config-if)# ipv6 router rip
```

Related Commands

None

2.3 ipv6 rip metric-offset

Use this command to set RIP metric offset in interface mode. To restore the default metric, use the `no` form of this command.

Command Syntax

```
ipv6 rip metric-offset NUMBER-VALUE  
no ipv6 rip metric-offset
```

NUMBER-VALUE	Default metric value is 1, the number range is 1 to 16
--------------	--

Command Mode

Interface configuration

Default

Metric offset value is 1.

Usage

Metric offset value is used to add the metric of the network on which the message arrived (as the RFC describes)..

Examples

In the following example, RIPng specify the adding metric value 2 when the RIPng message arrives

```
Switch(config)#interface eth-0-1
```

```
Switch (config-if)# ipv6 rip metric-offset 2
```

Related Commands

None

2.4 ipv6 rip split-horizon

To enable the split horizon mechanism for Routing Information Protocol next generation (RIPng), use the `ipv6 rip split-horizon` command in interface configuration mode. To disable the split horizon mechanism, use the `no` form of this command.

Command Syntax

ipv6 rip split-horizon (poisoned|)

no ipv6 rip split-horizon

poisoned	Split horizon with poisoned reverse
-----------------	-------------------------------------

Command Mode

Interface Configuration

Default

This command is enabled with poisoned reverse by default.

Usage

In general, changing the default state for the ipv6 rip split-horizon command is not recommended, unless you are certain that your application requires a change in order to properly advertise routes.

Examples

The following example enables split horizon without poisoned reverse:

```
Switch(config)# interface eth-0-1
Switch(config-if)# ipv6 rip split- horizon
```

Related Commands

None

2.5 default-information originate (RIPng)

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

Command Syntax

```
default-information originate (route-map name)
no default-information originate
```

route-map <i>name</i>	Route map reference
------------------------------	---------------------

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

The default route can be learned by neighbor, but can't be stored in FIB.

Examples

The following example originates a default route (0::0/0) into RIPng.

```
Switch(config)# router ipv6 rip
```

```
Switch(config-router)# default-information originate
```

Related Commands

None

2.6 default-metric (RIPng)

To specify the metrics to be assigned to redistributed routers for Routing Information Protocol next generation (RIPng), use the `default-metric` command in router configuration mode. To return to the default state, use the `no` form of this command.

Command Syntax

default-metric *NUMBER-VALUE*

no default-metric

<i>NUMBER-VALUE</i>	Default metric value is 1, the number range is 1 to 16
---------------------	--

Command Mode

Router Configuration

Default

By default, the metric is set to 1.

Usage

The default-metric command is used in conjunction with the redistribute router configuration command to cause the current routing protocol to use the same metric value for all redistributed routes. A default metric helps solve the problem of redistributing routes with incompatible metrics. Whenever metrics do not convert, using a default metric provides a reasonable substitute and enables the redistribution to proceed.

Examples

The following example shows a switch using both the RIPng and the Open Shortest Path First (OSPFv3) routing protocols. The example advertises OSPFv3-derived routes using RIPng and assigns the OSPFv3-derived routes a RIPng metric of 10.

```
Switch(config)# router ipv6 rip
Switch(config-router)#default-metric 10
Switch(config-router)#redistribute ospfv3
```

Related Commands

redistribute (RIPng)

2.7 distance (RIPng)

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

Command Syntax

distance *DISTANCE*

no distance

DISTANCE	Administrative distance, an integer from 1 to 255 (routes with a distance value of 255 are not installed in the routing table)
----------	--

Command Mode

Router Configuration

Default

By default, the distance is 120.

Usage

Route Source	Default Distance
Connected interface	0
Static route	1
External Border Gateway Protocol (eBGP)	20
Open Shortest Path First (OSPF)	110
Routing Information Protocol (RIP)/ Routing Information Protocol next generation (RIPng)	120
Internal BGP	200
Unknown	255

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

Examples

The following is sample output from the distance command:

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)#distance 200
```

Related Commands

None

2.8 neighbor (RIPng)

To specify a neighboring router to which to notify routing updating information, use the neighbor command in router configuration mode. To remove the neighbor, use the no form of this command.

Command Syntax

neighbor *IP-ADDRESS INTERFACE-NAME*

no neighbor *IP-ADDRESS INTERFACE-NAME*

IP-ADDRESS	Link-local IP address of a peer switch with which routing information will be notified
INTERFACE-NAME	Interface name to which the neighbor is specified

Command Mode

Router Configuration

Default

No neighboring switches are defined.

Usage

Especially use the neighbor command in conjunction with the passive-interface command to send routing updates to specific neighbors. This command permits the point-to-point (non-multicast) notification of routing update information. Multiple neighbors can be configured

Examples

In the following example, RIPng updates are sent to all interfaces which have been enabled RIPng routing except eth-0-1. However, in this case a neighbor switch configuration command is included. This command permits the sending of routing updates to specific neighbors.

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)# passive-interface eth-0-1
```

```
Switch(config-router)# neighbor fe80:db8::1 eth-0-1
```

Related Commands

router rip

2.9 offset-list (RIPng)

To add an offset to incoming and outgoing metrics to routes exchanged via Routing Information Protocol next generation (RIPng), use the offset-list command in router configuration mode. To remove an offset list, use the no form of this command.

Command Syntax

offset-list *ACCESSS-LIST-NAME* (**in** | **out**) *METRIC-OFFSET* (*INTERFACE-NAME* |)

no offset-list (**in** | **out**) (*INTERFACE-NAME* |)

<i>ACCESSS-LIST-NAME</i>	Named access list to be applied
in	Applies the access list to incoming metrics
out	Applies the access list to outgoing metrics
<i>METRIC- OFFSET</i>	Positive offset to be applied to metrics for networks matching the access list. The meric-offset range is 0 to 16
<i>INTERFACE-NAME</i>	Interface name to which the offset list is applied

Command Mode

Router Configuration

Default

This command is disabled by default.

Usage

Especially if the offset value is added to the routing metric by offset-list, the default action where the metric updates when RIPng messag arrives (as RFC defined) is ignored, but outputs will be added.

The offset value is added to the routing metric. An offset list with an interface is considered extended and takes precedence over an offset list that is not extended. Therefore, if an entry passes the extended offset list and the normal offset list, the offset of the extended offset list is added to the metric.

Examples

In the following example, the switch applies an offset of 10 if access list 21 permits:

```
Switch(config)# router ipv6 rip
```

```
Switch(config-router)# offset-list 21 out 10
```

Related Commands

None

2.10 passive-interface (RIPng)

To disable sending routing updates for the Routing Information Protocol next generation (RIPng) on an interface, use the passive-interface command in router configuration mode. To re-enable the sending of routing updates, use the no form of this command.

Command Syntax

passive-interface *INTERFACE-NAME*

no passive-interface *INTERFACE-NAME*

<i>INTERFACE-NAME</i>	The interface name
-----------------------	--------------------

Command Mode

Router Configuration

Default

Interface is active by default.

Usage

The command disable the sending of routing updates and ignore the request message from neighbor on an interface, but updates from other routers on that interface should be received and processed.

Examples

The following example sets the interface eth-0-1 as passive:

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)# passive-interface eth-0-1
```

Related Commands

router ipv6 rip

2.11 redistribute (RIPng)

To redistribute routes from one routing domain into RIPng routing domain, use the redistribute command in router configuration mode. To disable redistribution, use the no form of this command.

Command Syntax

redistribute *PROTOCOL* (**metric** *VALUE* | **route-map** *WORD* |)

no redistribute *PROTOCOL* (**metric** (*VALUE*) | **route-map** (*WORD*) |)

<i>PROTOCOL</i>	<i>The name of a routing protocol, or the keyword connected, or static. If you specify a routing protocol, use one of the following keywords: bgp, and ospfv3, static, connected</i>
metric <i>VALUE</i>	<i>(Optional) When redistributing other routing process to the RIP process, the default metric is 1 if no metric value is specified</i>
route-map name	<i>Route map reference, name of route-map entry</i>

Command Mode

Router Configuration

Default

Route redistribution is disabled.

Metric-value: 1

Usage

The metric value specified in the redistribute command supersedes the metric value specified using the default-metric command.

Examples

The following example redistributes the static routes into RIPng with metric 10:

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)#redistribute static metric 10
```

Related Commands

default-metric

2.12 timers basic (RIPng)

To adjust Routing Information Protocol next generation (RIPng) network timers, use the timers basic command in router configuration mode. To restore the default timers, use the no form of this command.

Command Syntax

timers basic *UPDATE TIMEOUT INVALID*

no timers basic

<i>UPDATE</i>	Rate (in seconds) at which updates are sent. This is the fundamental timing parameter of the routing protocol
<i>TIMEOUT</i>	Time (in seconds) after which a route is declared invalid without updates that refresh the route. The route then enters into an invalid state and is not used for forwarding packets. It is marked inaccessible and advertised as unreachable
<i>INVALID</i>	Time after which an invalid route is removed from RIPng routing database

Command Mode

Router Configuration

Default

Update timer: 30 seconds

Timeout timer: 180 seconds

Invalid timer: 120 seconds

Usage

The basic timing parameters for RIPng are adjustable. Because RIPng is executing a distributed, asynchronous routing algorithm, these timers must be the same for all switches and access servers in the network.

Examples

The following example sets updates to every 5 seconds. If a switch is not learned from in 15 seconds, the route is declared unusable. And after 15 seconds the invalid route will be removed from RIPng routing database.

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)#timers basic 5 15 15
```

Related Commands

None

2.13 distribute-list(RIPng)

To filter networks in routing updates, use the distribute-list command in router configuration mode. To restore the default value, use the no form of this command.

Command Syntax

distribute-list (*prefix name* | *ACCESSS-LIST-NAME*) (**in|out**) (*INTERFACE-NAME* |)

no distribute-list (*prefix name* | *ACCESSS-LIST-NAME*) (**in|out**) (*INTERFACE-NAME* |)

prefix name	Filter prefixes in routing update
<i>ACCESSS-LIST-NAME</i>	Access-list name
in	Filter incoming routing updates
out	Filter outgoing routing updates
<i>INTERFACE-NAME</i>	The interface name

Command Mode

Router Configuration

Default

None

Usage

None

Examples

The following is sample to filter all inputting packets:

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)# distribute-list prefix 1 in
```

Related Commands

ipv6 prefix-list

2.14 aggregate-address (RIPng)

To specify an aggregate RIPng route announcement, use the aggregate-address command in router configuration mode. To disable this feature, use the no form of this command.

Command Syntax

aggregate-address *IP-ADDRESS* (**avoid-feedback**) *INTERFACE-NAME*

no aggregate-address *IP-ADDRESS* *INTERFACE-NAME*

<i>IP-ADDRESS</i>	Specify an aggregate network (IPv6 address prefix and length).
avoid-feedback	Forbid to learn the address which is the same to aggregate address from the interface
<i>INTERFACE-NAME</i>	The interface name

Command Mode

Router Configuration

Default

No aggregate address is defined.

Usage

If the routing info is suppressed by aggregate-address, it is still stored in RIPng database, but willn't be notified to nerghbor. On the other hand the aggregate-address will be notified to neighbor..

Examples

In the following example, RIPng specify an aggregate address into RIPng database.

```
Switch(config)#router ipv6 rip
```

```
Switch(config-router)# aggregate-address 2001:db8::/32
```

Related Commands

None

2.15 route map(RIPng)

Use this command to set a route map for input or output filtering on a specified interface. Use the no parameter with this command to disable this function.

Command Syntax

route-map *name* (**in|out**) *INTERFACE-NAME*

no route-map *name* (**in|out**) *INTERFACE-NAME*

<i>name</i>	route map name
in	route map for input filterings
out	route map for output filtering
<i>INTERFACE-NAME</i>	Specify an interface name to which to associate the route map

Command Mode

Router configuration

Default

None.

Usage

Use this command to set a route map for input or output filtering on a specified interface.

Examples

In the following example, set a route map for input filtering interface eth-0-1.

```
Switch (config)# router ipv6 rip
```

```
Switch (config-router)# route-map routemap10 in eth-0-1
```

Related Commands

None

2.16 maximum-prefix(RIPng)

Use this command to configure the maximum prefix. Use the no parameter with this command to disable the limiting of the number of RIPng routes in the routing table.

Command Syntax

maximum-prefix *NUMBER-VALUE* (*PERCENTAGE-VALUE*)

no maximum-prefix

<i>NUMBER-VALUE</i>	maximum number of RIPng routes allowed,the range is 1 to 65535
<i>PERCENTAGE-VALUE</i>	Percentage of maximum routes to generate a warning, the range is 1 to 100. The default threshold is 75%.

Command Mode

Router configuration

Default

None.

Usage

Use this command to configure the maximum prefix.

Examples

In the following example, set maximum prefix 700 and warning percentage is 70%.

```
Switch (config)# router ipv6 rip
```

```
Switch (config-router)# maximum-prefix 700 70
```

Related Commands

None

2.17 show ipv6 rip database

Use this command to display RIPng information database.

Command Syntax

```
show ipv6 rip database
```

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ip rip database command.

```
Switch# show ipv6 rip database
```

```
Codes: R - RIP, Rc - RIP connected, Rs - RIP static, Ra - RIP aggregated,  
Rcx - RIP connect suppressed, Rsx - RIP static suppressed,  
K - Kernel, C - Connected, S - Static, O - OSPF, I - IS-IS, B - BGP
```

Network	Next Hop	If	Met	Tag	Time
Rc 2001:db8:0:6::/64	::	eth-0-9	1	0	
Rc 2001:db8:0:49::/64	::	eth-0-48	1	0	

Related Commands

show ipv6 rip interface

2.18 show ipv6 rip interface

To display summary information of Routing Information Protocol next generation (RIPng) for a specific interface, use the show ip rip interface command in privileged EXEC mode.

Command Syntax

show ipv6 rip interface (*INTERFACE-NAME* |)

INTERFACE-NAME	<i>The interface name</i>
----------------	---------------------------

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ip rip interface command.

```
Switch# show ipv6 rip interface eth-0-9
```

```
eth-0-9 is up, line protocol is up
Routing Protocol: RIPng
  Passive interface: Disabled
  Split horizon: Enabled with Poisoned Reversed
  IPv6 interface address:
    2001:db8:0:6::2/64
    fe80::b4df:82ff:fe70:ec00/10
```

Related Commands

show ipv6 rip database

2.19 show ipv6 rip database database-summary

Use this command to display the summary statistics for RIPng database.

Command Syntax

show ipv6 rip database database-summary

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ip rip database database-summary command.

```
Switch# show ipv6 rip database database-summary
```

Type	Count
RIPng connected	2
Total	2

Related Commands

show ipv6 rip database

2.20 show ipv6 protocol rip

To show Routing Information Protocol next generation (RIPng), use the show ipv6 protocol rip command in privileged EXEC mode.

Command Syntax

show ipv6 protocol rip

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show ipv6 rip interface command.

```
Switch# show ipv6 protocol rip
```

```
Routing Protocol is "ripng"  
  Sending updates every 30 seconds with +/-50%, next due in 2949331570 seconds  
  Timeout after 180 seconds, garbage collect after 120 seconds  
  Outgoing update filter list for all interface is not set  
  Incoming update filter list for all interface is not set  
  Default redistribute metric is 1  
  Redistributing:  
  Interface  
    eth-0-9  
    eth-0-48  
  Routing for Networks:  
  Number of routes (including connected): 2  
  Distance: (default is 120)
```


Related Commands

None

2.21 debug ipv6 rip

Use this command to specify the options for the displayed debugging information for RIPng events, RIPng packets. Use the no parameter with this command to disable all debugging.

Command Syntax

debug ipv6 rip (all|events|packet (recv|send|) (detail)|)

no debug ipv6 rip (all|events|packet (recv|send|) (detail)|)

all	All RIPng debug information
events	RIPng events debug information is displayed
packet	packet (recv send) (detail) Specifies RIPng packets only

Command Mode

Privileged EXEC

Default

Disabled

Usage

None

Examples

The following example displays information about the ripng packets that are received and sent out from the connected router.

```
Switch# debug ipv6 rip packet
```

Related Commands

show debugging rip

2.22 show debugging ipv6 rip

Use this command to display the RIP debugging status for these debugging options: nsm debugging, RIP event debugging, RIP packet debugging.

Command Syntax

```
show debugging ipv6 rip
```

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to display the debug status of RIPng.

Examples

The following is sample output from the show debugging ripng command.

```
Switch# show debugging ipv6 rip
```

```
RIPng debugging status:  
RIPng event debugging is on
```

Related Commands

```
debug ipv6 rip
```

2.23 show resource ipv6 rip

Use this command to display the route resources used by RIPng protocol.

Command Syntax

```
show resource ipv6 rip
```

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show resource ipv6 rip command.

Switch# show resource ipv6 rip

```

RIPng
Resource                               Used      Capability
=====
Routes                                  2         728
  
```

Related Commands

show ipv6 rip database

2.24 clear ipv6 rip route

To clear the specific route in RIPng routing table, use the command clear ipv6 rip router in privileged exec mode.

Command Syntax

clear ipv6 rip route (*IP-ADDRESS|connected|static|ospfv3|bgp|rip|all*)

<i>IP-ADDRESS</i>	Removes entries which exactly match this destination address from the RIPng routing table.
<i>connected</i>	Removes entries for connected routes from the RIPng routing table.
<i>static</i>	Removes static entries from the RIPng routing table
<i>ospfv3</i>	Removes only OSPF routes from the RIPng routing table
<i>bgp</i>	Removes only BGP routes from the RIPng routing table
<i>rip</i>	Removes ripng entries from RIPng routing table
<i>all</i>	Removes the entire RIPng routing table

Command Mode

Privileged EXEC

Default

None.

Usage

Use this command to clear specific data from the RIPng routing table.

Examples

In the following example, clear the entire RIPng routing table.

```
Switch# clear ipv6 rip route all
```

Related Commands

None

3 IPv6UC Commands

3.1 ipv6 enable

Use this command to enable ipv6 function. Use the no form of this command to disable ipv6 function.

Command Syntax

ipv6 enable
no ipv6 enable

Command Mode

Global Configuration

Default

Ipv6 function is disabled by default.

Usage

This command is used to enable the ipv6 function globally. Ipv6 packet should be processed as a L2 packet when ipv6 function is disabled.

Examples

Switch (config)# ipv6 enable

Related Commands

None

3.2 max-static-v6routes

To configure the maximum ipv6 static routes in system, use the max-static-v6routes command in global configuration mode. To configure the maximum static routes to default value, use the no form of this command.

Command Syntax

max-static-v6routes *count*

no max-static-v6routes

<i>Count</i>	the range is <1-65535>
--------------	------------------------

Command Mode

Global Configuration

Default

Please reference the current TCAM profile.

Usage

Users should not configure the maximum ipv6 static routes more than system profile of FIB. Also, users should not configure the maximum ipv6 static routes less than the current static routes count.

Examples

The following example displays how to change maximum ipv6 static routes to 10.

```
Switch (config)# max-static-v6routes 10
```

Related Commands

show ipv6 route

3.3 ipv6 route

To establish ipv6 static routes, use the ipv6 route command in global configuration mode. To remove ipv6 static routes, use the no form of this command.

Command Syntax

```
ipv6 route DEST_PREFIX (NEXTHOP |IFTUNNEL)  
ipv6 route DEST_PREFIX (NEXTHOP |IFTUNNEL) ADMIN_DISTANCE  
ipv6 route DEST_PREFIX NEXTHOP INTERFACE  
ipv6 route DEST_PREFIX NEXTHOP INTERFACE ADMIN_DISTANCE  
no ipv6 route DEST_PREFIX NEXTHOP INTERFACE  
no ipv6 route DEST_PREFIX (NEXTHOP |IFTUNNEL)  
no ipv6 route DEST_PREFIX
```

<i>DEST_PREFIX</i>	IPv6 route prefix (in format X:X::X:X/M) for the destination
<i>NEXTHOP</i>	IPv6 route address (in format X:X::X:X) for the nexthop
<i>IFTUNNEL</i>	Tunnel interface name for the ipv6 route
<i>INTERFACE</i>	Out going interface for the ipv6 route
<i>ADMIN_DISTANCE</i>	(Optional) An administrative distance. Between 1 - 255. The default administrative distance for a static route is 1. This configuration is optional.

Command Mode

Global Configuration

Default

There is not any static IPv6 route configured by default.

Usage

None

Examples

```
Switch (config)# ipv6 route 3001::1/64 fe80::1234 eth-0-2  
Switch (config)# ipv6 route 3002::1/64 3001::1
```

Related Commands

```
show ipv6 route
```

3.4 ipv6 address

To set an IPv6 address for an interface, use the `ipv6 address` command in interface configuration mode. To remove an IPv6 address, use the `no` form of this command.

Command Syntax

ipv6 address *GOLBAL_PREFIX* (**eui-64**)
no ipv6 address *GOLBAL_PREFIX* (**eui-64**)
ipv6 address *LINK-LOCAL* **link-local**
no ipv6 address *LINK-LOCAL* **link-local**
ipv6 address **auto link-local**
no ipv6 address **auto link-local**
no ipv6 address

<i>GOLBAL_PREFIX</i>	Global IPv6 address and prefix length. In X:X::X:X/M format
<i>LINK-LOCAL</i>	Link-local IPv6 address. In X:X::X:X format

Command Mode

Interface Configuration

Default

There is not any ipv6 address on the interface by default.

Usage

Use this command to configure ipv6 address on the interface. Use the `no` form of this command to remove the ipv6 address. This configuration should not affect the ipv4 functions and other ipv6 configuration on the interface.

The maximum count of the Link-local address is 1; the maximum count of the global address and anycast address is 8.

Use this command with the keyword "auto link-local " to automatically generate a link-local address, if there is no link-local address on this interface. Use the `no` form of this command with the keyword "auto link-local" to remove the automatically generated link-local address, if there is only that automatically generated link-local address left on this interface.

Use this command with a specified ipv6 address (e.g. 3ffe:506::1/48) to configure a global unicast or anycast ipv6 address. Use this command with the keyword "eui-64" to generate

interface id automatically by the eui-64 algorithm. Use this command with the keyword "anycast" to point out this specified ipv6 address is an anycast address. The global address and the anycast should not be same. Use the no form of this command the remove the specified ipv6 global unicast or anycast address.

If there is no link-local address on the interface, system should automatically generate one when configure a global unicast or anycast ipv6 address.

Use this command with a specified ipv6 address (e.g. fe80::1) and a keyword "link-local" to configure a link-local address. Use the no form of this command with the specified ipv6 address and the keyword "link-local" to remove the specified ipv6 link-local address. The specified link-local address has a higher priority than the automatically generated the link-local address, that can overwrite the automatically generated one.

Use the no form of this command without any parameters or keywords to remove all ipv6 addresses on the interface, include ipv6 global addresses, anycast addresses and link-local addresses.

Examples

```
Switch (config-if)# ipv6 address fe80::1233 link-local
```

```
Switch (config-if)# ipv6 address 3001:1::1234/64
```

Related Commands

```
show ipv6 interface
```

3.5 show ipv6 route

Use this command to show the ipv6 routes.

Command Syntax

```
show ipv6 route (database)
```

```
show ipv6 route (database) (bgp|connected|ospf|rip|static)
```

```
show ipv6 route IPV6_ADDRESS
```

```
show ipv6 route IPV6_PREFIX
```

```
show ipv6 route summary
```

<i>IPV6_ADDRESS</i>	IPv6 prefix in X:X::X:X/M format
<i>IPV6_PREFIX</i>	IPv6 address in X:X::X:X format

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to show the ipv6 routes

Examples

Switch # show ipv6 route

```
IPv6 Routing Table
Codes: C - connected, S - static, R - RIP, O - OSPF, I - IS-IS, B - BGP
      [*] - [AD/Metric]
Timers: Uptime

S    3001::/64 [1/0]
     via fe80::1234, eth-0-2, 04:09:56
C    3001:1::/64
     via ::, eth-0-1, 01:39:07
C    3001:1::1234/128
     via ::1, eth-0-1, 01:39:07
S    3002::/64 [1/0]
     via 3001::1 (recursive via fe80::1234), eth-0-2, 04:09:19
C    3ffe:2::/64
     via ::, eth-0-2, 1d19h37m
C    3ffe:2::10/128
     via ::1, eth-0-2, 1d19h37m
C    fe80::/10
     via ::, Null0, 1d19h53m
```

Switch # show ipv6 route database

```
IPv6 Routing Table
Codes: C - connected, S - static, R - RIP, O - OSPF, I - IS-IS, B - BGP
      [*] - [AD/Metric]
      > - selected route, * - FIB route, p - stale info
Timers: Uptime

S    > 3001::/64 [1/0]
     * via fe80::1234, eth-0-2, 04:10:45
C    > 3001:1::/64
     * via ::, eth-0-1, 01:39:56
C    > 3001:1::1234/128
     * via ::1, eth-0-1, 01:39:56
S    > 3002::/64 [1/0]
     * via 3001::1 (recursive via fe80::1234), eth-0-2, 04:10:08
C    > 3ffe:2::/64
     * via ::, eth-0-2, 1d19h37m
```

```
C > 3ffe2::10/128
* via ::1, eth-0-2, 1d19h37m
C > fe80::/10
* via ::, Null0, 1d19h54m
```

Switch # show ipv6 route static

```
IPv6 Routing Table
Codes: C - connected, S - static, R - RIP, O - OSPF, I - IS-IS, B - BGP
[*] - [AD/Metric]
Timers: Uptime

S 3001::/64 [1/0]
via fe80::1234, eth-0-2, 04:11:42
S 3002::/64 [1/0]
via 3001::1 (recursive via fe80::1234), eth-0-2, 04:11:05
```

Switch # show ipv6 route 3001::64

```
Routing entry for 3001::/64
Known via "static", distance 1, metric 0, best
Last update 04:12:32 ago
* via fe80::1234, eth-0-2
```

Switch # show ipv6 route 3001::64/64

```
Routing entry for 3001::/64
Known via "static", distance 1, metric 0, best
Last update 04:13:03 ago
* via fe80::1234, eth-0-2
```

Switch # show ipv6 route summary

```
IPv6 routing table name is Default-IPv6-Routing-Table(0)
IPv6 routing table maximum-paths is 8
Route source networks
connected 5
static 2
Total 7
Related Commands
ipv6 route
```

Related Commands

ipv6 route

3.6 show ipv6 interface

Use this command to show the ipv6 statuses on the interface.

Command Syntax

show ipv6 interface (*IFNAME*) (**brief**)

<i>IFNAME</i>	IPv6 interface status and configuration
brief	Brief summary of IPv6 status and configuration

Command Mode

EXEC

Default

None

Usage

None

Examples

Switch # show ipv6 interface eth-0-1

```

Interface eth-0-1
  Interface current state: UP
  The maximum transmit unit is 1500 bytes
  IPv6 is enabled, link-local address is fe80::1233
  Global unicast address(es):
    3001:1::1234, subnet is 3001:1::/64
  Joined group address(es):
    ff02::1:ff00:1234
    ff02::1:ff00:0
    ff02::1:ff00:1233
    ff02::2
    ff02::1
  ICMP error messages limited to one every 2000 milliseconds
  ICMP redirects are always sent
  ND DAD is enabled, number of DAD attempts: 1
  ND router advertisement is disabled
  ND reachable time is 30000 milliseconds
  ND advertised reachable time is 0 milliseconds
  ND retransmit interval is 1000 milliseconds
  ND advertised retransmit interval is 0 milliseconds
  ND router advertisements max interval: 600 secs
  ND router advertisements min interval: 198 secs
  ND router advertisements live for 1800 seconds
  ND router advertisements hop-limit is 0
  Hosts use stateless autoconfig for addresses.

```

Switch # show ipv6 interface eth-0-1 brief

```

*down: administratively down
Interface      Status Protocol IPv6 address
eth-0-1       up      up      3001:1::1234
              fe80::1233

```

Related Commands

ipv6 enable

ipv6 address

3.7 ipv6 verify unicast reverse-path

Use this command to enable urpf (unicast reverse path forwarding) on the interface. Use the no form of this command to disable urpf on the interface.

Command Syntax

ipv6 verify unicast reverse-path

no ipv6 verify unicast reverse-path

Command Mode

Interface Configuration

Default

Urpf is disable on the interface by default.

Usage

Use this command to enable urpf (unicast reverse path forwarding) on the interface. Use the no form of this command to disable urpf on the interface.

Examples

Switch (config-if)# ipv6 verify unicast reverse-path

Related Commands

show ipv6 interface

3.8 ipv6 icmp error-interval

Use this command to set the ipv6 icmp error-interval. Use the no form of this command to set the ipv6 icmp error-interval to default.

Command Syntax

ipv6 icmp error-interval *ERROR_INTERVAL*

no ipv6 icmp error-interval

error-interval <i>ERROR_INTERVAL</i>	ICMPv6 Error message interval. Between 0 – 2147483647.
---	--

Command Mode

Global Configuration

Default

1000 milliseconds.

Usage

None

Examples

Switch (config)# ipv6 icmp error-interval 2000

Related Commands

None