Show Commands

This chapter describes the Cisco NX-OS unicast routing **show** commands.

show bgp

To display Border Gateway Protocol routes, use the **show bgp** command.

show bgp {{**ipv4** | **ipv6**} {**unicast** | **multicast**} | **all**} [**addr** | *prefix* [**longer-prefixes**]] [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display BGP information for IPv4 address family.
ipv6	(Optional) Display BGP information for IPv4 address family.
unicast	Displays BGP information for unicast address family.
multicast	Displays BGP information for multicast address family.
all	(Optional) Display BGP information for all address families.
addr	(Optional) A network from the selected address family. The format is A.B.C.D for IPv4 and A:B::C:D for IPv6.
prefix	Optional) A prefix from the selected address family. The format is A.B.C.D/length for IPv4 and A:B::C:D/length for IPv6.
longer-prefixes	(Optional) Displays the prefix and any more specific routes.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.2(1)	Added support for IPv6 addresses and prefixes.

Usage Guidelines

Use the **show bgp** command to display information about BGP. This command does not require a license.

Examples

This example displays an entry in the BGP table:

```
switch(config-router)# show bgp ipv6 unicast
BGP routing table information for VRF default, address family IPv6 Unicast
```

Related Commands	Command	Description
	clear bgp	Clears entries in the BGP table.

show bgp community

To display Border Gateway Protocol (BGP) routes that match a community, use the **show bgp community** command.

show bgp{{**ipv4** | **ipv6**} {**unicast** | **multicast**} | **all**} **community** [*as-number*] [**internet**] [**no-advertise**] [**no-export**] [**no-export-subconfed**] [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description		
ipv4	(Optional) Display BGP information for IPv4 address family.	
ipv6	(Optional) Display BGP information for IPv4 address family.	
unicast	Displays BGP information for unicast address family.	
multicast	Displays BGP information for multicast address family.	
all	(Optional) Display BGP information for all address families.	
as-number	AS number. The AS number can be a 16-bit integer or a 32-bit integer in the form of <higher 16-bit decimal number>.<lower 16-bit decimal number>.	
internet	(Optional) Displays the internet community.	
no-advertise	(Optional) Displays the no-advertise community.	
no-export	(Optional) Displays the no-export community.	
no-export-subconfed	(Optional) Displays the no-export-subconfed community.	
exact-match	(Optional) Displays an exact match of the community.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community:

```
switch(config)# show bgp ip unicast community
```

Related Commands	Command	Description
	ip community-list	Creates a community list.

show bgp community-list

To display Border Gateway Protocol (BGP) routes that match a community list, use the **show bgp community-list** command.

show bgp {{**ipv4** | **ipv6**} {**unicast** | **multicast**} | **all**} **community-list** *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description		
	ipv4	(Optional) Display BGP information for IPv4 address family.
	ipv6	(Optional) Display BGP information for IPv4 address family.
	unicast	Displays BGP information for unicast address family.
	multicast	Displays BGP information for multicast address family.
	all	(Optional) Display BGP information for all address families.
	commlist-name	Name of a community-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
	exact-match	(Optional) Displays an exact match of the communities.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines This command does not require a license.

Examples This example displays routes that match a community list:

```
switch(config)# show bgp ip unicast community-list test1
```

Related Commands

Command	Description
ip community-list	Creates a community list.

show bgp extcommunity

To display Border Gateway Protocol (BGP) routes that match an extended community, use the **show bgp extcommunity** command.

show bgp{{**ipv4** | **ipv6**} {**unicast** | **multicast**} | **all**} **extcommunity generic** {**non-transitive** | **transitive**} [*as4-number*] [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display BGP information for IPv4 address family.
ipv6	(Optional) Display BGP information for IPv4 address family.
unicast	Displays BGP information for unicast address family.
multicast	Displays BGP information for multicast address family.
all	(Optional) Display BGP information for all address families.
generic	Displays the routes that match the generic specifice extended communities.
non-transitive	Displays the routes that match the non-transitive extended communities.
transitive	Displays the routes that match thetransitive extended communities.
as4-number	AS number. The *as4-number* is a 32-bit integer in the form of a plaintext integer or <higher 16-bit decimal number>.<lower 16-bit decimal number> .
exact-match	(Optional) Displays an exact match of the extended community.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match an extended community:

```
switch(config)# show bgp ip unicast xtcommunity generic transitive 1.3:30
```

Related Commands	Command	Description
	ip extcommunity-list	Creates an extended community list.

show bgp extcommunity-list

To display Border Gateway Protocol (BGP) routes that match an extended community list, use the **show bgp extcommunity-list** command.

show bgp {{**ipv4** | **ipv6**} {**unicast** | **multicast**} | **all**} **extcommunity-list** *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display BGP information for IPv4 address family.
ipv6	(Optional) Display BGP information for IPv4 address family.
unicast	Displays BGP information for unicast address family.
multicast	Displays BGP information for multicast address family.
all	(Optional) Display BGP information for all address families.
commlist-name	Name of an extended community-list. The *commlist-name* can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the extended communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community list:

```
switch(config)# show bgp ipv6 unicast extcommunity-list test1
```

Related Commands	**Command**	**Description**
	ip extcommunity-list	Creates an extended community list.

show bgp neighbors

To display Border Gateway Protocol (BGP) neighbors, use the **show bgp neighbors** command.

show bgp {**ip** | **ipv6**} {**unicast** | **multicast**} **neighbors** [*addr* [**advertised-routes** | **flap-statistics** | **paths** | **received-routes** | **routes** [**advertised** | **dampened** | **received**]] | *prefix*] [**vrf** {**all** | *vrf-name*}]

Syntax Description

addr	IPv4 address. The format is x.x.x.x
ip	Displays the IPv4 neighbor information.
ipv6	Displays the IPv6 neighbor information.
unicast	Displays the unicast neighbor information.
multicast	Displays the multicast neighbor information.
advertised-routes	(Optional) Displays all the routes advertised to this neighbor.
flap-statistics	(Optional) Displays flap statistics for the routes received from this neighbor.
paths	(Optional) Displays AS paths learned from this neighbor.
received-routes	(Optional) Displays all the routes received from this neighbor.
routes	(Optional) Displays the routes received or advertised to or from this neighbor.
advertised	(Optional) Displays all the routes advertised for this neighbor.
dampened	(Optional) Displays all dampened routes received from this neighbor.
received	(Optional) Displays all the routes received from this neighbor.
prefix	(Optional) IPv6 prefix. The format is x.x.x.x/length.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.
all	(Optional) Specifies all VRFS.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Added **paths** keyword.

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP neighbors:

```
switch(config)# show bgp ip unicast neighbors
```

Related Commands

Command	Description
show ip bgp neighbors	Displays the IPv4 BGP information.
show ipv6 bgp neighbors	Displays the IPv6 BGP information.

show bgp sessions

To display Border Gateway Protocol (BGP) sessions, use the **show bgp sessions** command.

show bgp sessions [**vrf** *vrf-name*]

Syntax Description		
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays BGP sessions:

```
switch# show bgp sessions
Total peers 0, established peers 0
ASN 33.33
VRF default, local ASN 33.33
peers 0, established peers 0, local router-id 192.168.1.222
State: I-Idle, A-Active, O-Open, E-Established, C-Closing, S-Shutdown
Flaps LastUpDn|LastRead|LastWrit St Port(L/R)  Notif(S/R)
```

Related Commands

Command	Description
clear bgp	Clears BGP sessions.

show forwarding

To display forwarding information, use the **show forwarding** command.

show forwarding [**ip** | **ipv4** | **ipv6**] {**adjacency** | **interfaces** | **route** | **trace** [**clear**] | **table** *id* **pss route**} [**module** *slot*] [**vrf** *vrf-name*]

Syntax Description		
ip	(Optional) Displays the IPv4 forwarding information.	
ipv4	(Optional) Displays the IPv4 forwarding information.	
ipv6	(Optional) Displays the IPv6 forwarding information.	
adjacency	Displays the adjacency information.	
interfaces	Displays the forwarding information for interfaces on a module.	
route	Displays the forwarding information for routes on a module.	
trace	Displays the forwarding trace buffer on a module.	
clear	(Optional) Clears the forwarding trace buffer on a module.	
table *id*	Displays the forwarding information for a route table. The *id* range is from 0 to 2147483647.	
pss route	Displays route information from persistent storage.	
module *slot*	(Optional) Displays information for the module. The slot range depends on the hardware platform.	
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.	

Command Modes Any

SupportedUserRoles network-adminr
vdc-adminr

Command History	Release	Modification
	4.0(1)	This command was introduced.
	4.1(2)	Added the **trace** and **clear** keywords.
	4.2(1)	Added the **table pss route** keywords.

Usage Guidelines Use the **show forwarding** command on the supervisor to view forwarding information on a module. Optionally, you can use the **attach module** command to attach to a module and use the **show forwarding** command on the module.

This command does not require a license.

Examples   The following example shows how to display forwarding information for module 2:

```
switch# show forwarding route module 2

IPv4 routes for table default/base

------------------+-----------------+--------------------
Prefix            | Next-hop        | Interface
------------------+-----------------+--------------------
0.0.0.0/32          Drop              Null0
255.255.255.255/32  Receive           sup-eth1
```

Related Commands

Command	Description
show ip fib	Displays information about the FIB.

show forwarding distribution

To display forwarding distribution information, use the **show forwarding distribution** command.

show forwarding distribution [**clients** | **fib-state**]

Syntax Description

clients	(Optional) Displays the forwarding distribution information for unicast clients.
fib-state	(Optional) Displays the forwarding distribution state for unicast FIB.

Command Modes   Any

SupportedUserRoles   Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays forwarding information for unicast clients:

```
switch# show forwarding distribution clients

id  pid    shmem-start  shmem-end  shmem-name
--  -----  -----------  ---------  ---------
 1  3646   0x64f70120   0x64fc0000  u6rib-ufdm
 2  3647   0x64b50120   0x64d50000  urib-ufdm
```

Related Commands

Command	Description
show ip fib distribution	Displays distribution information about the FIB.

show forwarding inconsistency

To display the results of the forwarding inconsistency checker, use the **show forwarding inconsistency** command.

show forwarding inconsistency [**ip** | **ipv4** | **ipv6**] [**unicast**] **module** *slot* [**vrf** *vrf-name*]

Syntax Description

ip	(Optional) Displays the IPv4 forwarding inconsistency information.
ipv4	(Optional) Displays the IPv4 forwarding inconsistency information.
ipv6	(Optional) Displays the IPv6 forwarding inconsistency information.
unicast	(Optional) Displays the forwarding inconsistency information for unicast routes
module *slot*	Displays inconsistency information for the module. The slot range depends on the hardware platform.
vrf *vrf-name*	(Optional) Displays inconsistency information for the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Command Modes

Any

SupportedUserRoles

Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(3)	This command was introduced.
4.2(1)	Added support for **ipv6** keyword.

Usage Guidelines

Use the **show forwarding inconsistency** command to display the results of the **test forwarding inconsistency** command.

This command does not require a license.

Examples

This example displays forwarding inconsistency information for module 2:

```
switch# show forwarding inconsistency module 2
Consistency check : table_id(0x1) slot(2)
No inconsistent adjacencies.
No inconsistent routes.
```

Related Commands	Command	Description
	clear forwarding inconsistency	Clears the forwarding inconsistency checker.
	test forwarding inconsistency	Triggers the forwarding inconsistency checker.

show glbp

To display Gateway Load Balancing Protocol (GLBP) information, use the **show glbp** command.

show glbp [**interface** *type number*] [**group** *number*] [*state*] [**brief**] [**vrf** *vrf-name*]

Syntax Description

interface *type number*	(Optional) Specifies the interface to display GLBP information.
group *number*	(Optional) Specifies the GLBP group number. The range is from 0 to 1023.
state	(Optional) State of the GLBP router. The states are as follows: **active**, **disabled**, **init**, **listen**, or **standby**.
brief	(Optional) Summarizes each virtual gateway or virtual forwarder with a single line of output.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names. Supported in Cisco NX-OS Release 4.0(2) and later releases.

Command Modes   Any

SupportedUserRoles   Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(2)	Added support for **vrf** keyword.

Usage Guidelines   Use the **show glbp** command to display information about GLBP groups. The **brief** keyword displays a single line of information about each virtual gateway or virtual forwarder.

This command does not require a license.

Examples   The following example shows how to display GLBP information:

```
switch# show glbp

Ethernet2/1 - Group 10
  State is Active
    2 state changes, last state change 23:50:33
  Virtual IP address is 192.0.2.10
  Hello time 5 sec, hold time 18 sec
    Next hello sent in 4.300 secs
  Redirect time 600 sec, forwarder time-out 7200 sec
```

```
      Authentication MD5, key "ThisStringIsTheSecretKey"
      Preemption enabled, min delay 60 sec
      Active is local
      Standby is unknown
      Priority 254 (configured)
      Weighting 105 (configured 110), thresholds: lower 95, upper 105
        Track object 2 state Down decrement 5
      Load balancing: host-dependent
      Group members:
        0016.C76C.85DC (7.199.10.1) local
      There is 1 forwarder (1 active)
      Forwarder 1
        State is Active
          1 state change, last state change 23:50:15
        MAC address is 0007.b400.0101 (default)
        Owner ID is 0005.0050.6c08
        Redirection enabled
        Preemption enabled, min delay 60 sec
        Active is local, weighting 105
```

The following example shows how to display a brief summary of GLBP information:

```
switch# show glbp brief

Interface   Grp  Fwd  Pri  State    Address         Active router   Standby router
Eth2/1      10   -    254  Active   192.0.2.10      local           unknown
Eth1/2      10   1    7    Active   0007.b400.0101  local           -
```

The following example shows how to specify the GLBP interface and group number:

```
switch# show glbp interface ethernet2/2 group 1

Ethernet2/2 - Group 1
 State is Listen
   64 state changes, last state change 00:00:54
 Virtual IP address is 10.1.0.7
 Hello time 50 msec, hold time 200 msec
   Next hello sent in 0.030 secs
 Redirect time 600 sec, forwarder time-out 14400 sec
 Authentication text "authword"
 Preemption enabled, min delay 0 sec
 Active is 10.1.0.2, priority 105 (expires in 0.184 sec)
 Standby is 10.1.0.3, priority 100 (expires in 0.176 sec)
 Priority 96 (configured)
 Weighting 100 (configured 100), thresholds: lower 95, upper 100
   Track object 1 state Up decrement 10
 Load balancing: round-robin
  Group members:
   0004.4d83.4801 (10.0.0.0)
   0010.7b5a.fa41 (10.0.0.1)
   00d0.bbd3.bc21 (10.0.0.2) local
```

Table 1-1 describes the significant fields shown in the displays.

Table 1-1   ***show glbp Field Descriptions***

Field	Description
Ethernet2/1 - Group	Interface type and number and GLBP group number for the interface.
State is	State of the virtual gateway. For a virtual gateway, the state can be one of the following: • Active—The gateway is the active virtual gateway (AVG) and is responsible for responding to Address Resolution Protocol (ARP) requests for the virtual IP address. • Disabled—The virtual IP address has not been configured or learned yet, but another GLBP configuration exists. • Initial—The virtual IP address has been configured or learned, but the virtual gateway configuration is not complete. An interface must be up and configured to route IP, and an interface IP address must be configured. • Listen—The virtual gateway is receiving hello packets and is ready to change to the Speak state if the active or standby virtual gateway becomes unavailable. • Speak—The virtual gateway is attempting to become the active or standby virtual gateway. • Standby—The gateway is next in line to be the AVG. For a virtual forwarder, the state can be one of the following: • Active—The gateway is the active virtual forwarder (AVF) and is responsible for forwarding packets sent to the virtual forwarder MAC address. • Disabled—The virtual MAC address has not been assigned or learned. This state is transitory because a virtual forwarder that changes to a disabled state is deleted. • Initial—The virtual MAC address is known, but the virtual forwarder configuration is not complete. An interface must be up and configured to route IP, an interface IP address must be configured, and the virtual IP address must be known. • Listen—The virtual forwarder is receiving hello packets and is ready to change to the Active state if the AVF becomes unavailable.
Virtual IP address is	Virtual IP address of the GLBP group. All secondary virtual IP addresses are listed on separate lines. If a virtual IP address is a duplicate of an address configured for another device, it will be marked as a duplicate. A duplicate address indicates that the router has failed to defend its ARP cache entry.
Hello time, hold time	Time between hello packets, in seconds or milliseconds, that indicates the hello time. The hold time is the time (in seconds or milliseconds) before other routers declare the active router to be down. All routers in a GLBP group use the hello-time and hold-time values of the current AVG. If the locally configured values are different, the configured values appear in parentheses after the hello-time and hold-time values.

Table 1-1   show glbp Field Descriptions (continued)

Field	Description
Redirect time, forwarder time-out	Redirect and timeout times for an AVF transition to a standby virtual forwarder. The redirect time is the time during which the AVG for a GLBP group continues to redirect clients to a secondary AVF. The timeout is the time (in seconds) before the secondary virtual forwarder becomes unavailable.
Preemption	Whether GLBP gateway preemption is enabled. If enabled, the minimum delay is the time, in seconds, for which a higher-priority nonactive router will wait before preempting the lower-priority active router. This field is also displayed under the forwarder section where it indicates GLBP forwarder preemption.
Active is	Active state of the virtual gateway. The value can be local, unknown, or an IP address. The address (and the expiration date of the address) is the address of the current AVG. This field is also displayed under the forwarder section where it indicates the address of the current AVF.
Standby is	Standby state of the virtual gateway. The value can be local, unknown, or an IP address. The address (and the expiration date of the address) is the address of the standby gateway (the gateway that is next in line to be the AVG).
Weighting	Initial weighting value with lower and upper threshold values.
Track object	List of objects that are being tracked and their corresponding states.
Load balancing	Load-balancing method configured for the GLBP group.
Group members	List of gateways that are members of this group.
Forwarder	List of forwarders in this group.

Table 1-2 describes the fields for the **show glbp brief** command output.

Table 1-2   show glbp brief Field Descriptions

Field	Description
Interface	Interface type and number. GLBP group number for the interface.
Grp	GLBP group number for the interface.
Fwd	Number of forwarders in the GLBP group.
Pri	Configured priority for this gateway.
State is	State of the virtual gateway. For a virtual gateway, the state can be one of the following: • Active—The gateway is the active virtual gateway (AVG) and is responsible for responding to Address Resolution Protocol (ARP) requests for the virtual IP address. • Disabled—The virtual IP address has not been configured or learned yet, but another GLBP configuration exists. • Initial—The virtual IP address has been configured or learned, but the virtual gateway configuration is not complete. An interface must be up and configured to route IP, and an interface IP address must be configured. • Listen—The virtual gateway is receiving hello packets and is ready to change to the Speak state if the active or standby virtual gateway becomes unavailable. • Speak—The virtual gateway is attempting to become the active or standby virtual gateway. • Standby—The gateway is next in line to be the AVG. For a virtual forwarder, the state can be one of the following: • Active—The gateway is the active virtual forwarder (AVF) and is responsible for forwarding packets sent to the virtual forwarder MAC address. • Disabled—The virtual MAC address has not been assigned or learned. This state is transitory because a virtual forwarder that changes to a disabled state is deleted. • Initial—The virtual MAC address is known, but the virtual forwarder configuration is not complete. An interface must be up and configured to route IP, an interface IP address must be configured, and the virtual IP address must be known. • Listen—The virtual forwarder is receiving hello packets and is ready to change to the Active state if the AVF becomes unavailable.
Address	Virtual IP address of the GLBP group. All secondary virtual IP addresses are listed on separate lines. If a virtual IP address is a duplicate of an address configured for another device, it will be marked as a duplicate. A duplicate address indicates that the router has failed to defend its ARP cache entry.

Table 1-2   show glbp brief Field Descriptions (continued)

Field	Description
Active router	IP address of the AVG.
Standby router	IP address of the standby virtual gateway.

Related Commands

Command	Description
glbp ip	Enables GLBP.
glbp timers	Configures the time between hello messages and the time before other routers declare the active GLBP router to be down.
glbp weighting track	Specifies an object to be tracked that affects the weighting of a GLBP gateway.

show glbp capability

To display which interfaces support Gateway Load Balancing Protocol (GLBP), use the **show glbp capability** command.

show glbp [**interface** *type number*] [**port-channel** *number*] [**vlan** *number*]

Syntax Description	**interface** *type number*	(Optional) Specifies the interface for which output is displayed.
	port-channel *number*	(Optional) Specifies the port channel for which output is displayed.
	vlan *number*	(Optional) VLAN for which output is displayed.

Command Modes   Any

SupportedUserRoles   network-admin
VDC administrator

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

Usage Guidelines   Use the **show glbp capability** command to display which interfaces support GLBP.

This command does not require a license.

Examples   This example shows how to display the interfaces that support GLBP:

```
switch# show glbp capability
              Nexus 7010 (10 Slot) Chassis * means interface may support GLBP
                                         |
          Interface               Type |  Potential Max Groups
              Eth1/1   2    Gigabit Ethernet *  1024
              Eth1/2   2    Gigabit Ethernet *  1024
              Eth2/1   2    Gigabit Ethernet *  1024
              Eth2/2   2    Gigabit Ethernet *  1024
              Eth2/3   2    Gigabit Ethernet *  1024
              Eth2/4   2    Gigabit Ethernet *  1024
              Eth2/5   2    Gigabit Ethernet *  1024
              Eth2/6   2    Gigabit Ethernet *  1024
              Eth2/7   2    Gigabit Ethernet *  1024
              Eth2/8   2    Gigabit Ethernet *  1024
               mgmt0   5  Management Sup Port    0
     Eth Inband Port  21       Inband  Port      0
     Eth Inband Port  21       Inband  Port      0
     Eth Inband Port  21       Inband  Port      0
```

Table 1-3 describes the significant fields shown in the output.

Table 1-3   show glbp capability Field Descriptions

Field	Description
Interface	Interface name.
Type	Interface type.
GLBP support (represented by the | character)	* indicates the interface may support GLBP.
Potential Max Groups	Maximum number of groups supported by this interface.

Related Commands

Command	Description
glbp ip	Enables GLBP.
glbp timers	Configures the time between hello messages and the time before other routers declare the active GLBP router to be down.
glbp weighting track	Specifies an object to be tracked that affects the weighting of a GLBP gateway.

show hardware forwarding dynamic-allocation status

To display information about the ternary content addressable memory (TCAM) allocation in the Forwarding Information Base (FIB), use the **show hardware forwarding dynamic-allocation status** command.

> **show hardware forwarding dynamic-allocation status**

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   Use the **show hardware forwarding dynamic-allocation status** command to display the TCAM allocation for one or more modules.

This command does not require a license.

Examples   The following example shows how to display the TCAM allocation:

```
switch(config)# show hardware forwarding dynamic-allocation status
slot  7
=======

Num 288 bit blocks : 1 (Same as default setting)
Num 144 bit blocks : 8 (Same as default setting)
Num  72 bit blocks : 7 (Same as default setting)

slot 12
=======

Num 288 bit blocks : 1 (Same as default setting)
Num 144 bit blocks : 7 (Different from default setting)
Num  72 bit blocks : 9 (Different from default setting)
```

Related Commands	Command	Description
	hardware forwarding dynamic-allocation	Configures dynamic TCAM allocation for each module.

show hardware forwarding ip verify

To display information about IP packet verification, use the **show hardware forwarding ip verify** command.

show hardware forwarding ip verify

Syntax Description   This command has no keywords or arguments

Command Modes   Any

SupportedUserRoles   network-admin
VDC administrator

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 IP packet verification settings:

```
switch# show hardware forwarding ip verify
IPv4 and v6 IDS Checks        Status    Packets Failed
---------------------------+---------+------------------
address source broadcast     Enabled   0
address source multicast     Enabled   0
address destination zero     Enabled   0
address identical            Enabled   0
address source reserved      Enabled   0
address class-e              Disabled  0
checksum                     Enabled   0
protocol                     Enabled   0
fragment                     Enabled   0
length minimum               Enabled   0
length consistent            Enabled   0
length maximum max-frag      Enabled   0
length maximum udp           Disabled  0
length maximum max-tcp       Enabled   0
tcp flags                    Disabled  0
tcp tiny-frag                Enabled   0
version                      Enabled   0
---------------------------+---------+------------------
IPv6 IDS Checks               Status    Packets Failed
---------------------------+---------+------------------
length consistent            Enabled   0
length maximum max-frag      Enabled   0
length maximum udp           Disabled  0
length maximum max-tcp       Enabled   0
```

```
tcp tiny-frag              Enabled   0
version                    Enabled   0
```

	Command	Description
Related Commands	**platform ip verify address**	Configures IPv4 and IPv6 packet verification checks based on addresses.
	platform ip verify length	Configures IPv4 packet verification checks based on length.
	platform ipv6 verify	Configures IPv6 packet verification.

show hsrp

To display Hot Standby Router Protocol (HSRP) information for each HSRP group, use the **show hsrp** command.

> **show hsrp** [**interface** *type number*] [**group** *group-number*] [**active** | **init** | **listen** | **standby**] [**all**] [**brief**] [**detail**] [**ipv4**]

Syntax Description	**interface** *type number*	(Optional) Specifies the interface type and number for which to display HSRP information.
	group *group-number*	(Optional) Specifies the HSRP group number of the interface to display information about.
	active	(Optional) Displays HSRP groups that are in an active state.
	init	(Optional) Displays HSRP groups that are in an initialization state.
	listen	(Optional) Displays HSRP groups that are in an listen state.
	standby	(Optional) Displays HSRP groups that are in an standby state.
	all	(Optional) Displays all HSRP groups.
	brief	(Optional) Summarizes each virtual gateway or virtual forwarder with a single line of output.
	detail	(Optional) Displays detailed information about HSRP grops.
	ipv4	(Optional) Displays HSRP IPv4 groups.

Command Modes	Any

SupportedUserRoles	network-admin VDC administrator

Command History	Release	Modification
	4.0(1)	This command was introduced.
	4.1(2)	Added **ipv4** keyword.
	4.2(1)	Added **detail** keyword.

Usage Guidelines Use the **show hsrp** command to display information about HSRP groups. The **brief** keyword displays a single line of information about each virtual gateway or virtual forwarder.

This command does not require a license.

Examples The following example shows how to display a brief summary of HSRP information:

```
switch# show hsrp brief

    P indicates configured to preempt.
```

```
          | P indicates configured to preempt.
                             |
Interface   Grp Prio P State    Active addr       Standby addr      Group addr
```

Related Commands	Command	Description
	feature hsrp	Enables the HSRP feature.

show hsrp delay

To display Hot Standby Router Protocol (HSRP) group delay information, use the **show hsrp delay** command.

show hsrp delay [**interface** *type number*] [**group** *group-number*] [**all**] [**brief**]

Syntax Description

interface *type number*	(Optional) Specifies the interface type and number for which to display HSRP information.
group *group-number*	(Optional) Specifies the HSRP group number of the interface to display information about.

Command Modes   Any

SupportedUserRoles   network-admin
VDC administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show hsrp delay** command to display delay information about HSRP groups.

This command does not require a license.

Examples   The following example shows how to display GLBP delay information:

```
switch# show hsrp delay
```

show hsrp summary

To display Hot Standby Router Protocol (HSRP) summary information for each HSRP group, use the **show hsrp summary** command.

show hsrp summary

Syntax Description   This command has no keywords or arguments.

Command Modes   Any

SupportedUserRoles   network-admin
VDC administrator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   Use the **show hsrp summary** command to display summary information about HSRP groups.

This command does not require a license.

Examples   The following example shows how to display a summary of HSRP information:

```
switch# show hsrp summary

    PHSRP Summary:
    -------------------------------
    Extended-hold (NSF) disabled

    Total Groups: 1
         Version:: V1-IPV4: 1    V2-IPV4: 0
           State::  Active: 0    Standby: 0    Listen: 0

    Total HSRP Enabled interfaces: 1

    Total Packets:
                Tx - Pass: 0       Fail: 0
                Rx - Good: 0

    Packet for unknown groups: 0

    Total MTS: Rx: 142


    -------------------------------
```

Related Commands

Command	Description
feature hsrp	Enables the HSRP feature.

show ip adjacency

To display adjacency information, use the **show ip adjacency** command.

show ip adjacency [*ip-addr* | *interface*] [**detail**] [**non-best**] [**statistics**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ip-addr	(Optional) An IPv4 source address. The format is x.x.x.x.
interface	(Optional) An interface. Use *?* to determine the supported interface types.
detail	(Optional) Displays detailed adjacency information.
non-best	(Optional) Displays both the best and nonbest adjacency information.
statistics	(Optional) Displays adjacency statistics.
summary	(Optional) Displays a summary of the adjacency information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The counter values in the output of **show ip adjacency** {**statistics** | **detail**} command are cleared after a supervisor module switchover.

This command does not require a license.

Examples

This example displays a summary of the adjacency information:

```
switch# show ip adjacency summary

IP AM Table - Adjacency Summary

  Static  : 1
  Dynamic : 22
  Others  : 0
  Total   : 23
```

Related Commands	Command	Description
	show forwarding adjacency	Displays forwarding adjacency information.

show ip arp

To display the Address Resolution Protocol (ARP) information, use the **show ip arp** command.

show ip arp [*ip-addr* | *interface*] [**client**] [**static**] [**statistics**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ip-addr	(Optional) An IPv4 source address. The format is x.x.x.x.
interface	(Optional) An interface. Use *?* to determine the supported interface types.
client	(Optional) Displays the ARP client table
static	(Optional) Displays static ARP entries.
statistics	(Optional) Displays ARP statistics.
summary	(Optional) Displays a summary of the ARP table.
vrf vrf-name	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays a summary of the ARP table:

```
switch# show ip arp summary

IP ARP Table - Adjacency Summary

  Resolved   : 33
  Incomplete : 0
  Unknown    : 0
  Total      : 33
```

Related Commands	Command	Description
	ip arp timeout	Configures ARP.

show ip as-path-access-list

To display the AS Path access lists for the Border Gateway Protocol (BGP), use the **show ip as-path-access-list** command.

> **show ip as-path-access-list** [*name*]

Syntax Description	*name*	(Optional) AS path access list name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the AS path access lists:

```
switch# show ip as-path-access-list
ip as-path access-list Test1 permit "10.0.0.1"
```

Related Commands

Command	Description
ip as-path access-list	Configures an AS path access list.

show ip bgp

To display entries in the Border Gateway Protocol (BGP) table, use the **show ip bgp** command.

show ip bgp [*ip-addr* | *ip-prefix* [**longer-prefixes**]] [**received-paths**] [**regexp** *expression*] [**route-map** *map-name*] [**summary**] [**vrf** *vrf-name*]

Syntax Description		
	ip-addr	(Optional)A network from the BGP route table. The format is x.x.x.x.
	ip-prefix	(Optional) A prefix from the the BGP route table. The format is x.x.x.x/length.
	longer-prefixes	(Optional) Displays the prefix and any more specific routes.
	received-paths	(Optional) Displays paths stored for soft reconfiguration.
	regexp *expression*	(Optional) Display information that matches the regular expression.
	route-map *map-name*	(Optional) Displays routes that match the route map. The map name can be any case-sensitive alphanumeric string up to 63 characters.
	summary	(Optional) Displays the summary of the routes.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays the BGP route table:

```
switch(config-router)# show ip bgp
BGP routing table information for VRF default, address family IPv4 Unicast
```

Related Commands

Command	Description
clear ip bgp	Clears entries in the BGP route table.

show ip bgp community-list

To display Border Gateway Protocol (BGP) routes that match a community list, use the **show ip bgp community-list** command.

show ip bgp [**ipv4** {**unicast** | **multicast**} | **all**] **community-list** *commlist-name* [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description		
ipv4	(Optional) Display BGP information for IPv4 address family.	
ipv6	(Optional) Display BGP information for IPv4 address family.	
unicast	Displays BGP information for unicast address family.	
multicast	Displays BGP information for multicast address family.	
all	(Optional) Display BGP information for all address families.	
community-list *commlist-name*	Display routes matching the community-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.	
exact-match	(Optional) Displays an exact match of the communities.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community list:

```
switch(config)# show ip bgp community-list test1
```

Related Commands

Command	Description
ip community-list	Creates a community list.

show ip bgp dampening

To display Border Gateway Protocol (BGP) dampening information, use the **show ip bgp dampening** command.

show ip bgp [**ipv4** {**unicast** | **multicast**} | **all**] **dampening** {**dampened-paths** [**regexp** *expression*] | **flap-statistics** | **history-paths** [**regexp** *expression*] | **parameters**} [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display BGP information for IPv4 address family.
ipv6	(Optional) Display BGP information for IPv4 address family.
unicast	Displays BGP information for unicast address family.
multicast	Displays BGP information for multicast address family.
all	(Optional) Display BGP information for all address families.
dampened-paths	Display all dampened paths.
regexp *expression*	(Optional) Display information that matches the regular expression.
flap-statistics	Display flap statistics for routes.
history-paths	Display all history paths.
parameters	Display all dampening parameters.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays dampening information:

```
switch(config)# show ip bgp dampening dampened-paths
```

Related Commands	Command	Description
	show ipv6 bgp dampening	Displays BGP dampening information.

show ip bgp extcommunity

To display Border Gateway Protocol (BGP) routes that match an extended community, use the **show ip bgp extcommunity** command.

> **show ip bgp extcommunity generic** {**non-transitive** | **transitive**} [*as4-number*] [**exact-match**] [**vrf** *vrf-name*]

Syntax Description		
	generic	Displays the routes that match the generic specifice extended communities.
	non-transitive	Displays the routes that match the non-transitive extended communities.
	transitive	Displays the routes that match thetransitive extended communities.
	as4-number	AS number. The *as4-number* is a 32-bit integer in the form of a plaintext integer or <higher 16-bit decimal number>.<lower 16-bit decimal number> .
	exact-match	(Optional) Displays an exact match of the extended community.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays routes that match an extended community:

```
switch(config)# show ip bgp extcommunity generic transitive 1.3:30
```

Related Commands	Command	Description
	ip extcommunity-list	Creates an extended community list.

show ip bgp extcommunity-list

To display Border Gateway Protocol (BGP) routes that match an extended community list, use the **show ip bgp extcommunity-list** command.

show ip bgp extcommunity-list *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

commlist-name	Name of an extended community-list. The *commlist-name* can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the extended communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community list:

```
switch(config)# show ip bgp extcommunity-list test1
```

Related Commands

Command	Description
ip extcommunity-list	Creates an extended community list.

show ip bgp filter-list

To display Border Gateway Protocol (BGP) routes that match a filter list, use the **show ip bgp filter-list** command.

show ip bgp filter-list *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

list-name	Name of a filter-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the filter.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles
network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a filter list:

```
switch(config)# show ip bgp filter-list test1
```

Related Commands

Command	Description
show ipv6 bgp filter-list	Displays BGP routes that match a filter list.

show ip bgp flap-statistics

To display Border Gateway Protocol (BGP) flap statistics, use the **show ip bgp flap-statistics** command.

show ip bgp flap-statistics [*prefix*] [**vrf** *vrf-name*]

Syntax Description	*prefix*	(Optional) IPv6 prefix. The format is x.x.x.x/length.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults	None

Command Modes	Any command mode

SupportedUserRoles	network-admin network-operator vdc-admin vdc-operator

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

Usage Guidelines	This command does not require a license.

Examples	This example displays the flap statistics:

```
switch(config)# show ip bgp flap-statistics
```

Related Commands	Command	Description
	show ipv6 bgp	Displays BGP information.

show ip bgp history-paths

To display Border Gateway Protocol (BGP) history paths, use the **show ip bgp history-paths** command.

show ip bgp [**ipv4** {**unicast** | **multicast**} | **all**] **history-paths** [**regexp** *expression*] [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display BGP information for IPv4 address family.
ipv6	(Optional) Display BGP information for IPv4 address family.
unicast	Displays BGP information for unicast address family.
multicast	Displays BGP information for multicast address family.
all	(Optional) Display BGP information for all address families.
regexp *expression*	(Optional) Display information that matches the regular expression.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays BGP history path information:

```
switch(config)# show ip bgp history-paths
```

Related Commands

Command	Description
show ipv6 bgp history-paths	Displays BGP history paths information.

show ip bgp neighbors

To display Border Gateway Protocol (BGP) neighbors, use the **show ip bgp neighbors** command.

show ip bgp neighbors [*addr* [**advertised-routes** | **flap-statistics** | **paths** | **received-routes** | **routes** [**advertised** | **dampened** | **received**]] | *prefix*] [**vrf** { **all** | *vrf-name* }]

Syntax Description		
addr	IPv4 address. The format is x.x.x.x	
advertised-routes	(Optional) Displays all the routes advertised to this neighbor.	
flap-statistics	(Optional) Displays flap statistics for the routes received from this neighbor.	
paths	(Optional) Displays AS paths learned from this neighbor.	
received-routes	(Optional) Displays all the routes received from this neighbor.	
routes	(Optional) Displays the routes received or advertised to or from this neighbor.	
advertised	(Optional) Displays all the routes advertised for this neighbor.	
dampened	(Optional) Displays all dampened routes received from this neighbor.	
received	(Optional) Displays all the routes received from this neighbor.	
prefix	(Optional) IPv6 prefix. The format is x.x.x.x/length.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	
all	(Optional) Specifies all VRFS.	

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Added **paths** keyword.

Usage Guidelines

This command does not require a license.

Examples

This example displays the BGP neighbors:

```
switch(config)# show ip bgp neighbors
```

Related Commands	Command	Description
	show ipv6 bgp neighbors	Displays BGP information.

show ip bgp nexthop

To display Border Gateway Protocol (BGP) next hop information, use the **show ip bgp nexthop** command.

show ip bgp nexthop *addr* [**vrf** *vrf-name*]

Syntax Description

addr	IPv4 address. The format is x.x.x.x
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP next-hop information:

```
switch(config)# show ip bgp nexthop 192.0.2.1
```

Related Commands

Command	Description
show ipv6 bgp nexhop	Displays BGP information.

show ip bgp nexthop-database

To display Border Gateway Protocol (BGP) next-hop database, use the **show ip bgp nexthop-database** command.

show ip bgp nexthop-database [**vrf** *vrf-name*]

Syntax Description		
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays the BGP next-hop database:

```
switch(config)# show ip bgp nexthop-database
```

Related Commands

Command	Description
show ipv6 bgp nexhop-database	Displays BGP information.

show ip bgp peer-policy

To display Border Gateway Protocol (BGP) peer policy template information, use the **show ip bgp peer-policy** command.

show ip bgp peer-policy *name*

Syntax Description

name	Name of a BGP template. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the BGP peer policy:

```
switch(config)# show ip bgp peer-policy test1
Commands configured in this template:
  Send Community
  Suppress Inactive
  Default Originate - route-map:
Inherited commands:
Inherited by the following peers:
  VRF default: 192.0.2.3
```

Related Commands

Command	Description
inherit peer-policy	Inherits a peer policy template for a neighbor.
template peer-policy	Configures a peer policy template.

show ip bgp peer-session

To display Border Gateway Protocol (BGP) peer session template information, use the **show ip bgp peer-session** command.

show ip bgp peer-session *name*

Syntax Description		
name	Name of a BGP template. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP peer session:

```
switch(config)# show ip bgp peer-session test1
Commands configured in this template:
  Update Source - interface: Vlan33
  EBGP Multihop - hop limit: 33
Inherited commands:
Inherited by the following peers:
  VRF default: 192.0.2.3
```

Related Commands	Command	Description
	inherit peer-session	Inherits a peer session template for a neighbor.
	template peer-session	Configures a peer session template.

show ip bgp peer-template

To display Border Gateway Protocol (BGP) peer template information, use the **show ip bgp peer-template** command.

show ip bgp peer-template *name*

Syntax Description	*name*	Name of a BGP template. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP peer template:

```
switch(config)# show ip bgp peer-template peer1
BGP peer-template is peer1
  Connected check is disabled
  Hold time = 0, keepalive interval is 0 seconds

  Message statistics:
                          Sent               Rcvd
  Opens:                     0                  0
  Notifications:             0                  0
  Updates:                   0                  0
  Keepalives:                0                  0
  Route Refresh:             0                  0
  Capability:                0                  0
  Total:                     0                  0
  Total bytes:               0                  0
  Bytes in queue:            0                  0

Members of peer-template peer1:
default:192.0.2.3
```

Related Commands

Command	Description
inherit peer-template	Inherits a peer template for a neighbor.
template peer	Configures a peer template.

show ip bgp prefix-list

To display Border Gateway Protocol (BGP) routes that match a prefix list, use the **show ip bgp prefix-list** command.

> **show ip bgp prefix-list** *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

list-name	Name of a prefix list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the filter.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles
network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a prefix list:

```
switch(config)# show ip bgp prefix-list test1
```

Related Commands

Command	Description
show ipv6 bgp prefix-list	Displays BGP routes that match a prefix list.

show ip client

To display information about the internal IP clients, use the **show ip client** command.

show ip client [*name*]

Syntax Description	*name*	(Optional) Name of client.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays the IP client information for ARP:

```
switch(config)# show ip client arp

Client: arp, uuid: 268, pid: 3687, extended pid: 3687
  Protocol: (none), client-index: 2, routing VRF id: 255
  Data MTS-SAP: 0
  Data messages, send successful: 33, failed: 0
```

Related Commands

Command	Description
show ip process	Displays information about the IP process.

show ip community-list

To display community lists for the Border Gateway Protocol (BGP), use the **show ip community-list** command.

show ip community-list [*name*]

Syntax Description	*name*	(Optional) Name of community list. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the community lists:

```
switch(config)# show ip community-list
Standard Community List test2
    permit internet local-AS
```

Related Commands

Command	Description
ip community-list	Configures a BGP community list.

show ip eigrp

To display a summary of the Enhanced Interior Gateway Routing Protocol (EIGRP) processes, use the **show ip eigrp** command.

show ip eigrp [*instance-tag*]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. The *instance-tag* can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines This command requires the Enterprise Services license.

Examples This example displays all the EIGRP instances:

```
switch# show ip eigrp
IP-EIGRP AS 0 ID 0.0.0.0 VRF default
  Process-tag: Test1
  Status: shutdown
  Authentication mode: none
  Authentication key-chain: none
  Metric weights: K1=1 K2=0 K3=1 K4=0 K5=0
  IP proto: 88 Multicast group: 224.0.0.10
  Int distance: 90 Ext distance: 170
  Max paths: 8
  Number of EIGRP interfaces: 0 (0 loopbacks)
  Number of EIGRP peers: 0
IP-EIGRP AS 0 ID 0.0.0.0 VRF default
  Process-tag: Test2
  Status: shutdown
  Authentication mode: none
  Authentication key-chain: none
  Metric weights: K1=1 K2=0 K3=1 K4=0 K5=0
  IP proto: 88 Multicast group: 224.0.0.10
  Int distance: 90 Ext distance: 170
  Max paths: 8
  Number of EIGRP interfaces: 0 (0 loopbacks)
```

```
Number of EIGRP peers: 0
```

show ip eigrp accounting

To display prefix accounting information for the Enhanced Interior Gateway Routing Protocol (EIGRP) processes, use the **show ip eigrp accounting** command.

show ip eigrp [*instance-tag*] **accounting** [**vrf** {*vrf-name* | *****}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. This option is available when a virtual routing and forwarding (VRF) instance is not specified. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
vrf *	(Optional) Specifies all VRF instances.

Defaults   None

Command Modes   Any

SupportedUserRoles   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 display the EIGRP accounting information:

```
switch# show ip eigrp accounting

IP-EIGRP accounting for AS(100)/ID(192.0.2.1) vrf RED
Total Prefix Count: 4
States: A-Adjacency, P-Pending, D-Down

State Address/Source   Interface       Prefix    Restart   Restart/
                                       Count     Count     Reset(s)
  P   Redistributed    ----               0         3        211
  A   192.0.2.2        e2/1               2         0         84
  P   192.0.2.4        e3/3               0         2        114
  D   192.0.2.3        e4/1               0         3          0
```

Table 1-4 describes the significant fields shown in the display.

Table 1-4 **show ip eigrp accounting Field Descriptions**

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

show ip eigrp interfaces

To display information about interfaces configured for the Enhanced Interior Gateway Routing Protocol (EIGRP), use the **show ip eigrp interfaces** command.

show ip eigrp [*instance-tag*] **interfaces** [*type instance*] [**brief**] [**vrf** {*vrf-name* | *****}]

Syntax Description

instance-tag	(Optional) instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
instance	(Optional) Either a physical interface instance or a virtual interface instance. Specifying *instance* removes all entries learned through this interface from the neighbor table. The *instance* argument has the following syntax: • Physical interface instance. Naming notation is *slot/port* and a slash mark between values is required as part of the notation. • Virtual interface instance. The number range varies depending on the interface type. For more information about the syntax for the router, use the question mark (**?**) online help function.
brief	(Optional) Displays brief summary of EIGRP interface information.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
vrf *	(Optional) Specifies all VRF instances.

Defaults   This command shows all interfaces for the default VRF if no VRF or no interface is specified.

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	Added **brief** keyword.

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

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

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

This command requires the Enterprise Services license.

Examples The following example shows how to display information about EIGRP interfaces:

```
switch# show ip eigrp interfaces brief

IP EIGRP interfaces for process 1 vrf default

                      Xmit Queue    Mean    Pacing Time   Multicast   Pending
Interface     Peers   Un/Reliable   SRTT    Un/Reliable   Flow Timer  Routes

e2/2           0        0/0          0        11/434         0           0

e2/20          1        0/0         337        0/10          0           0

e4/2           1        0/0          10        1/63         103          0

e3/2           1        0/0         330        0/16          0           0

switch#
```

Table 1-5 describes the significant fields shown in the display.

Table 1-5   *show ip eigrp interfaces Field Descriptions*

Field	Description
Interface	Interface over which EIGRP is configured.
Peers	Number of directly connected EIGRP neighbors.
Xmit Queue Un/Reliable	Number of packets remaining in the unreliable and reliable transmit queues.
Mean SRTT	Mean smoothed round-trip time (SRTT) internal (in milliseconds).
Pacing Time Un/Reliable	Pacing time used to determine when EIGRP packets should be sent out the interface (unreliable and reliable packets).
Multicast Flow Timer	Maximum number of seconds in which the router sends multicast EIGRP packets.
Pending Routes	Number of routes in the packets in the transmit queue waiting to be sent.

Related Commands

Command	Description
show ip eigrp neighbors	Displays the neighbors discovered by EIGRP.

show ip eigrp neighbors

To display information about neighbors discovered by the Enhanced Interior Gateway Routing Protocol (EIGRP), use the **show ip eigrp neighbors** command.

show ip eigrp [*instance-tag*] **neighbors** [**detail**] [*interface-type interface-instance*] [**static**] [**vrf** {*vrf-name* | *****}]

Syntax Description	*instance-tag*	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	detail	(Optional) Displays detailed EIGRP neighbor information.
	interface-type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
	interface-instance	(Optional) Either a physical interface instance or a virtual interface instance.
		Specifying *instance* removes all entries learned through this interface from the neighbor table.
		The *instance* argument has the following syntax:
		• Physical interface instance. Naming notation is *slot/port* and a slash mark between values is required as part of the notation.
		• Virtual interface instance. The number range varies depending on the interface type.
		For more information about the syntax for the router, use the question mark (**?**) online help function.
	static	(Optional) Displays static EIGRP interface information.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
	vrf *	(Optional) Specifies all VRF instances.

Defaults This command displays all neighbors for the default VRF on all interfaces if no VRF or interface is specified.

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

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

This command requires the Enterprise Services license.

Examples
The following example shows how to display information about EIGRP neighbors:

```
switch# show ip eigrp neighbors

IP-EIGRP Neighbors for process 77 vrf default

Address              Interface     Holdtime Uptime   Q     Seq  SRTT  RTO
                                   (secs)   (h:m:s)  Count Num  (ms)  (ms)

192.0.2.28               e1/3         13      0:00:41 0     11    4     20

192.0.2.2                e4/4         14      0:02:01 0     10    12    24

switch#
```

Table 1-6 describes the significant fields shown in the display.

Table 1-6   show ip eigrp neighbors Field Descriptions

Field	Description
process	Autonomous system number specified in the router configuration command.
vrf	VRF name.
Address	IP address of the EIGRP peer.
Interface	Interface on which the router is receiving hello packets from the peer.
Holdtime	Length of time (in seconds) that the Cisco NX-OS oftware waits to hear from the peer before declaring that the peer is down.
Uptime	Elapsed time (in hours, minutes, and seconds) since the local router first heard from this neighbor.
Q Count	Number of EIGRP packets (update, query, and reply) that the software waits to send.
Seq Num	Sequence number of the last update, query, or reply packet that was received from this neighbor.
SRTT	Smoothed round-trip time. This field indicates the number of milliseconds required for an EIGRP packet to be sent to this neighbor and for the local router to receive an acknowledgment of that packet.
RTO	Retransmission timeout (in milliseconds). This field indicates the amount of time that the software waits before resending a packet from the retransmission queue to a neighbor.

The following example shows how to display detailed information about EIGRP neighbors:

```
switch# show ip eigrp neighbors detail
```

```
IP-EIGRP neighbors for AS 1 vrf default

H   Address                 Interface       Hold Uptime   SRTT   RTO  Q  Seq
                                            (sec)         (ms)      Cnt Num
0   192.0.2.10              e1/5             14 01:00:52   3     200  0  10

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

switch#
```

Table 1-7 describes the significant fields shown in the display.

Table 1-7   show ip eigrp neighbors detail Field Descriptions

Field	Description
Version	Version of EIGRP software running on the node and neighbor.
Retrans:	Number of retransmissions sent to this neighbor.
Retries:	Number of retransmissions sent to this neighbor since the last acknowledgement (ACK).
Prefixes	Number of prefixes learned from this neighbor.

Related Commands

Command	Description
clear ip eigrp neighbors	Clears neighbors for EIGRP.

show ip eigrp policy statistics

To display the policy statistics for the Enhanced Interior Gateway Routing Protocol (EIGRP), use the **show ip eigrp policy statistics** command in any mode.

show ip eigrp [*instance-tag*] **policy statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospf** *id* | **rip** *id* | **static**} [**vrf** {*vrf-name* | ***}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
bgp	Displays policy statistics for the Border Gateway Protocol (BGP).
direct	Displays policy statistics for directly connected routes only.
eigrp	Displays policy statistics for EIGRP.
isis	Displays policy statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.
ospf	Displays policy statistics for the Open Shortest Path First (OSPF) protocol.
rip	Displays policy statistics for the Routing Information Protocol (RIP).
static	Displays policy statistics for IP static routes.
id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
	For the **eigrp** keyword, an EIGRP instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	For the **isis** keyword, an IS-IS instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	For the **ospf** keyword, an OSPF instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
vrf ***	(Optional) Specifies all VRF instances.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(13	This command was removed and replaced by the **show ip eigrp route-map statistics** command.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display policy statistics for EIGRP:

```
switch(config)# show ip eigrp policy statistics redistribute direct
C: No. of comparisons, M: No. of matches

route-map rmap1 permit 1

Total accept count for policy: 10
Total reject count for policy: 0
```

Related Commands

Related Commands

Command	Description
clear ip eigrp policy statistics	Clears policy statistics for EIGRP.
show ip eigrp traffic	Displays EIGRP traffic statistics.

show ip eigrp route-map statistics

To display the route redistribution statistics for the Enhanced Interior Gateway Routing Protocol (EIGRP, use the **show ip eigrp route-map statistics** command in any mode.

> **show ip eigrp** [*instance-tag*] [**route-map statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospf** *id* | **rip** *id* | **static**} **vrf** {*vrf-name* | ***}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
bgp	Displays policy statistics for the Border Gateway Protocol (BGP).
direct	Displays policy statistics for directly connected routes only.
eigrp	Displays policy statistics for EIGRP.
isis	Displays policy statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.
ospf	Displays policy statistics for the Open Shortest Path First (OSPF) protocol.
rip	Displays policy statistics for the Routing Information Protocol (RIP).
static	Displays policy statistics for IP static routes.
id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
	For the **eigrp** keyword, an EIGRP instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	For the **isis** keyword, an IS-IS instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	For the **ospf** keyword, an OSPF instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
vrf *	(Optional) Specifies all VRF instances.

Defaults　　　None

Command Modes　　　Any

SupportedUserRoles　　　network-admin
vdc-admin

Command History	Release	Modification
	4.0(3)	This command was introduced.

Usage Guidelines

This command replaces the **show ip eigrp policy statistics** command. This command does not require a license.

Examples

The following example shows how to display route-map statistics for EIGRP:

```
switch(config)# show ip eigrp route-map statistics redistribute direct
C: No. of comparisons, M: No. of matches

route-map rmap1 permit 1

Total accept count for policy: 10
Total reject count for policy: 0
```

Related Commands

Related Commands	Command	Description
	clear ip eigrp route-map statistics	Clears route-map statistics for EIGRP.
	show ip eigrp traffic	Displays EIGRP traffic statistics.

show ip eigrp topology

To display the Enhanced Interior Gateway Routing Protocol (EIGRP) topology table, use the **show ip eigrp topology** command.

> **show ip eigrp** [*instance-tag*] **topology** [*ip-address/length*] [**active** | **all-links** | **detail-links** | **pending** | **summary** | **zero-successors**] [**vrf** {*vrf-name* | *****}]

Syntax Description		
	instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	ip-address/length	(Optional) IP address in four-part, dotted-decimal notation with a network mask indicated as a slash (/) and number. For example, /8 indicates that the first 8 bits of the mask are 1s, and the corresponding bits of the address are the network address.
	active	(Optional) Displays only active entries in the EIGRP topology table.
	all-links	(Optional) Displays all entries in the EIGRP topology table.
	detail-links	(Optional) Displays detailed information for all entries in the EIGRP topology table.
	pending	(Optional) Displays all entries in the EIGRP topology table that are waiting for an update from a neighbor or are waiting to reply to a neighbor.
	summary	(Optional) Displays a summary of the EIGRP topology table.
	zero-successors	(Optional) Displays available routes in the EIGRP topology table.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
	vrf *	(Optional) Specifies all VRF instances.

Defaults   This command displays information for the default VRF if no VRF is specified.

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

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

Usage Guidelines   Use the **show ip eigrp topology** command to determine Diffusing Update Algorithm (DUAL) states and to debug possible DUAL problems.

When you use the **show ip eigrp topology** command without any keywords or arguments, Cisco NX-OS displays only routes that are feasible successors.

This command requires the Enterprise Services license.

Examples   This example shows how to display the EIGRP topology table. The EIGRP metrics for specified internal routes and external routes are displayed.

```
switch# show ip eigrp topology 192.0.2.0/24

IP-EIGRP (AS 1): Topology entry for 192.0.2.0/24
  State is Passive, Query origin flag is 1, 1 Successor(s), FD is 281600
  Routing Descriptor Blocks:
   192.0.2.22 (Ethernet 2/1), from 192.0.2.1, Send flag is 0x0
    Composite metric is (409600/128256), Route is External
    Vector metric:
      Minimum bandwidth is 10000 Kbit
      Total delay is 6000 microseconds
      Reliability is 255/255
      Load is 1/255
      Minimum MTU is 1500
      Hop count is 1
    External data:
      Originating router is 10.89.245.1
      AS number of route is 0
      External protocol is Connected, external metric is 0
      Administrator tag is 0 (0x00000000)
switch#
```

This example show the **all-links** option:

```
switch(config)# show ip eigrp topology all-links
IP-EIGRP Topology Table for AS(100)/ID(4.4.4.4) VRF default

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 3.3.3.0/24, 1 successors, FD is 130816, serno 58
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 2.2.2.0/24, 1 successors, FD is 130816, serno 57
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 1.1.1.0/24, 1 successors, FD is 130816, serno 56
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 192.168.6.0/24, 1 successors, FD is 2816, serno 25
        via Connected, Ethernet2/2
        via 192.168.5.2 (26112/2816), Ethernet2/1
P 6.6.6.0/24, 1 successors, FD is 128256, serno 24
        via Connected, loopback6
P 5.5.5.0/24, 1 successors, FD is 128256, serno 23
        via Connected, loopback5
P 4.4.4.0(1)/24, 1 successors, FD is 128256, serno 16
        via Connected, loopback4
P 192.168.5.0/24, 1 successors, FD is 25856, serno 1
        via Connected, Ethernet2/1
        via 192.168.6.2 (3072/2816), Ethernet2/2
```

This example shows more details:

```
switch(config)# show ip eigrp topology detail-links
IP-EIGRP Topology Table for AS(100)/ID(4.4.4.4) VRF default

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 3.3.3.0/24, 1 successors, FD is 130816, serno 58
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 2.2.2.0/24, 1 successors, FD is 130816, serno 57
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 1.1.1.0/24, 1 successors, FD is 130816, serno 56
        via 192.168.6.2 (130816/128256), Ethernet2/2
        via 192.168.5.2 (153856/128256), Ethernet2/1
P 192.168.6.0/24, 1 successors, FD is 2816, serno 25
        via Connected, Ethernet2/2
        via 192.168.5.2 (26112/2816), Ethernet2/1
P 6.6.6.0/24, 1 successors, FD is 128256, serno 24
        via Connected, loopback6
P 5.5.5.0/24, 1 successors, FD is 128256, serno 23
        via Connected, loopback5
P 4.4.4.0(1)/24, 1 successors, FD is 128256, serno 16
        via Connected, loopback4
P 192.168.5.0/24, 1 successors, FD is 25856, serno 1
        via Connected, Ethernet2/1
        via 192.168.6.2 (3072/2816), Ethernet2/2
```

This example shows a summary of the topology table:

```
switch(config)# show ip eigrp topology summary
IP-EIGRP Topology Table for AS(100)/ID(4.4.4.4) VRF default

Head serial 1, next serial 59
8 routes, 0 pending replies, 0 dummies
IP-EIGRP(0) enabled on 5 interfaces, 2 neighbors present on 2 interfaces
Quiescent interfaces:  Eth2/2 Eth2/1
```

This example shows the active entries in the topology table:

```
switch(config-if)# show ip eigrp topology active
IP-EIGRP Topology Table for AS(101)/ID(80.86.2.3) VRF default

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

A 8.3.2.0/24, 1 successors, FD is Inaccessible
    1 replies, active 00:00:04, query-origin: Local origin
        via Connected (Infinity/Infinity), loopback8
      Remaining replies:
         via 5.5.5.6, r, Ethernet2/6
```

This example shows zero-successors in the topology table:

```
switch(config-router)# show ip eigrp topology zero-successors
IP-EIGRP Topology Table for AS(101)/ID(10.1.48.4) VRF default

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 10.1.49.0/24, 0 successors, FD is Inaccessible
        via 5.5.5.5 (28416/28160), Ethernet2/6
```

This example shows pending entries:

```
switch(config)# show ip eigrp topology pending
IP-EIGRP Topology Table for AS(100)/ID(1.1.1.1) VRF default

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 6.6.6.0/24, 1 successors, FD is 130816, U
        via 192.168.5.1 (130816/128256), Ethernet2/1
P 5.5.5.0/24, 1 successors, FD is 130816, U
        via 192.168.5.1 (130816/128256), Ethernet2/1
P 4.4.4.0(1)/24, 1 successors, FD is 130816, U
        via 192.168.5.1 (130816/128256), Ethernet2/1
P 8.8.8.0/24, 1 successors, FD is 130816, U
        via 192.168.5.1 (130816/128256), Ethernet2/1
```

Table 1-8 describes the significant fields shown in the display.

Table 1-8   show ip eigrp topology Field Descriptions

Field	Description
Query origin	Query origin state.
Successors	Number of feasible successors for this prefix.
FD	Feasible distance for this prefix.
192.0.2.22(Ethernet 2/1)	Next hop and interface from which this path was learned.
from 192.0.2.1	Information source for this path.
Send flag	Status of whether the sending of this prefix is pending to this neighbor.
Composite metric is...	The first number is the EIGRP metric that represents the cost to the destination. The second number is the EIGRP metric that this peer advertised.
Route is	Type of route (internal or external).
Vector Metric	Metric (bandwidth, delay, reliability, load, MTU, and hop count) advertised by the neighbor.
External Data	External information (originating router ID, AS number, external protocol, metric, and tag) advertised by the neighbor.

show ip eigrp traffic

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

show ip eigrp [*instance-tag*] **traffic** [**vrf** {*vrf-name* | *****}]

Syntax Description		
	instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
	vrf *	(Optional) Specifies all VRF instances.

Defaults This command displays information for the default VRF if no VRF is specified.

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

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

Usage Guidelines Use the **show ip eigrp traffic** command to find the number of packets sent and received by this EIGRP instance.

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

This command requires the Enterprise Services license.

Examples The following example shows how to display the EIGRP traffic statistics:

```
switch# show ip eigrp traffic

IP-EIGRP Traffic Statistics for AS 1 vrf default

  Hellos sent/received: 736/797
  Updates sent/received: 6/6
  Queries sent/received: 0/1
  Replies sent/received: 1/0
  Acks sent/received: 6/6
```

```
Input queue high water mark 0, 0 drops
SIA-Queries sent/received: 0/0
SIA-Replies sent/received: 0/0
```

Table 1-9 describes the significant fields shown in the display.

Table 1-9   show ip eigrp traffic Field Descriptions

Field	Description
AS	Autonomous system number specified in the **router eigrp** command.
vrf	VRF specified in the **show** command.
Hellos sent/received:	Number of hello packets sent and received.
Updates sent/received:	Number of update packets sent and received.
Queries sent/received:	Number of query packets sent and received.
Replies sent/received:	Number of reply packets sent and received.
Acks sent/received:	Number of acknowledgment packets sent and received.
Input queue high water mark	Maximum number of packets in the input queue and number of drops.
SIA-Queries sent/received	Number of Stuck-in-Active query packets sent and received.
SIA-Replies sent/received:	Number of Stuck-in-Active reply packets sent and received.

show ip fib

To display forwarding information, use the **show ip fib** command.

show ip fib {**adjacency** | **interfaces** | **route**} **module** *slot*

Syntax Description

adjacency	Displays the adjacency information.
interfaces	Displays the forwarding information for interfaces on a module.
route	(Optional) Displays the forwarding information for routes on a module.
module *slot*	Displays information for the module. The slot range depends on the hardware platform.

Command Modes   Any

SupportedUserRoles   Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip fib** command on the supervisor to view forwarding information on a module. Optionally, you can use the **attach module** command to attach to a module and use the **show ip fib** command on the module.

This command does not require a license.

Examples   This example displays forwarding information for module 2:

```
switch# show ip fib route module 2

IPv4 routes for table default/base

-----------------+-----------------+--------------------
Prefix           | Next-hop        | Interface
-----------------+-----------------+--------------------
0.0.0.0/32         Drop              Null0
255.255.255.255/32 Receive           sup-eth1
```

Related Commands

Command	Description
show forwarding	Displays information about the FIB.

show ip fib distribution

To display forwarding distribution information, use the **show ip fib distribution** command.

show ip fib distribution [**clients** | **state**]

Syntax Description

clients	(Optional) Displays the forwarding distribution information for unicast clients.
state	(Optional) Displays the forwarding distribution state for unicast FIB.

Command Modes Any

SupportedUserRoles Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays forwarding information for unicast clients:

```
switch# show ip fib distribution clients

id  pid    shmem-start  shmem-end  shmem-name
--  -----  -----------  ---------  ----------
 1  3646   0x64f70120   0x64fc0000 u6rib-ufdm
 2  3647   0x64b50120   0x64d50000 urib-ufdm
```

Related Commands

Command	Description
show forwarding distribution	Displays distribution information about the FIB.

show ip interface

To display IP information for an interface, use the **show ip interface** command.

show ip interface [*type number*] [**brief**] [**vrf** *vrf-name*]

Syntax Description		
	type	(Optional) Interface type. Use **?** to see the options.
	number	(Optional) Interface number. Use **?** to see the range.
	brief	(Optional) Displays a summary of IP information.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Command Modes Any

SupportedUserRoles Network Administrator
VDC Administrator

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

Usage Guidelines This command does not require a license.

Examples This example displays IP information for Ethernet 2/1:

```
switch# show ip interface ethernet 2/1
Ethernet2/1, Interface status: protocol-down/link-down/admin-down, iod: 80,
  IP VRF context: "default"
  IP address: 192.0.2.1, IP subnet: 192.0.0.0/8
  IP broadcast address: 255.255.255.255
  IP multicast groups locally joined: none
  IP MTU: 1500 bytes (using link MTU)
  IP primary address route-preference: 0, tag: 0
  IP proxy ARP : disabled
  IP Local Proxy ARP : disabled
  IP multicast routing: disabled
  IP icmp redirects: enabled
  IP directed-broadcast: disabled
  IP icmp unreachables (except port): disabled
  IP icmp port-unreachable: enabled
  IP RP inbound packet-filtering policy: none
  IP RP outbound packet-filtering policy: none
  IP inbound packet-filtering policy: none
  IP outbound packet-filtering policy: none
  IP unicast reverse path forwarding: none
```

```
IP unicast reverse path forwarding fail policy: none
IP interface statistics last reset: never
IP interface software stats: (sent/received/forwarded/originated/consumed)
 Unicast packets    : 0/0/0/0/0
 Unicast bytes      : 0/0/0/0/0
 Multicast packets  : 0/0/0/0/0
 Multicast bytes    : 0/0/0/0/0
 Broadcast packets  : 0/0/0/0/0
 Broadcast bytes    : 0/0/0/0/0
 Labeled packets    : 0/0/0/0/0
 Labeled bytes      : 0/0/0/0/0
```

Related Commands	Command	Description
	show ipv6 interface	Displays IPv6 information about an interface.

show ip load-sharing

To display IP load sharing information, use the **show ip load-sharing** command.

> **show ip load-sharing**

Syntax Description   This command has no arguments or keywords.

Command Modes   Any

SupportedUserRoles   Network Administrator
VDC Administrator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays IP load sharing information:

```
switch# show ip load-sharing
IPv4/IPv6 ECMP load sharing:
Universal-id (Random Seed): 2823428857
Load-share mode : address source-destination port source-destination Broadcast bytes    :
0/0/0/0/0
    Labeled packets    : 0/0/0/0/0
    Labeled bytes      : 0/0/0/0/0
```

Related Commands

Command	Description
show ip load-sharing	Displays IP load sharing.

show ip mbgp

To display entries in the Multiprotocol Border Gateway Protocol (MP-BGP) table, use the **show ip mbgp** command.

show ip mbgp [*p-addr* | *ip-prefix* [**longer-prefixes**]] [**received-paths**] [**regexp** *expression*] [**route-map** *map-name*] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ip-addr	(Optional)A network from the MBGP route table. The format is x.x.x.x.
ip-prefix	(Optional) A prefix from the the MBGP route table. The format is x.x.x.x/length.
longer-prefixes	(Optional) Displays the prefix and any more specific routes.
received-paths	(Optional) Displays paths stored for soft reconfiguration.
regexp *expression*	(Optional) Display information that matches the regular expression.
route-map *map-name*	(Optional) Displays routes that match the route map. The map name can be any case-sensitive alphanumeric string up to 63 characters.
summary	(Optional) Displays the summary of the routes.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the MBGP route table:

```
switch(config-router)# show ip mbgp
BGP routing table information for VRF default, address family IPv4 Multicast
```

Related Commands	Command	Description
	clear ip mbgp	Clears entries in the MBGP route table.

show ip mbgp community

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a community, use the **show ip mbgp community** command.

> **show ip mbgp community** [*as-number*] [**internet**] [**no-advertise**] [**no-export**]
> [**no-export-subconfed**] [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description

as-number	AS number. The AS number can be a 16-bit integer or a 32-bit integer in the form of <higher 16-bit decimal number>.<lower 16-bit decimal number>.
internet	(Optional) Displays the internet community.
no-advertise	(Optional) Displays the no-advertise community.
no-export	(Optional) Displays the no-export community.
no-export-subconfed	(Optional) Displays the no-export-subconfed community.
exact-match	(Optional) Displays an exact match of the community.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays routes that match a community:

```
switch(config)# show ip mbgp community
```

Related Commands

Command	Description
ip community-list	Creates a community list.

show ip mbgp community-list

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a community list, use the **show ip mbgp community-list** command.

show ip mbgp community-list *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

commlist-name	Name of a community-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays routes that match a community list:

```
switch(config)# show ip mbgp community-list test1
```

Related Commands

Command	Description
ip community-list	Creates a community list.

show ip mbgp dampening

To display Multiprotocol Border Gateway Protocol (MP-BGP) dampening information, use the **show ip mbgp dampening** command.

show ip mbgp dampening {**dampened-paths** [**regexp** *expression*] | **flap-statistics** | **history-paths** [**regexp** *expression*] | **parameters**} [**vrf** *vrf-name*]

Syntax Description

ipv4	(Optional) Display MBGP information for IPv4 address family.
ipv6	(Optional) Display MBGP information for IPv4 address family.
unicast	Displays MBGP information for unicast address family.
multicast	Displays MBGP information for multicast address family.
all	(Optional) Display MBGP information for all address families.
dampened-paths	Display all dampened paths.
regexp *expression*	(Optional) Display information that matches the regular expression.
flap-statistics	Display flap statistics for routes.
history-paths	Display all history paths.
parameters	Display all dampening parameters.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays dampening information:

```
switch(config)# show ip mbgp dampening dampened-paths
```

Related Commands	Command	Description
	show ipv6 bgp dampening	Displays BGP dampening information.

show ip mbgp extcommunity

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match an extended community, use the **show ip mbgp extcommunity** command.

> **show ip mbgp extcommunity generic** {**non-transitive** | **transitive**} [*as4-number*] [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

generic	Displays the routes that match the generic specifice extended communities.
non-transitive	Displays the routes that match the non-transitive extended communities.
transitive	Displays the routes that match thetransitive extended communities.
as4-number	AS number. The *as4-number* is a 32-bit integer in the form of a plaintext integer or <higher 16-bit decimal number>.<lower 16-bit decimal number> .
exact-match	(Optional) Displays an exact match of the extended community.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays routes that match an extended community:

```
switch(config)# show ip mbgp extcommunity generic transitive 1.3:30
```

Related Commands

Command	Description
ip extcommunity-list	Creates an extended community list.

show ip mbgp extcommunity-list

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match an extended community list, use the **show ip mbgp extcommunity-list** command.

show ip mbgp extcommunity-list *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

commlist-name	Name of an extended community-list. The *commlist-name* can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the extended communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community list:

```
switch(config)# show ip mbgp extcommunity-list test1
```

Related Commands

Command	Description
ip extcommunity-list	Creates an extended community list.

show ip mbgp filter-list

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a filter list, use the **show ip mbgp filter-list** command.

show ip m**bgp filter-list** *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

list-name	Name of a filter-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the filter.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays routes that match a filter list:

```
switch(config)# show ip mbgp filter-list test1
```

Related Commands

Command	Description
show ipv6 bgp filter-list	Displays BGP routes that match a filter list.

show ip mbgp flap-statistics

To display Multiprotocol Border Gateway Protocol (MP-BGP) flap statistics, use the **show ip mbgp flap-statistics** command.

show ip mbgp flap-statistics [*prefix*] [**vrf** *vrf-name*]

Syntax Description

prefix	(Optional) IPv6 prefix. The format is x.x.x.x/length.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the flap statistics:

```
switch(config)# show ip mbgp flap-statistics
```

Related Commands

Command	Description
show ipv6 bgp	Displays BGP information.

show ip mbgp history-paths

To display Multiprotocol Border Gateway Protocol (MP-BGP) history paths, use the **show ip mbgp history-paths** command.

show ip mbgp history-paths [**regexp** *expression*] [**vrf** *vrf-name*]

Syntax Description	regexp *expression*	(Optional) Display information that matches the regular expression.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays BGP history path information:

```
switch(config)# show ip mbgp history-paths
```

Related Commands	Command	Description
	show ipv6 bgp history-paths	Displays BGP history paths information.

show ip mbgp neighbors

To display Multiprotocol Border Gateway Protocol (MP-BGP) neighbors, use the **show ip mbgp neighbors** command.

show ip bgp neighbors [*addr* [**advertised-routes** | **flap-statistics** | **paths** | **received-routes** | **routes** [**advertised** | **dampened** | **received**]] | *prefix*] [**vrf** { **all** | *vrf-name* }]

Syntax Description		
	addr	IPv4 address. The format is x.x.x.x
	advertised-routes	(Optional) Displays all the routes advertised to this neighbor.
	flap-statistics	(Optional) Displays flap statistics for the routes received from this neighbor.
	paths	(Optional) Displays AS paths learned from this neighbor.
	received-routes	(Optional) Displays all the routes received from this neighbor.
	routes	(Optional) Displays the routes received or advertised to or from this neighbor.
	advertised	(Optional) Displays all the routes advertised for this neighbor.
	dampened	(Optional) Displays all dampened routes received from this neighbor.
	received	(Optional) Displays all the routes received from this neighbor.
	prefix	(Optional) IPv6 prefix. The format is x.x.x.x/length.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.
	all	(Optional) Specifies all VRFS.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.0(1)	This command was introduced.
	4.1(2)	Added **paths** keyword.

Usage Guidelines   This command does not require a license.

Examples   This example displays the MBGP neighbors:

```
switch(config)# show ip mbgp neighbors
```

Related Commands

Command	Description
show ipv6 bgp neighbors	Displays BGP information.

show ip mbgp nexthop

To display Multiprotocol Border Gateway Protocol (MP-BGP) next hop information, use the **show ip mbgp nexthop** command.

> **show ip mbgp nexthop** *addr* [**vrf** *vrf-name*]

Syntax Description

addr	IPv4 address. The format is x.x.x.x
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the BGP next-hop information:

```
switch(config)# show ip mbgp nexthop 192.0.2.1
```

Related Commands

Command	Description
show ipv6 bgp nexhop	Displays BGP information.

show ip mbgp nexthop-database

To display Multiprotocol Border Gateway Protocol (MP-BGP) next-hop database, use the **show ip mbgp nexthop-database** command.

show ip mbgp nexthop-database [**vrf** *vrf-name*]

Syntax Description	

vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP next-hop database:

```
switch(config)# show ip mbgp nexthop-database
```

Related Commands

Command	Description
show ipv6 bgp nexhop-database	Displays BGP information.

show ip mbgp prefix-list

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a prefix list, use the **show ip mbgp prefix-list** command.

show ip mbgp prefix-list *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

list-name	Name of a prefix list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the filter.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example displays routes that match a prefix list:

```
switch(config)# show ip mbgp prefix-list test1
```

Related Commands

Command	Description
show ipv6 bgp prefix-list	Displays BGP routes that match a prefix list.

show ip ospf

To display general information about Open Shortest Path First (OSPF) routing instances, use the **show ip ospf** command.

show ip ospf [*instance-tag*] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Use this tag to display OSPF information about a specific OSPF instance. The *instance-tag* argument can be any alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **show ip ospf** command to display information about one or more OSPF instances.

This command requires the Enterprise Services license.

Examples

The following example shows how to display information about one specific OSPF instance:

```
switch# show ip ospf 201
 Routing Process 201 with ID 192.0.2.15 vrf default
 Stateful High Availability enabled
 Graceful-restart is configured
  Notify period: 15, grace period: 60, state: Inactive
  Last graceful restart exit status: (null)
 Supports only single TOS(TOS0) routes
 Supports opaque LSA
 Reference Bandwidth is 40000 Mbps
 Initial SPF schedule delay 200.000 msecs,
  minimum inter SPF delay of 1000.000 msecs,
  maximum inter SPF delay of 5000.000 msecs
 Minimum hold time for Router LSA throttle 5000.000 ms
 Minimum hold time for Network LSA throttle 5000.000 ms
```

```
        Minimum LSA arrival 1000.000 msec
        Maximum paths to destination 8
        Number of external LSAs 0, checksum sum 0
        Number of opaque AS LSA 0, checksum sum 0
        Number of areas is 2, 2 normal, 0 stub, 0 nssa
        Number of active areas is 0, 0 normal, 0 stub, 0 nssa
          Area BACKBONE(0) (Inactive)
                Area has existed for 1w0d
                Interfaces in this area: 1 Active interfaces: 0
                No authentication available
                SPF calculation has run 3 times
                 Last SPF ran for 0.000132s
                Area ranges are
                Number of LSAs: 0, checksum sum 0
          Area (10) (Inactive)
                Area has existed for 1w0d
                Interfaces in this area: 1 Active interfaces: 0
                No authentication available
                SPF calculation has run 3 times
                 Last SPF ran for 0.000035s
                Area ranges are
                Number of LSAs: 0, checksum sum 0
```

Table 1-10 describes the significant fields shown in the display.

Table 1-10   show ip ospf Field Descriptions

Field	Description
Routing Process...	OSPF instance tag and OSPF router ID.
Stateful High Availability	Status of stateful restart capability.
Graceful-restart	Status of graceful restart configuration.
grace period	Number of seconds that OSPF has to trigger a graceful restart.
Last graceful restart exit status	Exit status for last graceful restart.
Supports...	Number of types of service supported (Type 0 only).
Reference Bandwidth	Bandwidth used for cost calculation.
Initial SPF schedule delay	Delay time of SPF calculations.
Minimum LSA arrival	Minimum interval between link-state advertisements.
Number of...	Number and type of link-state advertisements that have been received.
Number of areas is...	Number and type of areas configured for the router.

show ip ospf border-routers

To display the Open Shortest Path First (OSPF) routing table entries to an Area Border Router (ABR) and Autonomous System Boundary Router (ASBR), use the **show ip ospf border-routers** command.

show ip ospf [*instance-tag*] **border-routers** [**vrf** *vrf-name*]

Syntax Description	*instance-tag*	(Optional) Name of the OSPF instance. Use this tag to display OSPF information about a specific OSPF instance. The *instance-tag* argument can be any alphanumeric string.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf border-routers** command to display information on ABRs. and ASBRs.

This command requires the Enterprise Services license.

Examples   The following example shows how to display information about border routers:

```
switch# show ip ospf border-routers

OSPF Process ID p1, vrf default Internal Routing Table
Codes: i - Intra-area route, I - Inter-area route

i 40.40.40.40 [10], ABR, Area 0.0.0.0, SPF 71 via
            192.0.2.1, Ethernet2/1
i 60.60.60.60 [20], ABR, Area 0.0.0.0, SPF 71 via
            192.0.2.1, Ethernet2/1
i 40.40.40.40 [10], ABR, Area 0.0.0.1, SPF 71 via
            192.0.2.1, Ethernet2/2
i 60.60.60.60 [20], ABR, Area 0.0.0.1, SPF 71 via
            192.0.2.1, Ethernet2/2
```

Table 1-11 describes the significant fields shown in the display.

Table 1-11   show ip ospf border-routers Field Descriptions

Field	Description
40.40.40.40	Router ID of the destination.
[10]	Cost of using this route.
ABR	Router type of the destination; the type is either an ABR, ASBR, or both.
Area	Area ID of the area from which this route is learned.
SPF 71	Internal number of the shortest path first (SPF) calculation that installs this route.
via 192.0.2.1	Next hop toward the destination.
Ethernet2/1	Interface type for the outgoing interface.

show ip ospf database

To display the Open Shortest Path First (OSPF) database for a specific router, use the **show ip ospf database** command.

> **show ip ospf** [*instance-tag*] **database** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database asbr-summary** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database database-summary**[**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database external** [**ext_tag** *value*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database network** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database nssa-external** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database opaque-area** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database opaque-as** [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database opaque-link** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database router** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> **show ip ospf** [*instance-tag*] **database summary** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area-id	(Optional) Area number used to define the particular area. Specify as either an IP address or a number from 0 to 4294967295.
link-state-id	(Optional) Portion of the Internet environment that is being described by the advertisement. The value entered depends on the advertisement's link-state type. Specify in the form of an IP address.
adv-router *ip-address*	(Optional) Displays all the link-state advertisements (LSAs) of the specified router.
self-originate	(Optional) Displays self-originated LSAs (from the local router).
asbr-summary	(Optional) Displays information about the autonomous system boundary router summary LSAs.
database-summary	(Optional) Displays each type of LSA for each area in the database, and the total number of LSAs.

external	(Optional) Displays information about the external LSAs.
ext_tag *value*	(Optional) Displays information based on an external tag. The range is from 1 to 4294967295.
network	(Optional) Displays information about the network LSAs.
nssa-external	(Optional) Displays information about the not-so-stubby area (NSSA) external LSAs.
opaque-area	(Optional) Displays information about the opaque area LSAs.
opaque-as	(Optional) Displays information about the opaque AS LSAs.
opaque-link	(Optional) Displays information about the opaque link-local LSAs.
router	(Optional) Displays information about the router LSAs.
summary	(Optional) Displays information about the summary LSAs.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **ip ospf database** command to display information about different OSPF LSAs.

When the link state advertisement is describing a network, the *link-state-id* argument can take one of two forms:

- The network's IP address (such as Type 3 summary link advertisements and autonomous system external link advertisements).

- A derived address obtained from the link state ID. (Note that masking a network links advertisement's link state ID with the network's subnet mask yields the network's IP address.)

- When the link state advertisement is describing a router, the link state ID is always the described router's OSPF router ID.

- When an autonomous system external advertisement (LS Type = 5) is describing a default route, its link state ID is set to Default Destination (0.0.0.0).

This command requires the Enterprise Services license.

Examples   The following example shows how to display the OSPF database:

```
Router# show ip ospf database

OSPF Router with ID (50.50.50.50) (Process ID p1)

                Router Link States (Area 0)

Link ID         ADV Router      Age         Seq#        Checksum Link Count
40.40.40.40     40.40.40.40     930         0x80000004 0x2ea1    3
50.50.50.50     50.50.50.50     935         0x80000002 0x8b52    1
60.60.60.60     60.60.60.60     943         0x800003c5 0x9854    2

                Network Link States (Area 0)

Link ID         ADV Router      Age         Seq#        Checksum
209.165.201.3   60.60.60.60     944         0x80000001 0x7179
192.0.2.1       50.50.50.50     935         0x80000001 0x516a

                Summary Network Link States (Area 0)

Link ID         ADV Router      Age         Seq#        Checksum
209.165.201.1   40.40.40.40     929         0x80000001 0x2498
209.165.201.1   50.50.50.50     928         0x80000001 0x5b2f
209.165.201.1   60.60.60.60     1265        0x800003c3 0xf49b
192.0.2.0       40.40.40.40     943         0x80000001 0x53f3
192.0.2.0       50.50.50.50     935         0x80000001 0x26f8
192.0.2.0       60.60.60.60     930         0x80000001 0x7b51
```

Table 1-12 describes the significant fields shown in the display.

Table 1-12   show ip ospf database Field Descriptions

Field	Description
Link ID	Router ID number.
ADV Router	Advertising router's ID.
Age	Link state age.
Seq#	Link state sequence number (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the link state advertisement.
Link count	Number of interfaces detected for the router.

The following example shows how to display a summary of autonomous system border routers:

```
Router# show ip ospf database asbr-summary

OSPF Router with id(192.168.239.66) (Process ID 300)

                Displaying Summary ASB Link States(Area 0.0.0.0)

    LS age: 1463
    Options: (No TOS-capability)
    LS Type: Summary Links(AS Boundary Router)
    Link State ID: 172.16.245.1 (AS Boundary Router address)
    Advertising Router: 172.16.241.5
    LS Seq Number: 80000072
    Checksum: 0x3548
    Length: 28
    Network Mask: 0.0.0.0 TOS: 0  Metric: 1
```

Table 1-13 describes the significant fields shown in the display.

Table 1-13   show ip ospf database asbr-summary Field Descriptions

Field	Description
OSPF Router with id	Router ID number.
Process ID	OSPF process ID.
LS age	Link state age.
Options	Type of service options (Type 0 only).
LS Type	Link state type.
Link State ID	Link state ID (autonomous system boundary router).
Advertising Router	Advertising router's ID.
LS Seq Number	Link state sequence (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the link state advertisement.
Length	Length in bytes of the link state advertisement.
Network Mask	Network mask implemented.
TOS	Type of service.
Metric	Link state metric.

The following example shows how to display information about external links:

```
Router# show ip ospf database external

OSPF Router with id(192.168.239.66) (Autonomous system 300)

                Displaying AS External Link States

LS age: 280
Options: (No TOS-capability)
LS Type: AS External Link
Link State ID: 10.105.0.0 (External Network Number)
Advertising Router: 172.16.70.6
LS Seq Number: 80000AFD
Checksum: 0xC3A
Length: 36
Network Mask: 255.255.0.0
        Metric Type: 2 (Larger than any link state path)
        TOS: 0
        Metric: 1
        Forward Address: 0.0.0.0
        External Route Tag: 0
```

Table 1-14 describes the significant fields shown in the display.

Table 1-14   show ip ospf database external Field Descriptions

Field	Description
OSPF Router with id	Router ID number.
Autonomous system	OSPF autonomous system number (OSPF process ID).
LS age	Link state age.

Table 1-14   show ip ospf database external Field Descriptions (continued)

Field	Description
Options	Type of service options (Type 0 only).
LS Type	Link state type.
Link State ID	Link state ID (external network number).
Advertising Router	Advertising router's ID.
LS Seq Number	Link state sequence number (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the LSA.
Length	Length in bytes of the link state advertisement.
Network Mask	Network mask implemented.
Metric Type	External type.
TOS	Type of service.
Metric	Link state metric.
Forward Address	Forwarding address. Data traffic for the advertised destination will be forwarded to this address. If the forwarding address is set to 0.0.0.0, data traffic will be forwarded instead to the advertisement's originator.
External Route Tag	External route tag; a 32-bit field attached to each external route. This field is not used by the OSPF protocol itself.

The following example shows how to display a summary of the OSPF database:

```
Router# show ip ospf database database-summary

OSPF Router with ID (100.0.0.1) (Process ID 1)

Area 0 database summary
  LSA Type        Count    Delete    Maxage
  Router          3        0         0
  Network         0        0         0
  Summary Net     0        0         0
  Summary ASBR    0        0         0
  Type-7 Ext      0        0         0
    Self-originated Type-7  0
Opaque Link       0        0         0
  Opaque Area     0        0         0
  Subtotal        3        0         0

Process 1 database summary
  LSA Type        Count    Delete    Maxage
  Router          3        0         0
  Network         0        0         0
  Summary Net     0        0         0
  Summary ASBR    0        0         0
  Type-7 Ext      0        0         0
  Opaque Link     0        0         0
  Opaque Area     0        0         0
  Type-5 Ext      0        0         0
    Self-originated Type-5  200
Opaque AS         0        0         0
  Total     203        0         0
```

Table 1-15 describes the significant fields shown in the display.

Table 1-15   show ip ospf database database-summary Field Descriptions

Field	Description
Area 0 database summary	Area number.
Count	Count of LSAs of the type identified in the first column.
Router	Number of router link state advertisements in that area.
Network	Number of network link state advertisements in that area.
Summary Net	Number of summary link state advertisements in that area.
Summary ASBR	Number of summary autonomous system boundary router (ASBR) link state advertisements in that area.
Type-7 Ext	Type-7 LSA count.
Self-originated Type-7	Self-originated Type-7 LSA.
Opaque Link	Type-9 LSA count.
Opaque Area	Type-10 LSA count.
Subtotal	Sum of LSAs for that area.
Delete	Number of link state advertisements that are marked "Deleted" in that area.
Maxage	Number of link state advertisements that are marked "Maxaged" in that area.
Process 1 database summary	Database summary for the process.
Count	Count of LSAs of the type identified in the first column.
Router	Number of router link state advertisements in that process.
Network	Number of network link state advertisements in that process.
Summary Net	Number of summary link state advertisements in that process.
Summary ASBR	Number of summary autonomous system boundary router (ASBR) link state advertisements in that process.
Type-7 Ext	Type-7 LSA count.
Opaque Link	Type-9 LSA count.
Opaque Area	Type-10 LSA count.
Type-5 Ext	Type-5 LSA count.
Self-Originated Type-5	Self-originated Type-5 LSA count.
Opaque AS	Type-11 LSA count.
Total	Sum of LSAs for that process.

show ip ospf interface

To display Open Shortest Path First (OSPF)-related interface information, use the **show ip ospf interface** command.

show ip ospf interface [*instance-tag*] [*interface-type interface-number*] [**brief**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
interface-type	(Optional) Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	(Optional) Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.
brief	(Optional) Displays brief overview information for OSPF interfaces, states, addresses, masks, and areas on the router.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf interface** command to display the OSPF status for the interface.

This command requires the Enterprise Services license.

Examples   The following example shows how to display OSPF information for Ethernet interface 1/2:

```
switch# show ip ospf interface ethernet 1/2
Ethernet1/2 is up, line protocol is up
   IP address 192.0.2.1, Process ID 201 vrf default, area 10
```

```
State UP, Network type BROADCAST, cost 65535
Index 2, Transmit delay 1 sec, Router Priority 1
No designated router on this network
No backup designated router on this network
0 Neighbors, flooding to 0, adjacent with 0
Timer intervals: Hello 10, Dead 40, Wait 40, Retransmit 5
Simple authentication
Number of link LSAs: 0, checksum sum 0
```

Table 1-16 describes the significant fields shown in the display.

Table 1-16   ***show ip ospf interface Field Descriptions***

Field	Description
Ethernet	Status of physical link and operational status of protocol.
IP Address	Interface IP address, subnet mask, and area address.
vrf	Virtual routing and forwarding (VRF) instance.
Transmit Delay	Transmit delay, interface state, and router priority.
designated router	Designated router ID and interface IP address.
backup designated router	Backup designated router ID and interface IP address.
Timer intervals	Configuration of timer intervals.
Hello	Number of seconds until next hello packet is sent out this interface.

show ip ospf lsa-content-changed-list

To display a list of all link-state advertisements (LSAs) with changed content, use the **show ip ospf lsa-content-changed-list** command.

show ip ospf lsa-content-changed-list *neighbor-id interface-type interface-number*

Syntax Description

neighbor id	Router ID for the neighbor.
interface-type	(Optional) Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	(Optional) Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.

Defaults   None

Command Modes   Any

SupportedUserRoles   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 display a list of LSAs that changed for Ethernet 2/1:

```
Router# show ip ospf lsa-content-changed-list 192.0.2.2 ethernet 2/1
```
Table 1-18 describes the significant fields shown in the displays.

Table 1-17   show ip ospf lsa-content-changed-list Field Descriptions

Field	Description

Table 1-17 show ip ospf lsa-content-changed-list Field Descriptions (continued)

Field	Description

show ip ospf memory

To display the memory usage statistics for the Open Shortest Path First (OSPF) protocol, use the **show ip ospf memory** command.

show ip ospf memory

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.
4.0(3)	This command was removed.

Usage Guidelines   This command requires the Enterprise Services license.

Examples   The following example shows how to display the memory statistics for OSPF:

```
Router# show ip ospf memory
 OSPF Process ID sd, Memory statistics
 Process memory: 2096 KB
 Byte usage:    needed 0, overhead 192, using 192 bytes
 Allocations:   current 6, created 6, failed 0, free 0
 Bitfields:     current 30, created 30, failed 0, free 0, using 248010 bytes
 Slabs:         current 2, created 2, failed 0, free 0, using 80 bytes
 Index failure: Interface 0, Neighbor 0

 Slab Memory
 OSPF vertex slab
 Alloc 1, max allocs 1, total allocs 1, total frees 0
 Total block allocs 1, total block frees 0, max blocks 1
 Bytes (size/allocated) 68/69720
 OSPF IPv4 prefix routes slab
 Alloc 0, max allocs 0, total allocs 0, total frees 0
 Total block allocs 0, total block frees 0, max blocks 0
 Bytes (size/allocated) 188/64
 OSPF router routes slab
 Alloc 0, max allocs 0, total allocs 0, total frees 0
 Total block allocs 0, total block frees 0, max blocks 0
 Bytes (size/allocated) 100/64
```

```
OSPF IPv4 next-hops slab
Alloc 1, max allocs 1, total allocs 1, total frees 0
Total block allocs 1, total block frees 0, max blocks 1
Bytes (size/allocated) 32/262232
```

show ip ospf neighbors

To display Open Shortest Path First (OSPF)-neighbor information on a per-interface basis, use the **show ip ospf neighbor** command.

> **show ip ospf** [*instance-tag*] **neighbors** [*interface-type interface-number*] [*neighbor-id*] [**detail**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area-id	(Optional) Area number used to define the particular area. Specify as an IP address or a number from 0 to 4294967295.
interface-type	(Optional) Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	(Optional) Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.
neighbor-id	(Optional) Router ID of the neighbor. Specify as an IP address.
detail	(Optional) Displays all neighbors given in detail (lists all neighbors).
summary	(Optional) Displays a summary of the neighbors.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
                           vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf neighbors** command to display information about all or some of the neighbors for this OSPF instance.

This command requires the Enterprise Services license.

Examples   The following example shows how to display the summary information about the neighbor that matches the neighbor ID:

```
Router# show ip ospf neighbors 10.199.199.137

Neighbor 10.199.199.137, interface address 192.0.2.37
    In the area 0.0.0.0 via interface Ethernet2/1
    Neighbor priority is 1, State is FULL
    Options 2
    Dead timer due in 0:00:32
    Link State retransmission due in 0:00:04
 Neighbor 10.199.199.137, interface address 209.165.201.189
    In the area 0.0.0.0 via interface Ethernet4/3
    Neighbor priority is 5, State is FULL
    Options 2
    Dead timer due in 0:00:32
    Link State retransmission due in 0:00:03
```

The following example shows how to display the neighbors that match the neighbor ID on an interface:

```
Router# show ip ospf neighbors ethernet 2/1 10.199.199.137

Neighbor 10.199.199.137, interface address 192.0.2.37
    In the area 0.0.0.0 via interface Ethernet2/1
    Neighbor priority is 1, State is FULL
    Options 2
    Dead timer due in 0:00:37
    Link State retransmission due in 0:00:04
```

The following example shows how to display detailed information about OSPF neighbors:

```
Router# show ip ospf neighbors detail

Neighbor 192.168.5.2, interface address 10.225.200.28
    In the area 0 via interface GigabitEthernet1/0/0
    Neighbor priority is 1, State is FULL, 6 state changes
    DR is 10.225.200.28 BDR is 10.225.200.30
    Options is 0x42
    LLS Options is 0x1 (LR), last OOB-Resync 00:03:08 ago
    Dead timer due in 00:00:36
    Neighbor is up for 00:09:46
  Index 1/1, retransmission queue length 0, number of retransmission 1
  First 0x0(0)/0x0(0) Next 0x0(0)/0x0(0)
  Last retransmission scan length is 1, maximum is 1
  Last retransmission scan time is 0 msec, maximum is 0 msec
```

Table 1-18 describes the significant fields shown in the displays.

Table 1-18   show ip ospf neighbor detail Field Descriptions

Field	Description
Neighbor	Neighbor router ID.
interface address	IP address of the interface.
In the area	Area and interface through which the OSPF neighbor is known.
Neighbor priority	Router priority of the neighbor.
State	OSPF state.

Table 1-18 **show ip ospf neighbor detail Field Descriptions (continued)**

Field	Description
state changes	Number of state changes since the neighbor was created.This value can be reset using the **clear ip ospf counters neighbor** command.
DR is	Router ID of the designated router for the interface.
BDR is	Router ID of the backup designated router for the interface.
Options	Hello packet options field contents. (E-bit only. Possible values are 0 and 2; 2 indicates the area is not a stub; 0 indicates the area is a stub.)
LLS Options..., last OOB-Resync	Link-Local Signalling and out-of-band (OOB) link-state database resynchronization performed hours:minutes:seconds ago (NSF information). The field indicates the last successful out-of-band resynchronization with the NSF-capable router.
Dead timer due in	Expected time before Cisco NX-OS declares the neighbor dead.
Neighbor is up for	Number of hours:minutes:seconds since the neighbor went into a two-way state.
Index	Neighbor location in the area-wide and autonomous system-wide retransmission queue.
retransmission queue length	Number of elements in the retransmission queue.
number of retransmission	Number of times that update packets have been resent during flooding.
First	First memory location of the flooding details.
Next	Next memory location of the flooding details.
Last retransmission scan length	Number of link state advertisements (LSAs) in the last retransmission packet.
maximum	Maximum number of LSAs sent in any retransmission packet.
Last retransmission scan time	Time taken to build last retransmission packet.
maximum	Maximum time taken to build any retransmission packet.

show ip ospf policy statistics area

To display Open Shortest Path First (OSPF) policy statistics for an area, use the **show ip ospf policy statistics area** command.

show ip ospf [*instance-tag*] **policy statistics area** *area id* **filter-list** {**in** | **out**} [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area *area-id*	Specifies the area number used to define the particular area. Specify as an IP address or a number from 0 to 4294967295.
filter-list	Filters prefixes between OSPF areas.
in	Displays policy statistics for incoming routes.
out	Displays policy statistics for outgoing routes.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf policy statistics area** command to display information about the filter lists applied to an area.

This command requires the Enterprise Services license.

Examples   The following example shows how to display policy statistics for OSPF:

```
switch# show ip ospf policy statistics area 201
```

show ip ospf policy statistics redistribute

To display Open Shortest Path First (OSPF) policy statistics, use the **show ip ospf policy statistics redistribute** command.

> **show ip ospf** [*instance-tag*] **policy statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospf** *id* | **rip** *id* | **static**} [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
	bgp	Displays policy statistics for the Border Gateway Protocol (BGP).
	direct	Displays policy statistics for directly connected routes only.
	eigrp	Displays policy statistics for the Enhanced Interior Gateway Routing Protocol (EIGRP).
	isis	Displays policy statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.
	ospf	Displays policy statistics for OSPF.
	rip	Displays policy statistics for the Routing Information Protocol (RIP).
	static	Displays policy statistics for IP static routes.
	id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
		For the **eigrp** keyword, an autonomous system number. The range is from 1 to 65535.
		For the **isis**. **ospf**, and **rip** keywords, an instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults None

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf policy statistics redistribute** command to display redistribution statistics.

This command requires the Enterprise Services license.

Examples   The following example shows how to display policy statistics for redistributed routes:

```
switch# show ip ospf policy statistics redistribute
```

show ip ospf request-list

To display a list of all link-state advertisements (LSAs) requested by a router, use the **show ip ospf request-list** command.

show ip ospf request-list *neighbor-id interface interface-number*

Syntax Description

neighbor-id	Router ID of the neighbor. Specify as an IP address.
interface-type	Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **show ip ospf request-list** command to troubleshoot Open Shortest Path First (OSPF) routing operations.

This command requires the Enterprise Services license.

Examples

The following example shows how to display a list of all LSAs requested by a router:

```
Router# show ip ospf request-list 40.40.40 ethernet 2/1
 OSPF Process ID p1
 Neighbor 40.40.40.40, interface Ethernet2/1, address 192.0.2.1
 1 LSAs on request-list

  Type  LS ID          ADV RTR        Seq NO      Age    Checksum
   1  192.0.2.12     192.0.2.12       0x8000020D  8      0x6572
```

Table 1-19 describes the significant fields shown in the displays.

Table 1-19   *show ip ospf request-list Field Descriptions*

Field	Description
Type	LSA type.
LS ID	IP address of the neighbor router.
ADV RTR	IP address of the advertising router.
Seq NO	Packet sequence number of the LSA.
Age	Age, in seconds, of the LSA.
Checksum	Checksum number of the LSA.

show ip ospf retransmission-list

To display a list of all link-state advertisements (LSAs) waiting to be resent to neighbors, use the **show ip ospf retransmission-list** command.

show ip ospf retransmission-list *neighbor-id interface interface-number*

Syntax Description

neighbor-id	Router ID of the neighbor. Specify as an IP address.
interface-type	Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf retransmission-list** command to troubleshoot Open Shortest Path First (OSPF) routing operations.

This command requires the Enterprise Services license.

Examples   The following example shows how to display all LSAs waiting to be resent to neighbors:

```
Router# show ip ospf retransmission-list 192.0.2.11 ethernet 2/1

           OSPF Router with ID (192.0.2.12) (Process ID 1)

 Neighbor 192.0.2.11, interface Ethernet2/1 address 209.165.201.11
 Link state retransmission due in 3764 msec, Queue length 2

 Type  LS ID           ADV RTR         Seq NO      Age     Checksum
    1  192.0.2.12      192.0.2.12      0x80000210  0       0xB196
```

Table 1-20 describes the significant fields shown in the displays.

Table 1-20 *show ip ospf retransmission-list Field Descriptions*

Field	Description
Type	LSA type.
LS ID	IP address of the neighbor router.
ADV RTR	IP address of the advertising router.
Seq NO	Packet sequence number of the LSA.
Age	Age, in seconds, of the LSA.
Checksum	Checksum number of the LSA.

show ip ospf routes

To display the Open Shortest Path First (OSPF) topology table, use the **show ip ospf routes** command.

show ospf [*instance-tag*] **routes** [*prefix/length* | **summary**} [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
	prefix /length	(Optional) IP prefix, which limits output to a specific route. Indicate the length as a slash (/) and number from 1 to 31. For example, /8 indicates that the first eight bits in the IP prefix are network bits.
	summary	(Optional) Displays a summary of all routes.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

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

Usage Guidelines   Use the **show ospf routes** command to display the OSPF private routing table (which contains only routes that are calculated by OSPF). If something is wrong with a route in the routing information base (RIB), then you should check the OSPF copy of the route to determine if it matches the RIB contents. If it does not match, a synchronization problem exists between OSPF and the RIB.

This command requires the Enterprise Services license.

Examples   The following example shows how to display OSPF routes:

```
RP/0/RP0/CPU0:router# show ip ospf routes
 OSPF Process ID sd vrf default, Routing Table
  (D) denotes route is directly attached      (R) denotes route is in RIB
 61.61.61.61/32 (i) area 1
     via 192.168.2.1/Ethernet2/2, cost 21
 100.100.2.0/24 (i) area 1
     via 192.168.2.1/Ethernet2/22, cost 20
```

```
192.168.2.0/24 (i) area 1
    via directly connected
```

Table 1-21 describes the significant fields shown in the display.

Table 1-21   show ospf route Field Descriptions

Field	Description
61.61.61.61/32	Router ID for the router that advertised this route.
via...	Packets destined for the given prefix are sent over the listed interface or directly connected to this device.

show ip ospf statistics

To display Open Shortest Path First (OSPF) shortest path first (SPF) calculation statistics, use the **show ip ospf statistics** command.

show ip ospf [*instance-tag*] **statistics** [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string up to 20 characters.
vrf *vrf-name*	(Optional) Name of the VRF. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf statistics** command to display information about link-state advertisements (LSAs). This information can be useful for both OSPF network maintenance and troubleshooting. For example, we recommend that you use the **show ip ospf statistics** command as the first troubleshooting step for LSA flapping.

This command requires the Enterprise Services license.

Examples   The following example shows how to display information about the SPF calculations:

```
Router# show ip ospf statistics
OSPF Process p1 vrf default, Event statistics (cleared 2w3d ago)
  Router ID changes: 0
  DR elections: 50
  Older LSAs received: 16
  Neighbor state changes: 82
  Neighbor dead postponed: 0
  Neighbor dead interval expirations: 2
  Neighbor bad lsreqs: 0
  Neighbor sequence number mismatches: 0
  SPF computations:  101 full, 23 summary, 23 external
```

```
        LSA Type Generated Refreshed    Flushed  Aged out
          Router        41      1678          4         3
         Network        12         2         15         1
     Summary Net        53         6        120         6
    Summary ASBR         0         0          0         0
     AS External         0         0          0         0
     Opaque Link         0         0          0         0
     Opaque Area         0         0          0         0
       Opaque AS         0         0          0         0

Following counters can not be reset:

  LSA deletions: 0 pending, 14 hwm, 183 deleted, 14 revived, 27 runs
  Hello queue: 0/200, hwm 2, drops 0
  Flood queue: 0/100, hwm 2, drops 0
  LSDB additions failed: 0

        Buffers:    in use     hwm permanent     alloc      free
       128 bytes         0       2         2    350300    350300
       512 bytes         0       2         2       114       114
      1520 bytes         0       0         0         0         0
      4500 bytes         0       1         1       355       355
           huge         0       0         0         0         0
```

Table 1-22 describes the significant fields shown in the display.

Table 1-22   show ip ospf statistics Field Descriptions

Field	Description
OSPF process	Unique value assigned to the OSPF instance in the configuration.
vrf	Virtual routing and forwarding (VRF) for this OSPF instance.
DR elections	Number of times that a new designated router was elected.
Neighbor...	Details about neighbors.
LSA Type	Number of each type of LSA sent.
Hello queue	Queue of hello packets to be processed: • current number in queue/maximum number allowed in queue • hwm—high water mark. The maximum number of packets ever stored in the queue. • drops—The number of packets dropped because the queue was full.
flood queue	Queue of flood packets to be processed.
buffers	Chunks of memory used to store packets.

show ip ospf summary-address

To display a list of all summary address redistribution information configured in an Open Shortest Path First (OSPF) instance, use the **show ip ospf summary-address** command.

show ip ospf [*instance-tag*] **summary-address** [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   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 display information about summary addresses:

```
Router# show ip ospf summary-address

OSPF Process 2, Summary-address

10.2.0.0/255.255.0.0 Metric -1, Type 0, Tag 0
10.2.0.0/255.255.0.0 Metric -1, Type 0, Tag 10
```

Table 1-18 describes the significant fields shown in the displays.

Table 1-23   show ip ospf summary-address Field Descriptions

Field	Description
10.2.0.0/255.255.0.0	IP address and mask of the router for the OSPF process.
Metric -1	OSPF metric type.

Table 1-23   *show ip ospf summary-address Field Descriptions (continued)*

Field	Description
Type 0	Type of LSA.
Tag 0	OSPF process tag identifier.

show ip ospf traffic

To display Open Shortest Path First (OSPF) traffic statistics, use the **show ip ospf traffic** command.

show ip ospf [*instance-tag*] **traffic** [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf traffic** command to display traffic statistics for one or more OSPF instances.

This command requires the Enterprise Services license.

Examples   The following example shows how to display OSPF traffic statistics:

```
Router# show ip ospf traffic

 OSPF Process ID p1, vrf Red, Packet Counters (cleared 2w3d ago)
  Total: 1690 in, 349230 out
  LSU transmissions: first 100, rxmit 108, for req 16
  Flooding packets output throttled (IP/tokens): 0 (0/0)
  Ignored LSAs: 0, LSAs dropped during SPF: 0
  LSAs dropped during graceful restart: 0
  Errors: drops in       0, drops out       0, errors in       0
          errors out     0, unknown in      0, unknown out     0
          no ospf        0, bad version     0, bad crc         0
          dup rid        0, dup src         0, invalid src     0
          invalid dst    0, no nbr          0, passive         0
          wrong area     0, nbr changed rid/ip addr            0
          bad auth       0

           hellos      dbds      lsreqs      lsus       acks
```

```
In:      1411        70        16        136        57
Out:   348871        62         4        224        69
```

Table 1-24 describes the significant fields shown in the display.

Table 1-24   show ospf traffic Field Descriptions

Field	Description
OSPF Process	OSPF instance tag for these traffic statistics.
vrf	Virtual routing and forwarding (VRF) for this OSPF instance.
Errors	
drops	Number of packets dropped.
bad version	Number of packets received with bad version.
dup rid	Number of packets with a duplicate router-id
dup src	Number of packets with a duplicate source address
no nbr	Number of packets from a router that is not a full neighbor.
nbr changed rid/ip addr	Number of packets with router-id/ip address pair not matching our neighbor's values.
lsreq	Number of packets of type LSREQ (LSA required)
lsacks	Number of packets of type LSACK (LSA acknowledged)

Related Commands	Command	Description
	clear ip ospf traffic	Clears OSPF traffic statistics.

show ip ospf virtual-links

To display parameters and the current state of Open Shortest Path First (OSPF) virtual links, use the **show ip ospf virtual-links** command.

show ip ospf [*instance-tag*] **virtual-links** [**brief**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Instance tag. Specify as an alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
instance-tag	(Optional) Instance tag. Use this tag to display OSPF information about a specific OSPF instance.
brief	(Optional) Displays a summary of the configured virtual links.
vrf *vrf-name*	(Optional) Name of the OSPF VRF. The *vrf-name* argument can be specified as an arbitrary string. The strings "default" and "all" are reserved *vrf-names*.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ip ospf virtual-links** command to display information about configured virtual links.

This command requires the Enterprise Services license.

Examples   The following example shows how to display information about virtual links:

```
Router# show ip ospf virtual-links

Virtual link 2 to router 40.40.40.40 is up
    Process ID p1 vrf default, Transit area 1, via interface Ethernet1/2, cost 10
    Local Address 192.0.2.2, Remote Address 192.0.2.1
    Index 4, Transmit delay 1 sec
    1 Neighbors, flooding to 1, adjacent with 1
    Timer intervals: hello 10, dead 40, wait 40, retransmit 5
      Hello timer due in 00:00:04
```

```
No authentication
Number of link LSAs: 0, checksum sum 0
Neighbor State is FULL, 4 state changes, last change 00:00:03
Hello options 0x2, dbd options 0x42
Last non-hello packet received 00:00:01
  Dead timer due in 00:00:36
```

Table 1-25 describes the significant fields shown in the display.

Table 1-25   show ip ospf virtual-links Field Descriptions

Field	Description
Virtual Link	OSPF neighbor and whether the link to that neighbor is up or down.
vrf	Virtual routing and forwarding (VRF) for this OSPF instance.
Transit area...	Transit area through which the virtual link is formed.
via interface...	Interface through which the virtual link is formed.
cost	Cost of reaching the OSPF neighbor through the virtual link.
Transmit delay	Transmit delay (in seconds) on the virtual link.
Timer intervals...	Various timer intervals configured for the link.
Hello timer due in 0:00:04	Time when the next hello is expected from the neighbor.

show ip policy

To display the route policy information, use the **show ip policy** command.

show ip policy [**vrf** *vrf-name*]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   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   This example shows the policies attached to interfaces:

```
switch(config-if)# show ip policy
Interface            Route-map           Status     VRF-Name
Ethernet2/45         floor1               Inactive   --
```

Related Commands

Command	Description
ip policy	Configures a route policy on an interface.

show ip prefix-list

To display prefix lists for the Border Gateway Protocol (BGP), use the **show ip prefix-list** command.

> **show ip prefix-list** [*name*]

Syntax Description	*name*	(Optional)Name of community list. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the prefix lists:

```
switch(config)# show ip prefix-list
ip prefix-list test2: 1 entries
   seq 5 permit 10.0.0.0/8
```

Related Commands

Command	Description
ip prefix-list	Configures a BGP prefix list.

show ip process

To display formation about the IP process, use the **show ip process** command.

show ip process [**vrf** *vrf-name*]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   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   This example shows details on the IP process:

```
switch(config)# show ip process
VRF default
  VRF id is 1
  Base table id is 1
  Auto discard is disabled
  Auto discard is not added
  Auto Null broadcast is configured
  Auto Punt broadcast is configured
  Static discard is not configured
  Number of static default route configured is 0
  Number of ip unreachable configured is 0
  Iodlist: 80
  Local address list:
```

Related Commands

Command	Description
show ipv6 process	Displays information about the IPv6 process.

show ip rip

To display the configuration and status of the Routing Information Protocol (RIP), use the **show ip rip** command in any mode.

show ip rip [*instance-tag*] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Selects a RIP instance.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   No default behavior or values

Command Modes   Any

SupportedUserRoles   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 is sample output from the **show ip rip** command:

```
switch(config-if)# show ip rip
Process Name "rip-sd" vrf "default"
RIP port 520, multicast-group 224.0.0.9
Admin-distance: 40
Updates every 30 sec, expire in 180 sec
Collect garbage in 120 sec
Default-metric: 1
Max-paths: 8
Process is up and running
  Interfaces supported by ipv4 RIP :
    Ethernet1/2
```

Table 1-26 describes the significant fields shown in the display.

Table 1-26   show ip rip Field Descriptions

Field	Description
Process Name	The RIP instance tag.
Admin-distance	The administrative distance assigned to RIP. You can configure this value using the **distance** command in router address-family configuration mode.
Updates	Timer value for RIP updates. Configure this value with the **ip rip timer basic** command in interface configuration mode.
expire	Timer value for expiring RIP updates. Configure this value with the **ip rip timer basic** command in interface configuration mode.
Collect garbage	Timer value for garbage collecting in the RIP route table. Configure this value with the **ip rip timer basic** command in interface configuration mode.
Default metric	Default metric value. Configure this value with the **default-metric** command in router address-family mode.
Max-paths	Number of maximum paths allowed per RIP route. Configure this value with the **max-paths** command in router address-family mode.
Process	Administrative and operational state of this RIP instance.
Interfaces supported	RIP version and list of interfaces configured for this RIP instance. Add or remove interfaces using the **ip router rip** command in interface configuration mode.

Related Commands

Command	Description
show ip rip interface	Displays RIP information for an interface.
show ip rip neighbor	Displays RIP neighbor information.
show ip rip policy statistics	Displays RIP policy statistics.
show ip rip route	Displays RIP route information.
show ip rip statistics	Displays RIP statistics.

show ip rip interface

To display interface entry information from the the Routing Information Protocol (RIP) topology table, use the **show ip rip interface** command in any mode.

> **show ip rip interface** [*type instance*] [**vrf** *vrf-name*]

Syntax Description	**interface** *type slot/port*	(Optional) Specifies the interface.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   This command has no default settings.

Command Modes   Any

SupportedUserRoles   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 is sample output from the **show ip rip interface** command:

```
switch(config-if)# show ip rip interface ethernet 1/2
Process Name "rip-sd" vrf "default"
RIP-configured interface information

GigabitEthernet1/2, protocol-down/link-down/admin-down, RIP state : down
  address/mask NotConfigured, metric 1, split-horizon
```

Table 1-27 describes the significant fields shown in the display.

Table 1-27   show ip rip interface Field Descriptions

Field	Description
Process Name	RIP instance tag.
vrf	Virtual routing and forwarding (VRF) of this interface.

Table 1-27   show ip rip interface Field Descriptions (continued)

Field	Description
Interface information	Interface administrative and operational state.
RIP state	RIP information for this interface.

Related Commands

Command	Description
show ip rip	Displays RIP information.
show ip rip neighbor	Displays RIP neighbor information.
show ip rip policy statistics	Displays RIP policy statistics.
show ip rip route	Displays RIP route information.
show ip rip statistics	Displays RIP statistics.

show ip rip neighbor

To display the neighbor information from the the Routing Information Protocol (RIP) topology table, use the **show ip rip neighbor** command in any mode.

> **show ip } rip neighbor** [*interface-type instance*] [**vrf** *vrf-name*]

Syntax Description

interface-type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
instance	(Optional) Either a physical interface instance or a virtual interface instance.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults No default behavior or values

Command Modes Any

SupportedUserRoles 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 is sample output from the **show rip neighbor** command:

```
switch(config-if)# show ip rip neighbor
Process Name "rip-sd" vrf "default"
RIP Neighbor Information (number of neighbors = 0)
('dead' means more than 300 seconds ago)
```

Table 1-28 describes the significant fields shown in the display.

Table 1-28   show ip rip neighbor Field Descriptions

Field	Description
Process Name	RIP instance tag.
vrf	Virtual routing and forwarding (VRF) of this interface.
Neighbor information	Number of RIP neighbors recognized on this interface.

Related Commands

Command	Description
show ip rip	Displays RIP information.
show ip rip interface	Displays RIP information for an interface.
show ip rip policy statistics	Displays RIP policy statistics.
show ip rip route	Displays RIP route information.
show ip rip statistics	Displays RIP statistics.

show ip rip policy statistics

To display the policy statistics for the Routing Information Protocol (RIP), use the **show ip rip policy statistics** command in any mode.

> **show ip rip policy statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospf** *id* | **ospfv3** *id* | **static**} [**vrf** *vrf-name*]

Syntax Description		
	bgp	Displays policy statistics for the Border Gateway Protocol (BGP).
	direct	Displays policy statistics for directly connected routes only.
	eigrp	Displays policy statistics for Enhanced Interior Gateway Routing Protocol (EIGRP).
	isis	Displays policy statistics for Intermediate-System to Intermediate-System (IS-IS) routing protocol.
	ospf	Displays policy statistics for Open Shortest Path First (OSPF) protocol.
	ospfv3	Displays policy statistics for Open Shortest Path First version 3 (OSPFv3) protocol.
	static	Displays policy statistics for IP static routes.
	id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
		For the **eigrp** keyword, an EIGRP instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
		For the **isis** keyword, an IS-IS instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
		For the **ospf** keyword, an OSPF instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   No default behavior or values.

Command Modes   Any

SupportedUserRoles   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 show policy statistics for EIGRP:

```
switch# show ip rip policy statistics redistribute eigrp 201
```

Related Commands

Related Commands	Command	Description
	clear ip rip policy statistics	Clears policy statistics for RIP.
	show ip rip	Displays RIP information.
	show ip rip interface	Displays RIP information for an interface.
	show ip rip neighbor	Displays RIP information for a neighbor.
	show ip rip route	Displays RIP route information.
	show ip rip statistics	Displays RIP statistics.

show ip rip route

To display route information from the the Routing Information Protocol (RIP) topology table, use the **show ip rip route** command in any mode.

> **show ip rip route** [*prefix/length*] [**summary**] [**vrf** *vrf-name*]

Syntax Description	*prefix/length*	(Optional) IP or IPv6 prefix about which routing information should be displayed.
	summary	(Optional) Displays information about summary routes.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   No default behavior or values

Command Modes   Any

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

Usage Guidelines   This command does not require a license.

Examples   The following is sample output from the **show ip rip route** command:

```
:switch# show ip rip route
```

Table 1-28 describes the significant fields shown in the display.

Table 1-29   show ip rip route Field Descriptions

Field	Description

Related Commands	Command	Description
	show ip rip	Displays RIP information.
	show ip rip interface	Displays RIP information for an interface.
	show ip rip neighbor	Displays RIP information for a neighbor.

Command	Description
show ip rip policy statistics	Displays policy statistics for RIP.
show ip rip statistics	Displays RIP statistics.

show ip rip statistics

To display statistical entry information from the the Routing Information Protocol (RIP) topology table, use the **show ip rip statistics** command in any mode.

show ip rip statistics [*interface-type instance*] [**vrf** *vrf-name*]

Syntax Description

interface-type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
instance	(Optional) Either a physical interface instance or a virtual interface instance.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Command Default No default behavior or values.

Command Modes Any

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples The following example is sample output from the **show ip rip statistics** command:

```
switch# show ip rip statistics
Global update stats:
   Sent Multicast Updates: periodic 0,triggered 0
   Sent Multicast Requests: 0
   Sent Unicast Updates: 544
   Sent Unicast Requests: 544
   Recv Multicast Updates: 0
   Recv Multicast Requests: 0
   Recv Unicast Updates: 500
   Recv Unicast Requests: 544
   Recv Bad Pkts: 0
   Recv Bad Routes: 0
```

Table 1-30 describes the significant fields shown in the display.

Table 1-30   show rip statistics Field Descriptions

Field	Description
Sent Multicast Updates:	Number of RIP multicast updates sent.
Sent Multicast Requests:	Number of RIP multicast requests sent.
Sent Unicast Updates:	Number of RIP unicast updates sent.
Sent Unicast Requests:	Number of RIP unicast requests sent.
Recv Multicast Updates:	Number of RIP multicast updates received.
Recv Multicast Requests:	Number of RIP multicast requests received.
Recv Unicast Updates:	Number of RIP unicast updates received.
Recv Unicast Requests:	Number of RIP unicast requests received.
Recv Bad Pkts:	Number of bad RIP packets received.
Recv Bad Routes:	Number of bad RIP routes received.

Related Commands

Command	Description
show ip rip	Displays RIP information.
show ip rip interface	Displays RIP information for an interface.
show ip rip neighbor	Displays RIP information for a neighbor.
show ip rip policy statistics	Displays policy statistics for RIP.
show ip rip route	Displays RIP route information.

show ip route

To display routes from the unicast RIB, use the **show ip route** command.

show ip route [**all** | *addr* | *hostname* | *prefix* | *route-type* | **interface** *type number* | **next-hop** *addr*]]
[**vrf** *vrf-name*]

Syntax Description

all	(Optional) Displays all routes.
addr	(Optional) IPv4 address. The format is x.x.x.x.
hostname	Host name. The *name* can be any case-sensitive alphanumeric string up to 80 characters.
prefix	(Optional) IPv4 prefix. The format is x.x.x.x/length. The length range is from 1 to 32.
route-type	(Optional) Type of route. Use **?** to see the list of types.
interface *type number*	(Optional) Displays the routes for an interface. Use **?** to see the supported interfaces.
next-hop *addr*	(Optional) Displays routes with this next-hop address. The format is x.x.x.x.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.
4.1(2)	Added *hostname* argument.

Usage Guidelines

This command does not require a license.

Examples

This example displays the route table:

```
switch(config)# show ip route all
IP Route Table for VRF "default"
'*' denotes best ucast next-hop      '**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
```

```
0.0.0.0/32, 1 ucast next-hops, 0 mcast next-hops
   *via Null0, [220/0], 00:45:24, local, discard
255.255.255.255/32, 1 ucast next-hops, 0 mcast next-hops
   *via sup-eth1, [0/0], 00:45:24, local
```

Related Commands	Command	Description
	clear ip route	Clears entries in the route table.

show ip static-route

To display static routes from the unicast RIB, use the **show ip static-route** command.

show ip static-route [**vrf** {*vrf-name* | **all**}]

Syntax Description		
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	
all	(Optional) Specifies all virtual router contexts (VRF) name.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.0(1)	This command was introduced.
	4.2(1)	Added **all** keyword.

Usage Guidelines   This command does not require a license.

Examples   This example displays the static routes:

```
switch(config)# show ip static-route
IPv4 Unicast Static Routes:

Total number of routes: 0, unresolved: 0
```

Related Commands	Command	Description
	ip route	Configures a static route.

show ip traffic

To display IP traffic information, use the **show ip traffic** command.

show ip traffic

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the IP traffic information:

```
switch(config)# show ip traffic

IP Software Processed Traffic Statistics
----------------------------------------
Transmission and reception:
  Packets received: 14121, sent: 3415, consumed: 0,
  Forwarded, unicast: 0, multicast: 0, Label: 0
Opts:
  end: 0, nop: 0, basic security: 0, loose source route: 0
  timestamp: 0, extended security: 0, record route: 0
  stream ID: 0, strict source route: 0, alert: 45, cipso: 0, ump: 0
  other: 0
Errors:
  Bad checksum: 0, packet too small: 0, bad version: 0,
  Bad header length: 0, bad packet length: 0, bad destination: 0,
  Bad ttl: 0, could not forward: 126, no buffer dropped: 0,
  Bad encapsulation: 0, no route: 0, non-existent protocol: 0
Fragmentation/reassembly:
  Fragments received: 0, fragments sent: 0, fragments created: 0,
  Fragments dropped: 0, packets with DF: 0, packets reassembled: 0,
  Fragments timed out: 0
```

```
ICMP Software Processed Traffic Statistics
------------------------------------------
Transmission:
  Redirect: 0, unreachable: 0, echo request: 0, echo reply: 1,
  Mask request: 0, mask reply: 0, info request: 0, info reply: 0,
  Parameter problem: 0, source quench: 0, timestamp: 0,
  Timestamp response: 0, time exceeded: 0,
  Irdp solicitation: 0, irdp advertisement: 0
Reception:
  Redirect: 0, unreachable: 337, echo request: 1, echo reply: 0,
  Mask request: 0, mask reply: 0, info request: 0, info reply: 0,
  Parameter problem: 0, source quench: 0, timestamp: 0,
  Timestamp response: 0, time exceeded: 0,
  Irdp solicitation: 0, irdp advertisement: 0,
  Format error: 0, checksum error: 0

Statistics last reset: never
```

Related Commands	Command	Description
	show ip process	Displays information about the IP process.

show ip wccp

To display global statistics that are related to the Web Cache Communication Protocol (WCCP), use the **show ip wccp** command.

show ip wccp [**vrf** *vrf-name*] [*service-number* | **web-cache**] [**detail** | **mask** | **service** | **view**]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the VRF in which the service group needs to be created. If no VRF is specified, then the service number is created in the default global VRF. The *vrf-name* can be any case-sensitive alphanumeric string up to 32 characters.
service-number	(Optional) Dynamic service identifier. The *service-number* range is from 1 to 255.
web-cache	(Optional) Displays information about the web-cache well-known service.
detail	(Optional) Displays information about the device and all web caches.
mask	(Optional) Displays information about the WCCP mask.
service	(Optional) Displays information about the WCCP service.
view	(Optional) Displays information about the members of a service group that have or have not been detected.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines   Use the **show ip wccp** *service-number* command to provide the Total Packets Redirected count. The Total Packets Redirected count is the number of flows, or sessions, that are redirected.

Use the **show ip wccp** *service-number* **detail** command to provide the Packets Redirected count. The Packets Redirected count is the number of flows, or sessions, that are redirected.

Use the **clear ip wccp** command to reset the statistics.

This command does not require a license.

Examples   The following example shows how to display the WCCP information for service 90:

```
switch(config)# show ip wccp 90
Service Identifier: 90
        Number of Service Group Clients:     1
        Number of Service Group Routers:     1
        Total Packets Redirected:            0
        Service mode:                        Closed
        Service Access-list:                 tcp91
        Total Packets Dropped Closed:        0
        Redirect Access-list:                -none-
        Total Packets Denied Redirect:       0
        Total Packets Unassigned:            0
        Total Authentication failures:       0
        Total Bypassed Packets Received:     0
```

Table 1-31 describes the significant fields shown in the display.

Table 1-31   show ip wccp Field Descriptions

Field	Description
Service Identifier	Service that is detailed.
Number of Service Group Clients	Number of routers in the service group.
Total Packets Redirected	Total number of packets redirected by the router.
Service mode	WCCP service mode. Options are open or closed.
Service Access-list	Named IP access list that defines the packets that match the service.
Total Packets Dropped Closed	Total number of packets that are dropped when WCCP is configured for closed services and an intermediary device is not available to process the service.
Redirect Access-list	Name of the access list that determines which packets are redirected.
Total Packets Denied Redirect	Total number of packets that are not redirected because they did not match the access list.
Total Packets Unassigned	Number of packets that are not redirected because they are not assigned to any cache engine. Packets may not be assigned during the initial discovery of cache engines or when a cache is dropped from a cluster.
Total Authentication failures	Number of instances where a password did not match.
Total Bypassed Packets Received	Number of packets that are bypassed (coming in through the negotiated return method).

The following example shows how to display the WCCP group member details for service 10:

```
switch(config)# show ip wccp 10 view

WCCP Router Informed of:
 10.168.88.10
 10.168.88.20

WCCP Cache Engines Visible
 10.168.88.11
 10.168.88.12
```

```
WCCP Cache Engines Not Visible:
 -none-
```

If any cache engine is displayed under the WCCP Cache Engines Not Visible field, the router needs to be reconfigured to map the cache engine that is not visible to it.

Table 1-32 describes the significant fields shown in the display.

Table 1-32   show ip wccp view Field Descriptions

Field	Description
WCCP Router Informed of	List of routers detected by the current router.
WCCP Clients Visible	List of clients that is visible to the router and other clients in the service group.
WCCP Clients Not Visible	List of clients in the service group that is not visible to the router and other clients in the service group.

The following example shows how to display the WCCP client information and WCCP router statistics that include the type of services:

```
switch(config)# show ip wccp 91 detail
WCCP Client information:

    WCCP Client ID:         10.1.1.1
    Protocol Version:       2.0
    State:                  Usable (Usable)
    Redirection:            L2
    Packet Return:          L2
    Packets Redirected:     0
    Connect Time:           00:01:15
    Assignment:             MASK
    Bypassed Packets:       0
Mask  SrcAddr    DstAddr    SrcPort DstPort
----  -------    -------    ------- -------
0001: 0x00000001 0x00000000 0x0000  0x0000
Value SrcAddr    DstAddr    SrcPort DstPort CE-IP
----- -------    -------    ------- ------- -----
0001: 0x00000000 0x00000000 0x0000  0x0000   0x0a010101 (10.1.1.1)
0002: 0x00000001 0x00000000 0x0000  0x0000   0x0a010101 (10.1.1.1)
```

Table 1-33 describes the significant fields shown in the display.

Table 1-33   show ip wccp detail Field Descriptions

Field	Description
WCCP Router information	Header for the area that contains fields for the IP address and version of WCCP associated with the router connected to the cache engine in the service group.
IP Address	IP address of the router connected to the cache engine in the service group.
WCCP Client Information	Header for the area that contains fields for information on clients.
IP Address	IP address of the cache engine in the service group.

Table 1-33 *show ip wccp detail Field Descriptions (continued)*

Field	Description
State	Whether the cache engine is operating properly and can be contacted by a router and other cache engines in the service group.
Packets Redirected	Number of packets that are redirected to the cache engine.
Connect Time	Amount of time that the cache engine is connected to the router.
Bypassed Packets	Number of packets thatare bypassed.

Related Commands	Command	Description
	clear ip wccp	Clears the counter for packets redirected by WCCP.
	ip wccp	Enables WCCP on a router and specifies the type of services to be used.
	show ip interface	Lists a summary of the IP information and status of an interface.

show ipv6 adjacency

To display adjacency information, use the **show ipv6 adjacency** command.

> **show ipv6 adjacency** [*ipv6-addr* | *interface*] [**detail**] [**non-best**] [**statistics**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ipv6-addr	(Optional) An IPv6 source address. The format is A:B::C:D
interface	(Optional) An interface. Use *?* to determine the supported interface types.
detail	(Optional) Displays detailed adjacency information.
non-best	(Optional) Displays the best adjacency entries and the alternate adjacency entries.
statistics	(Optional) Displays adjacency statistics.
summary	(Optional) Displays a summary of the adjacency information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	Added **non-best** and **summary** keywords.
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays a summary of the adjacency information:

```
switch# show ipv6 adjacency summary
IPv6 Adjacency Table for VRF default
Total number of entries: 0
Address         Age      MAC Address     Pref Source     Interface
```

Related Commands

Command	Description
show forwarding adjacency	Displays forwarding adjacency information.

show ipv6 bgp

To display entries in the Border Gateway Protocol (BGP) table, use the **show ipv6 bgp** command.

show iv6p bgp [*ipv6-addr* | *ipv6-prefix* [**longer-prefixes**]] [**received-paths**] [**regexp** *expression*]
[**route-map** *map-name*] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ipv6-addr	(Optional)A network from the BGP route table. The format is A:B::C:D.
ipv6-prefix	(Optional) A prefix from the the BGP route table. The format isA:B::C:D/length.
longer-prefixes	(Optional) Displays the prefix and any more specific routes.
received-paths	(Optional) Displays paths stored for soft reconfiguration.
regexp *expression*	(Optional) Display information that matches the regular expression.
route-map *map-name*	(Optional) Displays routes that match the route map. The map name can be any case-sensitive alphanumeric string up to 63 characters.
summary	(Optional) Displays the summary of the routes.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the BGP route table:

```
switch(config-router)# show ipv6 bgp
BGP routing table information for VRF default, address family IPv6 Unicast
```

Related Commands

Command	Description
clear bgp	Clears entries in the BGP route table.

show ipv6 bgp community

To display Border Gateway Protocol (MP-BGP) routes that match a community, use the **show ipv6 bgp community** command.

show iv6 bgp community [*as-number*] [**internet] [no-advertise] [no-export]**
[**no-export-subconfed**] [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description

as-number	AS number. The AS number can be a 16-bit integer or a 32-bit integer in the form of <higher 16-bit decimal number>.<lower 16-bit decimal number>.
internet	(Optional) Displays the internet community.
no-advertise	(Optional) Displays the no-advertise community.
no-export	(Optional) Displays the no-export community.
no-export-subconfed	(Optional) Displays the no-export-subconfed community.
exact-match	(Optional) Displays an exact match of the community.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community:

```
switch(config)# show ipv6 bgp community
```

Related Commands

Command	Description
ip community-list	Creates a community list.

show ipv6 bgp community-list

To display Border Gateway Protocol (BGP) routes that match a community list, use the **show ipv6 bgp community-list** command.

show ipv6 bgp [**community-list** *commlist-name* [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description		
community-list *commlist-name*	Display routes matching the community-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.	
exact-match	(Optional) Displays an exact match of the communities.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community list:

```
switch(config)# show ipv6 bgp community-list test1
```

Related Commands	Command	Description
	ip community-list	Creates a community list.

show ipv6 bgp dampening

To display Border Gateway Protocol (BGP) dampening information, use the **show ipv6 bgp dampening** command.

show ipv6 bgp dampening {**dampened-paths** [**regexp** *expression*] | **flap-statistics** | **history-paths** [**regexp** *expression*] | **parameters**} [**vrf** *vrf-name*]

Syntax Description

dampened-paths	Display all dampened paths.
regexp *expression*	(Optional) Display information that matches the regular expression.
flap-statistics	Display flap statistics for routes.
history-paths	Display all history paths.
parameters	Display all dampening parameters.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays dampening information:

```
switch(config)# show ipv6 bgp dampening dampened-paths
```

Related Commands

Command	Description
show ip bgp dampening	Displays BGP dampening information.

show ipv6 bgp extcommunity-list

To display Border Gateway Protocol (BGP) routes that match an extended community list, use the **show ipv6 bgp extcommunity-list** command.

show ipv6 bgp extcommunity-list *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

commlist-name	Name of an extended community-list. The *commlist-name* can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the extended communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays routes that match a community list:

```
switch(config)# show ipv6 bgp extcommunity-list test1
```

Related Commands

Command	Description
ip extcommunity-list	Creates an extended community list.

show ipv6 bgp filter-list

To display Border Gateway Protocol (BGP) routes that match a filter list, use the **show ipv6 bgp filter-list** command.

show ipv6 bgp filter-list *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

list-name	Name of a filter-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the filter.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a filter list:

```
switch(config)# show ipv6 bgp filter-list test1
```

Related Commands

Command	Description
show ip bgp filter-list	Displays BGP routes that match a filter list.

show ipv6 bgp flap-statistics

To display Border Gateway Protocol (BGP) flap statistics, use the **show ipv6 bgp flap-statistics** command.

show ipv6 bgp flap-statistics [*prefix*] [**vrf** *vrf-name*]

Syntax Description	*prefix*	(Optional) IPv6 prefix. The format is A:B::C:D/length.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles
network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays the flap statistics:

```
switch(config)# show ipv6 bgp flap-statistics
```

Related Commands	Command	Description
	show ip bgp	Displays BGP information.

show ipv6 bgp history-paths

To display Border Gateway Protocol (BGP) history paths, use the **show ipv6 bgp history-paths** command.

show ipv6 bgp history-paths [**regexp** *expression*] [**vrf** *vrf-name*]

Syntax Description

regexp *expression*	(Optional) Display information that matches the regular expression.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays BGP history path information:

```
switch(config)# show ipv6 bgp history-paths
```

Related Commands

Command	Description
show ip bgp history-paths	Displays BGP history paths information.

show ipv6 bgp neighbors

To display Border Gateway Protocol (BGP) neighbors, use the **show ipv6 bgp neighbors** command.

show ipv6 bgp neighbors [*addr* [**advertised-routes** | **flap-statistics** | **paths** | **received-routes** | **routes** [**advertised** | **dampened** | **received**]] | *prefix*] [**vrf** { **all** | *vrf-name*}]

Syntax Description

addr	IPv6 address. The format is A:B::C:D.
advertised-routes	(Optional) Displays all the routes advertised to this neighbor.
flap-statistics	(Optional) Displays flap statistics for the routes received from this neighbor.
paths	(Optional) Displays AS paths learned from this neighbor.
received-routes	(Optional) Displays all the routes received from this neighbor.
routes	(Optional) Displays the routes received or advertised to or from this neighbor.
advertised	(Optional) Displays all the routes advertised for this neighbor.
dampened	(Optional) Displays all dampened routes received from this neighbor.
received	(Optional) Displays all the routes received from this neighbor.
prefix	(Optional) IPv6 prefix. The format is A:B::C:D/length.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.
all	(Optional) Specifies all VRFS.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Added **paths** keyword.

Usage Guidelines

This command does not require a license.

Examples

This example displays the BGP neighbors:

```
switch(config)# show ipv6 bgp neighbors
```

Related Commands	Command	Description
	show ip bgp neighbors	Displays BGP information.

show ipv6 bgp nexthop

To display Border Gateway Protocol (BGP) next hop information, use the **show ipv6 bgp nexthop** command.

show ipv6 bgp nexthop *addr* [**vrf** *vrf-name*]

Syntax Description		
	addr	IPv4 address. The format is A:B::C:D.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP next-hop information:

```
switch(config)# show ipv6 bgp nexthop 2001:0DB8::1
```

Related Commands	Command	Description
	show ip bgp nexhop	Displays BGP information.

show ipv6 bgp nexthop-database

To display Border Gateway Protocol (BGP) next-hop database, use the **show ipv6 bgp nexthop-database** command.

show ipv6 bgp nexthop-database [**vrf** *vrf-name*]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the BGP next-hop database:

```
switch(config)# show ipv6 bgp nexthop-database
```

Related Commands

Command	Description
show ip bgp nexhop-database	Displays BGP information.

show ipv6 bgp prefix-list

To display Border Gateway Protocol (BGP) routes that match a prefix list, use the **show ipv6 bgp prefix-list** command.

show ipv6 bgp prefix-list *list-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description		
	list-name	Name of a prefix list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
	exact-match	(Optional) Displays an exact match of the filter.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a prefix list:

```
switch(config)# show ipv6 bgp prefix-list test1
```

Related Commands	Command	Description
	show ip bgp prefix-list	Displays BGP routes that match a prefix list.

show ipv6 client

To display information about the internal IPv6 clients, use the **show ipv6 client** command.

show ipv6 client [*name*]

Syntax Description	*name*	(Optional) Name of client.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the IPv6 client information for ICMPv6:

```
switch(config-if)# show ipv6 client icmpv6
IPv6 Registered Client Status

Client: icmpv6, status: up, pid: 3688, extended pid: 3688
  Protocol: 58, pib-index: 2, routing context id: 255
  Control mts SAP: 1551
  Data mts SAP: 1552
  IPC messages to control mq: 3
  IPC messages to data mq: 0
```

Related Commands

Command	Description
show ipv6 process	Displays information about the IPv6 process.

show ipv6 eigrp

To display a summary of the Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6 processes, use the **show ipv6 eigrp** command.

show ipv6 eigrp [*instance-tag*]

Syntax Description	*instance-tag*	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History	Release	Modification
	4.1(2)	This command was introduced.

Usage Guidelines   This command requires the Enterprise Services license.

Examples   The following example shows how to display all the EIGRP for IPv6 instances:

```
switch# show ipv6 eigrp
IP-EIGRP AS 0 ID 0.0.0.0 VRF default
  Process-tag: Test1
  Status: shutdown
  Authentication mode: none
  Authentication key-chain: none
  Metric weights: K1=1 K2=0 K3=1 K4=0 K5=0
  IP proto: 88 Multicast group: ff02::000a
  Int distance: 90 Ext distance: 170
  Max paths: 8
  Number of EIGRP interfaces: 0 (0 loopbacks)
  Number of EIGRP peers: 0
```

show ipv6 eigrp accounting

To display prefix accounting information for the Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6 processes, use the **show ipv6 eigrp accounting** command.

show ipv6 eigrp [*instance-tag*] **accounting** [**vrf** {*vrf-name* | *****}]

Syntax Description		
	instance-tag	(Optional) Name of the EIGRP instance. This option is available when a virtual routing and forwarding (VRF) instance is not specified. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
	vrf *	(Optional) Specifies all VRF instances.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   This command requires the Enterprise Services license.

Examples   The following example shows how to display the EIGRP accounting information:

```
switch# show ipv6 eigrp accounting

IPv6-EIGRP accounting for AS(100)/ID(192.0.2.1) vrf RED
Total Prefix Count: 4
States: A-Adjacency, P-Pending, D-Down

State Address/Source   Interface       Prefix    Restart   Restart/
                                       Count     Count     Reset(s)
  P    Redistributed   ----               0         3         211
  A    2001:0DB8::2     e2/1              2         0          84
  P    2001:0DB8::3     e3/3              0         2         114
  D    2001:0DB8::4     e4/1              0         3           0
```

Table 1-4 describes the significant fields shown in the display.

Table 1-34   show ipv6 eigrp accounting Field Descriptions

Field	Description
IPv6-EIGRP accounting for AS...	EIGRP instance, AS number, router ID, and table ID.
Total Prefix Count:	Aggregate sum of the prefixes in an EIGRP instance topology table. The count includes prefixes learned from all neighbors or from redistribution.
States: A-Adjacency, P-Pending, D-Down	A-Adjacency—Indicates a stable adjacency with the neighbor or a normal redistribution state. P-Pending—Neighbor adjacency or redistribution is suspended or in a penalized state because the maximum prefix limit was exceeded. D-Down—Neighbor adjacency or redistribution is suspended permanently until a manual reset is performed with the **clear route** command.
Address/Source	Peer IP address of the redistribution source.
Prefix Count	Total number of learned prefixes by source. **Note** Routes can be learned for the same prefix from multiple sources, and the sum of all prefix counts in this column may be greater than the figure displayed in the "Prefix Count" field.
Restart Count	Number of times that a route source exceeded the maximum prefix limit.
Restart Reset(s)	Time, in seconds, that a route source is in a P (penalized) state. If the route source is in an A (stable or normal) state, the displayed time, in seconds, is the time period until penalization history is reset.

show ipv6 eigrp interfaces

To display information about interfaces configured for the Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6, use the **show ipv6 eigrp interfaces** command.

show ipv6 eigrp [*instance-tag*] **interfaces** [*type instance*] [**brief**] [**vrf** {*vrf-name* | *****}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
vrf *	(Optional) Specifies all VRF instances.
type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
instance	(Optional) Either a physical interface instance or a virtual interface instance.
	Specifying *instance* removes all entries learned through this interface from the neighbor table.
	For more information, use the question mark (**?**) online help function.
brief	(Optional) Displays a brief summary of EIGRP interface information.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults

This command shows all interfaces for the default VRF if no VRF or interface is specified.

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines

Use the **show ipv6 eigrp interfaces** command to determine on which interfaces EIGRP is active and to learn information about EIGRP related to those interfaces.

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

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

This command requires the Enterprise Services license.

Examples   The following example shows how to display information about EIGRP interfaces:

```
switch# show ipv6 eigrp interfaces brief

IPv6 EIGRP interfaces for process 1 vrf default

                     Xmit Queue   Mean   Pacing Time   Multicast    Pending
Interface     Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer   Routes

e2/2            0       0/0          0      11/434           0          0

e2/20           1       0/0        337       0/10            0          0

e4/2            1       0/0         10        1/63         103          0

e3/2            1       0/0        330       0/16            0          0

switch#
```

Table 1-5 describes the significant fields shown in the display.

Table 1-35   show ip eigrp interfaces Field Descriptions

Field	Description
Interface	Interface over which EIGRP is configured.
Peers	Number of directly connected EIGRP neighbors.
Xmit Queue Un/Reliable	Number of packets remaining in the unreliable and reliable transmit queues.
Mean SRTT	Mean smoothed round-trip time (SRTT) internal (in milliseconds).
Pacing Time Un/Reliable	Pacing time used to determine when EIGRP packets should be sent out the interface (unreliable and reliable packets).
Multicast Flow Timer	Maximum number of seconds in which the router sends multicast EIGRP packets.
Pending Routes	Number of routes in the packets in the transmit queue waiting to be sent.

Related Commands

Command	Description
show ipv6 eigrp neighbors	Displays the neighbors discovered by EIGRP.

show ipv6 eigrp neighbors

To display information about neighbors discovered by the Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6, use the **show ipv6 eigrp neighbors** command.

show ipv6 eigrp [*instance-tag*] **neighbors** [**detail**] [*interface-type interface-instance*] [**static**] [**vrf** {*vrf-name* | *****}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instanceThe instance tag can be any case-sensitive alphanumeric string up to 63 characters.
vrf *	(Optional) Specifies all VRF instances.
detail	(Optional) Displays detailed EIGRP neighbor information.
interface-type	(Optional) Interface type. For more information, use the question mark (**?**) online help function.
interface-instance	(Optional) Either a physical interface instance or a virtual interface instance. Specifying *instance* removes all entries learned through this interface from the neighbor table. For more information about the syntax for the router, use the question mark (**?**) online help function.
static	(Optional) Displays static EIGRP interface information.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults This command displays all neighbors for the default VRF on all interfaces if no VRF or interface is specified.

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines Use the **show ipv6 eigrp neighbors** command to determine when neighbors become active and inactive. This command is also useful for debugging certain types of transport problems.

This command requires the Enterprise Services license.

Examples   The following example shows how to display information about EIGRP neighbors:

```
switch# show ipv6 eigrp neighbors

IPv6-EIGRP Neighbors for process 77 vrf default

Address              Interface     Holdtime Uptime   Q     Seq  SRTT  RTO
                                   (secs)   (h:m:s)  Count Num  (ms)  (ms)

2001:0DB8::28            e1/3         13       0:00:41  0     11    4     20

2001:0DB8:2             e4/4         14       0:02:01  0     10    12    24

switch#
```

Table 1-6 describes the significant fields shown in the display.

Table 1-36   show ip eigrp neighbors Field Descriptions

Field	Description
process	Autonomous system number specified in the router configuration command.
vrf	VRF name.
Address	IPv6 address of the EIGRP peer.
Interface	Interface on which the router is receiving hello packets from the peer.
Holdtime	Length of time (in seconds) that the Cisco NX-OS oftware waits to hear from the peer before declaring that the peer is down.
Uptime	Elapsed time (in hours, minutes, and seconds) since the local router first heard from this neighbor.
Q Count	Number of EIGRP packets (update, query, and reply) that the software waits to send.
Seq Num	Sequence number of the last update, query, or reply packet that was received from this neighbor.
SRTT	Smoothed round-trip time. This field indicates the number of milliseconds required for an EIGRP packet to be sent to this neighbor and for the local router to receive an acknowledgment of that packet.
RTO	Retransmission timeout (in milliseconds). This field indicates the amount of time that the software waits before resending a packet from the retransmission queue to a neighbor.

The following example shows how to display detailed information about EIGRP neighbors:

```
switch# show ipv6 eigrp neighbors detail

IPv6-EIGRP neighbors for AS 1 vrf default

H   Address              Interface      Hold Uptime   SRTT   RTO  Q   Seq
                                        (sec)         (ms)        Cnt Num
0   2001:0DB9::10           e1/5           14 01:00:52   3     200  0   10

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

```
switch#
```

Table 1-7 describes the significant fields shown in the display.

Table 1-37   show ip eigrp neighbors detail Field Descriptions

Field	Description
Version	Version of EIGRP software running on the node and neighbor.
Retrans:	Number of retransmissions sent to this neighbor.
Retries:	Number of retransmissions sent to this neighbor since the last acknowledgement (ACK).
Prefixes	Number of prefixes learned from this neighbor.

Related Commands

Command	Description
clear ipv6 eigrp neighbors	Clears neighbors for EIGRP.

show ipv6 eigrp route-map statistics

To display the route redistribution statistics for the Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6, use the **show ipv6 eigrp route-map statistics** command in any mode.

show ipv6 eigrp [*instance-tag*] **route-map statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospfv3** *id* | **rip** *id* | **static**} [**vrf** {*vrf-name* | ***}]

Syntax Description		
	instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	vrf *	(Optional) Specifies all VRF instances.
	bgp	Displays the policy statistics for the Border Gateway Protocol (BGP).
	direct	Displays the policy statistics for directly connected routes only.
	eigrp	Displays the policy statistics for EIGRP.
	isis	Displays the policy statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.
	ospfv3	Displays the policy statistics for the Open Shortest Path First (OSPF) version 3 protocol.
	rip	Displays the policy statistics for the Routing Information Protocol (RIP).
	static	Displays the policy statistics for IP static routes.
	id	For the **bgp** keyword, the *id* is an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
		For the **eigrp** keyword, the *id* is an EIGRP instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
		For the **isis** keyword, the *id* is an IS-IS instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
		For the **ospf** keyword, the *id* is an OSPF instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display route-map statistics for EIGRP:

```
switch(config)# show ipv6 eigrp route-map statistics redistribute direct
C: No. of comparisons, M: No. of matches

route-map rmap1 permit 1

Total accept count for policy: 10
Total reject count for policy: 0
```

Related Commands

Command	Description
clear ipv6 eigrp route-map statistics	Clears route-map statistics for EIGRP.
show ipv6 eigrp traffic	Displays EIGRP traffic statistics.

show ipv6 eigrp topology

To display the Enhanced Interior Gateway Routing Protocol (EIGRP) for an IPv6 topology table, use the **show ipv6 eigrp topology** command.

show ipv6 eigrp [*instance-tag*] **topology** [*ipv6-address/length*] [**active** | **all-links** | **detail-links** | **pending** | **summary** | **zero-successors**] [**vrf** {*vrf-name* | *****}]

Syntax Description		
	instance-tag	(Optional)Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
	ipv6-address/length	(Optional) IP address in A:B::C:D format with a network mask indicated as a slash (/) and number. The length range is from 1 to 128.
	active	(Optional) Displays only active entries in the EIGRP topology table.
	all-links	(Optional) Displays all entries in the EIGRP topology table.
	detail-links	(Optional) Displays detailed information for all entries in the EIGRP topology table.
	pending	(Optional) Displays all entries in the EIGRP topology table that are waiting for an update from a neighbor or are waiting to reply to a neighbor.
	summary	(Optional) Displays a summary of the EIGRP topology table.
	zero-successors	(Optional) Displays available routes in the EIGRP topology table.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
	vrf *	(Optional) Specifies all VRF instances.

Defaults   This command displays information for the default VRF if no VRF is specified.

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History	Release	Modification
	4.1(2)	This command was introduced.

Usage Guidelines   Use the **show ipv6 eigrp topology** command to determine Diffusing Update Algorithm (DUAL) states and to debug possible DUAL problems.

When you use the **show ipv6 eigrp topology** command without any keywords or arguments, Cisco NX-OS displays only routes that are feasible successors.

This command requires the Enterprise Services license.

Examples

This example shows how to display the EIGRP topology table. The EIGRP metrics for specified internal routes and external routes are displayed.

```
switch# show ipv6 eigrp topology 2001:0DB8::/24

IP-EIGRP (AS 1): Topology entry for 2001:0DB8::/24
  State is Passive, Query origin flag is 1, 1 Successor(s), FD is 281600
  Routing Descriptor Blocks:
   2001:0DB8::10 (Ethernet 2/1), from 2001:0DB8::1, Send flag is 0x0
    Composite metric is (409600/128256), Route is External
    Vector metric:
      Minimum bandwidth is 10000 Kbit
      Total delay is 6000 microseconds
      Reliability is 255/255
      Load is 1/255
      Minimum MTU is 1500
      Hop count is 1
    External data:
      Originating router is 192.0.2.1
      AS number of route is 0
      External protocol is Connected, external metric is 0
      Administrator tag is 0 (0x00000000)
switch#
```

Table 1-8 describes the significant fields shown in the display.

Table 1-38   show ip eigrp topology Field Descriptions

Field	Description
Query origin	Query origin state.
Successors	Number of feasible successors for this prefix.
FD	Feasible distance for this prefix.
2001:0DB8::10 (Ethernet 2/1)	Next hop and interface from which this path was learned.
from 2001:0DB8::1	Information source for this path.
Send flag	Status of whether the sending of this prefix is pending to this neighbor.
Composite metric is...	The first number is the EIGRP metric that represents the cost to the destination. The second number is the EIGRP metric that this peer advertised.
Route is	Type of route (internal or external).
Vector Metric	Metric (bandwidth, delay, reliability, load, MTU, and hop count) advertised by the neighbor.
External Data	External information (originating router ID, AS number, external protocol, metric, and tag) advertised by the neighbor.

show ipv6 eigrp traffic

To display the number of Enhanced Interior Gateway Routing Protocol (EIGRP) for IPv6 packets sent and received, use the **show ipv6 eigrp traffic** command.

show ipv6 eigrp [*instance-tag*] **traffic** [**vrf** {*vrf-name* | *****}]

Syntax Description

instance-tag	(Optional) Name of the EIGRP instance. The instance tag can be any case-sensitive alphanumeric string up to 63 characters.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.
vrf *	(Optional) Specifies all VRF instances.

Defaults   This command displays information for the default VRF if no VRF is specified.

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   Use the **show ipv6 eigrp traffic** command to find the number of packets sent and received by this EIGRP instance.

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

This command requires the Enterprise Services license.

Examples   The following example shows how to display the EIGRP traffic statistics:

```
switch# show ipv6 eigrp traffic

IPv6-EIGRP Traffic Statistics for AS 1 vrf default

  Hellos sent/received: 736/797
  Updates sent/received: 6/6
  Queries sent/received: 0/1
  Replies sent/received: 1/0
  Acks sent/received: 6/6
```

```
Input queue high water mark 0, 0 drops
SIA-Queries sent/received: 0/0
SIA-Replies sent/received: 0/0
```

Table 1-9 describes the significant fields shown in the display.

Table 1-39   show ipv6 eigrp traffic Field Descriptions

Field	Description
AS	Autonomous system number specified in the **router eigrp** command.
vrf	VRF specified in the **show** command.
Hellos sent/received:	Number of hello packets sent and received.
Updates sent/received:	Number of update packets sent and received.
Queries sent/received:	Number of query packets sent and received.
Replies sent/received:	Number of reply packets sent and received.
Acks sent/received:	Number of acknowledgment packets sent and received.
Input queue high water mark	Maximum number of packets in the input queue and number of drops.
SIA-Queries sent/received	Number of Stuck-in-Active query packets sent and received.
SIA-Replies sent/received:	Number of Stuck-in-Active reply packets sent and received.

show ipv6 fragments

To display information about the IPv6 fragments queued, use the **show ipv6 fragments** command.

show ipv6 fragments [*ipv6-addr*]

Syntax Description		
	name	(Optional)IPv6 address. The format is A:B::C:D.

Defaults　　None

Command Modes　　Any command mode

SupportedUserRoles　　network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines　　This command does not require a license.

Examples　　This example displays the IPv6 fragments:

```
switch(config-if)# show ipv6 fragments
No IPv6 fragments queued
```

Related Commands

Command	Description
show ipv6 process	Displays information about the IPv6 process.

show ipv6 icmp interface

To display information about the ICMPv6, use the **show ipv6 icmp interface** command.

show ipv6 icmp interface [*type number*] [**detail**] [**vrf** *vrf-name*]

Syntax Description

type	(Optional) Interface type. Use **?** to see the list of supported interfaces.
number	(Optional) Interface number. Use **?** to see the range.
detail	(Optional) Displays detailed ICMPv6 information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays ICMPv6 information:

```
switch(config-if)# show ipv6 icmp interface
```

Related Commands

Command	Description
ipv6 icmp	Configures ICMPv6 on an interface.

show ipv6 interface

To display IPv6 information for an interface, use the **show ipv6 interface** command.

show ipv6 interface [*type number*] [**brief**][**vrf** *vrf-name*]

Syntax Description		
	type	(Optional) Interface type. Use **?** to see the options.
	number	(Optional) Interface number. Use **?** to see the range.
	brief	(Optional) Displays a summary of IP information.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Command Modes   Any

SupportedUserRoles   Network Administrator
VDC Administrator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays IPv6 information for Ethernet 2/1:

```
switch# show ipv6 interface ethernet 2/1
Ethernet2/1, Interface status: protocol-down/link-down/admin-down, iod: 80
Context:"default"
  IPv6 address: 2001:0db8:0000:0000:0000:0000:0000:0001
  IPv6 subnet:  2001:0000:0000:0000:0000:0000:0000:0000/16
  IPv6 link-local address: fe80::0218:baff:fed8:3ffd (default)
  IPv6 multicast routing: disabled
  IPv6 multicast groups locally joined:
      ff02::0001:ff00:0001  ff02::0002  ff02::0001  ff02::0001:ffd8:3ffd
  IPv6 multicast (S,G) entries joined: none
  IPv6 MTU: 1500 (using link MTU)
  IPv6 RP inbound packet-filtering policy: none
  IPv6 RP outbound packet-filtering policy: none
  IPv6 inbound packet-filtering policy: none
  IPv6 outbound packet-filtering policy: none
  IPv6 interface statistics last reset: never
  IPv6 interface RP-traffic statistics: (forwarded/originated/consumed)
    Unicast packets:      0/0/0
    Unicast bytes:        0/0/0
    Multicast packets:    0/0/0
```

```
         Multicast bytes:      0/0/0
     IPv6 interface hardware statistics not available
       Reason: unsupported platform
```

Related Commands

Command	Description
show ip interface	Displays IP information about an interface.

show ipv6 mbgp

To display entries in the Multiprotocol Border Gateway Protocol (MP-BGP) table, use the **show ipv6 mbgp** command.

show ipv6 mbgp [*ipv6-addr* | *ipv6-prefix* [**longer-prefixes**]] [**vrf** *vrf-name*]

Syntax Description		
ipv6-addr	(Optional)A network from the MBGP route table. The format is A:B::C:D.	
ipv6-prefix	(Optional) A prefix from the the MBGP route table. The format isA:B::C:D/length.	
longer-prefixes	(Optional) Displays the prefix and any more specific routes.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines This command does not require a license.

Examples This example displays the MBGP route table:

```
switch(config-router)# show ipv6 mbgp
BGP routing table information for VRF default, address family IPv6 Multicast
```

Related Commands	Command	Description
	clear ip mbgp	Clears entries in the MBGP route table.

show ipv6 mbgp community

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a community, use the **show ipv6 mbgp community** command.

> **show ipv6 mbgp community** [*as-number*] [**no-advertise**] [**no-export**] [**no-export-subconfed**] [**exact-match**]} [**vrf** *vrf-name*]

Syntax Description	*as-number*	AS number. The AS number can be a 16-bit integer or a 32-bit integer in the form of <higher 16-bit decimal number>.<lower 16-bit decimal number>.
	no-advertise	(Optional) Displays the no-advertise community.
	no-export	(Optional) Displays the no-export community.
	no-export-subconfed	(Optional) Displays the no-export-subconfed community.
	exact-match	(Optional) Displays an exact match of the community.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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

Usage Guidelines   This command does not require a license.

Examples   This example displays routes that match a community:

```
switch(config)# show ipv6 mbgp community
```

Related Commands	Command	Description
	ipv6 community-list	Creates a community list.

show ipv6 mbgp community-list

To display Multiprotocol Border Gateway Protocol (MP-BGP) routes that match a community list, use the **show ipv6 mbgp community-list** command.

show ipv6 mbgp community-list *commlist-name* [**exact-match**] [**vrf** *vrf-name*]

Syntax Description

community-list *commlist-name*	Display routes matching the community-list. The commlist-name can be any case-sensitive alphanumeric string up to 63 characters.
exact-match	(Optional) Displays an exact match of the communities.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays routes that match a community list:

```
switch(config)# show ip v6mbgp community-list test1
```

Related Commands

Command	Description
ipv6 community-list	Creates a community list.

show ipv6 mbgp neighbors

To display Multiprotocol Border Gateway Protocol (MP-BGP) neighbors, use the **show ipv6 mbgp neighbors** command.

show ipv6 mbgp neighbors [*addr* [**advertised-routes** | **flap-statistics** | **paths** | **received-routes** | **routes** [**advertised** | **dampened** | **received**]] | *prefix*] [**vrf** { **all** | *vrf-name*}]

Syntax Description

addr	IPv6 address. The format is A:B::C:D.
advertised-routes	(Optional) Displays all the routes advertised to this neighbor.
flap-statistics	(Optional) Displays flap statistics for the routes received from this neighbor.
paths	(Optional) Displays AS paths learned from this neighbor.
received-routes	(Optional) Displays all the routes received from this neighbor.
routes	(Optional) Displays the routes received or advertised to or from this neighbor.
advertised	(Optional) Displays all the routes advertised for this neighbor.
dampened	(Optional) Displays all dampened routes received from this neighbor.
received	(Optional) Displays all the routes received from this neighbor.
prefix	(Optional) IPv6 prefix. The format is A:B::C:D/length.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.
all	(Optional) Specifies all VRFS.

None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Added **paths** keyword.

Usage Guidelines   This command does not require a license.

Examples   This example displays the MBGP neighbors:

```
switch(config)# show ipv6 mbgp neighbors
```

Related Commands

Command	Description
show ip mbgp neighbors	Displays BGP information.

show ipv6 nd interface

To display information about the Neighbor Discovery (ND), use the **show ipv6 nd interface** command.

show ipv6 nd interface [*type number*] [**detail**] [**vrf** *vrf-name*]

Syntax Description

type	(Optional) Interface type. Use **?** to see the list of supported interfaces.
number	(Optional) Interface number. Use **?** to see the range.
detail	(Optional) Displays detailed ND information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays ND information:

```
switch(config-if)# show ipv6 nd interface
ICMPv6 ND Interfaces for VRF "default"
Ethernet2/45, Interface status: protocol-down/link-down/admin-down
  IPv6 address: 2001:0db8:0000:0000:0000:0000:0000:0001
  ICMPv6 active timers:
      Last Neighbor-Solicitation sent: never
      Last Neighbor-Advertisement sent: never
      Last Router-Advertisement sent: never
      Next Router-Advertisement sent in: 0.000000
  Router-Advertisement parameters:
      Periodic interval: 200 to 600 seconds
      Send "Managed Address Configuration" flag: false
      Send "Other Stateful Configuration" flag: false
      Send "Current Hop Limit" field: 64
      Send "MTU" option value: 1500
      Send "Router Lifetime" field: 1800 secs
```

```
        Send "Reachable Time" field: 0 ms
        Send "Retrans Timer" field: 0 ms
Neighbor-Solicitation parameters:
    NS retransmit interval: 1000 ms
ICMPv6 error message parameters:
    Send redirects: true
    Send unreachables: false
```

Related Commands	Command	Description
	ipv6 nd	Configures ICMPv6 ND on an interface.

show ipv6 neighbor

To display IPv6 neighbors, use the **show ipv6 neighbor** command.

show ipv6 neighbor [*ipv6-addr | interface*] [**detail**] [**non-best**] [**statistics**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

ipv6-addr	(Optional) An IPv6 source address. The format is A:B::C:D
interface	(Optional) An interface. Use *?* to determine the supported interface types.
detail	(Optional) Displays detailed neighbor information.
non-best	(Optional) Displays the best neighbor entries and the alternate neighbor entries.
statistics	(Optional) Displays neighbor statistics.
summary	(Optional) Displays a summary of the neighbor information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	Added **non-best** and **summary** keywords.
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ipv6 neighbor** command to display the IPv6 adjacency table.

This command does not require a license.

Examples   This example displays IPv6 neighbors:

```
switch# show ipv6 neigbhor

IPv6 Adjacency Table for VRF default
Total number of entries: 0
Address          Age      MAC Address     Pref Source     Interface
```

Related Commands	Command	Description
	ipv6 nd	Configures ICMPv6 ND on an interface.

show ipv6 policy

To display the route policy information, use the **show ipv6 policy** command.

show ipv6 policy [**vrf** *vrf-name*]

Syntax Description	**vrf** *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults	None

Command Modes	Any

SupportedUserRoles	network-admin vdc-admin

Command History	**Release**	**Modification**
	4.2(1)	This command was introduced.

Usage Guidelines	This command does not require a license.

Examples	This example shows the policies attached to interfaces:

```
switch(config-if)# show ipv6 policy
Interface              Route-map           Status     VRF-Name
Ethernet2/45           floor1               Inactive    --
```

Related Commands	**Command**	**Description**
	ipv6 policy	Configures a route policy on an interface.

show ipv6 prefix-list

To display prefix lists for the Border Gateway Protocol (BGP), use the **show ipv6 prefix-list** command.

show ipv6 prefix-list [*name*]

Syntax Description	*name*	(Optional) Name of community list. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the prefix lists:

```
switch(config)# show ipv6 prefix-list
ip prefix-list test2: 1 entries
   seq 5 permit 2001:0DB8::/8
```

Related Commands

Command	Description
ipv6 prefix-list	Configures a BGP prefix list.

show ipv6 process

To display formation about the IPv6 process, use the **show ipv6 process** command.

show ipv6 process [**vrf** *vrf-name*]

Syntax Description

vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults None

Command Modes Any

SupportedUserRoles 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 This example shows details on the IPv6 process:

```
switch(config)# show ipv6 process
VRF default
  VRF id is 1
  Auto discard is disabled
  Auto discard is not added
  Static discard is not configured
  Number of static default route configured is 0
  Number of ipv6 unreachable configured is 0
  Iodlist: 80
  Local address list:  2001:0db8::0001  fe80::0218:baff:fed8:3ffd
```

Related Commands

Command	Description
show ip process	Displays information about the IPv4 process.

show ipv6 route

To display routes from the unicast RIB, use the **show ipv6 route** command.

show ipv6 route [*addr* | *hostname* | *prefix*] [*route-type*][**summary**] [**vrf** *vrf-name*]

Syntax Description

addr	(Optional) IPv6 address. The format is A:B::C:D.
hostname	Host name. The *name* can be any case-sensitive alphanumeric string up to 80 characters.
prefix	(Optional) IPv6 prefix. The format is A:B::C:D/length. The length range is from 1 to 128.
route-type	(Optional) Type of route. Use **?** to see the list of types.
summary	(Optional) Displays route counts.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(3)	This command was introduced.
4.1(2)	Added *hostname* argument.

Usage Guidelines

This command does not require a license.

Examples

This example displays the route table:

```
switch(config)# show ipv6 route
IPv6 Routing Table for VRF "default"

0::/127, ubest/mbest: 1/0
   *via 0::, Null0, [220/0], 18:03:20, discard, discard
fe80::/10, ubest/mbest: 1/0
   *via 0::, Null0, [220/0], 18:03:20, discard, discard
```

Related Commands	Command	Description
	clear ipv6 route	Clears entries in the route table.

show ipv6 routers

To display IPv6 neighbor routers, use the **show ipv6 routers** command.

show ipv6 routers

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display the IPv6 neighbors:

```
switch(config)# show ipv6 routers
```

Related Commands

Command	Description
clear ipv6 neighbors	Displays IPv6 neighbor details.

show ipv6 static-route

To display static routes from the unicast RIB, use the **show ipv6 static-route** command.

show ipv6 static-route [**vrf** {*vrf-name* | **all**}]

Syntax Description		
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	
all	(Optional) Specifies all virtual router contexts (VRF) name.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.0(1)	This command was introduced.
	4.2(1)	Added **all** keyword.

Usage Guidelines   This command does not require a license.

Examples   This example displays the static routes:

```
switch(config)# show ipv6 static-route
IPv6 Unicast Static Routes:
```

Related Commands	Command	Description
	ipv6 route	Configures a static route.

show ipv6 traffic

To display IPv6 traffic information, use the **show ipv6 traffic** command.

show ipv6 traffic

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   This example displays the IPv6 traffic information:

```
switch(config)# show ipv6 traffic
IPv6 Software Processed Traffic and Error Statistics, last reset: never

RP-Traffic Statistics:
  Counter                 Unicast  Multicast
  -------                 -------  ---------
  Packets forwarded:          0  0
  Bytes forwarded:            0  0
  Packets originated:         0  0
  Bytes originated:           0  0
  Packets consumed:           0  0
  Bytes consumed:             0  0
  Fragments originated:       0  0
  Fragments consumed:         0  0

Error Statistics:
  Bad version: 0, route lookup failed: 0, hop limit exceeded: 0
  Option header errors: 0, payload length too small: 0
  PM errors: 0, MBUF errors: 0, encapsulation errors: 0
```

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Related Commands	Command	Description
	show ipv6 process	Displays information about the IPv6 process.

show isis adjacency

To display adjacency information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis adjacency** command.

show isis [*instance-tag*] **adjacency** [*interface*] [**detail**] [**summary**] [**system-id** *sid*] [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
	interface	(Optional) Interface name. Use *?* to determine the supported interface types.
	detail	(Optional) Displays detailed adjacency information.
	summary	(Optional) Displays a summary of the adjacency information.
	system-id *sid*	(Optional) Displays the adjacency information for this system ID. The *sid* format is XXXX.XXXX.XXXX.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the adjacency information:

```
switch# show isis adjacency

IS-IS process: 1 VRF: default
IS-IS adjacency database:
System ID       SNPA            Level  State  Hold Time  Interface
test11-m9       001b.210d.e3bd  1      UP     00:00:07   Ethernet2/3
test11-m9       001b.210d.e3bd  2      UP     00:00:06   Ethernet2/3
test11-m9       0015.1757.d82c  1      UP     00:00:33   Ethernet2/4
test11-m9       0015.1757.d82c  2      UP     00:00:28   Ethernet2/4
```

```
test11-m9        N/A            1-2   UP    00:00:28   Ethernet2/5
test11-m9        0015.1757.d82f 1     UP    00:00:31   Ethernet2/7
test11-m9        0015.1757.d82f 2     UP    00:00:24   Ethernet2/7
```

The following example shows how to display the adjacency information for Ethernet 2/3 and system ID test11-m9:

```
switch# show isis adjacency ethernet 2/3 system-id test1
IS-IS process: 1 VRF: default
IS-IS adjacency database for Ethernet2/3:
System ID       SNPA           Level State Hold Time  Interface
test11-m9       001b.210d.e3bd 1     UP    00:00:08   Ethernet2/3
  Up/Down transitions: 1, Last transition: 00:06:44 ago
  Circuit Type: L1-2
  IPv4 Address: 23.1.1.9
  IPv6 Address: 0::
  Circuit ID: test11-m9.01, Priority: 64

test11-m9       001b.210d.e3bd 2     UP    00:00:06   Ethernet2/3
  Up/Down transitions: 1, Last transition: 00:06:37 ago
  Circuit Type: L1-2
  IPv4 Address: 23.1.1.9
  IPv6 Address: 0::
  Circuit ID: test11-m9.01, Priority: 64
```

Related Commands	Command	Description
	feature isis	Enables IS-IS on the router.
	router isis	Enables IS-IS.

show isis database

To display database information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis database** command.

show isis [*instance-tag*] **database** [*lspid*] [**detail** | **summary**] [**level-1** | **level-2**] {[**adjacency** *sid*] | [{**ip** | **ipv6**} **prefix** *filter*] | [**router-id** *id*] | [**zero-sequence**]} [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
lspid	(Optional) LSP ID. The *sid* format is XXXX.XXXX.XXXX.XX-XX.	
detail	(Optional) Displays detailed database information.	
summary	(Optional) Displays a summary of the database information.	
level-1	(Optional) Displays Level 1 router database information.	
level-2	(Optional) Displays Level 2 router database information.	
adjacency *sid*	(Optional) Displays database information that matches the adjacency filter. The *sid* format is XXXX.XXXX.XXXX.XX.	
{**ip**	**ipv6**} **prefix** *filter*	(Optional) Displays database information that matches the prefix filter. The *filter* format for IPv4 is x.x.x.x/length, where the length range is from 1 to 32. The *filter* format for IPv6 is A:B::C:D/length, where the length range is from 1 to 128.	
router-id *id*	(Optional) Displays database information that matches the router ID. The *id* format is x.x.x.x.	
zero-sequence	(Optional) Displays the database information for LSPs with zero sequence numbers.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the database information:

```
switch# show isis database

IIS-IS Process: 1 LSP database VRF: default
IS-IS Level-1 Link State Database
  LSPID               Seq Number    Checksum  Lifetime  A/P/O/T
  test11-m9.00-00       0x000006AB    0xD715    1115      0/0/0/3
  test11-m9.01-00       0x00000002    0xB7DF    1008      0/0/0/3
  test-m10.00-00     * 0x0000000C    0xC457    1125      0/0/0/3
  test-m10.02-00     * 0x00000002    0x8673    1024      0/0/0/3
  test-m10.04-00     * 0x00000002    0x787F    1029      0/0/0/3

IS-IS Level-2 Link State Database
  LSPID               Seq Number    Checksum  Lifetime  A/P/O/T
  test11-m9.00-00       0x0000065F    0x98A0    1115      0/0/0/3
  test11-m9.01-00       0x00000002    0xB7DF    1067      0/0/0/3
  test-m10.00-00     * 0x0000000C    0x1903    1125      0/0/0/3
  test-m10.02-00     * 0x00000002    0x8673    1018      0/0/0/3
  test-m10.04-00     * 0x00000002    0x787F    1040      0/0/0/3
```

The following example shows how to display the detailed database information for test11-m9:

```
switch(config)# show isis database level-1 detail test11-m9.00-00
IS-IS Process: 1 LSP database VRF: default
IS-IS Level-1 Link State Database
  LSPID               Seq Number    Checksum  Lifetime  A/P/O/T
  test11-m9.00-00       0x000006AB    0xD715    1079      0/0/0/3
    Instance     :  0x00000006
    Area Address :  48
    NLPID        :  0xCC 0x8E
    Router ID    :  9.1.1.1
    IP Address   :  9.1.1.1
    Hostname     :  test11-m9        Length : 9
    Extended IS  :  test-m10.02    Metric : 40
    Extended IS  :  test-m10.04    Metric : 40
    Extended IS  :  test11-m9.01    Metric : 400
    Extended IS  :  test-m10.00    Metric : 40
    Extended IP  :        25.1.1.0/24  Metric : 40        (U)
    Extended IP  :        24.1.1.0/24  Metric : 40        (U)
    Extended IP  :        80.1.1.0/24  Metric : 10        (U)
    Extended IP  :        70.1.1.0/24  Metric : 10        (U)
    Extended IP  :        60.1.1.0/24  Metric : 10        (U)
    Extended IP  :        50.1.1.0/24  Metric : 10        (U)
    Extended IP  :        23.1.1.0/24  Metric : 400       (U)
    Extended IP  :         9.1.1.0/24  Metric : 1         (U)
    IPv6 Prefix  : 0027::/64  Metric : 40          (U/I)
    Digest Offset :  0
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis hostname

To display hostname information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis hostname** command.

> **show isis** [*instance-tag*] **hostname** [**detail**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
detail	(Optional) Displays detailed hostname information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles
network-admin
network-operator
vdc-admin
vdc-operator

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 display the hostname information:

```
test11-m9# show isis hostname
IS-IS Process: 1 dynamic hostname table VRF: default
  Level  System ID      Dynamic hostname
  1      0015.1757.d82c  test11-m9
  1      0015.1757.d8c8* test-m10
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

Cisco Nexus 7000 Series NX-OS Unicast Routing Command Reference, Release 4.2 ■

show isis interface

To display interface information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis interface** command.

show isis [*instance-tag*] **interface** [*interface*] [**brief**] [**level-1** | **level-2**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
interface	(Optional) Interface name and interface number. Use **?** to see a list of interfaces.
brief	(Optional) Displays a summary of the interface information.
level-1	(Optional) Displays Level 1 interface information.
level-2	(Optional) Displays Level 2 interface information.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display a brief view of the interface information:

```
switch# show isis interface brief

IIS-IS process: 1 VRF: default
Interface    Type  Idx State         Circuit    MTU  Metric  Priority  Adjs/AdjsUp
                                                     L1  L2  L1  L2   L1    L2
loopback1    Loop  5    Up/Ready    0x01/L1-2 1500 1   1   64  64   0/0   0/0
Ethernet2/3  Bcast 1    Up/Ready    0x01/L1-2 1500 400 400 64  64   1/1   1/1
Ethernet2/4  Bcast 2    Up/Ready    0x02/L1-2 1500 40  40  64  64   1/1   1/1
Ethernet2/5  P2P   3    Up/Ready    0x01/L1-2 1500 40  40  64  64   1/1   1/1
Ethernet2/6  Bcast 4    Down/Ready  0x03/L1-2 1500 40  40  64  64   0/0   0/0
```

```
           Ethernet2/7  Bcast 6     Up/Ready   0x04/L1-2 1500 40  40  64  64    1/1   1/1
```

The following example shows how to display the interface information for Ethernet 2/5:

```
switch# show isis interface ethernet 2/5
IS-IS process: 1 VRF: default
Ethernet2/5, Interface status: protocol-up/link-up/admin-up
  IP address: 192.0.2.1 IP subnet: 192.0.2.0/24
  IPv6 routing is disabled
  Index: 0x0003, Local Circuit ID: 0x01, Circuit Type: L1-2
  Extended Local Circuit ID: 0x1A084000, P2P Circuit ID: 0000.0000.0000.00
  Retx interval: 5, Retx throttle interval: 66 ms
  LSP interval: 33 ms, MTU: 1500
  P2P Adjs: 1, AdjsUp: 1, Priority 64
  Hello Interval: 10, Multi: 3, Next IIH: 00:00:08
  Level   Adjs   AdjsUp  Metric   CSNP  Next CSNP  Last LSP ID
  1        1       1       40       60   00:00:48   ffff.ffff.ffff.ff-ff
  2        1       1       40       60   00:00:19   ffff.ffff.ffff.ff-ff
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis ip route-map statistics redistribute

To display statistics for route redistribution for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis ip route-map statistics redistribute** command.

> **show isis** [*instance-tag*] **ip route-map statistics redistribute** {**bgp** *id* | **direct** | **eigrp** *id* | **isis** *id* | **ospf** *id* | **rip** *id* | **static**} [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
bgp	Displays statistics for the Border Gateway Protocol (BGP).	
direct	Displays statistics for directly connected routes only.	
eigrp	Displays statistics for the Enhanced Interior Gateway Protocol (EIGRP) routing protocol.	
isis	Displays statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.	
ospf	Displays statistics for the Open Shortest Path First (OSPF) protocol.	
rip	Displays statistics for the Routing Information Protocol (RIP).	
static	Displays statistics for IP static routes.	
id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.	
	For the **isis**, **eigrp**, **ospf**, and **rip** keywords, an instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.	
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.	

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show isis ip route-map statistics redistribute** command to display redistribution statistics.

This command requires the Enterprise Services license.

Examples   This example shows how to display statistics for redistributed routes:

```
switch# show isis ip route-map statistics redistribute static
IS-IS process: 1
VRF: default
C: No. of comparisions, M: No. of matches

route-map rm10 permit 10

Total accept count for policy: 9
Total reject count for policy: 0
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis mesh-group

To display mesh groups for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis mesh-group** command.

> **show isis** [*instance-tag*] **mesh-group** [*number*] [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
number	(Optional) Number of the IS-IS mesh group. The range is from 1 to 4294967295.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

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 display the mesh groups:

```
switch# show isis mesh-group
IS-IS Process: Test1 mesh-groups VRF: default
 Mesh-group 33:
    Ethernet7/45
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis protocol

To display process-level information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis protocol** command.

> **show isis** [*instance-tag*] [**protocol**][**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the IS-IS protocol information:

```
switch# show isis protocol
ISIS process : 1
VRF: default
  System ID : 0015.1757.d8c8  IS-Type : L1-L2
  SAP : 412  Queue Handle : 11
  Graceful Restart enabled
  Metric-style : advertise(wide), accept(narrow, wide)
  Area address(es) :
    48
  Process is up and running
  VRF ID: 1
  Stale routes during non-graceful controlled restart
  Interfaces supported by IS-IS :
    loopback1
    Ethernet2/3
    Ethernet2/4
```

```
      Ethernet2/5
      Ethernet2/6
      Ethernet2/7
Address family IPv4 unicast :
   Number of interface : 5
   Distance : 115
Address family IPv6 unicast :
   Number of interface : 1
   Distance : 115
L1 Next SPF: Inactive
L2 Next SPF: Inactive
```

Related Commands	Command	Description
	feature isis	Enables IS-IS on the router.
	router isis	Enables IS-IS.

show isis redistribute route

To display route redistribution information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis redistribute route** command.

show isis [*instance-tag*] [**ip** | **ipv6**] **redistribute route** [*address* | *prefix* [**longer-prefixes** [**summary**]] | **summary**] [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
ip	(Optional) Displays route redistribution information for an IPv4 route.	
ipv6	(Optional) Displays route redistribution information for an IPv6 route.	
address	(Optional) Route redistribution information for a specific IPv4 or IPv6 address. The *address* format for IPv4 is x.x.x.x. The *address* format for IPv6 is A:B::C:D.	
prefix	(Optional) Route redistribution information for a specific IPv4 or IPv6 address. The *prefix* format for IPv4 is x.x.x.x/length, where the length range is from 1 to 32. The *prefix* format for IPv6 is A:B::C:D/length, where the length range is from 1 to 128.	
longer-prefixes	(Optional) Displays the exact match to the prefix as well as more specific routes.	
summary	(Optional) Displays a summary of the route redistribution information.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

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 display the route redistribution information:

```
switch# show isis redistribute route

IS-IS process: 1 VRF: default
```

```
IS-IS IPv4 redistribute route

100.1.1.1/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.1.1.2/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.1.1.3/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.1.1.4/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.2.0.0/16, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.2.1.0/24, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.2.1.1/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
```

The following example shows how to display the route redistribution information for route 100.2.1.0:

```
test-m10(config)# show isis redistribute route 100.2.1.0/16 longer-prefixes
IS-IS process: 1 VRF: default
IS-IS IPv4 redistribute route

100.2.0.0/16, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.2.1.0/24, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
100.2.1.1/32, static,
  Redistributed into L1, metric 10
  Redistributed into L2, metric 10
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis route

To display route information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis route** command.

show isis [*instance-tag*] [**ip** | **ipv6**] **route** [*address* | *prefix* [**longer-prefixes** [**summary**]] [**detail** | **summary**] [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
ip	(Optional) Displays route information for an IPv4 route.	
ipv6	(Optional) Displays route information for an IPv6 route.	
address	(Optional) Route information for a specific IPv4 or IPv6 address. The *address* format for IPv4 is x.x.x.x. The *address* format for IPv6 is A:B::C:D.	
prefix	(Optional) Route information for a specific IPv4 or IPv6 address. The *prefix* format for IPv4 is x.x.x.x/length, where the length range is from 1 to 32. The *prefix* format for IPv6 is A:B::C:D/length, where the length range is from 1 to 128.	
longer-prefixes	(Optional) Displays the exact match to the prefix as well as more specific routes.	
summary	(Optional) Displays a summary of the route information.	
detail	(Optional) Displays detailed route information.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the route information for IPv4:

```
switch# show isis route
```

```
IS-IS IPv4 routing table

10.1.1.0/24, L1, direct
   *via GigabitEthernet2/1, metric 40, L1, direct
    via GigabitEthernet2/1, metric 40, L2, direct
10.1.2.0/24, L1, direct
   *via GigabitEthernet2/2, metric 40, L1, direct
    via GigabitEthernet2/2, metric 40, L2, direct
100.0.0.2/32, L1, direct
   *via Loopback0, metric 1, L1, direct
    via Loopback0, metric 1, L2, direct
```

The following example shows how to display the route information for IPv6:

```
switch# show isis ipv6 route
IS-IS IPv6 routing table

3000:0010:0001::/48, L1, direct
   *via GigabitEthernet2/1, metric 40, L1, direct
    via GigabitEthernet2/1, metric 40, L2, direct
```

The following example shows how to display the route information for 10.0.0:

```
switch# show isis ip route 10.0.0.0/8 longer-prefixes
IS-IS IPv4 routing table

10.1.1.0/24, L1, direct
   *via GigabitEthernet2/1, metric 40, L1, direct
    via GigabitEthernet2/1, metric 40, L2, direct
10.1.2.0/24, L1, direct
   *via GigabitEthernet2/2, metric 40, L1, direct
    via GigabitEthernet2/2, metric 40, L2, direct
```

The following example shows how to display a summary of the route information for 10.0.0:

```
test-i1# show isis ip route 10.0.0.0/8 longer-prefixes summary
IS-IS IPv4 routing table

Summary information for range 10.0.0.0/8

Total number of best routes  : 2
Total number of paths        : 4
Total number of best paths   : 2
Total number of backup paths : 2

Best routes per level
  L1        total   : 2
            direct  : 2

Best paths per level
  L1        total   : 2
            direct  : 2

Backup paths per level
  L2        total   : 2
            direct  : 2

Number of best routes per mask-length
  /24 : 2
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis route-map statistics distribute

To display statistics for route distribution between Level-1 and Level-2 areas for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis route-map statistics distribute** command.

> **show isis** [*instance-tag*] [**ip** | **ipv6**] **route-map statistics distribute** [**level-1** | **level-2**] **into** [**level-1** | **level-2**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
ip	(Optional) Displays statistics for IPv4.
ipv6	(Optional) Displays statistics for IPv6.
level-1	(Optional) Displays Level 1 distribution statistics.
level-2	(Optional) Displays Level 2 distribution statistics.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

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 display a summary of the distribute information:

```
switch# show isis route-map statistics distribute level-1 into level 2
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis rrm

To display Retransmit-Routing-Message (RRM) information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis rrm** command.

show isis [*instance-tag*] **rrm** *interface* [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.	
interface	Interface name and interface number. Use **?** to see a list of interfaces.	
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.1(2)	This command was introduced.

Usage Guidelines This command requires the Enterprise Services license.

Examples The following example shows how to display the RRM statistics:

```
switch# show isis rrm ethernet 2/3

IS-IS process: 1

IS-IS RRM information for interface Ethernet2/3:
  No retransmission on non-P2P interface

test-m10(config)# show isis rrm eth 2/5
IS-IS process: 1

IS-IS RRM information for interface Ethernet2/5:
IS-IS Level-1 Link State Database
  Retx interval: 5, Retx throttle interval: 66 ms
  Retx queue length: 0, Next Retx: Inactive
  Retx queue HWM: 5, Retx queue exceed: 0
```

```
    LSPID                 Seq Number   Checksum  Lifetime   A/P/O/T  Ago

IS-IS Level-2 Link State Database
  Retx interval: 5, Retx throttle interval: 66 ms
  Retx queue length: 0, Next Retx: Inactive
  Retx queue HWM: 5, Retx queue exceed: 0
    LSPID                 Seq Number   Checksum  Lifetime   A/P/O/T  Ago
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis spf-log

To display shortest path first (SPF) information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis srm** command.

> **show isis** [*instance-tag*] **spf-log** [**detail**] [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
	detail	(Optional) Displays detailed information about the SPF calculation.
	vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the SPF information:

```
switch# show isis spf-log

ITotal number of SPF calculations: 10

Log entry (current/max): 7/20
Ago       Level  Reason                                    Count  Total
1w0d      1      Adjust route distribution                 3
          2      Adjust route distribution                 3      0.000216
1w0d      1      New IP address on GigabitEthernet         1
          2      New IP address on GigabitEthernet         1      0.000229
1w0d      2      New NH to test-i2 on GigabitEthernet      1      0.000135
1w0d      2      New adj test-i2 on GigabitEthernet        4      0.000243
1w0d      1      New adj test-i2 on GigabitEthernet        3      0.000155
1w0d      1      New LSP test-i2.00-00                      2      0.000252
1w0d      1      Updated LSP test-i2.00-00                 1
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis srm

To display Send-Routing-Message (SRM) information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis srm** command.

show isis [*instance-tag*] **srm** *interface* [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
interface	Interface name and interface number. Use **?** to see a list of interfaces.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

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 display the SRM statistics:

```
switch# show isis srm ethernet 2/3

IS-IS process: 1

IS-IS SRM information for interface Ethernet2/3:
IS-IS Level-1 Link State Database
  Interface is eligible for flooding LSP
  Interface is on stopped SRM list
  LSP interval: 33 ms, Next LSP: Inactive
  LSPID              Seq Number   Checksum  Lifetime   A/P/O/T

IS-IS Level-2 Link State Database
  Interface is eligible for flooding LSP
  Interface is on stopped SRM list
  LSP interval: 33 ms, Next LSP: Inactive
```

```
        LSPID               Seq Number   Checksum  Lifetime   A/P/O/T
```

Related Commands	Command	Description
	feature isis	Enables IS-IS on the router.
	router isis	Enables IS-IS.

show isis ssn

To display Send-Sequence-Number (SSN) information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis ssn** command.

> **show isis** [*instance-tag*] **ssn** *interface* [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
interface	Interface name and interface number. Use **?** to see a list of interfaces.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

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 display the SSN statistics:

```
switch# show isis ssn ethernet 2/5

IS-IS SSN information for interface Ethernet2/5:
IS-IS Level-1 Link State Database
  Interface is eligible for sending PSNP
  Next PSNP: Inactive
  LSPID                 Seq Number   Checksum  Lifetime   A/P/O/T

IS-IS Level-2 Link State Database
  Interface is eligible for sending PSNP
  Next PSNP: Inactive
  LSPID                 Seq Number   Checksum  Lifetime   A/P/O/T
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis statistics

To display statistics for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis statistics** command.

show isis [*instance-tag*] **statistics** [*interface*] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
interface	(Optional) Interface name and interface number. Use **?** to see a list of interfaces.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
network-operator
vdc-admin
vdc-operator

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 display the IS-IS statistics:

```
switch# show isis statistics ethernet 7/45

VRF:              default
SPF calculations: 34
LSPs sourced:     6
LSPs refreshed:   42
LSPs purged:      0
DIS elections:    10
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

show isis summary-address

To display summary address information for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis summary-address** command.

show isis [*instance-tag*] [**ip** | **ipv6**] **summary-address** [*address* | *prefix*] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
ip	(Optional) Displays summary address information for IPv4.
ipv6	(Optional) Displays summary address information for IPv6.
address	(Optional) IPv4 or IPv6 address. The *address* format for IPv4 is x.x.x.x. The *address* format for IPv6 is A:B::C:D.
prefix	(Optional) IPv4 or IPv6 address. The *prefix* format for IPv4 is x.x.x.x/length, where the length range is from 1 to 32. The *prefix* format for IPv6 is A:B::C:D/length, where the length range is from 1 to 128.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

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 display summary address information:

```
switch# show isis summary-address
IS-IS IPv4 summary address:

20.0.0.0/8, L1-2
  Summarize 0 routes into L1
  Summarize 0 routes into L2
```

Related Commands	Command	Description
	feature isis	Enables IS-IS on the router.
	router isis	Enables IS-IS.

show isis traffic

To display traffic statistics for Intermediate-System-to-Intermediate System (IS-IS), use the **show isis traffic** command.

show isis [*instance-tag*] **traffic** [*interface*] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the IS-IS instance. The name can be any case-sensitive alphanumeric string up to 63 characters.
interface	(Optional) Interface name and interface number. Use **?** to see a list of interfaces.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

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 display the traffic statistics:

```
switch# show isis traffic
IS-IS process: 1
VRF: default
IS-IS Traffic:
%PDU        Received        Sent RcvAuthErr OtherRcvErr  ReTransmit
LAN-IIH      62156        87080          0           0         n/a
P2P-IIH       6232         6234          0           0         n/a
CSNP         11646        22356          0           0         n/a
PSNP           802          590          0           0         n/a
LSP           2385         3291          0           0           0
```

Related Commandsl	Command	Description
	feature isis	Enables IS-IS on the router.
	router isis	Enables IS-IS.

show ospfv3

To display general information about Open Shortest Path First version 3 (OSPFv3) routing instances, use the **show ospfv3** command.

show [**ipv6**] **ospfv3** [*instance-tag*] [**vrf** *vrf-name*]

Syntax Description	

instance-tag	(Optional) Name of the OSPF instance. Use this tag to display OSPFv3 information about a specific OSPFv3 instance. The *instance-tag* argument can be any alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ospfv3** command to display information about one or more OSPFv3 instances.

This command requires the Enterprise Services license.

Examples   This example shows how to display information about one specific OSPFv3 instance:

```
switch# show ospfv3 201
Routing Process sd with ID 0.0.0.0 vrf default
Graceful-restart is configured
  grace period: 60, state: (null)
  Last graceful restart exit status: None
Supports only single TOS(TOS0) routes
Supports opaque LSA
Administrative distance 110
Reference Bandwidth is 40000 Mbps
Initial SPF schedule delay 200.000 msecs,
  minimum inter SPF delay of 1000.000 msecs,
  maximum inter SPF delay of 5000.000 msecs
Minimum hold time for Router LSA throttle 5000.000 ms
Minimum hold time for Network LSA throttle 5000.000 ms
```

```
        Minimum hold time for Intra-Area-Prefix LSA throttle 5000.000 ms
        Minimum hold time for Link LSA throttle 5000.000 ms
        Minimum LSA arrival 1000.000 msec
        Maximum paths to destination 8
        Number of external LSAs 0, checksum sum 0
        Number of areas is 2, 2 normal, 0 stub, 0 nssa
        Number of active areas is 0, 0 normal, 0 stub, 0 nssa
          Area BACKBONE(0) (Inactive)
                Area has existed for 01:13:04
                Interfaces in this area: 1 Active interfaces: 0
                SPF calculation has run 1 times
                 Last SPF ran for 0.000433s
                Area ranges are
                Number of LSAs: 0, checksum sum 0
          Area (33) (Inactive)
                Area has existed for 01:13:04
                Interfaces in this area: 0 Active interfaces: 0
                SPF calculation has run 1 times
                 Last SPF ran for 0.000053s
                Area ranges are
                Number of LSAs: 0, checksum sum 0
```

Table 1-10 describes the significant fields shown in the display.

Table 1-40   show ospfv3 Field Descriptions

Field	Description
Routing Process...	OSPFv3 instance tag and OSPFv3 router ID.
Stateful High Availability	Status of stateful restart capability.
Graceful-restart	Status of graceful restart configuration.
grace period	Number of seconds that OSPFv3 has to trigger a graceful restart.
Last graceful restart exit status	Exit status for last graceful restart.
Supports...	Number of types of service supported (Type 0 only).
Reference Bandwidth	Bandwidth used for cost calculation.
Initial SPF schedule delay	Delay time of SPF calculations.
Minimum LSA arrival	Minimum interval between link-state advertisements.
Number of...	Number and type of link-state advertisements that have been received.
Number of areas is...	Number and type of areas configured for the router.

show ospfv3 border-routers

To display the Open Shortest Path First version 3 (OSPFv3) routing table entries to an Area Border Router (ABR) and Autonomous System Boundary Router (ASBR), use the **show ospfv3 border-routers** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **border-routers** [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the OSPF instance. Use this tag to display OSPFv3 information about a specific OSPFv3 instance. The *instance-tag* argument can be any alphanumeric string.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ospfv3 border-routers** command to display information on ABRs. and ASBRs.

This command requires the Enterprise Services license.

Examples   This example shows how to display information about border routers:

```
switch# show ospfv3 border-routers

OSPFv3 Process ID p1, vrf default internal routing table
Codes: i - Intra-area route, I - Inter-area route

i 60.60.60.60 [10], ABR, Area 0.0.0.0, SPF 9
    via fe80::0206:d6ff:fec8:a41c, Ethernet2/5
i 60.60.60.60 [10], ABR, Area 0.0.0.1, SPF 9
    via fe80::0206:d6ff:fec8:a408, Ethernet2/6
```

Table 1-11 describes the significant fields shown in the display.

Table 1-41   show ospfv3 border-routers Field Descriptions

Field	Description
40.40.40.40	Router ID of the destination.
[10]	Cost of using this route.
ABR	Router type of the destination; the type is either an ABR, ASBR, or both.
Area	Area ID of the area from which this route is learned.
SPF 71	Internal number of the shortest path first (SPF) calculation that installs this route.
via fe80::0206:d6ff:fec8:a41c	Next hop toward the destination.
Ethernet2/1	Interface type for the outgoing interface.

show ospfv3 database

To display the Open Shortest Path First version 3 (OSPFv3) database for a specific router, use the **show ospfv3 database** command.

> show [**ipv6**] **ospfv3** [*instance-tag*] **database** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database asbr-summary** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database database-summary** [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database external** [**ext_tag** *value*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database network** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database nssa-external** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database opaque-area** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database opaque-as** [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database opaque-link** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database router** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

> show [**ipv6**] **ospfv3** [*instance-tag*] **database summary** [*area-id*] [*link-state-id*] [**adv-router** *ip-address* | **self-originated**] [**detail**] [**vrf** *vrf-name*]

Syntax Description	
instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area-id	(Optional) Area number used to define the particular area. Specify as either an IP address or a number from 0 to 4294967295.
link-state-id	(Optional) Portion of the Internet environment that is being described by the advertisement. The value entered depends on the advertisement's link-state type. Specify in the form of an IP address.
adv-router *ip-address*	(Optional) Displays all the link-state advertisements (LSAs) of the specified router.
self-originate	(Optional) Displays self-originated LSAs (from the local router).
asbr-summary	(Optional) Displays information about the autonomous system boundary router summary LSAs.
database-summary	(Optional) Displays each type of LSA for each area in the database, and the total number of LSAs.

external	(Optional) Displays information about the external LSAs.
ext_tag *value*	(Optional) Displays information based on an external tag. The range is from 1 to 4294967295.
network	(Optional) Displays information about the network LSAs.
nssa-external	(Optional) Displays information about the not-so-stubby area (NSSA) external LSAs.
opaque-area	(Optional) Displays information about the opaque area LSAs.
opaque-as	(Optional) Displays information about the opaque AS LSAs.
opaque-link	(Optional) Displays information about the opaque link-local LSAs.
router	(Optional) Displays information about the router LSAs.
summary	(Optional) Displays information about the summary LSAs.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **ipv6 ospfv3 database** command to display information about different OSPFv3 LSAs.

When the link state advertisement is describing a network, the *link-state-id* argument can take one of two forms:

- The network's IP address (such as Type 3 summary link advertisements and autonomous system external link advertisements).

- A derived address obtained from the link state ID. (Note that masking a network links advertisement's link state ID with the network's subnet mask yields the network's IP address.)

- When the link state advertisement is describing a router, the link state ID is always the described router's OSPFv3 router ID.

- When an autonomous system external advertisement (LS Type = 5) is describing a default route, its link state ID is set to Default Destination (0.0.0.0).

This command requires the Enterprise Services license.

Examples   This example shows how to display the OSPFv3 database:

```
Router# show ospfv3 database

OSPFv3 Router with ID (40.40.40.40) (Process ID p1)

                Router Link States (Area 0)

Link ID         ADV Router     Age  Seq#       Link Count
0.0.0.0         40.40.40.40    301  0x8000006d 1
0.0.0.0         60.60.60.60    1655 0x80000a59 1

                Network Link States (Area 0)

Link ID         ADV Router     Age  Seq#       Routers
0.0.0.5         60.60.60.60    1655 0x8000005c 2

                Inter-Area Prefix Link States (Area 0)

Link ID         ADV Router     Age  Seq#       Prefix
0.0.0.2         40.40.40.40    301  0x8000006a 1111:2222::/32
0.0.0.4         40.40.40.40    291  0x80000066 1111:6666::/32
0.0.0.6         40.40.40.40    291  0x80000066 6161:6161::6161/128
0.0.0.0         60.60.60.60    147  0x800009f6 6161:6161::6161/128
0.0.0.111       60.60.60.60    1655 0x8000005c 1111:6666::/32
0.0.0.112       60.60.60.60    1655 0x8000005c 1111:2222::/32

                Intra-Area Prefix Link States (Area 0)

Link ID         ADV Router     Age  Seq#       Ref-lstype Ref-LSID
1.0.0.0         40.40.40.40    301  0x8000006e Router     0.0.0.0
0.0.0.0         60.60.60.60    1655 0x80000a32 Router     0.0.0.0
0.0.3.237       60.60.60.60    1655 0x8000005c Network    0.0.0.5

                Link-Local Link States (Area 0)

Link ID         ADV Router     Age  Seq#       Interface
0.0.0.1         40.40.40.40    341  0x80000066 Enet2/1
0.0.0.3         40.40.40.40    341  0x80000066 Enet24
0.0.0.4         40.40.40.40    301  0x8000006d Enet25
0.0.0.5         60.60.60.60    147  0x80000917 Enet25

                Router Link States (Area 1)

Link ID         ADV Router     Age  Seq#       Link Count
0.0.0.0         40.40.40.40    291  0x8000006d 1
0.0.0.0         60.60.60.60    1655 0x80000abd 1

                Network Link States (Area 1)

Link ID         ADV Router     Age  Seq#       Routers
0.0.0.4         60.60.60.60    1655 0x8000005c 2

                Inter-Area Prefix Link States (Area 1)

Link ID         ADV Router     Age  Seq#       Prefix
0.0.0.1         40.40.40.40    291  0x8000006a 1111:1111::/32
0.0.0.3         40.40.40.40    331  0x80000066 1111:4444::0001/128
0.0.0.5         40.40.40.40    291  0x80000066 6060:6060::6060/128
0.0.0.0         60.60.60.60    147  0x800009f6 6060:6060::6060/128
0.0.0.156       60.60.60.60    409  0x8000005d 1111:5555::/32
0.0.0.158       60.60.60.60    1655 0x8000005c 1111:1111::/32
0.0.0.159       60.60.60.60    1655 0x8000005c 1111:4444::0001/128
```

```
                    Intra-Area Prefix Link States (Area 1)

Link ID         ADV Router      Age  Seq#        Ref-lstype Ref-LSID
1.0.0.0         40.40.40.40     291  0x8000006e Router      0.0.0.0
0.0.0.0         60.60.60.60     1655 0x80000a54 Router      0.0.0.0
0.0.3.236       60.60.60.60     1655 0x8000005c Network     0.0.0.4


                    Link-Local Link States (Area 1)

Link ID         ADV Router      Age  Seq#        Interface
0.0.0.2         40.40.40.40     341  0x80000066 Enet2/2
0.0.0.5         40.40.40.40     291  0x8000006d Enet2/6
0.0.0.4         60.60.60.60     1655 0x8000005d Enet2/6
```

Table 1-12 describes the significant fields shown in the display.

Table 1-42   show ospfv3 database Field Descriptions

Field	Description
Link ID	Router ID number.
ADV Router	Advertising router's ID.
Age	Link state age.
Seq#	Link state sequence number (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the link state advertisement.
Link count	Number of interfaces detected for the router.

This example shows how to display a summary of autonomous system border routers:

```
Router# show ospfv3 database asbr-summary

OSPFv3 Router with id(192.168.239.66) (Process ID 300)

            Displaying Summary ASB Link States(Area 0.0.0.0)

   LS age: 1463
   Options: (No TOS-capability)
   LS Type: Summary Links(AS Boundary Router)
   Link State ID: 172.16.245.1 (AS Boundary Router address)
   Advertising Router: 172.16.241.5
   LS Seq Number: 80000072
   Checksum: 0x3548
   Length: 28
   Network Mask: 0.0.0.0 TOS: 0  Metric: 1
```

Table 1-13 describes the significant fields shown in the display.

Table 1-43   show ospfv3 database asbr-summary Field Descriptions

Field	Description
OSPFv3 Router with id	Router ID number.
Process ID	OSPFv3 process ID.
LS age	Link state age.
Options	Type of service options (Type 0 only).

Table 1-43   show ospfv3 database asbr-summary Field Descriptions (continued)

Field	Description
LS Type	Link state type.
Link State ID	Link state ID (autonomous system boundary router).
Advertising Router	Advertising router's ID.
LS Seq Number	Link state sequence (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the link state advertisement.
Length	Length in bytes of the link state advertisement.
Network Mask	Network mask implemented.
TOS	Type of service.
Metric	Link state metric.

This example shows how to display information about external links:

```
Router# show ospfv3 database external

OSPFv3 Router with id(192.168.239.66) (Autonomous system 300)

                    Displaying AS External Link States

LS age: 280
Options: (No TOS-capability)
LS Type: AS External Link
Link State ID: 10.105.0.0 (External Network Number)
Advertising Router: 172.16.70.6
LS Seq Number: 80000AFD
Checksum: 0xC3A
Length: 36
Network Mask: 255.255.0.0
        Metric Type: 2 (Larger than any link state path)
        TOS: 0
        Metric: 1
        Forward Address: 0.0.0.0
        External Route Tag: 0
```

Table 1-14 describes the significant fields shown in the display.

Table 1-44   show ospfv3 database external Field Descriptions

Field	Description
OSPFv3 Router with id	Router ID number.
Autonomous system	OSPFv3 autonomous system number (OSPFv3 process ID).
LS age	Link state age.
Options	Type of service options (Type 0 only).
LS Type	Link state type.
Link State ID	Link state ID (external network number).
Advertising Router	Advertising router's ID.

Table 1-44   *show ospfv3 database external Field Descriptions (continued)*

Field	Description
LS Seq Number	Link state sequence number (detects old or duplicate link state advertisements).
Checksum	Checksum of the complete contents of the LSA.
Length	Length in bytes of the link state advertisement.
Network Mask	Network mask implemented.
Metric Type	External type.
TOS	Type of service.
Metric	Link state metric.
Forward Address	Forwarding address. Data traffic for the advertised destination will be forwarded to this address. If the forwarding address is set to 0.0.0.0, data traffic will be forwarded instead to the advertisement's originator.
External Route Tag	External route tag; a 32-bit field attached to each external route. This field is not used by the OSPFv3 protocol itself.

This example shows how to display a summary of the OSPFv3 database:

```
Router# show ospfv3 database database-summary

OSPFv3 Router with ID (100.0.0.1) (Process ID 1)

Area 0 database summary
  LSA Type        Count     Delete    Maxage
  Router          3         0         0
  Network         0         0         0
  Summary Net     0         0         0
  Summary ASBR    0         0         0
  Type-7 Ext      0         0         0
    Self-originated Type-7   0
Opaque Link        0         0         0
  Opaque Area     0         0         0
  Subtotal        3         0         0

Process 1 database summary
  LSA Type        Count     Delete    Maxage
  Router          3         0         0
  Network         0         0         0
  Summary Net     0         0         0
  Summary ASBR    0         0         0
  Type-7 Ext      0         0         0
  Opaque Link     0         0         0
  Opaque Area     0         0         0
  Type-5 Ext      0         0         0
     Self-originated Type-5   200
Opaque AS          0         0         0
  Total        203         0         0
```

Table 1-15 describes the significant fields shown in the display.

Table 1-45   show ospfv3 database database-summary Field Descriptions

Field	Description
Area 0 database summary	Area number.
Count	Count of LSAs of the type identified in the first column.
Router	Number of router link state advertisements in that area.
Network	Number of network link state advertisements in that area.
Summary Net	Number of summary link state advertisements in that area.
Summary ASBR	Number of summary autonomous system boundary router (ASBR) link state advertisements in that area.
Type-7 Ext	Type-7 LSA count.
Self-originated Type-7	Self-originated Type-7 LSA.
Opaque Link	Type-9 LSA count.
Opaque Area	Type-10 LSA count.
Subtotal	Sum of LSAs for that area.
Delete	Number of link state advertisements that are marked "Deleted" in that area.
Maxage	Number of link state advertisements that are marked "Maxaged" in that area.
Process 1 database summary	Database summary for the process.
Count	Count of LSAs of the type identified in the first column.
Router	Number of router link state advertisements in that process.
Network	Number of network link state advertisements in that process.
Summary Net	Number of summary link state advertisements in that process.
Summary ASBR	Number of summary autonomous system boundary router (ASBR) link state advertisements in that process.
Type-7 Ext	Type-7 LSA count.
Opaque Link	Type-9 LSA count.
Opaque Area	Type-10 LSA count.
Type-5 Ext	Type-5 LSA count.
Self-Originated Type-5	Self-originated Type-5 LSA count.
Opaque AS	Type-11 LSA count.
Total	Sum of LSAs for that process.

show ospfv3 interface

To display Open Shortest Path First version 3 (OSPFv3)-related interface information, use the **show ospfv3 interface** command.

> **show** [**ipv6**] **ospfv3 interface** [*instance-tag*] [*interface-type interface-number*] [**brief**] [**vrf** *vrf-name*]

Syntax Description		
	instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
	interface-type	(Optional) Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
	interface-number	(Optional) Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.
	brief	(Optional) Displays brief overview information for OSPFv3 interfaces, states, addresses, masks, and areas on the router.
	vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

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

Usage Guidelines   Use the **show ospfv3 interface** command to display the OSPFv3 status for the interface.

This command requires the Enterprise Services license.

Examples   This example shows how to display OSPFv3 information for Ethernet interface 1/2:

```
switch# show ospfv3 interface ethernet 1/2
Ethernet1/2 is up, line protocol is up
```

```
IP address 192.0.2.1, Process ID 201 vrf default, area 10
IPv6 address 2001:0DB8::1
 Process ID sd vrf default, Instance ID 0, area 0
 State DOWN, Network type P2P, cost 65535
 Index 1, Transmit delay 1 sec
 0 Neighbors, flooding to 0, adjacent with 0
 Timer intervals: Hello 10, Dead 40, Wait 40, Retransmit 5
 Number of link LSAs: 0, checksum sum 0
```

Table 1-16 describes the significant fields shown in the display.

Table 1-46   show ospfv3 interface Field Descriptions

Field	Description
Ethernet	Status of physical link and operational status of protocol.
IPv6 Address	Interface IPv6 address.
vrf	Virtual routing and forwarding (VRF) instance.
Transmit Delay	Transmit delay, interface state, and router priority.
designated router	Designated router ID and interface IP address.
backup designated router	Backup designated router ID and interface IP address.
Timer intervals	Configuration of timer intervals.
Hello	Number of seconds until next hello packet is sent out this interface.

show ospfv3 memory

To display the memory usage statistics for the Open Shortest Path First version 3 (OSPFv3) protocol, use the **show ospfv3 memory** command.

> **show** [**ipv6**] **ospfv3 memory**

Syntax Description This command has no keywords or arguments.

Defaults None

Command Modes Any

SupportedUserRoles 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 This example shows how to display the memory statistics for OSPFv3:

```
Router# show ospfv3 memory
 OSPFv3 Process ID sd, Memory statistics
  Process memory: 2096 KB
  Byte usage:    needed 0, overhead 192, using 192 bytes
  Allocations:   current 6, created 6, failed 0, free 0
  Bitfields:     current 30, created 30, failed 0, free 0, using 248010 bytes
  Slabs:         current 2, created 2, failed 0, free 0, using 80 bytes
  Index failure: Interface 0, Neighbor 0

  Slab Memory
  OSPFv3 vertex slab
  Alloc 1, max allocs 1, total allocs 1, total frees 0
  Total block allocs 1, total block frees 0, max blocks 1
  Bytes (size/allocated) 68/69720
  OSPFv3 IPv4 prefix routes slab
  Alloc 0, max allocs 0, total allocs 0, total frees 0
  Total block allocs 0, total block frees 0, max blocks 0
  Bytes (size/allocated) 188/64
  OSPFv3 router routes slab
  Alloc 0, max allocs 0, total allocs 0, total frees 0
  Total block allocs 0, total block frees 0, max blocks 0
  Bytes (size/allocated) 100/64
  OSPFv3 IPv4 next-hops slab
```

```
Alloc 1, max allocs 1, total allocs 1, total frees 0
Total block allocs 1, total block frees 0, max blocks 1
Bytes (size/allocated) 32/262232
```

Table 1-18 describes the significant fields shown in the displays.

Table 1-47   *show ospfv3 memory Field Descriptions*

Field	Description

show ospfv3 neighbors

To display Open Shortest Path First version 3 (OSPFv3)-neighbor information on a per-interface basis, use the **show ospfv3 neighbor** command.

> **show** [**ipv6**] **ospfv3** [*instance-tag*] **neighbors** [*interface-type interface-number*] [*neighbor-id*] [**detail**] [**summary**] [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area-id	(Optional) Area number used to define the particular area. Specify as an IP address or a number from 0 to 4294967295.
interface-type	(Optional) Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
interface-number	(Optional) Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.
neighbor-id	(Optional) Router ID of the neighbor. Specify as an IP address.
detail	(Optional) Displays all neighbors given in detail (lists all neighbors).
summary	(Optional) Displays a summary of the neighbors.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ospfv3 neighbors** command to display information about all or some of the neighbors for this OSPFv3 instance.

This command requires the Enterprise Services license.

Examples

This example shows how to display the summary information about the neighbor that matches the neighbor ID:

```
Router# show ospfv3 neighbors
OSPFv3 Process ID p1 vrf Red
 Total number of neighbors: 2
Neighbor ID     Pri State           Up Time  Interface ID     Interface
60.60.60.60      1 FULL/DR          2d03h    5                GigE2/0/5
   Neighbor address fe80::0206:d6ff:fec8:a41c
60.60.60.60      1 FULL/DR          2d03h    4                GigE2/0/6
   Neighbor address fe80::0206:d6ff:fec8:a408
```

Table 1-18 describes the significant fields shown in the displays.

Table 1-48   show ospfv3 neighbors Field Descriptions

Field	Description
Neighbor ID	Neighbor router ID.
Pri State	OSPFv3 priority and state.
Up Time	Time since the OSPFv3 established adjacency with this neighbor.

show ospfv3 policy statistics area

To display Open Shortest Path First version 3 (OSPFv3) policy statistics for an area, use the **show ospfv3 policy statistics area** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **policy statistics area** *area id* **filter-list** {**in** | **out**} [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
area *area-id*	Specifies the area number used to define the particular area. Specify as an IP address or a number from 0 to 4294967295.
filter-list	Filters prefixes between OSPFv3 areas.
in	Displays policy statistics for incoming routes.
out	Displays policy statistics for outgoing routes.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **show ospfv3 policy statistics area** command to display information about the filter lists applied to an area.

This command requires the Enterprise Services license.

Examples

This example shows how to display policy statistics for OSPFv3:

```
switch# show ospfv3 policy statistics area
```

show ospfv3 policy statistics redistribute

To display Open Shortest Path First version 3 (OSPFv3) policy statistics, use the **show ospfv3 policy statistics redistribute** command.

> **show** [**ipv6**] **ospfv3** [*instance-tag*] **policy statistics redistribute** {**bgp** *id* | **direct** | **isis** *id* | **rip** *id* | **static**} [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
bgp	Displays policy statistics for the Border Gateway Protocol (BGP).
direct	Displays policy statistics for directly connected routes only.
isis	Displays policy statistics for the Intermediate-System to Intermediate-System (IS-IS) routing protocol.
rip	Displays policy statistics for the Routing Information Protocol (RIP).
static	Displays policy statistics for IP static routes.
id	For the **bgp** keyword, an autonomous system number. The range for 2-byte numbers is from 1 to 65535. The range for 4-byte numbers is from 1.0 to 65535.65535.
	For the **isis** and **rip** keywords, an instance name from which routes are to be redistributed. The value takes the form of a string. You can enter a decimal number, but Cisco NX-OS stores it internally as a string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **show ospfv3 policy statistics redistribute** command to display redistribution statistics.

This command requires the Enterprise Services license.

Examples   This example shows how to display policy statistics for redistributed routes:

```
switch# show ospfv3 policy statistics redistribute
```

show ospfv3 request-list

To display a list of all link-state advertisements (LSAs) requested by a router, use the **show ospfv3 request-list** command.

> **show** [**ipv6**] **ospfv3 request-list** *neighbor-id interface interface-number*

Syntax Description	*neighbor-id*	Router ID of the neighbor. Specify as an IP address.
	interface-type	Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
	interface-number	Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

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

Usage Guidelines   Use the **show ospfv3 request-list** command to troubleshoot Open Shortest Path First version 3 (osPFv3) routing operations.

This command requires the Enterprise Services license.

Examples   This example shows how to display a list of all LSAs requested by a router:

```
Router# show ospfv3 request-list 40.40.40 ethernet 2/1
OSPFv3 Process ID p1
Neighbor 40.40.40.40, interface Ethernet2/1, address 192.0.2.1
1 LSAs on request-list

 Type  LS ID          ADV RTR        Seq NO      Age    Checksum
  1   192.0.2.12     192.0.2.12       0x8000020D  8      0x6572
```

Table 1-19 describes the significant fields shown in the displays.

Table 1-49   show ospfv3 request-list Field Descriptions

Field	Description
Type	LSA type.
LS ID	IP address of the neighbor router.
ADV RTR	IP address of the advertising router.
Seq NO	Packet sequence number of the LSA.
Age	Age, in seconds, of the LSA.
Checksum	Checksum number of the LSA.

show ospfv3 retransmission-list

To display a list of all link-state advertisements (LSAs) waiting to be resent to neighbors, use the **show ospfv3 retransmission-list** command.

show [**ipv6**] **ospfv3 retransmission-list** *neighbor-id interface interface-number*

Syntax Description		
	neighbor-id	Router ID of the neighbor. Specify as an IP address.
	interface-type	Interface type. If the *interface-type* argument is included, only information for the specified interface type is included. Type ? on the CLI for help on available options for this argument.
	interface-number	Interface number. If the *interface-number* argument is included, only information for the specified interface number is included. Type ? on the CLI for help on available options for this argument.

Defaults None

Command Modes Any

SupportedUserRoles network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines Use the **show ospfv3 retransmission-list** command to troubleshoot Open Shortest Path First version 3 (osPFv3) routing operations.

This command requires the Enterprise Services license.

Examples This example shows how to display all LSAs waiting to be resent to neighbors:

```
Router# show ospfv3 retransmission-list 192.0.2.11 ethernet 2/1

        OSPFv3 Router with ID (192.0.2.12) (Process ID 1)

 Neighbor 192.0.2.11, interface Ethernet2/1 address 209.165.201.11
 Link state retransmission due in 3764 msec, Queue length 2

 Type  LS ID           ADV RTR         Seq NO      Age     Checksum
    1  192.0.2.12      192.0.2.12      0x80000210  0       0xB196
```

Table 1-20 describes the significant fields shown in the displays.

Table 1-50 *show ospfv3 retransmission-list Field Descriptions*

Field	Description
Type	LSA type.
LS ID	IP address of the neighbor router.
ADV RTR	IP address of the advertising router.
Seq NO	Packet sequence number of the LSA.
Age	Age, in seconds, of the LSA.
Checksum	Checksum number of the LSA.

show ospfv3 routes

To display the Open Shortest Path First version 3 (OSPFv3) topology table, use the **show ospfv3 routes** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **routes** [*prefix*/*length* | **summary**} [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
prefix /length	(Optional) IP prefix, which limits output to a specific route. Indicate the length as a slash (/) and number from 1 to 255. For example, /8 indicates that the first eight bits in the IP prefix are network bits.
summary	(Optional) Displays a summary of all routes.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ospfv3 routes** command to display the OSPFv3 private routing table (which contains only routes that are calculated by OSPFv3). If something is wrong with a route in the routing information base (RIB), then you should check the OSPFv3 copy of the route to determine if it matches the RIB contents. If it does not match, a synchronization problem exists between OSPFv3 and the RIB.

This command requires the Enterprise Services license.

Examples   This example shows how to display OSPFv3 routes:

```
RP/0/RP0/CPU0:router# show ospfv3 routes
OSPFv3 routing table
1111:1111::/32 (i) area 0
    via directly connected
1111:2222::/32 (i) area 1
    via directly connected
```

```
1111:4444::0001/128 (i) area 0
    via directly connected
1111:5555::/32 (i) area 0
1111:6666::/32 (i) area 1
    via directly connected
6060:6060::6060/128 (i) area 0
    via fe80::0206:d6ff:fec8:a41c/Enet2/5, cost 10
6161:6161::6161/128 (i) area 1
    via fe80::0206:d6ff:fec8:a408/Enet2/6, cost 10
```

Table 1-21 describes the significant fields shown in the display.

Table 1-51   show ospfv3 route Field Descriptions

Field	Description
1111:1111::/32	Router ID for the router that advertised this route.
via...	Packets destined for the given prefix are sent over the listed interface or directly connected to this device.

show ospfv3 statistics

To display Open Shortest Path First version 3 (OSPFv3) shortest path first (SPF) calculation statistics, use the **show ospfv3 statistics** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **statistics** [**vrf** *vrf-name*]

Syntax Description

instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **show ospfv3 statistics** command to display information about link-state advertisements (LSAs). This information can be useful for both OSPFv3 network maintenance and troubleshooting. For example, we recommend that you use the **show ospfv3 statistics** command as the first troubleshooting step for LSA flapping.

This command requires the Enterprise Services license.

Examples

This example shows how to display information about the SPF calculations:

```
Router# show ospfv3 statistics
OSPFv3 Process p1 vrf default, Event statistics (cleared 2w3d ago)

  Router ID changes: 0
  DR elections: 5
  Older LSAs received: 0
  Neighbor state changes: 10
  Neighbor dead postponed: 0
  Neighbor dead interval expirations: 0
  Neighbor bad lsreqs: 0
  Neighbor sequence number mismatches: 0
  SPF computations:  9 full, 0 summary, 0 external
```

LSA Type	Generated	Refreshed	Flushed	Aged out
Router	4	202	0	0
Network	0	0	0	0
Inter-Area-Prefix	0	606	7	0
Inter-Area-Router	0	0	0	0
AS External	0	0	0	0
Link-Local	7	505	0	0
Intra-Area-Prefix	6	202	0	0
Unknown	0	0	0	0

Following counters can not be reset:

```
LSA deletions: 0 pending, 2 hwm, 16 deleted, 0 revived, 2 runs
Hello queue: 0/200, hwm 2, drops 0
Flood queue: 0/100, hwm 2, drops 0
LSDB additions failed: 0
```

Buffers:	in use	hwm	permanent	alloc	free
128 bytes	0	2	1	142512	142512
512 bytes	0	2	2	779	779
1520 bytes	0	1	0	1	1
4500 bytes	0	1	1	891	891
huge	0	0	0	0	0

Table 1-22 describes the significant fields shown in the display.

Table 1-52   show ospfv3 statistics Field Descriptions

Field	Description
OSPFv3 process	Unique value assigned to the OSPFv3 instance in the configuration.
vrf	Virtual routing and forwarding (VRF) for this OSPFv3 instance.
DR elections	Number of times that a new designated router was elected.
Neighbor...	Details about neighbors.
LSA Type	Number of each type of LSA sent.

show ospfv3 summary-address

To display a list of all summary address redistribution information configured in an Open Shortest Path First version 3 (OSPFv3) instance, use the **show ospfv3 summary-address** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **summary-address** [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.	
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.	

Defaults   None

Command Modes   Any

SupportedUserRoles   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   This example shows how to display information about summary addresses:

```
Router# show ospfv3 summary-address

OSPFv3 Router with ID (40.40.40.40) (Process ID p1Configured summary-address

2000::/8 Pending
6161::/16 Pending
```

Table 1-18 describes the significant fields shown in the displays.

Table 1-53   show ospfv3 summary-address Field Descriptions

Field	Description
10.2.0.0/255.255.0.0	IP address and mask of the router for the OSPFv3 process.
Metric -1	OSPFv3 metric type.

Table 1-53   show ospfv3 summary-address Field Descriptions (continued)

Field	Description
Type 0	Type of LSA.
Tag 0	OSPFv3 process tag identifier.

show ospfv3 traffic

To display Open Shortest Path First version 3 (OSPFv3) traffic statistics, use the **show ospfv3 traffic** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **traffic** [**vrf** *vrf-name*]

Syntax Description		
instance-tag	(Optional) Name of the OSPF instance. Specify as an alphanumeric string.
vrf *vrf-name*	(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

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

Usage Guidelines   Use the **show ospfv3 traffic** command to display traffic statistics for one or more OSPFv3 instances.

This command requires the Enterprise Services license.

Examples   This example shows how to display OSPFv3 traffic statistics:

```
Router# show ospfv3 traffic

 OSPFv3 Process ID p1, vrf Red, Packet Counters (cleared 2w3d ago)
 Total: 1690 in, 349230 out
 LSU transmissions: first 100, rxmit 108, for req 16
 Flooding packets output throttled (IP/tokens): 0 (0/0)
 Ignored LSAs: 0, LSAs dropped during SPF: 0
 LSAs dropped during graceful restart: 0
 Errors: drops in       0, drops out        0, errors in       0
         errors out     0, unknown in       0, unknown out     0
         no ospfv3        0, bad version      0, bad crc          0
         dup rid        0, dup src         0, invalid src     0
         invalid dst    0, no nbr          0, passive         0
         wrong area     0, nbr changed rid/ip addr           0
         bad auth       0
```

```
           hellos    dbds    lsreqs      lsus      acks
   In:       1411      70        16       136        57
   Out:    348871      62         4       224        69
```

Table 1-24 describes the significant fields shown in the display.

Table 1-54   ***show ospfv3 traffic Field Descriptions***

Field	Description
OSPFv3 Process	OSPFv3 instance tag for these traffic statistics.
vrf	Virtual routing and forwarding (VRF) for this OSPFv3 instance.
Errors	
drops	Number of packets dropped.
bad version	Number of packets received with bad version.
dup rid	Number of packets with a duplicate router-id
dup src	Number of packets with a duplicate source address
no nbr	Number of packets from a router that is not a full neighbor.
nbr changed rid/ip addr	Number of packets with router-id/ip address pair not matching our neighbor's values.
lsreq	Number of packets of type LSREQ (LSA required)
lsacks	Number of packets of type LSACK (LSA acknowledged)

Related Commands	Command	Description
	clear ipv6 ospfv3 traffic	Clears OSPFv3 traffic statistics.

show ospfv3 virtual-links

To display parameters and the current state of Open Shortest Path First version 3 (OSPFv3) virtual links, use the **show ospfv3 virtual-links** command.

show [**ipv6**] **ospfv3** [*instance-tag*] **virtual-links** [**brief**] [**vrf** *vrf-name*]

Syntax Description		
instance-tag		(Optional) Name of the OSPF instance. Use this tag to display OSPFv3 information about a specific OSPFv3 instance.
brief		(Optional) Displays a summary of the configured virtual links.
vrf *vrf-name*		(Optional) Specifies the name of the virtual routing and forwarding (VRF) instance. The *vrf-name* argument can be specified as any case-insensitive alphanumeric string up to 32 characters. The strings "default" and "all" are reserved VRF names.

Defaults   None

Command Modes   Any

SupportedUserRoles   network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines   Use the **show ospfv3 virtual-links** command to display information about configured virtual links.

This command requires the Enterprise Services license.

Examples   This example shows how to display information about virtual links:

```
Router# show ospfv3 virtual-links

Virtual link 2 to router 40.40.40.40 is up
  Process ID p1 vrf default, Transit area 1, via interface Ethernet1/2, cost 10
  Transit area 33, remote addr 0::
  IPv6 address 0::
  Process ID sd vrf default, Instance ID 0, area 0
  State DOWN, Network type P2P, cost 65535
  Index 1, Transmit delay 1 sec
  0 Neighbors, flooding to 0, adjacent with 0
  Timer intervals: Hello 10, Dead 40, Wait 40, Retransmit 5
  Number of link LSAs: 0, checksum sum 0
  Adjacency Information
```

Table 1-25 describes the significant fields shown in the display.

Table 1-55   show ospfv3 virtual-links Field Descriptions

Field	Description
Virtual Link	OSPFv3 neighbor and whether the link to that neighbor is up or down.
vrf	Virtual routing and forwarding (VRF) for this OSPFv3 instance.
Transit area...	Transit area through which the virtual link is formed.
via interface...	Interface through which the virtual link is formed.
cost	Cost of reaching the OSPFv3 neighbor through the virtual link.
Transmit delay	Transmit delay (in seconds) on the virtual link.
Timer intervals...	Various timer intervals configured for the link.
Hello timer due in 0:00:04	Time when the next hello is expected from the neighbor.

show routing

To display routing information, use the **show routing** command.

show routing [**ip** | **ipv4** | **ipv6**] [*address* | *hostname* | *prefix* | *route-type* | **clients** | **hidden-nh**
interface *type number* | **next-hop** *addr* | **recursive**-**next-hop** [*addr*]] [**vrf** *vrf-name*]

Syntax Description

address	(Optional) IPv4 or IPv6 address. IPv4 address format is x.x.x.x. IPv6 address format is A:B::C:D.
hostname	Host name. The *name* can be any case-sensitive alphanumeric string up to 80 characters.
prefix	(Optional) IPv4 or IPv6 prefix. IPv4 prefix format is x.x.x.x/length. IPv6 address format is A:B::C:D/length.
route-type	(Optional) Type of route. Use **?** to see the list of types.
clients	(Optional) Displays the routing clients.
hidden-nh	(Optional) Displays hidden next-hop information.
interface *type number*	(Optional) Displays the routes for an interface. Use **?** to see the supported interfaces.
next-hop *addr*	(Optional)Displays routes with this next-hop address. The format is x.x.x.x.
recursive next-hop *addr*	(Optional)Displays routes with this recursive next-hop address. The format is x.x.x.x.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.
4.1(2)	Added *hostname* argument.
4.2(1)	Added **hidden-nh** keyword.

Usage Guidelines

This command does not require a license.

Examples   This example displays the route table:

```
switch(config)# show ip routing
IP Route Table for VRF "default"
'*' denotes best ucast next-hop        '**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]

0.0.0.0/32, 1 ucast next-hops, 0 mcast next-hops
   *via Null0, [220/0], 00:45:24, local, discard
255.255.255.255/32, 1 ucast next-hops, 0 mcast next-hops
   *via sup-eth1, [0/0], 00:45:24, local
```

Related Commands

Command	Description
clear ip route	Clears entries in the route table.

show routing memory estimate

To display an estimate of routing memory requirements, use the **show routing memory estimate** command.

show routing memory estimate *num-routes*|**next-hops** *num-hop-addresses*

Syntax Description

num-routes	Number of routes. The range is from 1000 to 112000.
num-hop-addresses	Number of next-hop addresses per route. The range is from 1 to 16.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

Use the **show routing memory estimate** command to estimate the memory required for a selected number of routes and number of next-hop addresses per route.

This command does not require a license.

Examples

This example displays the route table:

```
switch# show routing memory estimate routes 110000 next-hops 16
Shared memory estimates:
  Current max    32 MB;  26125 routes with 16 nhs
         in-use   1 MB;     11 routes with  1 nhs (average)
  Configured max 32 MB;  26125 routes with 16 nhs
  Estimate      135 MB; 110000 routes with 16 nhs
```

show routing-context

To display the virtual routing and forwarding (VRF) scope for all EXEC commands, use the **show routing-context** command.

show routing-context

Syntax Description   This command has no keywords or arguments.

Defaults   None

Command Modes   EXEC

SupportedUserRoles   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   This example shows how display the current routing context:

```
switch%management# show routing-context
Current Route Context: management
```

Related Commands

Command	Description
routing-context vrf	Configures the routing context.

show routing hash

To display the route selected for a particular source and destination address, use the **show routing hash** command.

show routing hash source-*addr dest-addr* [*source-port dest-port*]] [**vrf** *vrf-name*]

Syntax Description

source-addr	Source IPv4 address. IPv4 address format is x.x.x.x.
dest-addr	Destination IPv4 address. IPv4 address format is x.x.x.x.
source-port	(Optional) Source port. The range is from 1 to 65535.
dest-port	(Optional) Destination port. The range is from 1 to 65535.
vrf *vrf-name*	(Optional) Specifies the virtual router context (VRF) name. The name can be any case-sensitive alphanumeric string up to 63 characters.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example displays the route selected to reach 30.0.0.2 from 10.0.0.5:

```
switch# show routing hash  10.0.0.5 30.0.0.2
  Load-share parameters used for software forwarding:
  load-share mode: address source-destination port source-destination
  Universal-id seed: 0xe05e2e85
  Hash for VRF "default"
  Hashing to path *20.0.0.2 (hash: 0x0e), for route:
```

Related Commands

Command	Description
clear ip route	Clears entries in the route table.

show sockets client

To display information about the sockets clients , use the **show sockets client** command.

show sockets client [**pid** *id*] [**raw** | **tcp** | **udp**] [**detail**]

Syntax Description

pid *id*	(Optional) Displays the socket client information for a specific process. The *id* range is from 1 to 65535.
raw	(Optional) Displays information about the raw client.
tcp	(Optional) Displays information about the TCP client.
udp	(Optional) Displays information about the UDP client.
detail	(Optional) Displays information about the detailed client.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display the UDP socket client information:

```
switch# show socket client udp
Total number of UDP clients: 8

client: syslogd, pid: 3307, sockets: 1
client: ntp, pid: 3577, sockets: 2
client: ntpd, pid: 3660, sockets: 3
client: snmpd, pid: 3579, sockets: 2
client: hsrp_engine, pid: 3786, sockets: 2
client: pim, pid: 3782, sockets: 1
client: glbp, pid: 3783, sockets: 1
client: radiusd, pid: 3572, sockets: 2
```

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Related Commands	**Command**	**Description**
	clear sockets statistics	Clears socket statistics.
	show sockets connection	Displays information about the socket connection.
	show sockets statistics	Displays information about the socket statistics.

show sockets connection

To display information about the sockets connection, use the **show sockets connection** command.

show sockets connection [**pid** *id*] [**local** *address* | **foreign** *addres* | **raw** | **tcp** | **udp**] [**detail**]

Syntax Description		
pid *id*	(Optional) Displays the socket client information for a specific process. the *id* range is from 1 to 65535.	
local *address*	(Optional) Displays information about all the TCP connections with the specified local address. The *address* can be an IPv4 or an IPv6 address.	
foreign *address*	(Optional) Displays information about all the TCP connections with the specified foreign address. The *address* can be an IPv4 or an IPv6 address.	
raw	(Optional) Displays information about the raw client.	
tcp	(Optional) Displays information about the TCP client.	
udp	(Optional) Displays information about the UDP client.	
detail	(Optional) Displays information about the detailed client.	

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History	Release	Modification
	4.1(2)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display the TCP socket connection information:

```
switch# show socketx connection tcp
Total number of tcp sockets: 10
Active connections (including servers)
Protocol State/       Recv-Q/   Local Address(port)/
         Context      Send-Q    Remote Address(port)
tcp6     LISTEN       0         *(22)
         Wildcard     0         *(*)

tcp6     LISTEN       0         *(23)
```

```
              Wildcard    0         *(*)

    tcp       LISTEN      0         *(161)
              Wildcard    0         *(*)

    tcp6      LISTEN      0         *(161)
              Wildcard    0         *(*)

    tcp       LISTEN      0         *(179)
              Wildcard    0         *(*)

    tcp6      LISTEN      0         *(179)
              Wildcard    0         *(*)

    tcp       ESTABLISHED 0         172.28.230.85(22)
              management  0         172.28.254.254(1055)

    tcp       ESTABLISHED 0         172.28.230.85(22)
              management  0         172.28.254.254(3353)

    tcp       ESTABLISHED 0         172.28.230.85(23)
              management  0         10.82.232.102(2390)

    tcp       ESTABLISHED 0         172.28.230.85(23)
              management  4         161.44.67.127(1242)
```

Related Commands

Command	Description
clear sockets statistics	Clears the socket statistics.
show sockets client	Displays information about the socket client.
show sockets statistics	Displays the socket statistics.

show sockets statistics

To display the socket statistics, use the **show sockets statistics** command.

show sockets statistics [all | raw | raw6 | rawsum | tcp | tcp6 | tcpsum | udp | udp6 | udpsum]

Syntax Description		
	all	(Optional) Displays all the socket statistics.
	raw	(Optional) Displays the socket statistics for the raw IPv4 protocol socket statistics.
	raw6	(Optional) Displays the socket statistics for the raw IPv6 protocol socket statistics.
	rawsum	(Optional) Displays a summary of the socket statistics for the raw IPv4 and IPv6 protocol socket statistics.
	tcp	(Optional) Displays the socket statistics for the TCP IPv4 protocol.
	tcp6	(Optional) Displays the socket statistics for the TCP IPv6 protocol.
	tcpsum	(Optional) Displays a summary of the socket statistics for the TCP IPv4 and IPv6 protocols.
	udp	(Optional) Displays the socket statistics for the UDP IPv4 protocol.
	udp6	(Optional) Displays the socket statistics for the UDP IPv6 protocol.
	udpsum	(Optional) Displays a summary of the socket statistics for the UDP IPv4 and IPv6 protocols.

Defaults   None

Command Modes   Any command mode

SupportedUserRoles   network-admin
network-operator
vdc-admin
vdc-operator

Command History

Release	Modification
4.1(2)	This command was introduced.

Usage Guidelines   This command does not require a license.

Examples   The following example shows how to display the TCP socket statistics:

```
switch# show sockets statistics tcp
TCP v4 Received:
        36490 packets total
        0 checksum error, 0 bad offset, 0 too short, 0 MD5 error
```

```
            18711 packets (950071 bytes) in sequence
            2 duplicate packets (136 bytes)
            0 partially dup packets (0 bytes)
            1 out-of-order packets (0 bytes)
            0 packets (0 bytes) with data after window
            0 packets after close
            0 window probe packets, 0 window update packets
            17 duplicate ack packets, 0 ack packets with unsent data
            26130 ack packets (8137813 bytes)
TCP v4 Sent:
            44602 total, 0 urgent packets
            6 control packets
            43908 data packets (8137790 bytes)
            0 data packets (0 bytes) retransmitted
            688 ack only packets
            0 window probe packets, 0 window update packets
TCP v4:
0 connections initiated, 21 connections accepted, 21 connections established
18 connections closed (including 11 dropped, 0 embryonic dropped)
0 total rxmt timeout, 0 connections dropped in rxmt timeout
12 keepalive timeout, 12 keepalive probe, 0 connections dropped in keepalive
```

Related Commands	Command	Description
	clear sockets statistics	Clears socket statistics.
	show sockets client	Displays information about the socket client.
	show sockets connection	Displays information about the socket connection.

show track

To show information about object tracking, use the **show track** command.

show track [*object-id*] [**interface** | {**ip** | **ipv6**} **route**] [**brief**]

Syntax Description

object-id	(Optional) Tracking ID. The range can be from 1 to 500.
interface	(Optional) Displays information about tracked interfaces.
ip route	(Optional) Displays information about tracked IP routes.
ipv6 route	(Optional) Displays information about tracked IPv6 routes.
brief	(Optional) Displays brief information about tracked objects.

Defaults

Display information for all tracked objects.

Command Modes

Any

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.1(2)	Added **ipv6** keyword
4.0(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display information about tracked interfaces:

```
switch# show track interface
Track 1
  Interface Ethernet1/2 IP Routing
  IP Routing is DOWN
  1 changes, last change 00:35:14

Track 2
  Interface Ethernet2/2 Line Protocol
  Line Protocol is DOWN
  1 changes, last change 00:33:55

Track 4
  Interface Ethernet2/45 IP Routing
  IP Routing is DOWN
  1 changes, last change 00:17:03
```

```
Track 6
  Interface Ethernet2/34 Line Protocol
  Line Protocol is DOWN
  1 changes, last change 00:15:12
```

This example shows how to display information about tracked IP routes:

```
switch# show track ip route
Track 3
  IP Route 10.10.10.0/8 Reachability
  Reachability is DOWN
  1 changes, last change 00:22:09
```

This example shows how to display brief information about tracked objects:

```
switch# show track brief
Track Type        Instance          Parameter      State  Last Change
1     Interface   Ethernet1/2       IP Routing     DOWN   00:36:42
2     Interface   Ethernet2/2       Line Protocol  DOWN   00:35:22
3     IP Route    10.10.10.0/8      Reachability   DOWN   00:22:47
4     Interface   Ethernet2/45      IP Routing     DOWN   00:18:31
6     Interface   Ethernet2/34      Line Protocol  DOWN   00:16:40
switch#
```

Related Commands	Command	Description
	track interface	Tracks the state of an interface.
	track ip route	Tracks the state of an IP route.
	track ipv6 route	Tracks the state of an IPv6 route.

show vrrp

To show information about the Virtual Router Redundancy Protocol (VRRP), use the **show vrrp** command.

show vrrp [**detail** | **statistics**] [**interface** *if-number*] [**vr** *id*] [**master** | **backup** | **init**]

Syntax Description

detail	(Optional) Displays detailed information about VRRP.
statistics	(Optional) Displays VRRP statistics.
interface *if-number*	(Optional) Displays information about VRRP on an interface. Use **?** to see a list of supported interfaces.
vr *id*	(Optional) Displays information about VRRP for a group. The *id* range is from 1 to 255.
master	(Optional) Displays information about VRRP groups in the master state.
backup	(Optional) Displays information about VRRP groups in the backup state.
init	(Optional) Displays information about VRRP groups in the init state.

Defaults   Display information for all VRRP groups.

Command Modes   Any

SupportedUserRoles   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   This example shows how to display information about VRRP:

```
switch(config)# show vrrp
      Interface  VR IpVersion Pri   Time Pre State   VR IP addr
----------------------------------------------------------------
   Ethernet7/45  33   IPV4    100    1 s  Y    Init
   Ethernet7/45  99   IPV4    100    1 s  Y    Init
```

Related Commands

Command	Description
feature vrrp	Enables the VRRP feature.
clear vrrp	Clears VRRP statistics.