

show ip cef

To display entries in the Forwarding Information Base (FIB) or to display a summary of the FIB, use the **show ip cef** command in user EXEC or privileged EXEC mode.

```
show ip cef [vrf vrf-name] [unresolved [detail] | [detail | summary]]
```

Specific FIB Entries Based on IP Address Information

```
show ip cef [vrf vrf-name] [network [mask]] [longer-prefixes] [detail]
```

Specific FIB Entries Based on Interface Information

```
show ip cef [vrf vrf-name] [type number] [detail]
```

Specific FIB Entries Based on Nonrecursive Routes

```
show ip cef [vrf vrf-name] non-recursive [detail]
```

Syntax Description

vrf	(Optional) A Virtual Private Network (VPN) routing/forwarding (VRF) instance.
<i>vrf-name</i>	(Optional) Name assigned to the VRF.
unresolved	(Optional) Displays unresolved FIB entries.
detail	(Optional) Displays detailed FIB entry information.
summary	(Optional) Displays a summary of the FIB.
<i>network</i>	(Optional) Network number for which to display a FIB entry.
<i>mask</i>	(Optional) Network mask to be used with the specified <i>network</i> .
longer-prefixes	(Optional) Displays FIB entries for more specific destinations.
<i>type number</i>	(Optional) Interface type and number for which to display FIB entries.
non-recursive	Displays only nonrecursive routes.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.2 GS	This command was introduced to support the Cisco 12012 Internet router.
11.1 CC	Multiple platform support was added.
12.0(5)T	The vrf keyword was added.
12.0(17)ST	The display of a message indicating support for Border Gateway Protocol (BGP) policy accounting was added.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Usage Guidelines

The **show ip cef** command without any keywords or arguments shows a brief display of all FIB entries. The **show ip cef detail** command shows detailed FIB entry information for all FIB entries.

Examples

The following is sample output from the **show ip cef unresolved** command:

```
Router# show ip cef unresolved

IP Distributed CEF with switching (Table Version 136632)
45776 routes, 13 unresolved routes (0 old, 13 new)
45776 leaves, 2868 nodes, 8441480 bytes, 136632 inserts, 90856 invalidations
1 load sharing elements, 208 bytes, 1 references
1 CEF resets, 1 revisions of existing leaves
refcounts: 527292 leaf, 465617 node

10.214.0.0/16, version 136622
0 packets, 0 bytes
  via 172.17.233.56, 0 dependencies, recursive
  unresolved
10.215.0.0/16, version 136623
0 packets, 0 bytes
  via 172.17.233.56, 0 dependencies, recursive
  unresolved
10.218.0.0/16, version 136624
0 packets, 0 bytes
```

[Table 40](#) describes the significant fields shown in the display.

Table 40 *show ip cef unresolved Field Descriptions*

Field	Description
routes	Total number of entries in the CEF table
unresolved routes	Number of entries in the CEF table that do not have resolved recursions categorized by old and new routes
leaves, nodes, bytes	Number of elements in the CEF Trie and how much memory they use
inserts	Number of nodes inserted
invalidations	Number of entries that have been invalidated
load sharing elements, bytes, references	Information about load sharing elements: how many, number of associated bytes, and number of associated references
version	Version of the CEF table
packets, bytes	Number of packets and bytes switched through the name entry
dependencies	Number of table entries which point to the named entry
recursive	Indicates that the destination is reachable through another route
unresolved	Number of entries that do not have resolved recursions

The following is sample output from the **show ip cef summary** command:

```
Router# show ip cef summary

IP Distributed CEF with switching (Table Version 135165)
45788 routes, 0 reresolve, 4 unresolved routes (0 old, 4 new)
45788 leaves, 2868 nodes, 8442864 bytes, 135165 inserts, 89377 invalidations
0 load sharing elements, 0 bytes, 0 references
```

```
1 CEF resets, 0 revisions of existing leaves
refcounts: 527870 leaf, 466167 node
```

For a description of significant fields in this display, see [Table 40](#).

The following is sample output from the **show ip cef detail** command for Ethernet interface 0. It shows all the prefixes resolving through adjacency pointing to next hop Ethernet interface 0/0 and next hop interface IP address 172.19.233.33.

```
Router# show ip cef e0/0 172.19.233.33 detail
```

```
IP Distributed CEF with switching (Table Version 136808)
45800 routes, 8 unresolved routes (0 old, 8 new) 45800 leaves, 2868 nodes, 8444360 bytes,
136808 inserts, 91008 invalidations 1 load sharing elements, 208 bytes, 1 references 1 CEF
resets, 1 revisions of existing leaves refcounts: 527343 leaf, 465638 node
```

```
172.19.233.33/32, version 7417, cached adjacency 172.19.233.33 0 packets, 0 bytes,
Adjacency-prefix
via 172.19.233.33, Ethernet0/0, 0 dependencies
next hop 172.19.233.33, Ethernet0/0
valid cached adjacency
```

[Table 41](#) describes the significant fields in the display.

Table 41 *show ip cef detail Field Descriptions*

Field	Description
routes	Total number of entries in the CEF table
unresolved routes	Number of entries in the CEF table that do not have resolved recursions categorized by old and new routes
leaves, nodes, bytes	Number of elements in the CEF Trie and how much memory they use
inserts	Number of nodes inserted
invalidations	Number of entries that have been invalidated
load sharing elements, bytes, references	Information about load sharing elements: how many, number of associated bytes, and number of associated references
version	Version of the CEF table
cached adjacency	Type of adjacency to which this CEF table entry points
packets, bytes	Number of packets and bytes switched through the name entry
dependencies	Number of table entries which point to the named entry
next hop	Type of adjacency or the next hop toward the destination

The following is sample output from the **show ip cef detail** command for the prefix 192.168.5.0, showing that the BGP policy accounting bucket number 4 (traffic_index 4) is assigned to this prefix:

```
Router# show ip cef 192.168.5.0 detail
```

```
192.168.5.0/24, version 21, cached adjacency to POS7/2
0 packets, 0 bytes, traffic_index 4
via 10.14.1.1, 0 dependencies, recursive
next hop 10.14.1.1, POS7/2 via 10.14.1.0/30
valid cached adjacency
```

The following example shows the forwarding table associated with the VRF named vrf1:

```
Router# show ip cef vrf vrf1

Prefix          Next Hop          Interface
0.0.0.0/32      receive
10.11.0.0/16    10.50.0.1        Ethernet1/3
10.12.0.0/16    10.52.0.2        POS6/0
10.50.0.0/16    attached         Ethernet1/3
10.50.0.0/32    receive
10.50.0.1/32    10.50.0.1        Ethernet1/3
10.50.0.2/32    receive
10.255.255.255/32 receive
10.51.0.0/16    10.52.0.2        POS6/0
224.0.0.0/24    receive
255.255.255.255/32 receive
```

Table 42 describes the significant fields shown in the display.

Table 42 *show ip cef vrf Field Descriptions*

Field	Description
Prefix	Specifies the network prefix.
Next Hop	Specifies the BGP next hop address.
Interface	Specifies the VRF interface.

Related Commands

Command	Description
show cef	Displays which packets the line cards dropped, or displays which packets were not express forwarded.
show cef interface	Displays CEF-related interface information.

show ip cef adjacency

To display Cisco Express Forwarding (CEF) recursive and direct prefixes resolved through an adjacency, use the **show ip cef adjacency** command in user EXEC or privileged EXEC mode.

```
show ip cef [vrf vrf-name] adjacency type number ip-prefix [detail]
```

To display CEF recursive and direct prefixes resolved through special adjacency types representing nonstandard switching paths, use this form of the **show ip cef adjacency** command in privileged EXEC mode.

```
show ip cef [vrf vrf-name] adjacency {discard | drop | glean | null | punt} [detail]
```

Syntax Description	
vrf	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.
<i>vrf-name</i>	(Optional) Name assigned to the VRF.
<i>type number</i>	Interface type and number for which to display forwarding information base (FIB) entries.
<i>ip-prefix</i>	Next hop IP prefix, in dotted decimal format (A.B.C.D).
detail	(Optional) Displays detailed information for each CEF adjacency type entry.
discard	Discard adjacency. Sets up for loopback interfaces. Loopback IP addresses are receive entries in the FIB table.
drop	Drop adjacency. Packets forwarded to this adjacency are dropped.
glean	Glean adjacency. Represents destinations on a connected interface for which no ARP cache entry exists.
null	Null adjacency. Formed for the Null0 interface. Packets forwarded to this adjacency are dropped.
punt	Punt adjacency. Represents destinations that cannot be switched in the normal path and that are punted to the next fastest switching vector.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.1 CC	This command was introduced.
	12.0(5)T	The vrf keyword was added.

Usage Guidelines An adjacency is a node that can be reached by one Layer 2 hop.

This command shows all prefixes resolved through a regular next hop adjacency or through a special adjacency type such as discard, drop, glean, null and punt.

The following sample output is from the **show ip cef adjacency** command when the **glean** type is specified:

```
Router# show ip cef adjacency glean

Prefix          Next Hop          Interface
9.2.61.0/24     attached         Ethernet1/0/0
172.17.250.252/32  9.2.61.1        Ethernet1/0/0
```

The following sample output is from the **show ip cef adjacency drop** command with **detail** specified:

```
Router# show ip cef adjacency drop detail

IP CEF with switching (Table Version 4), flags=0x0
  4 routes, 0 reresolve, 0 unresolved (0 old, 0 new), peak 0
  4 leaves, 8 nodes, 8832 bytes, 13 inserts, 9 invalidations
  0 load sharing elements, 0 bytes, 0 references
  universal per-destination load sharing algorithm, id 00B999CA
  3 CEF resets, 0 revisions of existing leaves
  Resolution Timer: Exponential (currently 1s, peak 1s)
  0 in-place modifications
  refcounts: 533 leaf, 536 node

224.0.0.0/4, version 3
0 packets, 0 bytes, Precedence routine (0)
  via 0.0.0.0, 0 dependencies
  next hop 0.0.0.0
  valid drop adjacency
```

The following sample output shows the direct IP prefix when the next hop Gigabit Ethernet interface 3/0 is specified:

```
Router# show ip cef adjacency GigabitEthernet 3/0 172.20.26.29

Prefix          Next Hop          Interface
34.1.1.0/24     172.20.26.29    GigabitEthernet3/0
```

[Table 43](#) describes the significant fields shown in the display.

Table 43 *show ip cef adjacency Field Descriptions*

Field	Description
Prefix	Destination IP prefix.
Next Hop	Next hop IP address.
Interface	Next hop interface.

Related Commands

Command	Description
show adjacency	Displays CEF adjacency table information.

show ip cef events

To display all recorded Cisco Express Forwarding (CEF) forwarding information base (FIB) and adjacency events, use the **show ip cef events** command in user EXEC or privileged EXEC mode.

show ip cef [*vrf vrf-name*] **events** [*ip-prefix*] [**new** | **within seconds**] [**detail**] [**summary**]

Syntax Description

vrf	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.
<i>vrf-name</i>	(Optional) Name assigned to the VRF.
<i>ip-prefix</i>	(Optional) Next hop IP prefix, in dotted decimal format (A.B.C.D).
new	(Optional) Displays new CEF events not previously shown.
within seconds	(Optional) Displays CEF events that occurred within a specified number of seconds.
detail	(Optional) Displays detailed information for each CEF event entry.
summary	(Optional) Displays a summary of the CEF event log.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.0(15)S	This command was introduced.
12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.

Usage Guidelines

This command shows the state of the table event log and must be enabled for events to record. The **ip cef table event-log** command controls parameters such as event log size.

Examples

The following sample output is from the **show ip cef events** command with **summary** specified:

```
Router# show ip cef events summary

CEF table events summary:
  Storage for 10000 events (320000 bytes), 822/0 events recorded/ignored
  Matching all events, traceback depth 16
  Last event occurred 00:00:06.516 ago.
```

The following sample output is from the **show ip cef events** command displaying events that occurred within 1 second:

```
Router# show ip cef events within 1

CEF table events (storage for 10000 events, 14 events recorded)
+00:00:00.000:[Default-table] *.*.*.*/*          New FIB table          [OK]
+00:00:00.000:[Default-table] 9.1.80.194/32     FIB insert in mtrie   [OK]
+00:00:00.000:[Default-table] 9.1.80.0/32          FIB insert in mtrie   [OK]
+00:00:00.000:[Default-table] 9.1.80.255/32       FIB insert in mtrie   [OK]
```

```

+00:00:00.004:[Default-table] 9.1.80.0/24      FIB insert in mtrie [OK]
+00:00:00.004:[Default-table] 9.1.80.0/24      NBD up [OK]
+00:00:00.004:[Default-table] 224.0.0.0/4      FIB insert in mtrie [OK]
+00:00:00.012:[Default-table] 9.1.80.0/24      NBD up [Ignr]
+00:00:00.012:[Default-table] 224.0.0.0/4      FIB remove [OK]
+00:00:00.016:[Default-table] 224.0.0.0/4      FIB insert in mtrie [OK]
+00:00:05.012:[Default-table] 224.0.0.0/4      FIB remove [OK]
+00:00:05.012:[Default-table] 224.0.0.0/4      FIB insert in mtrie [OK]
+00:00:28.440:[Default-table] 224.0.0.0/4      FIB remove [OK]
+00:00:28.440:[Default-table] 224.0.0.0/4      FIB insert in mtrie [OK]
First event occurred at 00:00:36.568 (00:04:40.756 ago)
Last event occurred at 00:01:05.008 (00:04:12.316 ago)

```

Table 44 describes the significant fields shown in the display.

Table 44 *show ip cef events Field Descriptions*

Field	Description
+00:00:00.000	Time stamp of the IP CEF event.
[Default-table]	Type of VPN routing and forwarding (VRF) table for this event entry.
..*.*/*	All IP prefixes.
9.1.80.194/32	IP prefix associated with the event.
FIB insert in mtrie	IP prefix insert in the FIB table event.
NBD up	IP prefix up event.
FIB remove	FIB entry remove event.
[Ignr]	CEF ignored event.
[OK]	CEF processed event.

Related Commands

Command	Description
ip cef table consistency-check	Enables CEF table consistency checker types and parameters.
ip cef table event-log	Controls CEF table event-log characteristics.

show ip cef exact-route

To display the exact route for a source-destination IP address pair, use the **show ip cef exact-route** command in user EXEC or privileged EXEC mode.

show ip cef [**vrf** *vrf-name*] **exact-route** *source-address destination-address*

Syntax Description	Parameter	Description
	vrf	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.
	<i>vrf-name</i>	(Optional) Name assigned to the VRF.
	<i>source-address</i>	Specifies the network source address.
	<i>destination-address</i>	Specifies the network destination address.

Command Modes	Mode
	User EXEC
	Privileged EXEC

Command History	Release	Modification
	12.1(4)T	This command was introduced.

Usage Guidelines When you are load balancing per destination, this command shows the exact next hop that is used for a given IP source-destination pair.

Examples The following sample output is from the **show ip cef exact-route** command:

```
Router# show ip cef exact-route 1.1.1.1 172.17.249.252
1.1.1.1          -> 172.17.249.252 :Ethernet2/0/0 (next hop 9.1.104.1)
```

[Table 45](#) describes the significant fields shown in the display.

Table 45 *show ip cef exact-route* Field Descriptions

Field	Description
1.1.1.1 -> 172.17.249.252	From source 1.1.1.1 to destination 172.17.249.252.
Ethernet2/0/0 (next hop 9.1.104.1)	Next hop is 9.1.104.1 on Ethernet 2/0/0.

show ip cef inconsistency

To display Cisco Express Forwarding (CEF) IP prefix inconsistencies, use the **show ip cef inconsistency** command in user EXEC or privileged EXEC mode.

```
show ip cef [vrf vrf-name] inconsistency [records [detail]]
```

Syntax Description		
vrf	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.	
<i>vrf-name</i>	(Optional) Name assigned to the VRF.	
records	(Optional) Displays all recorded inconsistencies.	
detail	(Optional) Displays detailed information for each CEF table entry.	

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	12.0(15)S	This command was introduced.
	12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.

Usage Guidelines	
	This command is available only on routers with line cards.
	This command displays recorded CEF inconsistency records found by the lc-detect, scan-rp, scan-rib, and scan-lc detection mechanisms.
	You can configure the CEF consistency detection mechanisms using the ip cef table consistency-check command.

Examples The following sample output is from the **show ip cef inconsistency** command:

```
Router# show ip cef inconsistency

Table consistency checkers (settle time 65s)
lc-detect:running
  0/0/0 queries sent/ignored/received
scan-lc:running [100 prefixes checked every 60s]
  0/0/0 queries sent/ignored/received
scan-rp:running [100 prefixes checked every 60s]
  0/0/0 queries sent/ignored/received
scan-rib:running [1000 prefixes checked every 60s]
  0/0/0 queries sent/ignored/received
Inconsistencies:0 confirmed, 0/16 recorded
```

Table 46 describes the significant fields shown in the display.

Table 46 *show ip cef inconsistency Field Descriptions*

Field	Description
settle time	Time after a recorded inconsistency is confirmed.
lc-detect running	Consistency checker lc-detect is running.
0/0/0 queries	Number of queries sent, ignored, and received.
Inconsistencies:0 confirmed, 0/16 recorded	Number of inconsistencies confirmed, and recorded. Sixteen is the maximum number of inconsistency records to be recorded.

Related Commands

Command	Description
ip cef table consistency-check	Enables CEF table consistency checker types and parameters.

show ip cef traffic prefix-length

To display Cisco Express Forwarding (CEF) traffic statistics, use the **show ip cef traffic prefix-length** command in user EXEC or privileged EXEC mode.

show ip cef [*vrf vrf-name*] **traffic prefix-length**

Syntax Description	Parameter	Description
	vrf	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.
	<i>vrf-name</i>	(Optional) Name assigned to the VRF.
	prefix-length	Displays traffic statistics by prefix size.

Command Modes	Mode
	User EXEC
	Privileged EXEC

Command History	Release	Modification
	11.1 CC	This command was introduced.
	12.0(5)T	The vrf keyword was added.

Usage Guidelines This command is used to display CEF switched traffic statistics by destination prefix length. The **ip cef accounting prefix-length** command must be enabled for the counters to increment.

Examples The following sample output is from the **show ip cef traffic prefix-length** command:

```
Router# show ip cef traffic prefix-length
```

```
IP prefix length switching statistics:
```

```
-----
```

Prefix Length	Number of Packets	Number of Bytes
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
.		
.		
.		
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0

```
-----
```

Table 47 describes the significant fields shown in the display.

Table 47 *show ip cef traffic prefix-length Field Descriptions*

Field	Description
Prefix Length	Destination IP prefix length for CEF switched traffic.
Number of packets	Number of packets forwarded for the specified IP prefix length.
Number of bytes	Number of bytes transmitted for the specified IP prefix length.

Related Commands

Command	Description
ip cef accounting	Enables network accounting of CEF.

show ip cef vrf

To display the Cisco Express Forwarding (CEF) forwarding table associated with a Virtual Private Network (VPN) routing/forwarding instance (VRF), use the **show ip cef vrf** command in privileged EXEC mode.

```
show ip cef vrf vrf-name [ip-prefix [mask [longer-prefixes]] [detail] [output-modifiers]] [interface
interface-number] [adjacency [interface interface-number] [detail] [discard] [drop] [glean]
[null] [punt] [output-modifiers]] [detail [output-modifiers]] [non-recursive [detail]
[output-modifiers]] [summary [output-modifiers]] [traffic [prefix-length] [output-modifiers]]
[unresolved [detail] [output-modifiers]]
```

Syntax Description	
<i>vrf-name</i>	Name assigned to the VRF.
<i>ip-prefix</i>	(Optional) IP prefix of entries to show, in dotted decimal format (A.B.C.D).
<i>mask</i>	(Optional) Mask of the IP prefix, in dotted decimal format.
longer-prefixes	(Optional) Displays table entries for all of the more specific routes.
detail	(Optional) Displays detailed information for each CEF table entry.
<i>output-modifiers</i>	(Optional) For a list of associated keywords and arguments, use context-sensitive help.
<i>interface</i>	(Optional) Type of network interface to use: ATM, Ethernet, Loopback, POS (packet over SONET) or Null.
<i>interface-number</i>	Number identifying the network interface to use.
adjacency	(Optional) Displays all prefixes resolving through adjacency.
discard	(Optional) Discards adjacency.
drop	(Optional) Drops adjacency.
glean	(Optional) Gleans adjacency.
null	(Optional) Nulls adjacency.
punt	(Optional) Punts adjacency.
non-recursive	(Optional) Displays only nonrecursive routes.
summary	(Optional) Displays a CEF table summary.
traffic	(Optional) Displays traffic statistics.
prefix-length	(Optional) Displays traffic statistics by prefix size.
unresolved	(Optional) Displays only unresolved routes.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced.
	12.0(21)ST	This command was integrated into Cisco IOS 12.0(21)ST.
	12.0(23)S	This command was integrated into Cisco IOS 12.0(23)S.
	12.2(13)T	This command was integrated into Cisco IOS 12.2(13)T.

Usage Guidelines

Used with only the *vrf-name* argument, the **show ip cef vrf** command shows a shortened display of the CEF table.

Used with the **detail** keyword, the **show ip cef vrf** command shows detailed information for all CEF table entries.

Examples

This example shows the forwarding table associated with the VRF called vrf1:

```
Router# show ip cef vrf vrf1
```

```

Prefix          Next Hop          Interface
0.0.0.0/32      receive
11.0.0.0/8      50.0.0.1         Ethernet1/3
12.0.0.0/8      52.0.0.2         POS6/0
50.0.0.0/8      attached         Ethernet1/3
50.0.0.0/32     receive
50.0.0.1/32     50.0.0.1         Ethernet1/3
50.0.0.2/32     receive
50.255.255.255/32 receive
51.0.0.0/8      52.0.0.2         POS6/0
224.0.0.0/24    receive
255.255.255.255/32 receive

```

[Table 48](#) describes the fields shown in the example.

Table 48 *show ip cef vrf Field Descriptions*

Field	Description
Prefix	Specifies the network prefix.
Next Hop	Specifies the BGP next hop address.
Interface	Specifies the VRF interface.

Related Commands

Command	Description
show ip route vrf	Displays the IP routing table associated with a VRF.
show ip vrf	Displays VRF interfaces.

show ip explicit-paths

To display the configured IP explicit paths, use the **show ip explicit-paths** command in user EXEC or privileged EXEC mode.

show ip explicit-paths [*name word* | *identifier number*] [*detail*]

Syntax Description	name <i>word</i>	(Optional) Name of the explicit path.
	identifier <i>number</i>	(Optional) Number of the explicit path. Valid values are from 1 to 65535.
	detail	(Optional) Displays, in the long form, information about the configured IP explicit paths.

Command Modes	User EXEC Privileged EXEC
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines An IP explicit path is a list of IP addresses, each representing a node or link in the explicit path.

Examples The following is sample output from the **show ip explicit-paths** command:

```
Router# show ip explicit-paths

PATH 200 (strict source route, path complete, generation 6)
  1: next-address 3.3.28.3
  2: next-address 3.3.27.3
```

[Table 49](#) describes the significant fields displayed in the display.

Table 49 *show ip explicit-paths* Field Descriptions

Field	Description
PATH	Path name or number, followed by the path status.
1: next-address	First IP address in the path.
2: next-address	Second IP address in the path.

■ show ip explicit-paths

Related Commands	Command	Description
	append-after	Inserts a path entry after a specific index number. Commands might be renumbered as a result.
	index	Inserts or modifies a path entry at a specific index.
	ip explicit-path	Enters the subcommand mode for IP explicit paths so that you can create or modify the named path.
	list	Displays all or part of the explicit paths.
	next-address	Specifies the next IP address in the explicit path.

show ip flow export

To display the statistics for the data export, including the main cache and all other enabled caches, use the **show ip flow export** command in user EXEC or privileged EXEC mode.

show ip flow export [template]

Syntax Description	template	(Optional) Shows the data export statistics (such as template timeout and refresh rate) for the template-specific configurations.
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Command Modes	User EXEC Privileged EXEC
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Command History	Release	Modification
	11.1CC	This command was introduced.
	12.2(2)T	This command was modified to display multiple NetFlow export destinations.
	12.0(24)S	The template keyword was added.
	12.3(1)	This command was integrated into Cisco IOS Release 12.3(1).

Examples The following is sample output from the **show ip flow export** command:

```
Router# show ip flow export

Flow export v5 is enabled for main cache
  Exporting flows to 10.51.12.4 (9991) 10.1.97.50 (9111)
  Exporting using source IP address 9.1.97.17
  Version 5 flow records
  11 flows exported in 8 udp datagrams
  0 flows failed due to lack of export packet
  0 export packets were sent up to process level
  0 export packets were dropped due to no fib
  0 export packets were dropped due to adjacency issues
  0 export packets were dropped due to fragmentation failures
  0 export packets were dropped due to encapsulation fixup failures
  0 export packets were dropped enqueueing for the RP
  0 export packets were dropped due to IPC rate limiting
  0 export packets were dropped due to output drops
```

Table 50 describes the significant fields shown in the display.

Table 50 *show ip flow export Field Descriptions*

Field	Description
Exporting flows to 10.51.12.4 (9991) 10.1.97.50 (9111)	Specifies the export destinations and ports. The ports are in parentheses.
Exporting using source IP address 9.1.97.17	Specifies the source address or interface.
Version 5 flow records	Specifies the version of the flow.
11 flows exported in 8 udp datagrams	The total number of export packets sent, and the total number of flows contained within them.
0 flows failed due to lack of export packet	No memory was available to create an export packet.
0 export packets were sent up to process level	The packet could not be processed by CEF or by fast switching, possibly because another feature requires running on the packet.
0 export packets were dropped due to no fib	Indicates that CEF was unable to switch the packet or forward it up to the process level.
0 export packets were dropped due to adjacency issues	
0 export packets were dropped due to fragmentation failures	
0 export packets were dropped due to encapsulation fixup failures	Indicates that the packet was dropped because of problems constructing the IP packet.
0 export packets were dropped due to IPC rate limiting	
0 export packets were dropped due to output drops	Indicates that the send queue was full while the packet was being transmitted.

Related Commands

Command	Description
clear adjacency	Configures aggregation cache operational parameters.
exit-address-family	Leaves aggregation cache mode.
ip flow-aggregation cache	Enables aggregation cache configuration mode.

show ip mds forwarding

To display the Multicast Forwarding Information Base (MFIB) table and forwarding information for multicast distributed switching (MDS) on a line card, use the **show ip mds forwarding** command in user EXEC or privileged EXEC mode.

```
show ip mds forwarding [group-address] [source-address]
```

Syntax Description	
<i>group-address</i>	(Optional) Address of the IP multicast group for which to display the MFIB table.
<i>source-address</i>	(Optional) Address of the source of IP multicast packets for which to display the MFIB table.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.2(11)GS	This command was introduced.

Usage Guidelines Use this command on the line card. This command displays the MFIB table, forwarding information, and related flags and counts.



Note To reach the console for a line card, enter **attach slot#** (slot number where the line card resides).

On a GSR only, line card commands can be executed from the RP using the following syntax: **execute [slot slot-number | all] command**.

The *command* argument is any of the line card **show** commands, such as **show ip mds summary** and **show ip mds forward**.

Examples The following is sample output from the **show ip mds forwarding** command:

```
Router# show ip mds forwarding

IP multicast MDFS forwarding information and statistics:
Flags: N - Not MDFS switchable, F - Not all MDFS switchable, O - OIF Null
       R - In-ratelimit, A - In-access, M - MTU mismatch, P - Register set

Interface state: Interface, Next-Hop, Mac header

(*, 224.2.170.73),
  Incoming interface: Null
  Pkts: 0, last used: never, Kbps: 0, fast-flags: N
  Outgoing interface list: Null
```

show ip mds forwarding

```
(128.97.62.86, 224.2.170.73) [31]
  Incoming interface: Fddi3/0/0
  Pkts: 3034, last used: 00:00:00, Kbps: 0, fast-flags: M
  Outgoing interface list:
```

Table 51 describes the significant fields shown in the display.

Table 51 *show ip mds forwarding Field Descriptions*

Field	Description
(128.97.62.86, 224.2.170.73) [31])	Source and group addresses. The number in brackets is the hash bucket for the route.
Incoming interface:	Expected interface for a multicast packet from the source. If the packet is not received on this interface, it is discarded.
Pkts	Total number of packets switched by that entry.
last used:	Time when this MFIB entry was used to switch a packet.
Kbps:	Kilobits per second of the switched traffic.
Outgoing interface list:	Interfaces through which packets will be forwarded.

show ip mds interface

To display Multicast Distributed Switching (MDS) information for all the interfaces on the line card, use the **show ip mds interface** command in user EXEC or privileged EXEC mode.

```
show ip mds interface [vrf vrf-name]
```

Syntax Description	Field	Description
	vrf	(Optional) Supports the Multicast Virtual Private Network (VPN) routing/forwarding instance (VRF).
	<i>vrf-name</i>	(Optional) Name assigned to the VRF.

Command Modes	Mode
	User EXEC
	Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	11.2(11)GS	This command was integrated into Cisco IOS Release 11.2(11)GS.
	12.0(23)S	The vrf keyword and <i>vrf-name</i> argument were added.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

Examples

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

```
Router# show ip mds interface
```

```

Interface          SW-Index HW-Index HW IDB   FS Vector  VRF
Ethernet1/0/0      2         1         0x60C2DB40 0x602FB7A4 default
Ethernet1/0/1      3         2         0x60C32280 0x603D52B8 default
Ethernet1/0/2      4         3         0x60C35E40 0x602FB7A4 default
Ethernet1/0/3      5         4         0x60C39E60 0x603D52B8 default
Ethernet1/0/4      6         5         0x60C3D780 0x602FB7A4 default
Ethernet1/0/5      7         6         0x60C41140 0x602FB7A4 default
Ethernet1/0/6      8         7         0x60C453A0 0x602FB7A4 default
Ethernet1/0/7      9         8         0x60C48DC0 0x602FB7A4 default
POS2/0/0           10        9         0x0         default
POS3/0/0           11        10        0x0         default
Virtual-Access1    13        11        0x0         default
Loopback0          14        12        0x0         default
Tunnel0            15        23        0x61C2E480 0x603D52B8 vrf1
Tunnel1            16        24        0x61C267E0 0x603D52B8 vrf2
Ethernet1/0/3.1    17         4         0x60C39E60 0x603D52B8 vrf1
Ethernet1/0/3.2    18         4         0x60C39E60 0x603D52B8 vrf2

```

[Table 52](#) describes the significant fields shown in the display.

Table 52 *show ip mds interface Field Descriptions*

Field	Description
Interface	The specified interface.
SW-Index	Software index.
HW-Index	Hardware index.
HW IDB	Hardware interface description block.
VRF	VPN routing/forwarding instance.

show ip mds stats

To display switching statistics or line card statistics for multicast distributed switching (MDS), use the **show ip mds stats** command in user EXEC or privileged EXEC mode.

show ip mds stats [**switching** | **linecard**]

Syntax Description

switching	(Optional) Displays switching statistics.
linecard	(Optional) Displays line card statistics.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.2(11)GS	This command was introduced.

Usage Guidelines

Use this command on the Route Processor (RP).

Examples

The following is sample output from the **show ip mds stats** command used with the **switching** keyword:

```
Router# show ip mds stats switching
```

Slot	Total	Switched	Drops	RPF	Punts	Failures (switch/clone)
1	0	0	0	0	4	0/0
3	20260925	18014717	253	93	2247454	1/0

[Table 53](#) describes the significant fields in the display.

Table 53 *show ip mds stats switching Field Descriptions*

Field	Description
Slot	Slot number for the line card.
Total	Total number of packets received.
Switched	Total number of packets switched.
Drops	Total number of packets dropped.
RPF	Total number of packets that failed RPF lookup.
Punts	Total number of packets sent to the RP because the line card could not switch them.
Failures (switch/clone)	Times that the RP tried to switch but failed because of lack of resources or clone for the RSP only; failed to get a packet clone.

The following is sample output from the **show ip mds stats** command with the **linecard** keyword:

```
Router# show ip mds stats linecard
```

Slot	Status	IPC(seq/max)	Q(high/route)	Reloads
1	active	10560/10596	0/0	9
3	active	11055/11091	0/0	9

show ip mds summary

To display a summary of the MFIB table for multicast distributed switching (MDS), use the **show ip mds summary** command in user EXEC or privileged EXEC mode.

show ip mds summary

Syntax Description This command has no arguments or keywords.

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	11.2(11)GS	This command was introduced.

Usage Guidelines Use this command on a line card. On a GSR only, line card commands can be executed from the RP using the following syntax:

execute [*slot slot-number* | **all**] *command*

The *command* argument is any of the line card **show** commands, such as **show ip mds summary** and **show ip mds forward**.

Examples The following is sample output from the **show ip mds summary** command:

```
Router# show ip mds summary

IP multicast MDFS forwarding information and statistics:
Flags: N - Not MDFS switchable, F - Not all MDFS switchable, O - OIF Null
       R - In-ratelimit, A - In-access, M - MTU mismatch, P - Register set

Interface state: Interface, Next-Hop, Mac header

(*, 224.2.170.73),
  Incoming interface: Null
  Pkts: 0, last used: never, Kbps: 0, fast-flags: N
(128.97.62.86, 224.2.170.73) [31]
  Incoming interface: Fddi3/0/0
  Pkts: 3045, last used: 00:00:03, Kbps: 0, fast-flags: M
(128.223.3.7, 224.2.170.73) [334]
  Incoming interface: Fddi3/0/0
  Pkts: 0, last used: never, Kbps: 0, fast-flags: M
```

Table 54 describes the significant fields in the display.

Table 54 *show ip mds summary Field Descriptions*

Field	Description
(128.97.62.86, 224.2.170.73) [31]	Source and group addresses. The number in brackets is the hash bucket for the route.
Incoming interface	Expected interface for a multicast packet from the source. If the packet is not received on this interface, it is discarded.
Pkts	Total number of packets switched by that entry.
last used	Time when this MFIB entry was used to switch a packet.
Kbps	Kilobits per second of the switched traffic.

show ip ospf database opaque-area

To display lists of information related to traffic engineering opaque link-state advertisements (LSAs), also known as Type-10 opaque link area link states, use the **show ip ospf database opaque-area** command in user EXEC or privileged EXEC mode.

show ip ospf database opaque-area

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.0(8)S	This command was introduced.

Examples

The following is sample output from the **show ip ospf database opaque-area** command:

```
Router# show ip ospf database opaque-area

OSPF Router with ID (25.3.3.3) (Process ID 1)

          Type-10 Opaque Link Area Link States (Area 0)

LS age: 12
Options: (No TOS-capability, DC)
LS Type: Opaque Area Link
Link State ID: 1.0.0.0
Opaque Type: 1
Opaque ID: 0
Advertising Router: 24.8.8.8
LS Seq Number: 80000004
Checksum: 0xD423
Length: 132
Fragment number : 0

MPLS TE router ID: 24.8.8.8

Link connected to Point-to-Point network
Link ID : 26.2.2.2

Interface Address : 198.1.1.1
```

[Table 55](#) describes the significant fields displayed in the display.

Table 55 *show ip ospf database opaque-area Field Descriptions*

Field	Description
LS age	Link-state age.
Options	Type of service options.

Table 55 *show ip ospf database opaque-area Field Descriptions (continued)*

Field	Description
LS Type	Type of the link state.
Link State ID	Router ID number.
Opaque Type	Opaque link-state type.
Opaque ID	Opaque LSA ID number.
Advertising Router	Advertising router ID.
LS Seq Number	Link-state sequence number that detects old or duplicate link state advertisements (LSAs).
Checksum	Fletcher checksum of the complete contents of the LSA.
Length	Length (in bytes) of the LSA.
Fragment number	Arbitrary value used to maintain multiple traffic engineering LSAs.
MPLS TE router ID	Unique MPLS traffic engineering ID.
Link ID	Index of the link being described.
Interface Address	Address of the interface.

Related Commands

Command	Description
mpls traffic-eng area	Configures a router running OSPF MPLS to flood traffic engineering for an indicated OSPF area.
mpls traffic-eng router-id	Specifies that the traffic engineering router identifier for the node is the IP address associated with a given interface.
show ip ospf mpls traffic-eng	Provides information about the links available on the local router for traffic engineering.

show ip ospf mpls traffic-eng

To display information about the links available on the local router for traffic engineering, use the **show ip ospf mpls traffic-eng** command in user EXEC or privileged EXEC mode.

```
show ip ospf [process-id [area-id] mpls traffic-eng [link] | [fragment]]
```

Syntax Description

process-id	(Optional) Internal identification number that is assigned locally when the OSPF routing process is enabled. The value can be any positive integer.
area-id	(Optional) Area number associated with the OSPF
link	(Optional) Provides detailed information about the links over which traffic engineering is supported on the local router.
fragment	(Optional) Provides detailed information about the traffic engineering fragments on the local router.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
Release 12.0 S	This command was introduced.

Examples

The following is sample output from the **show ip ospf mpls traffic-eng** command:

```
Router# show ip ospf mpls traffic-eng link

OSPF Router with ID (23.0.0.1) (Process ID 1)

Area 0 has 2 MPLS TE links. Area instance is 14.

Links in hash bucket 8.
Link is associated with fragment 1. Link instance is 14
Link connected to Point-to-Point network
Link ID :197.0.0.1
Interface Address :66.0.0.1
Neighbor Address :66.0.0.2
Admin Metric :97
Maximum bandwidth :128000
Maximum reservable bandwidth :250000
Number of Priority :8
Priority 0 :250000      Priority 1 :250000
Priority 2 :250000      Priority 3 :250000
Priority 4 :250000      Priority 5 :250000
Priority 6 :250000      Priority 7 :212500
Affinity Bit :0x0
Link is associated with fragment 0. Link instance is 14
Link connected to Broadcast network
Link ID :195.1.1.2
Interface Address :195.1.1.1
Neighbor Address :195.1.1.2
Admin Metric :10
```

```
show ip ospf mpls traffic-eng
```

```

Maximum bandwidth :1250000
Maximum reservable bandwidth :2500000
Number of Priority :8
Priority 0 :2500000      Priority 1 :2500000
Priority 2 :2500000      Priority 3 :2500000
Priority 4 :2500000      Priority 5 :2500000
Priority 6 :2500000      Priority 7 :2500000
Affinity Bit :0x0

```

Table 56 describes the significant fields shown in the display.

Table 56 *show ip ospf mpls traffic-eng Field Descriptions*

Field	Description
OSPF Router with ID	Router identification number.
Process ID	OSPF process identification.
Area instance	Number of times traffic engineering information or any link changed.
Link instance	Number of times any link changed.
Link ID	Link-state ID.
Interface Address	Local IP address on the link.
Neighbor Address	IP address that is on the remote end of the link.
Admin Metric	Traffic engineering link metric.
Maximum bandwidth	Bandwidth set by the bandwidth interface interface configuration command.
Maximum reservable bandwidth	Bandwidth available for traffic engineering on this link. This value is set in the ip rsvp interface configuration command.
Number of priority	Number of priorities that are supported.
Priority	Bandwidth (in bytes per second) that is available for traffic engineering at certain priorities.
Affinity Bit	Affinity bits (color) assigned to the link.

show ip protocols vrf

To display the routing protocol information associated with a Virtual Private Network (VPN) routing/forwarding instance (VRF), use the **show ip protocols vrf** command in user EXEC or privileged EXEC mode.

show ip protocols vrf *vrf-name*

Syntax Description	<i>vrf-name</i>	Name assigned to a VRF.
Command Modes	User EXEC Privileged EXEC	
Command History	Release	Modification
	12.0(5)T	This command was introduced.

Usage Guidelines Use this command to display routing information associated with a VRF.

Examples The following example shows information about a VRF named vpn1:

```
Router# show ip protocols vrf vpn1

Routing Protocol is "bgp 100"
  Sending updates every 60 seconds, next due in 0 sec
  Outgoing update filter list for all interfaces is
  Incoming update filter list for all interfaces is
  IGP synchronization is disabled
  Automatic route summarization is disabled
  Redistributing:connected, static
  Routing for Networks:
  Routing Information Sources:
    Gateway         Distance      Last Update
    10.13.13.13      200           02:20:54
    10.18.18.18      200           03:26:15
  Distance:external 20 internal 200 local 200
```

Table 57 describes the significant fields shown in the display.

Table 57 *show ip protocols vrf Field Descriptions*

Field	Description
Gateway	Displays the IP address of the router identifier for all routers in the network.
Distance	Displays the metric used to access the destination route.
Last Update	Displays the last time the routing table was updated from the source.

Related Commands

Command	Description
show ip vrf	Displays the set of defined VRFs and associated interfaces.

show ip route vrf

To display the IP routing table associated with a Virtual Private Network (VPN) routing/forwarding instance (VRF), use the **show ip route vrf** command in user EXEC or privileged EXEC mode.

```
show ip route vrf vrf-name [connected] [protocol [as-number] [tag] [output-modifiers]] [ip-prefix]
[list number [output-modifiers]] [profile] [static [output-modifiers]] [summary
[output-modifiers]] [supernets-only [output-modifiers]]
```

Syntax Description

<i>vrf-name</i>	Name assigned to the VRF.
connected	(Optional) Displays all connected routes in a VRF.
<i>protocol</i>	(Optional) To specify a routing protocol, use one of the following keywords: bgp , egp , eigrp , hello , igrp , isis , ospf , or rip .
<i>as-number</i>	(Optional) Autonomous system number.
<i>tag</i>	(Optional) Cisco IOS routing area label.
<i>output-modifiers</i>	(Optional) For a list of associated keywords and arguments, use context-sensitive help.
<i>ip-prefix</i>	(Optional) Specifies a network to display.
list number	(Optional) Specifies the IP access list to display.
profile	(Optional) Displays the IP routing table profile.
static	(Optional) Displays static routes.
summary	(Optional) Displays a summary of routes.
supernets-only	(Optional) Displays supernet entries only.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.0(5)T	This command was introduced.
12.2(2)T	The <i>ip-prefix</i> argument was added. The output from the show ip route vrf vrf-name ip-prefix command was enhanced to display information on the multipaths to the specified network.

Usage Guidelines

This command displays specified information from the IP routing table of a VRF.

Examples

This example shows the IP routing table associated with the VRF named vrf1:

```
Router# show ip route vrf vrf1

Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
       U - per-user static route, o - ODR
       T - traffic engineered route

Gateway of last resort is not set

B    51.0.0.0/8 [200/0] via 10.13.13.13, 00:24:19
C    50.0.0.0/8 is directly connected, Ethernet1/3
B    11.0.0.0/8 [20/0] via 10.0.0.1, 02:10:22
B    12.0.0.0/8 [200/0] via 10.13.13.13, 00:24:20
```

This example shows BGP entries in the IP routing table associated with the VRF named vrf1:

```
Router# show ip route vrf vrf1 bgp

B 51.0.0.0/8 [200/0] via 10.13.13.13, 03:44:14
B 11.0.0.0/8 [20/0] via 51.0.0.1, 03:44:12
B 12.0.0.0/8 [200/0] via 10.13.13.13, 03:43:14
```

This example shows the IP routing table associated with a VRF named PATH and network 10.22.22.0:

```
Router# show ip route vrf PATH 10.22.22.0

Routing entry for 10.22.22.0/24
  Known via "bgp 1", distance 200, metric 0
  Tag 22, type internal
  Last update from 10.22.5.10 00:01:07 ago
  Routing Descriptor Blocks:
  * 1.22.7.8 (Default-IP-Routing-Table), from 1.11.3.4, 00:01:07 ago
    Route metric is 0, traffic share count is 1
    AS Hops 1
  1.22.1.9 (Default-IP-Routing-Table), from 1.11.1.2, 00:01:07 ago
    Route metric is 0, traffic share count is 1
    AS Hops 1
  1.22.6.10 (Default-IP-Routing-Table), from 1.11.6.7, 00:01:07 ago
    Route metric is 0, traffic share count is 1
    AS Hops 1
  1.22.4.10 (Default-IP-Routing-Table), from 1.11.4.5, 00:01:07 ago
    Route metric is 0, traffic share count is 1
    AS Hops 1
  1.22.5.10 (Default-IP-Routing-Table), from 1.11.5.6, 00:01:07 ago
    Route metric is 0, traffic share count is 1
    AS Hops 1
```

[Table 60](#) describes the significant fields shown when using the `show ip route vrf vrf-name ip-prefix` command.

Table 58 *show ip route vrf Field Descriptions*

Field	Description
Routing entry for 10.22.22.0/24	Network number.
Known via ...	Indicates how the route was derived.
distance	Administrative distance of the information source.

Table 58 show ip route vrf Field Descriptions (continued)

Field	Description
metric	The metric to reach the destination network.
Tag	Integer that is used to implement the route.
type	Indicates that the route is a L1 type or L2 type route.
Last update from 10.22.5.10	Indicates the IP address of a router that is the next hop to the remote network and the router interface on which the last update arrived.
hh:mm:ss ago	Specifies the last time the route was updated (in hours:minutes:seconds).
Routing Descriptor Blocks:	Displays the next hop IP address followed by the information source.
<i>ip-address</i> , from <i>ip-address</i> , <i>hh:mm:ss</i> ago	Indicates the next hop address, the address of the gateway that sent the update, and the time that has elapsed since this update was received (in hours:minutes:seconds).
Route metric	This value is the best metric for this routing descriptor block.
traffic share count	Number of uses for this routing descriptor block.
AS Hops	Number of hops to the destination or to the router where the route first enters iBGP.

Related Commands

Command	Description
show ip cache	Displays the CEF forwarding table associated with a VRF.
show ip vrf	Displays the set of defined VRFs and associated interfaces.

show ip rsvp host

To display Resource Reservation Protocol (RSVP) terminal point information for receivers or senders, use the **show ip rsvp host** command in user EXEC or privileged EXEC mode.

show ip rsvp host {**senders** | **receivers**} [*hostname* | *A.B.C.D*]

Syntax Description

senders	Displays information for senders.
receivers	Displays information for receivers.
<i>hostname</i>	(Optional) Restricts the display to sessions with <i>hostname</i> as their destination.
<i>A.B.C.D</i>	(Optional) Restricts the display to sessions with the specified IP address as their destination.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.0(5)S	This command was introduced.

Examples

The following is sample output from the **show ip rsvp host receivers** command:

```
Router# show ip rsvp host receivers
```

```
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
10.0.0.11   10.1.0.4       0   10011 1                SE  LOAD 100K 1K
```

[Table 59](#) describes the significant fields shown in the display.

Table 59 *show ip rsvp host Field Descriptions*

Field	Description
To	IP address of the receiver.
From	IP address of the sender.
Pro	Protocol code.
DPort	Destination port number.
Sport	Source port number.
Next Hop	IP address of the next hop.
I/F	Interface of the next hop.
Fi	Filter (wild card, shared explicit, or fixed).
Serv	Service (RATE or LOAD).

Table 59 *show ip rsvp host Field Descriptions (continued)*

Field	Description
BPS	Reservation rate (in bits per second).
Bytes	Bytes of requested burst size.

Related Commands

Command	Description
show ip rsvp request	Displays the RSVP reservations currently being requested upstream for a specified interface or all interfaces.
show ip rsvp reservation	Displays RSVP-related receiver information currently in the database.
show ip rsvp sender	Displays RSVP-related sender information currently in the database.

show ip vrf

To display the set of defined Virtual Private Network (VPN) routing/forwarding instances (VRFs) and associated interfaces, use the **show ip vrf** command in privileged EXEC mode.

```
show ip vrf [brief | detail | interfaces | id] [vrf-name] [output-modifiers]
```

Syntax	Description
brief	(Optional) Displays concise information on the VRFs and associated interfaces.
detail	(Optional) Displays detailed information on the VRFs and associated interfaces.
interfaces	(Optional) Displays detailed information about all interfaces bound to a particular VRF or any VRF.
id	(Optional) Displays the VPN IDs that are configured in a PE router for different VPNs.
<i>vrf-name</i>	(Optional) Name assigned to a VRF.
<i>output-modifiers</i>	(Optional) For a list of associated keywords and arguments, use context-sensitive help.

Defaults When no keywords or arguments are specified, the command shows concise information about all configured VRFs.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced.
	12.0(17)ST	This command was modified to include the id keyword, and VPN ID information was added to the output of the show ip vrf detail command.
	12.2(4)B	This command was integrated into Cisco IOS Release 12.2(4)B.
	12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines Use this command to display information about VRFs. Two levels of detail are available; use the **brief** keyword or no keyword to display concise information, or use the **detail** keyword to display all information. To display information about all interfaces bound to a particular VRF, or to any VRF, use the **interfaces** keyword. To display information about VPN IDs assigned to a PE router, use the **id** keyword.

Examples

The following example shows brief information for the VRFs currently configured:

```
Router# show ip vrf

Name                Default RD          Interfaces
vrf1                100:1              Ethernet1/3
vrf2                100:2              Ethernet0/3
```

Table 60 describes the fields shown in the display.

Table 60 *show ip vrf Field Descriptions*

Field	Description
Name	Specifies the VRF name.
Default RD	Specifies the default route distinguisher.
Interfaces	Specifies the network interfaces.

The following example shows detailed information for the VRF called vrf1:

```
Router# show ip vrf detail vrf1

VRF vrf1; default RD 100:1 default VPNID A1:3F6C
Interfaces:
 Ethernet1/3
Connected addresses are in global routing table
Export VPN route-target communities
 RT:100:1
Import VPN route-target communities
 RT:100:1
No import route-map
```

Table 61 describes the fields shown in the display.

Table 61 *show ip vrf detail Field Descriptions*

Field	Description
VPNID	Specifies the VPN ID assigned to the VRF.
Interfaces	Specifies the network interfaces.
Export	Specifies VPN route-target export communities.
Import	Specifies VPN route-target import communities.

The following example shows the interfaces bound to a particular VRF:

```
Router# show ip vrf interfaces

Interface      IP-Address      VRF          Protocol
Ethernet2     130.22.0.33    blue_vrf     up
Ethernet4     130.77.0.33    hub          up
Router#
```

Table 62 describes the significant fields shown in the display.

Table 62 *show ip vrf interfaces Field Descriptions*

Field	Description
Interface	Specifies the network interfaces for a VRF.
IP-Address	Specifies the IP address of a VRF interface.
VRF	Specifies the VRF name.
Protocol	Displays the state of the protocol (up or down) for each VRF interface.

The following is sample output that shows all the VPN IDs that are configured in the router and their associated VRF names and VRF route distinguishers (RDs):

```
Router# show ip vrf id
VPN Id      Name      RD
2:3        vpn2     <not set>
A1:3F6C    vpn1     100:1
```

Table 63 describes the significant fields shown in the display.

Table 63 *show ip vrf id Field Descriptions*

Field	Description
VPN ID	Specifies the VPN ID assigned to the VRF.
Name	Specifies the VRF name.
RD	Specifies the route distinguisher.

Related Commands

Command	Description
import map	Configures an import route map for a VRF.
ip vrf	Configures a VRF routing table.
ip vrf forwarding (interface configuration)	Associates a VRF with an interface or subinterface.
rd	Creates routing and forwarding tables for a VRF.
route-target	Creates a route-target extended community for a VRF.
vpn id	Assigns a VPN ID to a VRF.