Cisco IOS XR Netflow Command Reference for the Cisco CRS Router, Release 4.1

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Preface

The *Cisco IOS XR Netflow Command Reference for the Cisco CRS Router* preface contains these sections:

Changes to This Document

This table lists the technical changes made to this document since it was first printed

Table 1: Changes to This Document

Revision	Date	Change Summary
OL-24715-01	April 2011	Initial release of this document.

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NetFlow Commands on the Cisco IOS XR Software

This module provides command line interface (CLI) commands for configuring NetFlow on the Cisco CRS Router.

cache entries

To configure the number of entries in the monitor map flow cache, enter the **cache entries** command in flow monitor map configuration mode. To remove a configured number of entries and return the cache to the default configuration, use the **no** form of this command.

cache entries *number*

no cache entries *number*

Syntax Description

number	Number of entries in the flow cache. Replace the *number* argument with the number of flow entries allowed in the flow cache. Range is from 4096 through 1000000.

Command Default

number : 65535

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the number of entries in the monitor map flow cache to be 10000:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# cache entries 10000
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map

Command	Description
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

cache permanent

To disable the removal of entries from the monitor map flow cache, enter the **cache permanent** command in flow monitor map configuration mode. To re-enable the removal of entries from the flow cache, use the **no** form of this command.

cache permanent

no cache permanent

Syntax Description

This command has no arguments or keywords.

Command Default

The removal of entries from the monitor map flow cache is enabled.

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to disable the removal of entries from the monitor map flow cache:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)#flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# cache permanent
```

The following example shows how to re-enable the removal of entries from the monitor map flow cache:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# no cache permanent
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

cache timeout

To configure the active, inactive, and update flow cache timeout, enter the **cache timeout** command in flow monitor map configuration mode. To remove the configured timeout value and return the cache to its default timeout value, use the **no** form of this command.

cache timeout {**active| inactive| update**} *timeout_value*

no cache timeout {**active| inactive| update**} *timeout_value*

Syntax Description

active	Specifies the active flow timeout.
inactive	Specifies the inactive flow timeout.
update	Specifies the update timeout.
timeout_value	Timeout value for the specified keyword (**active** , **inactive** , or **update**), in seconds. Range is from 1 through 604800.

Command Default

For active timeout, the default value is 1800 seconds.

For inactive timeout, the default value is 15 seconds.

For update timeout, the default value is 1800 seconds.

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Note The **inactive** timeout value should be smaller than the **active** timeout value. The **update** keyword is used for permanent caches only. It specifies the timeout value that is used to export entries from permanent caches. In this case, the entries are exported but remain the cache.

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to set the active timeout for the monitor map cache to 200,000 seconds:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# cache timeout active 200000
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

clear flow exporter

To export flow exporter templates to the collector or restart the flow exporter statistics collector, enter the **clear flow exporter** command in EXEC mode.

clear flow exporter [*fem-name*] {**restart**| **statistics**} **location** *node-id*

Syntax Description

fem-name	(Optional) Flow exporter name.
restart	Exports all of the current templates to the collector.
statistics	Clears the exporter statistics.
location *node-id*	Identifies the node whose flow exporter statistics you want to clear, or whose flow exporter statistics collector you want to restart. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
basic-services	read, write
netflow	read, write

Examples

The following example exports all templates to the collector:

```
RP/0/RP0/CPU0:router# clear flow exporter restart location 0/0/SP
Restart exporter all locations. Continue? [confirm]
```

The following example shows how to clear flow exporter statistics on a specific node:

```
RP/0/RP0/CPU0:router# clear flow exporter statistics location 0/0/CPU0
Clear statistics for all exporters on the location. Continue? [confirm]
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
show flow exporter, page 38	Displays flow exporter data

clear flow monitor

To clear the flow monitor data, enter the **clear flow monitor** command in EXEC mode.

clear flow monitor [*name*] **cache** [**force-export**| **statistics**] **location** *node-id*

Syntax Description

name	(Optional) Identifies a specific cache you want to clear.
cache	Clears all cache related information.
force-export	(Optional) Forces the export of flow records on flushing the cache on the specified node.
statistics	(Optional) Clears cache statistics on a specific node.
location *node-id*	Node whose flow monitor you want to clear. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to clear the cache-related flow records on a specific node:

```
RP/0/RP0/CPU0:router# clear flow monitor cache force-export location 0/0/CPU0
Clear cache entries for this monitor on this location. Continue? [confirm]
```

Related Commands

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow monitor-map, page 65	Displays flow monitor map data.

clear flow platform producer statistics location

To clear statistics collected by the NetFlow producer, use the **clear flow platform producer statistics location** command in EXEC mode.

clear flow platform producer statistics location *node-id*

Syntax Description

node-id	Node on which to clear statistics collected by the NetFlow producer. The *node-id* is expressed in the *rack/slot/module* notation. **Note** Enter the **show platform** command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to clear statistics collected by the NetFlow producer:

```
RP/0/RP0/CPU0:router# clear flow platform producer statistics location 0/0/CPU0
```

destination

To configure the collector export destination, enter the **destination** command in flow exporter map configuration mode. To remove a configured export destination, use the **no** form of this command.

destination *hostname_or_IP_address*

no destination *hostname_or_IP_address*

Syntax Description

hostname_or_IP_address	Export destination for the current flow exporter map. Enter the hostname or destination IP address in the *A.B.C.D* format.

Command Default

No default behavior or values

Command Modes

Flow exporter map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.4.0	This command was moved to the flow exporter map configuration mode.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the flow exporter map export destination to be a specific IP address:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# destination 172.18.189.38
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data

dscp

To configure the differentiated services codepoint (DSCP) value for export packets, enter the **dscp** command in flow exporter map configuration mode. To remove a configured DSCP value, use the **no** form of this command.

dscp *dscp_value*

no dscp *dscp_value*

Syntax Description

dscp_value	Specifies the DSCP value for export packets. Replace *dscp_value* with a number. Range is from 0 through 63.

Command Default

No default behavior or values

Command Modes

Flow exporter map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.4.0	This command was moved to the flow exporter map configuration mode.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the DSCP value for export packets to be 30:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# dscp 30
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data

exporter

To associate a flow exporter map with the current flow monitor map, enter the **exporter** command in flow monitor map configuration mode. To remove an associated flow exporter map from a flow monitor map, use the **no** form of this command.

exporter *map_name*

no exporter *map_name*

Syntax Description

map_name	Name of the flow exporter map you want to associate with the current flow monitor map. The exporter map name can be a maximum of 32 characters. **Note** A single flow monitor map supports up to 8 exporters.

Command Default

No default behavior or values

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.4.0	NetFlow was updated so that a single flow monitor map supports up to 8 exporters.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to associate a flow exporter map called “fem_1” with the current flow monitor map:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# exporter fem_1
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

flow

To specify a flow monitor map and a sampler map for the packets on an interface, enter the **flow** command in interface configuration mode.

flow [**ipv4**| **ipv6**| **mpls**] **monitor** *name* **sampler** *name* {**egress**| **ingress**}

Syntax Description

ipv4	Enables IPV4 NetFlow on the specified interface.
ipv6	Enables IPV6 NetFlow on the specified interface.
mpls	Enables Multiprotocol Label Switching (MPLS)-aware NetFlow on the specified interface.
monitor *name*	Specifies the name of the flow monitor map you want to specify for IPv4, IPv6, or MPLS packets.
sampler *name*	Name of the sampler map you want to apply to the flow monitor map.
egress	Applies the flow monitor map on outgoing packets.
ingress	Applies the flow monitor map on incoming packets.

Command Default

No default behavior or values

Command Modes

Interface configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.1	The **mpls** keyword was added to the **flow** command to support MPLS-aware NetFlow.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to enable IPV4 NetFlow on a GigabitEthernet interface, and then apply the flow monitor map, named “map1,” on outgoing IPv4 packets:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface GigabitEthernet 0/4/0/0
RP/0/RP0/CPU0:router(config-if)# flow ipv4 monitor map1 sampler smap1 egress
```

The following example shows how to enable MPLS NetFlow on a GigabitEthernet interface, and apply the flow monitor map, named “map_mpls1,” on outgoing MPLS packets:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface gigabit Ethernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow mpls monitor map_mpls1 sampler smap1 egress
```

Related Commands

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow monitor-map, page 65	Displays flow monitor map data.

flow exporter-map

To create a flow exporter map and enter flow exporter map configuration mode, use the **flow exporter-map** command in global configuration mode. To remove a configured flow exporter map, use the **no** form of this command.

flow exporter-map *fem-name*

no flow exporter-map *fem-name*

Syntax Description

fem-name	Creates a new exporter map name, or specifies the name of an existing exporter map.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

When you issue the **flow exporter-map** *fem-name* command in global configuration mode, the CLI prompt changes to "config-fem," indicating that you have entered the flow exporter map configuration submode. In the following sample output, the question mark (**?**) online help function displays all the commands available under flow exporter map configuration submode:

```
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# ?

RP/0/RP0/CPU0:routerNetflow-R4(config-fem)#?
  clear        Clear the uncommitted configuration
  commit       Commit the configuration changes to running
  describe     Describe a command without taking real actions
  destination  Export destination configuration
  do           Run an exec command
  dscp         Specify DSCP value for export packets
  exit         Exit from this submode
  no           Negate a command or set its defaults
  pwd          Commands used to reach current submode
  root         Exit to the global configuration mode
  show         Show contents of configuration
  source       Source interface
  transport    Specify the transport protocol for export packets
  version      Specify export version parameters
```

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to create a flow exporter map called “map1,” and then enter the flow exporter map configuration submode for that map:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)#
```

Related Commands

Command	Description
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data

flow monitor-map

To create and configure a flow monitor map and enter flow monitor map configuration submode, use the **flow monitor-map** command in global configuration mode. To remove a configured flow monitor map, use the **no** form of this command:

flow monitor-map *map_name*

no flow monitor-map *map_name*

Syntax Description

map_name	New monitor map name, or specifies the name of an existing monitor map. The monitor map name can be a maximum 32 characters.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.4.0	NetFlow was updated so that a single flow monitor map supports up to 8 exporters.

Usage Guidelines

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

When you issue the **flow monitor-map** *map_name* command in global configuration mode, the CLI prompt changes to "config-fmm," indicating that you have entered the flow monitor map configuration submode. In the following sample output, the question mark (**?**) online help function displays all the commands available under flow monitor map configuration submode:

```
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)#?

  cache     Specify flow cache attributes
  clear     Clear the uncommitted configuration
  commit    Commit the configuration changes to running
  describe  Describe a command without taking real actions
  do        Run an exec command
  exit      Exit from this submode
  exporter  Specify flow exporter map name
  no        Negate a command or set its defaults
  pwd       Commands used to reach current submode
  record    Specify a flow record map name
  root      Exit to the global configuration mode
  show      Show contents of configuration
```

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to enter flow monitor map configuration mode for a monitor map called "map1:"

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)#
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow, page 20	Specifies a flow monitor map
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

options

To export the tables in the options template and specify export timeout values, enter the **options** command in flow exporter map version configuration mode. To return the options template to its default configuration values, use the **no** form of this command.

options {**interface-table**| **sampler-table**} [**timeout** *seconds*]

no options {**interface-table**| **sampler-table**} [**timeout** *seconds*]

Syntax Description

interface-table	Export the interface table.
sampler-table	Exports the sampler table.
timeout *seconds*	Specifies the export timeout value. Replace *seconds* with the export timeout value. Range is from 1 through 604800 seconds.

Command Default

Without options command, the default value for timeout is 0 seconds, which means that the template options are not exported by default. Where as when options command is used without mentioning any timeout, default timeout is 1800 seconds.

Command Modes

Flow exporter map version configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following is sample output after setting to export the interface table and configure the export timeout value:

```
RP/0/RP0/CPU0:router(config-fem-ver)# show running-config flow exporter-map f1
flow exporter-map f1
 version v9
 !
 transport udp 9321
```

```
 source FastEthernet0/4/3/0
 destination 10.64.81.237
!

RP/0/RP0/CPU0:router(config-fem-ver)# do show flow exporter-map f1

Flow Exporter Map : f1
-------------------------------------------------
Id                  : 21
DestinationIpAddr   : 10.64.81.237
SourceIfName        : FastEthernet0/4/3/0
SourceIpAddr        : 0.0.0.0
DSCP                : 0
TransportProtocol   : UDP
TransportDestPort   : 9321

Export Version: 9
  Common Template Timeout : 1800 seconds
  Options Template Timeout : 1800 seconds
  Data Template Timeout : 1800 seconds
  Interface-Table Export Timeout : 0 seconds
  Sampler-Table Export Timeout : 0 seconds

RP/0/RP0/CPU0:router(config-fem-ver)# do sh running-config flow exporter-map $
flow exporter-map f1
 version v9
  options interface-table
  options sampler-table
 !
 transport udp 9321
 source FastEthernet0/4/3/0
 destination 10.64.81.237
!
RP/0/RP0/CPU0:router(config-fem-ver)# show flow exporter-map f1

Flow Exporter Map : f1
-------------------------------------------------
Id                  : 21
DestinationIpAddr   : 10.64.81.237
SourceIfName        : FastEthernet0/4/3/0
SourceIpAddr        : 0.0.0.0
DSCP                : 0
TransportProtocol   : UDP
TransportDestPort   : 9321

Export Version: 9
  Common Template Timeout : 1800 seconds
  Options Template Timeout : 1800 seconds
  Data Template Timeout : 1800 seconds
  Interface-Table Export Timeout : 1800 seconds
  Sampler-Table Export Timeout : 1800 seconds
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data

random 1 out-of

To configure the packet sampling interval for a monitor map, use the **random 1 out-of** command in sampler map configuration submode. To remove a configured sampling interval and return to the default sampling interval, use the **no** form of this command. The limit of sampling rate values per line card per direction is 4, and limit of total samplers per line card per direction is 16.

random 1 out-of *number_of_packets*

no random 1 out-of *number_of_packets*

Syntax Description

number_of_packets	Sampling interval in units of packets. Replace the *number_of_packets* argument with a number. Range is from 1 through 65535 units.

Command Default

There is no default value to *number_of_packets* . However, for optimal performance, the recommended value for *number_of_packets* is 10000.

Command Modes

Sampler map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the sampler map to randomly sample 1 out of every 10 packets:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# sampler map1
RP/0/RP0/CPU0:router(config-sm)# random 1 out-of 10
```

record ipv4

To activate an IPv4 flow record, use the **record ipv4** command in flow monitor map configuration mode. To deactivate the flow record, use the **no** form of this command.

record ipv4 [**peer-as**| **destination**]

no record ipv4

Syntax Description

peer-as	Records peer AS.The Border Gateway Protocol (BGP) AS is not collected unless the **bgp attribute download** command is configured.
destination	Records IPv4 destination based NetFlow accounting.

Command Default

The default is that no IPv4 flow record is enabled.

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 4.0.1	The **destination** keyword was added to support destination-based Netflow accounting.

Usage Guidelines

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

The BGP AS is not collected unless the **bgp attribute download** command is configured.

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure an IPv4 flow record:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# record ipv4
```

The following example shows how to configure an IPv4 flow record for destination-based NetFlow accounting:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# record ipv4 destination
RP/0/RP0/CPU0:router(config-fmm)# exit
RP/0/RP0/CPU0:router(config)# interface Gigabit Ethernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow ipv4 monitor monitor1 ingress
RP/0/RP0/CPU0:router(config-if)# end
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
record ipv6, page 31	Configures the flow record map name for IPv6
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.
bgp attribute download	

record ipv6

To configure the flow record map name for IPv6, use the **record ipv6** command in flow monitor map configuration mode. To remove the configured name from a flow record, use the **no** form of this command.

record ipv6 [peer-as]

no record ipv6

Syntax Description

peer-as	Records peer AS.

Command Default

The default is that originating AS numbers are recorded.

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 4.0.1	The **peer-as** keyword as added to support collection of NetFlow BGP routing attributes for IPv6 traffic.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

This example shows how to configure the flow record map name for IPv6:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# record ipv6
```

This example shows how to configure the peer-as to collect and export the IPv6 peer AS numbers:

```
RP/0/RP0/CPU0:router#configure
RP/0/RP0/CPU0:router(config)#flow monitor-map IPv6-peer
RP/0/RP0/CPU0:router(config-fmm)#record ipv6 peer-as
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
record ipv4, page 29	Activates an IPv4 flow record
show flow monitor, page 44	Displays flow monitor cache data in various formats.
show flow monitor-map, page 65	Displays flow monitor map data.

record mpls

To configure the flow record map name for MPLS, use the **record mpls** command in flow monitor map configuration mode. To remove the configured name from a flow record, use the **no** form of this command.

record mpls [ipv4-fields] [ipv6-fields] [ipv4-ipv6-fields] [**labels** *number*]

no record mpls [ipv4-fields] [ipv6-fields] [ipv4-ipv6-fields] [**labels** *number*]

Syntax Description

ipv4-fields	(Optional) Collects IPv4 fields in the MPLS-aware Netflow when the payload of the MPLS packet has IPv4 fields. It also collects MPLS traffic with no IPv4 payload, but the IPv4 fields are set to zero.
ipv6-fields	(Optional) Collects IPv6 fields in the MPLS-aware Netflow when the payload of the MPLS packet has IPv6 fields. It also collects MPLS traffic with no IPv6 payload, but the IPv6 fields are set to zero.
ipv4-ipv6-fields	(Optional) Collects IPv4 and IPv6 fields in the MPLS-aware Netflow when the payload of the MPLS packet has either IPv4 fields or IPv6 fields. It also collects MPLS traffic with no IPv4 or IPv6 payload, but those fields are set to zero.
labels *number*	(Optional) Configures the number of labels that are used in hashing. The *number* argument is the number of labels that are used in hashing. The range is from 1 to 6.

Command Default

The default is no IPV4 fields and six labels.

Command Modes

Flow monitor map configuration

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	IPv6 and IPv4-IPv6 fields were added.

Usage Guidelines

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

In Cisco IOS XR software, you can have only one MPLS flow monitor running on an interface at a time. If you apply an additional MPLS flow monitor to the interface, the new flow monitor overwrites the existing one.

You can configure the MPLS flow monitor to collect IPv4 fields, IPv6 fields, or both types of fields.

Task ID

Task ID	Operations
netflow	read, write

Examples

The following configuration allows you to collect only MPLS fields. No payload information is collected.

```
RP/0/RP0/CPU0:router(config)# flow monitor-map MPLS-fmm
RP/0/RP0/CPU0:router(config-fmm)# record mpls labels 3
RP/0/RP0/CPU0:router(config-fmm)# cache permanent
RP/0/RP0/CPU0:router(config)# exit
RP/0/RP0/CPU0:router(config)# interface Gigabit Ethernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow mpls monitor MPLS-fmm sampler fsm ingress
```

The following configuration allows you to collect MPLS traffic with IPv4 fields. It also collects MPLS traffic with no IPv4 payload, but the IPv4 fields are set to zero.

```
RP/0/RP0/CPU0:router(config)# flow monitor-map MPLS-IPv4-fmm
RP/0/RP0/CPU0:router(config-fmm)# record mpls IPv4-fields labels 3
RP/0/RP0/CPU0:router(config-fmm)# cache permanent
RP/0/RP0/CPU0:router(config-fmm)# exit
RP/0/RP0/CPU0:router(config)# interface gigabitEthernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow mpls monitor MPLS-IPv4-fmm sampler fsm ingress
```

The following configuration allows you to collect MPLS traffic with IPv6 fields. It also collects MPLS traffic with no IPv6 payload, but the IPv6 fields are set to zero.

```
RP/0/RP0/CPU0:router(config)# flow monitor-map MPLS-IPv6-fmm
RP/0/RP0/CPU0:router(config-fmm)# record mpls IPv6-fields labels 3
RP/0/RP0/CPU0:router(config-fmm)# cache permanent
RP/0/RP0/CPU0:router(config-fmm)# exit
RP/0/RP0/CPU0:router(config)# interface gigabitEthernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow mpls monitor MPLS-IPv6-fmm sampler fsm ingress
```

The following configuration allows you to collect MPLS traffic with both IPv6 and IPv4 fields. It also collects MPLS traffic with no IPv4 or IPv6 payload, but those fields are set to zero.

```
RP/0/RP0/CPU0:router(config)# flow monitor-map MPLS-IPv4-IPv6-fmm
RP/0/RP0/CPU0:router(config-fmm)# record mpls IPv4-IPv6-fields labels 3
RP/0/RP0/CPU0:router(config-fmm)# cache permanent
RP/0/RP0/CPU0:router(config-fmm)# exit
RP/0/RP0/CPU0:router(config)# interface gigabitEthernet 0/0/0/0
RP/0/RP0/CPU0:router(config-if)# flow mpls monitor MPLS-IPv4-IPv6-fmm sampler fsm ingress
```

The following example shows how to configure three labels for hashing:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow monitor-map map1
RP/0/RP0/CPU0:router(config-fmm)# record mpls labels 3
```

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
record ipv4, page 29	Activates an IPv4 flow record
show flow monitor, page 44	Displays flow monitor cache data in various formats.

Command	Description
show flow monitor-map, page 65	Displays flow monitor map data.

sampler-map

To enter sampler map configuration submode for a specific monitor map, use the **sampler-map** command in global configuration mode.

sampler-map *map_name*

Syntax Description

map_name	Name of the sampler map you want to configure. The sampler map name can be a maximum 32 characters.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

When you issue the **sampler-map** *map_name* command in global configuration mode, the CLI prompt changes to "config-sm," indicating that you have entered the sampler map configuration submode. In the following sample output, the question mark (**?**) online help function displays all the commands available under sampler map configuration submode:

```
RP/0/RP0/CPU0:router(config)# sampler-map test
RP/0/RP0/CPU0:router(config-sm)# ?

  clear     Clear the uncommitted configuration
  commit    Commit the configuration changes to running
  describe  Describe a command without taking real actions
  do        Run an exec command
  exit      Exit from this submode
  no        Negate a command or set its defaults
  pwd       Commands used to reach current submode
  random    Use random mode for sampling packets
  root      Exit to the global configuration mode
  show      Show contents of configuration
```

The following restrictions prevent the NetFlow processes from using up all of the available CPU:

- NetFlow supports a policer rate of 35,000 packets per second per direction for each individual line card.
- NetFlow supports a policer rate of 50,000 packets per second per direction for each individual line card if Sampled NetFlow (SNF) is enabled in one direction (ingress or egress). Note that this limit does not apply if SNF is enabled in both directions. If SNF is enabled in both directions, then NetFlow supports 25,000 packets per second per direction for each individual line card.

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to use the **sampler-map** command to enter sampler map configuration submode for the monitor map called "map1:"

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# sampler-map map1
RP/0/RP0/CPU0:router(config-sm)#
```

Related Commands

Command	Description
flow, page 20	Specifies a flow monitor map

show flow exporter

To display flow exporter data, enter the **show flow exporter** command in EXEC mode.

show flow exporter [*exporter_name*] **location** *node-id*

Syntax Description

exporter_name	Identifies the flow exporter whose data you want to display.
location *node-id*	Location where the cache resides. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Enter the **show platform** command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display flow exporter map data:

```
RP/0/RP0/CPU0:router# show flow exporter fem1 location 0/0/CPU0

Flow Exporter: NFC
Used by flow monitors: fmm4

Status: Normal
Transport   UDP
Destination 12.24.39.0      (50001)
Source      12.25.54.3      (5956)
Flows exported:                                 0 (0 bytes)
Flows dropped:                                  0 (0 bytes)

Templates exported:                             1 (88 bytes)
Templates dropped:                              0 (0 bytes)
```

```
Option data exported:                            0 (0 bytes)
Option data dropped:                             0 (0 bytes)

Option templates exported:                       2 (56 bytes)
Option templates dropped:                        0 (0 bytes)

Packets exported:                                3 (144 bytes)
Packets dropped:                                 0 (0 bytes)

Total export over last interval of:
  1 hour:                                        0 pkts
                                                 0 bytes
                                                 0 flows
  1 minute:                                      3 pkts
                                               144 bytes
                                                 0 flows
  1 second:                                      0 pkts
                                                 0 bytes
                                                 0 flows
```

Table 2: show flow exporter Field Descriptions

Field	Description
Id	Identifies the flow exporter map.
Used by flow monitors	Name of the flow monitors associated with the specified flow exporter map.
Status	Status of the exporter. • Normal—Exporter is active and can export packets. • Disabled—Exporter cannot send out packets because the collector is unreachable or the configuration is incomplete.
Destination	Export destination address the current flow exporter map.
Flows exported	Flows exported, in bytes.
Flows dropped	Flows dropped, in bytes.
Templates exported	Templates exported, in bytes.
Templates dropped	Templates dropped, in bytes.
Option data exported	Option data exported, in bytes.
Option data dropped	Option data dropped, in bytes.
Option templates exported	Option templates exported, in bytes.
Option templates dropped	Option templates dropped, in bytes.

Field	Description
Packets exported:	Packets exported, in bytes.
Packets dropped	Packets dropped, in bytes.
Average export rate over interval of last:	Average export rate, in bytes/pkts. Information is displayed for intervals of the last hour, minute, and second.

show flow exporter-map

To display flow exporter map information for a specific node, enter the **show flow exporter-map** command in EXEC mode.

show flow exporter-map [*name*]

Syntax Description

name	Name of the exporter map whose information you want to display.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display flow exporter map information:

```
RP/0/RP0/CPU0:router# show flow exporter-map map1

Flow Exporter Map : map1
-------------------------------------------------
Id                  : 2
DestinationIpAddr   : 10.1.1.1
SourceIfName        : Loopback0
SourceIpAddr        : 10.1.1.1
DSCP                : 10
TransportProtocol   : UDP
TransportDestPort   : 1024

Export Version: 9
  Common Template Timeout : 1800 seconds
  Options Template Timeout : 1800 seconds
  Data Template Timeout : 600 seconds
  Interface-Table Export Timeout : 1800 seconds
  Sampler-Table Export Timeout : 0 seconds
```

This table describes the significant fields shown in the display.

Table 3: show flow exporter-map Field Descriptions

Field	Description
Id	Identifies the flow exporter map.
DestinationIpAddr	Exports destination configuration.
SourceIfName	Source interface for this exporter map. You can specify the source interface with the **flow exporter-map** command.
SourceIpAddr	IP address of the source interface (SourceIfName).
DSCP	Differentiated services codepoint (DSCP) value for export packets. **Note** You can specify the DSCP with the **flow exporter-map** command.
TransportProtocol	Displays the configured transport protocol. **Note** Cisco IOS XR software supports the UDP transport protocol only. **Note** You can specify the transport protocol with the **flow exporter-map** command.
TransportDestPort	Displays the configured destination port for UDP packets.
Export Version	Displays the configured export format. **Note** Cisco IOS XR software supports export format version 9 only.
Common Template Timeout	Displays the configured common template timeout.
Options Template Timeout	Displays the configured options template timeout. **Note** You can specify the options template timeout with the **flow exporter-map** command.
Data Template Timeout	Displays the configured data template timeout. **Note** You can specify the data template timeout with the **flow exporter-map** command.
Interface-Table Export Timeout	Displays the export timeout value for the interface table. **Note** You can specify the export timeout for the interface table with the **flow exporter-map** command.

Field	Description
Sampler-Table Export Timeout	Displays the export timeout value for the sampler table. **Note** You can specify the export timeout for the sampler table with the **flow exporter-map** command.

Related Commands

Command	Description
clear flow exporter, page 9	Exports flow exporter templates to the collector
flow exporter-map, page 22	Creates a flow exporter map
show flow exporter, page 38	Displays flow exporter data

show flow monitor

To display flow monitor cache data in various formats, enter the **show flow monitor** command in EXEC mode.

To match on Access Control Lists (ACLs) and one or more fields:

show flow monitor *monitor-name* **cache match** {**ipv4** {**acl** *name*| **source-address** *match-options*| **destination-address** *match-options*| **protocol** *match-options*| **tos** *match-options*}| **ipv6** {**acl** *name*| **source-address** *match-options*| **destination-address** *match-options*| **protocol** *match-options*| **tc** *match-options*}| **layer4** {**source-port-overloaded** *match-options*| **destination-port-overloaded** *match-options*| **tcp-flags** *match-flags-options*}| **bgp** {**source-as** *match-options*| **destination-as** *match-options*}| **interface** {**ingress** *match-if-options*| **egress** *match-if-options*}| **timestamp** {**first** *match-options*| **last** *match-options*}| **counters** {**byte** *match-options*| **packets** *match-options*}| **misc** {**forwarding-status** *match-options*| **direction** *match-dir-options*}}

To sort flow record information according to a particular field:

show flow monitor *monitor-name* **cache sort** {**ipv4** {**source-address**| **destination-address**| **tos**| **protocol**}| **ipv4** {**source-address**| **destination-address**| **tc**| **protocol**}| **mpls** {**label-2**| **label-3**| **label-4**| **label-5**| **label-6**| **label-type**| **prefix**| **top-label**}| **layer4** {**source-port-overloaded**| **destination-port-overloaded**}| **bgp** {**source-as**| **destination-as**}| **timestamp** {**first**| **last**}| **counters** {**bytes**| **packets**}| **misc** {**forwarding-status**| **direction**} {**top**| **bottom**} [*entries*]}

To include or exclude one or more fields in the **show flow monitor** command output:

show flow monitor *monitor-name* **cache** {**include**| **exclude**} {**ipv4** {**source-address**| **destination-address**| **tos**| **protocol**}| **ipv6** {**source-address**| **destination-address**| **tc**| **flow-label**| **option-headers**| **protocol**}| **mpls** {**label-2**| **label-3**| **label-4**| **label-5**| **label-6**| **top-label**}| **layer4** {**source-port-overloaded**| **destination-port-overloaded**}| **bgp** {**source-as**| **destination-as**}| **timestamp** {**first**| **last**}| **counters** {**bytes**| **packets**}| **misc** {**forwarding-status** *match-options*| **direction** *match-dir-options*}}

To display summarized flow record statistics:

show flow monitor *monitor-name* **cache summary location** *node-id*

To display only key field, packet, and byte information for the flow records:

show flow monitor *monitor-name* **cache brief location** *node-id*

To display flow record information for a particular node only:

show flow monitor *monitor-name* **cache location** *node-id*

Syntax Description

If you specified the **show flow monitor monitor-name cache match** command to match on ACL and one or more fields:

monitor-name	Flow monitor map whose details you want to display.

cache	Displays details about the flow monitor cache.
match	Specifies match criteria for the display. Enter the **match** keyword followed by the **?** command to see a complete list of possible match criteria.
ipv4	Specifies IPv4 fields.
ipv6	Specifies IPv6 fields.
acl *name*	Specifies an access list. Replace name with the *name* of the access whose information you want to display.
source-address *match-options*	Specifies source IP address match options. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **source-address** keyword followed by the **?** command to see a complete list of possible match criteria.
destination-address	Specifies IPV4 or IPv6 destination address match options. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **destination-address** keyword followed by the **?** command to see a complete list of possible match criteria.
tos *match-options*	Compares fields and matches them based on the type of service value. Range is from 0 through 255. Possible match options are: • **eq** —Match if equal to field value.

	• **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **tos** keyword followed by the **?** command to see a complete list of possible match criteria.
protocol *match-options*	Compares fields and matches them based on the protocol value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **protocol** keyword followed by the **?** command to see a complete list of possible match criteria.
layer4	Compares Layer 4 fields and matches them based on specific criteria. You can specify match criteria for any of the following Layer 4 fields: • **destination-port-overloaded** • **source-port-overloaded** • **tcp-flags** **Note** Enter the **layer4** keyword followed by the **?** command to see a complete list of possible Layer 4 fields to compare and match.
destination-port-overloaded	Compares fields and matches them based on the **destination-port-overloaded** value. The destination port is matched if the protocol specified for that port is TCP or UDP. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value.

	• **range** —Match if within the range of field values. **Note** Enter the **destination-port-overloaded** keyword followed by the ? command to see a complete list of possible match criteria.
source-port-overloaded	Compares fields and matches them based on the **source-port-overloaded** value. The source port is matched if the protocol specified for that port is one of the following: • TCP—Range is from 0 through 65535. • UDP—Range is from 0 through 65535. • ICMP—Type or code is in range from 0 through 255. • IGMP—Type is in range from 0 through 255. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** NoteEnter the **source-port-overloaded** keyword followed by the **?** command to see a complete list of possible match criteria.
tcp-flags *match-flags-options*	Specifies TCP flags, as follows: • **all** —Match all of the fields • **any** —Match any of the fields • **none** —Match none of the fields. **Note** Enter the **tcp-flags** keyword followed by the **?** command to see a complete list of possible match criteria.
bgp	Compares BGP fields and matches them based on specific criteria. You can specify match criteria for any of the following BGP fields: • **destination-as** —Destination as. • **source-as** —Source as.

source-as *match-options*	Compares and matches the BGP autonomous system number of the destination address. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **source-as** keyword followed by the **?** command to see a complete list of possible match criteria.
destination-as match-options	Compares and matches the BGP autonomous system number of the source address. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **destination-as** keyword followed by the **?** command to see a complete list of possible match criteria.
timestamp	Specifies the time stamp for which to compare and match the specified criteria. Enter the **first** keyword or the **last** keyword to specify the time stamp whose criteria you want to compare.
first *match-options*	Compares fields from the first time stamp and matches them based on the match-options value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values.

	Note Enter the **first** keyword followed by the **?** command to see a complete list of possible match criteria.
last *match-options*	Compares fields from the last time stamp and matches them based on the match-if-options value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **last** keyword followed by the **?** command to see a complete list of possible match criteria.
counters	Specifies the counters for which to compare and match the specified criteria. Enter the **byte** keyword or the **packets** keyword to specify the counters whose criteria you want to compare.
byte *match-options*	Compares bytes counter fields and matches them based on the match-options value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. **Note** Enter the **byte** keyword followed by the **?** command to see a complete list of possible match criteria.
packets *match-options*	Compares packets counter fields and matches them based on the match-options value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value.

	• **range** —Match if within the range of field values. **Note** Enter the **byte** keyword followed by the **?** command to see a complete list of possible match criteria.
misc	Specifies miscellaneous fields for which to compare and match the specified criteria. Enter the **forwarding-status** keyword or the **direction** keyword to specify the field whose criteria you want to compare.
forwarding-status *match-options*	Compares forwarding status fields and matches them based on the match-options value. Possible match options are: • **eq** —Match if equal to field value. • **gt** —Match if greater than field value. • **lt** —Match if less than field value. • **neq** —Match if not equal to field value. • **range** —Match if within the range of field values. Enter the **forwarding-status** keyword followed by the **?** command to see a complete list of possible match criteria.
direction *match-dir-options*	Compares information about the direction of the flow and matches it based on the match-options value. Possible match options are: • **eq** —Match if equal to field value. • **neq** —Match if not equal to field value. **Note** Enter the **direction** keyword followed by the **?** command to see a complete list of possible match criteria.
To sort flow record information according to a particular field:	
monitor-name	Flow monitor map whose details you want to display.
cache	Displays details about the flow monitor cache.
sort	Determines sorting criteria for the **show flow monitor** command display.

ipv4	Specifies sorting criteria for one of the following IPv4 fields: • **destination-address** • **source-address** • **protocol** • **tos** **Note** Enter the **ipv4** keyword followed by the **?** command to see a complete list of possible sorting criteria.
ipv6	Specifies sorting criteria for one of the following IPv6 fields: • **destination-address** • **source-address** • **protocol** • **tos** **Note** Enter the **ipv6** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-address	Displays IPv4 or IPv6 information for the source address according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **source-address** keyword followed by the **?** command to see a complete list of possible sorting criteria.
destination-address	Displays IPv4 or IPv6 information for the destination address according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **destination-address** keyword followed by the **?** command to see a complete list of possible sorting criteria.
tos	Displays IPv4 type of service information according to the specified sorting criteria. Possible sorting options are:

	• **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **tos** keyword followed by the **?** command to see a complete list of possible sorting criteria.
tc	Displays IPv6 traffic class information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **tc** keyword followed by the **?** command to see a complete list of possible sorting criteria.
protocol	Displays IPv4 or IPv6 protocol information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **tos** keyword followed by the **?** command to see a complete list of possible sorting criteria.
mpls	Specifies sorting criteria for one of the following MPLS fields: • **label-2** • **label-3** • **label-4** • **label-5** • **label-6** • **label-type** • **prefix** • **top-label** **Note** Enter the **mpls** keyword followed by the **?** command to see a complete list of possible sorting criteria.
label-2	Displays MPLS information for the second label in the MPLS label stack. Possible sorting options are:

	• **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
label-3	Displays MPLS information for the third label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
label-4	Displays MPLS information for the fourth label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
label-5	Displays MPLS information for the fifth label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
label-6	Displays MPLS information for the sixth label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
label-type	Displays MPLS information for the specified type of label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
prefix	Displays MPLS information for the destination address. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
top-label	Displays MPLS information for the top label in the MPLS label stack. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.

layer4	Specifies sorting criteria for one of the following Layer 4 fields: • **source-port-overloaded** • **destination-port-overloaded** **Note** Enter the **layer4** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-port-overloaded	Displays source port overload information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **source-port-overloaded** keyword followed by the **?** command to see a complete list of possible sorting criteria.
destination-port-overloaded	Displays destination port overload information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **destination-port-overloaded** keyword followed by the **?** command to see a complete list of possible sorting criteria.
bgp	Specifies sorting criteria for one of the following BGP fields: • **source-as** • **destination-as** **Note** Enter the **layer4** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-as	Displays information about the BGP source address autonomous system number according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **source-as** keyword followed by the **?** command to see a complete list of possible sorting criteria.

destination-as	Displays information about the BGP destination address autonomous system number according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **destination-as** keyword followed by the **?** command to see a complete list of possible sorting criteria.
timestamp	Specifies sorting criteria for the first or last time stamp. Enter the **first** keyword or the **last** keyword to specify the time stamp whose criteria you want to specify. **Note** Enter the **timestamp** keyword followed by the **?** command to see a complete list of possible sorting criteria.
first	Displays information for the first time stamp according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **first** keyword followed by the **?** command to see a complete list of possible sorting criteria.
last	Displays information for the last time stamp according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **last** keyword followed by the **?** command to see a complete list of possible sorting criteria.
counters	Specifies sorting criteria for the bytes or packets counters. Follow the **counters** keyword with the **byte** keyword or the **packets** keyword to specify the counters whose criteria you want to compare.
bytes	Displays bytes counter information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.

	Note Enter the **bytes** keyword followed by the **?** command to see a complete list of possible sorting criteria.
packets	Displays packets counter information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **packets** keyword followed by the **?** command to see a complete list of possible sorting criteria.
misc	Specifies sorting criteria for miscellaneous fields. Follow the **misc** keyword with the **forwarding-status** keyword or the **direction** keyword to specify the counters whose criteria you want to compare.
forwarding-status	Displays forwarding status information according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **forwarding-status** keyword followed by the **?** command to see a complete list of possible sorting criteria.
direction	Displays information about the direction of the flow according to the specified sorting criteria. Possible sorting options are: • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries. **Note** Enter the **direction** keyword followed by the **?** command to see a complete list of possible sorting criteria.
top	Displays top cache entries. Replace records with the number of records you want to display. **Note** You can follow the **top** keyword with the optional entries argument to specify the number of records to display.
bottom	Displays bottom cache entries. Replace records with the number of records you want to display.

	Note You can follow the **bottom** keyword with the optional entries argument to specify the number of records to display.
entries	Number of records to display. Range is from 1 through 1000.
To include or exclude one or more fields in the show flow monitor command output:	
monitor-name	Flow monitor map whose details you want to display.
cache	Displays details about the flow monitor cache.
include	Includes the specified fields in the display output. Enter the **include** keyword, followed by the keyword or keywords that specify the fields to include. **Note** To see a list of fields that can be included, enter the **include** keyword, followed by the ? command.
exclude	Excludes the specified fields in the display output. Enter the **exclude** keyword, followed by the keyword or keywords that specify the fields to exclude. **Note** To see a list of fields that can be excluded, enter the **exclude** keyword, followed by the ? command.
ipv4	Includes or excludes one of the following IPv4 fields in the command output: • **destination-address** • **source-address** • **protocol** • **tos** **Note** Enter the **ipv4** keyword followed by the **?** command to see a complete list of possible sorting criteria.
ipv6	Includes or excludes one of the following IPv6 fields in the command output: • **destination-address** • **flow-label** • **option-headers** • **source-address** • **protocol** • **tos**

	Note Enter the **ipv6** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-address	Includes or excludes IPV4 or IPV6 information for the source address in the command output.
destination-address	Includes or excludes IPV4 or IPV6 information for the destination address in the command output.
flow-label	Includes or excludes information about the IPv6 flow label in the command output. The flow label is the 20-bit flow label id present in every IPv6 packet header.
option-headers	Includes or excludes IPV6 information for the option headers in the command output. The option header is a bit mask that indicates which options headers are present in the IPv6 header.
tos	Includes or excludes IPV4 type of service information in the command output.
tc	Includes or excludes IPV6 traffic class information in the command output.
protocol	Includes or excludes IPV4 or IPV6 protocol information in the command output.
mpls	Includes or excludes one of the following MPLS fields in the command output: • **label-2** • **label-3** • **label-4** • **label-5** • **label-6** • **top-label** **Note** Enter the **mpls** keyword followed by the **?** command to see a complete list of possible sorting criteria.
label-2	Includes or excludes MPLS information for the second label in the MPLS label stack.
label-3	Includes or excludes MPLS information for the third label in the MPLS label stack.

label-4	Includes or excludes MPLS information for the fourth label in the MPLS label stack.
label-5	Includes or excludes MPLS information for the fifth label in the MPLS label stack.
label-6	Includes or excludes MPLS information for the sixth label in the MPLS label stack.
top-label	Includes or excludes MPLS information for the top label in the MPLS label stack.
layer4	Includes or excludes one of the following the following Layer 4 fields in the command output: • **source-port-overloaded** • **destination-port-overloaded** **Note** Enter the **layer4** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-port-overloaded	Includes or excludes source port overload information in the command output.
destination-port-overloaded	Includes or excludes destination port overload information in the command output. • **top** —Displays top cache entries. • **bottom** —Displays bottom cache entries.
bgp	Includes or excludes the following BGP fields in the command output: • **source-as** • **destination-as** **Note** Enter the **bgp** keyword followed by the **?** command to see a complete list of possible sorting criteria.
source-as	Includes or excludes information about the BGP source address autonomous system number in the command output.
destination-as	Includes or excludes information about the BGP destination address autonomous system number in the command output.

timestamp	Includes or excludes information from the first or last time stamp in the command output. Enter the **first** keyword or the **last** keyword to include or exclude information about a specific time stamp. **Note** Enter the **timestamp** keyword followed by the **?** command to see a complete list of possible sorting criteria.
first	Includes or excludes information for the first time stamp in the command output.
last	Includes or excludes information for the first time stamp in the command output.
counters	Includes or excludes bytes or packets counters in the command output. Follow the **counters** keyword with the **byte** keyword or the **packets** keyword to include or exclude particular counters. **Note** Enter the **counters** keyword followed by the **?** command to see a complete list of possible sorting criteria.
bytes	Includes or excludes bytes counter information in the command output.
packets	Includes or excludes packets counter information in the command output.
misc	Includes or excludes information for miscellaneous fields in the command output. Follow the **misc** keyword with the **forwarding-status** keyword or the **direction** keyword to specify the field you want to include or exclude. **Note** Enter the **misc** keyword followed by the **?** command to see a complete list of possible sorting criteria.
forwarding-status	Includes or excludes forwarding status information in the command output.
direction	Includes or excludes information about the direction of the flow in the command output.
top	Includes or excludes top cache entries in the command output. Replace records with the number of *records* you want to display.
bottom	Includes or excludes bottom cache entries. Replace records with the number of *records* you want to display

entries	Number of records to display. Range is from 1 through 1000.
To display summarized flow record statistics:	
monitor-name	Flow monitor map whose details you want to display.
cache	Displays details about the flow monitor cache.
summary	Displays summarized flow monitor information only.
monitor-name	Flow monitor map whose details you want to display.
cache	Displays details about the flow monitor cache.
brief	Abbreviates the **show flow monitor** command output.
To display flow record information for a particular node only:	
monitor-name	Flow monitor map whose details you want to display.
cache	Displays details about the flow monitor cache.
location *node-id*	Identifies the node whose flow exporter statistics you want to clear, or whose flow exporter statistics collector you want to restart. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Enter the **location** keyword followed by the **?** command to see a complete list of possible sorting criteria.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.1	• **label-6** • The following keywords were added to the **show flow monitor** command **sort** option: ◦ **mpls** { **label-2** | **label-3** | **label-4** | **label-5** | **label-6** | **label-type** | **prefix** | **top-label** }

Release	Modification
	• The following keywords were added to the **show flow monitor** command **include** and **exclude** options: ◦ **mpls** { **label-2** | **label-3** | **label-4** | **label-5** | **label-6** | **top-label** } • The **show flow monitor** command output was updated to include MPLS information for MPLS-aware NetFlow.
Release 3.5.0	The following keywords were added to the **show flow monitor** command to support IPv6: • **ipv6** • **tc** • **option-headers** • **flow-label**
Release 4.0.0	The interface keyword options were removed.

Usage Guidelines

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

Note To collect source and destination AS information, you must enable BGP on the relevant BGP AFI/SAFI. Unless this is done, all AS numbers in the flow records are displayed as *0*.

Keep the following information in mind when using the **show flow monitor** command:

- The **show flow monitor** command can include combinations of the following options:
  - **format**
  - **match**
  - **include**
  - **exclude**
  - **sort**
  - **summary**
  - **location**
- We do not recommend including the **summary** option with the **sort** and **format** options.
- The mutually exclusive options are **summary**, **brief**, **include**, and **exclude**.

- To see a list of fields that can be included after a keyword, enter the **?** command, as shown in the following example:

```
RP/0/RP0/CPU0:router# show flow monitor map1 cache summary ?

  brief     Show just the key fields
  exclude   Exclude field
  format    Display format
  include   Include field
  location  Specify a location
  match     Match criteria
  sort      Sorting criteria
```

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display flow monitor data for a specific monitor map cache in the location 0/0/CPU0 *:*

```
RP/0/RP0/CPU0:router# show flow monitor fmm2 cache loc 0/0/CPU0

Cache summary for Flow Monitor fmm2:
Cache size:                             65535
Current entries:                            4
High Watermark:                         62258
Flows added:                                4
Flows not added:                            0
Ager Polls:                                60
  - Active timeout                          0
  - Inactive timeout                        0
  - TCP FIN flag                            0
  - Watermark aged                          0
  - Emergency aged                          0
  - Counter wrap aged                       0
  - Total                                   0
Periodic export:
  - Counter wrap                            0
  - TCP FIN flag                            0
Flows exported                              0
Matching entries:                           4

IPV4SrcAddr      IPV4DstAddr      L4SrcPort  L4DestPort BGPDstOrigAS BGPSrcOrigAS
IPV4DstPrfxLen
IPV4SrcPrfxLen  IPV4Prot IPV4TOS  InputInterface  OutputInterface L4TCPFlags   ForwardStatus
ForwardReason FirstSwitched   LastSwitched    ByteCount    PacketCount  Dir Sampler ID
17.17.17.2       18.18.18.2       0           0           0            0            24
        24         $
61       normal   PO0/0/0/8       PO0/0/0/12      0            Fwd           0
 00
00:02:43:800 00 00:02:49:980 37200        620           In 0
18.18.18.2       17.17.17.2       0           0           0            0            24
        24         $
61       normal   PO0/0/0/12      PO0/0/0/8       0            Fwd           0
 00
00:02:43:791 00 00:02:49:980 37200        620           In 0
17.17.17.2       18.18.18.2       0           0           0            0            24
        0          $
61       normal   PO0/0/0/8       PO0/0/0/12      0            Fwd           0
 00
00:02:43:798 00 00:02:49:980 34720        620          Out 0
18.18.18.2       17.17.17.2       0           0           0            0            24
        0          $
61       normal   PO0/0/0/12      PO0/0/0/8       0            Fwd           0
```

```
 00
00:02:43:797 00 00:02:49:980 34720        620          Out 0
L4SrcPort  L4DestPort BGPDstOrigAS BGPSrcOrigAS IPV4DstPrfxLen
```

This table describes the significant fields shown in the display.

Table 4: show flow monitor Field Descriptions

Field	Description
Cache summary for Flow Monitor fmm2	Displays general cache information for the specified flow monitor. The following information is displayed • Cache size for the specified flow monitor map • Current number of entries in the cache • High watermark for this cache • Number of flows added to the cache • Number of flows not added to the cache
Ager Polls	Displays the following ager statistics: • Active timeout • Inactive timeout • TCP FIN flag • Watermark aged • Emergency aged • Counter wrap aged • Total
Periodic export	• Counter wrap • TCP FIN flag
Cache summary for Flow Monitor fmm2	Displays general cache information for the specified flow monitor. The following information is displayed • Cache size for the specified flow monitor map • Current number of entries in the cache • High watermark for this cache • Number of flows added to the cache • Number of flows not added to the cache

show flow monitor-map

To display flow monitor map data, enter the **show flow monitor-map** command in EXEC mode.

show flow monitor-map *map-name*

Syntax Description

map-name	Name of the monitor map whose data you want to display.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.1	The **show flow monitor-map** command output was modified to include MPLS information.
Release 3.4.1	The ipv4-raw record map name was replaced with ipv4.
Release 3.5.0	The record map name field was updated to include ipv6 when relevant.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display monitor-map data for a specific flow:

```
RP/0/RP0/CPU0:router# show flow monitor-map fmm1

Flow Monitor Map : fmm1
-----------------------------------------------
Id:                 1
RecordMapName:      ipv4
ExportMapName:      NFC
CacheAgingMode:     Permanent
CacheMaxEntries:    10000
CacheActiveTout:    N/A
CacheInactiveTout: N/A
```

```
CacheUpdateTout:   60 seconds
```

This table describes the significant fields shown in the display.

Table 5: show flow monitor-map Field Descriptions

Field	Description
Flow Monitor Map	Name of the flow monitor map whose information is display in the **show flow monitor-map** command output.
Id	Number that identifies the flow monitor map.
RecordMapName	Name of the flow record map that is associated with this monitor map. The RecordMapName indicates the type of packets NetFlow captures as they leave the router.
ExportMapName	Name of the export map that is associated with this monitor map.
CacheAgingMode	Current aging mode configured on this cache.“Permanent” indicates that the removal of entries from the monitor map flow cache is disabled. **Note** To configure the number of entries allowed in the monitor map flow cache, enter the **cache entries** command in flow monitor map configuration mode. To disable the removal of entries from the monitor map flow cache, enter the **cache permanent** command in flow monitor map configuration mode.
CacheMaxEntries	Number of flow entries currently allowed in the flow cache before the oldest entry is removed. **Note** To modify the number of entries in the monitor map flow cache, enter the **cache entries** command in flow monitor map configuration mode
CacheActiveTout	Active flow timeout configured for this cache, in seconds. **Note** To modify the configured active flow timeout, use the **cache timeout** command in flow monitor map configuration mode.
CacheInactiveTout	Inactive flow timeout configured for this cache, in seconds. **Note** To modify the configured inactive flow timeout, use the **cache timeout** command in flow monitor map configuration mode.

Field	Description
CacheUpdateTout	Update timeout configured for this cache, in seconds. **Note** To modify the configured update timeout, use the **cache timeout** command in flow monitor map configuration mode.

Related Commands

Command	Description
clear flow monitor, page 11	Clears the flow monitor data
flow monitor-map, page 24	Creates and configures a flow monitor map
flow, page 20	Specifies a flow monitor map
record ipv4, page 29	Activates an IPv4 flow record
record ipv6, page 31	Configures the flow record map name for IPv6
record mpls, page 33	Configures the flow record map name for MPLS

show flow platform producer statistics location

To display statistics collected by the NetFlow producer, use the **show flow platform producer statistics location** command in EXEC mode.

show flow platform producer statistics location *node-id*

Syntax Description

node-id	Location of the node whose NetFlow producer statistics you want to display. The *node-id* is expressed in the *rack/slot/module* notation. **Note** Enter the **show platform** command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.3.0	This command was introduced.
Release 3.3.1	The **show flow platform producer statistics location** command output was updated to include Multiprotocol Label Switching (MPLS) statistics.
Release 3.5.0	The **show flow platform producer statistics location** command output was updated to include IPv6 statistics.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display statistics collected by the NetFlow producer for the CPU card in slot 0:

```
RP/0/RP0/CPU0:router# show flow platform producer statistics location 0/0/CPU0
Thu Oct 29 09:49:35.771 UTC
Netflow Platform Producer Counters:
IPv4 Ingress Packets:               41447246
IPv4 Egress Packets:                41447242
IPv6 Ingress Packets:                      0
```

```
IPv6 Egress Packets:                        0
MPLS Ingress Packets:                       0
MPLS Egress Packets:                        0
Drops (no space):                           0
Drops (other):                              0
Unknown Ingress Packets:                    0
Unknown Egress Packets:                     0
Worker waiting:                          4677
SPP Packets:                          2032602
Flow Packets:                        82894488
Flow Packets per SPP Frame:                40
```

This table describes the significant fields shown in the display.

Table 6: show flow platform producer statistics Field Descriptions

Field	Description
IPv4 Ingress Packets	Number of IPV4 packets that were received from the remote end.
IPv4 Egress Packets	Number of transmitted IPV4 packets.
MPLS Ingress Packets	Number of MPLS packets that were received from the remote end.
MPLS Egress Packets	Number of transmitted MPLS packets.
Drops (no space)	Number of packets that the producer could not enqueue to the NetFlow server because the server input ring was full.
Drops (other)	Number of packets that the producer could not enqueue to the NetFlow server due to errors other than the server input ring being full.
Unknown Ingress Packets	Number of unrecognized packets received from the remote end that were dropped.
Unknown Egress Packets	Number of packets transmitted to the remote end that were dropped because they were not recognized by the remote end.
Worker waiting	Number of times that the producer needed to use the server. **Note** This field is strictly informational and does not indicate any error.

show sampler-map

To display sampler map information, enter the **show sampler-map** command in EXEC mode.

show sampler-map [*sampler-name*]

Syntax Description

sampler-name	Identifies the sampler map whose information you want to display.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read

Examples

The following example shows how to display sampler map information for a router:

```
RP/0/RP0/CPU0:router# show sampler-map map1

Sampler Map : map1
-------------------------------------------------
Id:      1
Mode:    Random (1 out of 100 Pkts)
```

This table describes the significant fields shown in the display.

Table 7: show sampler-map Field Descriptions

Field	Description
Id	Flow sampler map identifier.

Field	Description
Mode	Sampling interval in units of packet. “Random” mode is any mode that was configured with the **flow monitor-map** command. **Note** Currently, Cisco IOS XR software supports “Random” mode only.

Related Commands

Command	Description
sampler-map, page 36	Enter sampler map configuration submode for a specific monitor map
flow, page 20	Specifies a flow monitor map

source (NetFlow)

To configure a source interface for the current collector, use the **source** command in flow exporter map configuration mode. To remove a configured source interface, use the **no** form of this command.

source *type interface-path-id*

no source *type interface-path-id*

Syntax Description

type	Interface type. For more information, use the question mark (**?**) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.

Command Default

No default behavior or values

Command Modes

Flow exporter map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.4.0	This command was moved to the flow exporter map configuration mode.

Usage Guidelines

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

For the *interface-path-id* argument, use the following guidelines:

- If specifying T1/E1/DS0 physical interfaces, the naming notation is *rack*/*slot*/*module*/*port*/*t1-num:*
- *channel-group-number*. If specifying other physical interface types, the naming notation is *rack*/*slot*/*module*/*port.* The slash between values is required as part of the notation. An explanation of each component of the naming notation is as follows:
  - *rack*: Chassis number of the rack.
  - *slot*: Physical slot number of the modular services card or line card.
  - *module*: Module number. A physical layer interface module (PLIM) is always 0. Shared port adapters (SPAs) are referenced by their subslot number.

- *port*: Physical port number of the T3 controller.
- *t1-num* : T1 or E1 channel number. T1 channels range from 1 to 24; E1 channels range from 1 to 31.
- *channel-group-number* : Time slot number. T1 time slots range from 1 to 24; E1 time slots range from 1 to 31. The *channel-group-number* is preceded by a colon and not a slash.

• If specifying a virtual interface, the number range varies, depending on interface type.

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure a physical interface as a source for the current collector:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# source Gigabit Ethernet 0/1/0/0
```

The following example shows how to configure a virtual interface as a source for the current collector. In this example, the source is an Ethernet bundle:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# source Bundle-Ether 1
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data
show flow exporter-map, page 41	Displays flow exporter map information for a specific node.

template (NetFlow)

To configure the export timeout value for the data and options templates, enter the **template** command in flow exporter map version configuration mode. To remove a configured template export timeout value, use the **no** form of this command.

template [**data**| **options**] **timeout** *seconds*

no template [**data**| **options**] **timeout** *seconds*

Syntax Description

data	(Optional) Specifies the data template.
options	(Optional) Specifies the options template.
timeout *seconds*	Configures the timeout value for the specified template, or for both the data and options templates. Replace *seconds* with the export timeout value. Range is from 1 through 604800 seconds.

Command Default

Default timeout value for data and options template is 1800 seconds.

Command Modes

Flow exporter map version configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the export timeout value for the data template to be 300 seconds:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map fem1
RP/0/RP0/CPU0:router(config-fem)# version v9
RP/0/RP0/CPU0:router(config-fem-ver)# template data timeout 300
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data
show flow exporter-map, page 41	Displays flow exporter map information for a specific node.

transport udp

To configure the destination port for User Datagram Protocol (UDP) packets, enter the **transport udp** command in flow exporter map configuration mode. To remove a configured destination port, use the **no** form of this command.

transport udp *port*

no transport udp *port*

Syntax Description

port	Destination port for UDP packets. Replace *port* with the destination port value. Range is from 1024 through 65535.

Command Default

No default behavior or values

Command Modes

Flow exporter map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to configure the destination port for UDP packets:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# transport udp 1030
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data

Command	Description
show flow exporter-map, page 41	Displays flow exporter map information for a specific node.

version v9

To enter flow exporter map version configuration submode so that you can configure export version parameters, enter the **version v9** command in flow exporter map configuration mode. To remove the current export version configuration and return to the default configuration, use the **no** form of this command.

version v9

no version v9

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

Flow exporter map configuration

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

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

When you issue the **version v9** command, the CLI prompt changes to "config-fem-ver," indicating that you have entered flow exporter map version configuration submode. In the following sample output, the question mark (**?**) online help function displays all the commands available under flow exporter map version configuration submode:

```
RP/0/RP0/CPU0:router(config-fem)# version v9
RP/0/RP0/CPU0:router(config-fem-ver)#?

  clear     Clear the uncommitted configuration
  commit    Commit the configuration changes to running
  describe  Describe a command without taking real actions
  do        Run an exec command
  exit      Exit from this submode
  no        Negate a command or set its defaults
  options   Specify export of options template
  pwd       Commands used to reach current submode
  root      Exit to the global configuration mode
  show      Show contents of configuration
  template  Specify template export parameters
```

Task ID

Task ID	Operations
netflow	read, write

Examples

The following example shows how to enter flow exporter map version configuration submode:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# flow exporter-map map1
RP/0/RP0/CPU0:router(config-fem)# version v9
RP/0/RP0/CPU0:router(config-fem-ver)#
```

Related Commands

Command	Description
flow exporter-map, page 22	Creates a flow exporter map
flow monitor-map, page 24	Creates and configures a flow monitor map
show flow exporter, page 38	Displays flow exporter data
show flow exporter-map, page 41	Displays flow exporter map information for a specific node.

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