Traffic Mirroring Commands

This module describes the commands used to configure and monitor traffic mirroring.

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

acl

To configure ACL-based traffic mirroring, use the **acl** command in monitor session configuration mode. To stop ACL-based traffic mirroring, use the **no** form of this command.

acl

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

Monitor session configuration

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

If you use the **acl** command, traffic is mirrored according to the definition of the global interface access list (ACL) defined in one of the following commands: **ipv4 access-list**, **ipv6 access-list**, **ethernet-services access-list**.

Even when the **acl** command is configured on the source mirroring port, if the ACL configuration command does not use the **capture** keyword, no traffic gets mirrored.

If the ACL configuration uses the **capture** keyword, but the **acl** command is not configured on the source port, although traffic is mirrored, no access list configuration is applied.

Examples

This example shows how to configure ACL-based traffic mirroring on the interface:

```
RP/0/RP0/CPU0:router(config)# monitor-session tm_example
RP/0/RP0/CPU0:router(config)# ethernet-services access-list tm_filter
RP/0/RP0/CPU0:router(config-es-acl)# 10 deny 0000.1234.5678 0000.abcd.abcd any capture
RP/0/RP0/CPU0:router(config-es-acl)# exit
RP/0/RP0/CPU0:router(config)# interface GigabitEthernet0/2/0/0
RP/0/RP0/CPU0:router(config-if)# monitor-session tm_example direction rx-only
RP/0/RP0/CPU0:router(config-if)# acl
RP/0/RP0/CPU0:router(config-if)# l2transport
RP/0/RP0/CPU0:router(config-if-l2)# exit
RP/0/RP0/CPU0:router(config-if)# ethernet-services access-group tm_filter ingress
RP/0/RP0/CPU0:router(config-if)# end
```

Related Commands

Command	Description
ethernet-services access-list	Defines an Ethernet services (Layer 2) access list by name.
ipv4 access-list	Defines an IPv4 access list by name.

clear monitor-session counters

To clear the traffic mirroring session statistics, use the **clear monitor-session counters** command in EXEC mode .

clear monitor-session counters [*session-name*]**ipv4** | **ipv6**

Syntax Description

interface	Identifies the interface for which the counters are to be cleared.
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.
session-name	Name of the monitor session to clear.
ipv6	Specifies an ipv6 address.

Command Default

All stored statistics for all interfaces are cleared.

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read

Examples

This example shows how to clear the traffic mirroring statistic counters:

```
RP/0/RP0/CPU0:router#clear monitor-session  counters
```

destination next-hop

To configure the destination address for the monitor-session, use the **destination next-hop** command in the monitor session configuration mode.

destination next-hop *ip address*

Syntax Description

ip address	Specifies a valid IPv4 or IPv6 address and configures the destination for the current monitor-session to be a next-hop IP address (whose type matches that of the monitor-session).

Command Default

No default behavior or values

Command Modes

Monitor session configuration

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

This may only be specified for ipv4 and ipv6 monitor-sessions. A monitor session can be either for IPv4 or for IPv6. It cannot support both together.

Task ID

Task ID	Operation
ethernet-services	read, write

Example

This example shows how to execute the **destination next-hop** command:

```
RP/0/RP0/CPU0:router(config)#
RP/0/RP0/CPU0:router(config-mon-sess)#destination next-hop ipv4 254.23.24.5
```

mirror first

To configure partial traffic mirroring, use the **mirror first** command in monitor session configuration mode. To stop mirroring a portion of the packet, use the **no** form of this command.

mirror first *bytes*

Syntax Description

bytes	Number of bytes mirrored. The mirrored packet length value can range from 65 to 128.

Command Default

The entire packet is mirrored.

Command Modes

Monitor session configuration

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

Use the **mirror first** command to mirror the first 64 to 128 bytes of the packet. The actual mirrored packet is the configured partial packet monitoring size plus the 4-byte trailing CRC.

Examples

This example shows how to mirror the first 100 bytes of the packet:

```
RP/0/RP0/CPU0:router(config)# interface gigabitethernet0/0/0/11
RP/0/RP0/CPU0:router(config-if)# monitor-session mon1
RP/0/RP0/CPU0:router(config-if-mon)# mirror first 100
```

Related Commands

Command	Description
monitor-session, on page 7	Defines a traffic mirroring session and enter monitor session configuration mode.

mirror interval

To configure mirror interval for a specified number of packets in traffic mirroring, use the **mirror interval** command in monitor session configuration mode. To stop mirroring the packet in the interval, use the **no** form of this command.

mirror interval 512 | 1k | 2k | 4k | 8k | 16k

Syntax Description

interval Number of packets per mirror interval. The interval can be configured for every 512, 1k, 2k, 4k, 8k, or 16k packets.

Note
- port-level mirroring is only supported in the ingress direction.
- port-level mirroring is only supported in sampling mode with a minimal sampling rate of 1:512

Command Default

The mirror interval is set as per the specified packet count.

Command Modes

Monitor session configuration

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Examples

This example shows how to set the mirror interval for every 512 packets:

```
RP/0/RP0/CPU0:router(config)# interface gigabitethernet0/0/0/11
RP/0/RP0/CPU0:router(config-if)# monitor-session mon1
RP/0/RP0/CPU0:router(config-if-mon)# mirror first 100
RP/0/RP0/CPU0:router(config-if-mon)# mirror interval 512
```

Related Commands

Command	Description
monitor-session, on page 7	Defines a traffic mirroring session and enter monitor session configuration mode.

monitor-session

To define a traffic mirroring session and enter monitor session configuration mode, use the **monitor-session** command in global configuration mode. To remove the traffic mirroring session, use the **no** form of this command.

monitor-session *session-name***[ethernet|ipv4|ipv6] destination(interface** *<Interface> slot/port***)**

Syntax Description

session-name	Name of the monitor session to configure.
ethernet	Specifies ethernet interface as destination.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.9.1	This command was introduced.

Usage Guidelines

Before you can assign a monitor session to a specific interface, you must configure it using the **monitor-session** command. The *session-name* should not be the same as any interface name.

In monitor session configuration mode, you should define the destination interface to be used in the traffic mirroring session using the **destination** command.

This commands triggers entry in to the monitor-session sub-mode and creates the session. The session will be non-operable until a destination is configured for the session. The destination can be either IPv4 or IPv6.

Examples

This example shows how to enter monitor session configuration mode:

```
RP/0/RP0/CPU0:router(config)# monitor-session mon1
RP/0/RP0/CPU0:router(config-mon)#
```

Related Commands

Command	Description
destination next-hop, on page 4	Configures the destination for the current monitor-session.

monitor-session (interface)

To associate a traffic mirroring session with a specific interface, use the **monitor-session** command in interface configuration mode. To remove the association between a traffic mirroring session and an interface, use the **no** form of this command.

monitor-session *session-name* **[ethernet|ipv4|ipv6]**[**direction rx-only**] **[port-level]**

Syntax Description

session-name	Name of the monitor session to configure.
direction	Specifies that traffic replication is in only one direction.
rx-only	Specifies that only ingress traffic is replicated.
ethernet	Specifies ethernet interface as destination.
ipv4	Indicates that Ipv4 traffic needs to be monitored.
ipv6	Indicates that Ipv6 traffic needs to be monitored.
port-level	Specifies the configuration at port level. **Note** • port-level mirroring is only supported in the ingress direction. • port-level mirroring is only supported in sampling mode with a minimal sampling rate of 1:512.

Command Default

Replicates both ingress and egress traffic.

Command Modes

Interface configuration

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

Before you can associate a traffic mirroring session to a specific interface, you must define it using the **monitor-session** global configuration command. After the traffic mirroring session is defined, use the **monitor-session** interface configuration command or dynamic template configuration command to associate this session with a specific source interface. For BNG sessions, the subscriber is attached to the monitor session, only when the dynamic template is applied to the subscriber. When the session is associated, all specified traffic on the interface is then replicated to the destination location defined in the monitor session configuration.

The **monitor-session** interface configuration command also enters monitor session configuration mode for you to configure additional features of the mirroring session.

If a physical interface is configured for Layer 3, then the traffic mirroring session can be associated on physical interfaces. Example:

```
interface TenGigE0/1/0/0
ipv4 address 10.0.0.1 255.255.255.0
```

If a physical interface has sub-interfaces configured for Layer 3, then the traffic mirroring session must be associated on each sub-interface. Example:

```
interface TenGigE0/1/0/1.601
ipv4 address 10.0.1.1 255.255.255.0
encapsulation dot1q 601
```

Task ID

Task ID	Operations
interface	read, write
config-services	read, write

Examples

This example shows a sample configuration of the **monitor-session** command in the interface configuration mode:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface gigabitethernet0/2/0/0
RP/0/RP0/CPU0:router(config-if)# monitor-session test  ipv4 rx-only
RP/0/RP0/CPU0:router(config-if)# acl
```

show monitor-session status

To display status information about configured traffic mirroring sessions, use the **show monitor-session status** command in EXEC mode .

show monitor-session [*session-name*] **status** [**detail**] [**errors**]

Syntax Description

session-name	Name of the monitor session to configure.
detail	Displays the full error string for any errors.
errors	Displays all sessions, but only source interfaces with errors are displayed (if no source interfaces have errors, then 'No errors' is displayed).

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

The **show monitor-sessions status** command displays the following information:

- Destination information for the session (including the name of the interface).
- Destination status (interface state).
- List of source interfaces.
- Any other status information that may be pertinent, such as a software or hardware error that would stop sessions operating correctly. If an error is returned from interactions with another component, then the full error string is only displayed in detail output; standard tabular output reports that there has been an error but refers the user to the detailed output.

Examples

This example shows the sample output for the **show monitor-session status detail** command:

```
RP/0/RP0/CPU0:router show monitor-session status detail

Monitor-session foo
  Destination interface GigabitEthernet 0/0/0/0
  Source Interfaces
  -----------------
  GigabitEthernet 0/1/0/0.100:
    Direction: Both
    Status:    Operating
  GigabitEthernet 0/2/0/0.200:
    Direction: Rx
    Status:    Error: <blah>

Monitor session bar
  No destination configured
  Source Interfaces
```

```
-----------------
GigabitEthernet 0/3/0/0.100:
  Direction: Rx
  Status:    Not operational(no destination interface)
```

show monitor-session counters

To display statistics regarding traffic mirroring sessions, use the **show monitor-session counters** command in EXEC mode .

show monitor-session [*session-name*] **ipv4** | **ipv6counters**

Syntax Description

session-name	Name of the monitor session to configure.
ipv4	Specifies the counters of next-hop ipv4 address associated with a monitor-session.
ipv6	Specifies the counters of next-hop ipv6 address associated with a monitor-session.

Command Default

If you do not specify an address, the IPv4 counters are displayed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.9.1	This command was introduced.

Usage Guidelines

The **show monitor-sessions counters** command displays a list of all source interfaces, and the replicated packet statistics for each interface. The full set of statistics displayed for each interface is:

- Ingress replicated packets and octets
- Egress replicated packets and octets
- Non-replicated packets and octets

Examples

This example shows sample output from the **show monitor-session counters** command:

```
RP/0/RP0/CPU0:router show monitor-session 2 counters

Global Non Replicated : 100 Packets 8000 Bytes
Monitor session test1 ipv4
      Next Hop : 20.1.1.1
      Rx Replicated: 100 Packets 8000 Bytes
Monitor session test2
      Next Hop : 30.1.1.1
      Rx Replicated: 200 Packets 16000 Bytes
```