

Traffic Monitoring Commands

This module describes the Cisco IOS XR Software commands to monitor traffic on the router.

For detailed information about monitoring traffic concepts, configuration tasks, and examples, see the *Traffic Monitoring* chapter in the *System Monitoring Configuration Guide for Cisco NCS 5500 Series Routers*.

- show controllers npu exttcamipv4, on page 2
- show controllers npu exttcamipv6, on page 4
- show drops all, on page 6
- show controllers npu stats counters-all, on page 9
- show controllers npu stats traps-all, on page 12
- show controllers npu stats voq, on page 15
- show fwd statistics, on page 19
- show spp client, on page 22
- show spp node-counters, on page 25
- show controllers fia diagshell, on page 29
- show controllers fia statistics, on page 31
- show netio drops, on page 35

show controllers npu exttcamipv4

To display informations of external TCAM for ipv4, use the **show controllers npu exttcamipv4** command in EXEC mode.

show controllers npu exttcamipv4 location

Syntax Description

exttcamipv4 location	Displays summary information external TCAM for ipv4 like hardware information and ORR summary of selected location.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.3.5	The command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
npu	read

This example display informations of external TCAM for ipv4 on the router:

```
Router# sh controllers npu resources exttcamipv4 location 0/RP0/CPU0
HW Resource Information
    Name                            : ext_tcam_ipv4
    Asic Type                       : Jericho Two

NPU-0
OOR Summary
        Estimated Max Entries       : 1838024
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Green
        High Water Mark             : 1100203
        High Water Mark Time        : 2025.Jun.17 11:37:02 BST
        Bank Info                   : ext_tcam_ipv4

OFA Table Information
(May not match HW usage)
        iproute                     : 1100203

Current Hardware Usage
    Name: ext_tcam_ipv4
        Estimated Max Entries       : 1838024
        Total In-Use                : 1099631  (59 %)
        OOR State                   : Green
        High Water Mark             : 1100203
```

```
High Water Mark Time        : 2025.Jun.17 11:37:02 BST
Bank Info                   : ext_tcam_ipv4
```

show controllers npu exttcamipv6

To display informations of external TCAM for ipv6, use the **show controllers npu exttcamipv6** command in EXEC mode.

show controllers npu exttcamipv6 location

Syntax Description

exttcamipv6 location	Displays summary information external TCAM for ipv6 like hardware information and ORR summary of selected location.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.3.5	The command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
npu	read

This example display informations of external TCAM for ipv6 on the router:

```
Router# sh controllers npu resources exttcamipv6 location 0/RP0/CPU0
HW Resource Information
    Name                            : ext_tcam_ipv6
    Asic Type                       : Jericho Two

NPU-0
OOR Summary
        Estimated Max Entries       : 1769611
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Green
        High Water Mark             : 250166
        High Water Mark Time        : 2025.Jun.17 11:28:11 BST
        Bank Info                   : ext_tcam_ipv6

OFA Table Information
(May not match HW usage)
        ip6route                    : 166

Current Hardware Usage
    Name: ext_tcam_ipv6
        Estimated Max Entries       : 1769611
        Total In-Use                : 166      (0 %)
        OOR State                   : Green
        High Water Mark             : 250166
```

```
High Water Mark Time        : 2025.Jun.17 11:28:11 BST
Bank Info                   : ext_tcam_ipv6
```

show drops all

To display the exact packet drop location in a node, use the **show drops all** command in the XR EXEC mode.

show drops all { **commands location** | **location** | **ongoing location** } { *node-id* | **all** }

Syntax Description

commands	Displays commands executed.
location	Specifies location of line card or route processor.
ongoing	Shows drops occuring since last executed.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
cisco-support	read

The **show drops all location all** command displays packet drops for all nodes on all locations.

The command outputs given here are truncated.

```
RP/0/RP0/CPU0:ios#show drops all location all
====================================
Checking for drops on 0/4/CPU0
====================================


show controllers npu stats counters-all instance all location:
[np:Slot: 4, instance: 2] ENQ_DISCARDED_PACKET_COUNTER   : 48
[np:Slot: 4, instance: 3] ENQ_DISCARDED_PACKET_COUNTER   : 38


show controllers npu stats counters-all detail instance all location:
.
.
.
[np:Slot: 4, instance: 5] FDR P1FDRDscrdCntA                  : 4536
[np:Slot: 4, instance: 5] FDR P1FDRDscrdCntB                  : 4536



show spp node-counters:
```

```
[spp:fretta/classify] dropped in classify node: 6
[spp:fretta/classify] lnx l2 drop in classify node: 6


show controller fia statistics detail instance all location:
.
.
.
[fia:FIA Statistics Rack: 0, Slot: 4, instance: 2] FDR P1FDRDscrdCntA: 4536
[fia:FIA Statistics Rack: 0, Slot: 4, instance: 2] FDR P1FDRDscrdCntB: 4536
[fia:FIA Statistics Rack: 0, Slot: 4, instance: 2] FDR P2FDRDscrdCntA: 4536
[fia:FIA Statistics Rack: 0, Slot: 4, instance: 2] FDR P2FDRDscrdCntB: 4536


show controller fia diagshell all "diag counter nZ" location:
.
.
.
[fia:R/S/I: 0/4/0] DRCA0 DrcaCntGddr5BistDataErrGlobal: 96
[fia:R/S/I: 0/4/0] DRCA0 DrcaCntGddr5BistDbiErrGlobal: 96
[fia:R/S/I: 0/4/0] DRCB0 DrcbCntGddr5BistDataErrGlobal: 96
[fia:R/S/I: 0/4/0] DRCB0 DrcbCntGddr5BistDbiErrGlobal: 96
[fia:R/S/I: 0/4/0] DRCC0 DrccCntGddr5BistDbiErrGlobal: 96
```

The **show drops all ongoing location all** command displays the packet drops since last executed.

```
Router#show drops all ongoing location all
====================================
Checking for ongoing drops on 0/4/CPU0
====================================
filtering...


====================================
Checking for ongoing drops on 0/4/CPU0
====================================


====================================
Checking for ongoing drops on 0/3/CPU0
====================================


show controllers npu stats counters-all instance all location:
.
.
.
[np:Slot: 3, instance: 3] ENQ_DISCARDED_PACKET_COUNTER   : +1950


show controllers npu stats counters-all detail instance all location:
[np:Slot: 3, instance: 0] IQM1 TotDscrdByteCnt                 : +133008


show controller fia statistics detail instance all location:

[fia:FIA Statistics Rack: 0, Slot: 3, instance: 0] IQM0 QueueEnqDscrdPktCnt: +1304

show controller fia diagshell all "diag counter nZ" location:
.
.
.
[fia:R/S/I: 0/3/1] IQM0 IqmQueueEnqDiscardedPacketCounter: +45
```

```
====================================
Checking for ongoing drops on 0/RP0/CPU0
====================================


show interfaces:
[Interface:Bundle-Ether10000] input errors: +65
[Interface:Bundle-Ether10001] input errors: +65
[Interface:Bundle-Ether10002] input errors: +65
[Interface:Bundle-Ether10003] input errors: +64
[Interface:Bundle-Ether10004] input errors: +65
[Interface:Bundle-Ether10005] input errors: +65
[Interface:Bundle-Ether10006] input errors: +65
[Interface:Bundle-Ether10007] input errors: +64
[Interface:Bundle-Ether10008] input errors: +64
[Interface:Bundle-Ether10009] input errors: +65
[Interface:Bundle-Ether20001] input errors: +65

====================================
Checking for ongoing drops on 0/2/CPU0
====================================

show controller fia statistics detail instance all location:
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM0 IqmCntCmdErrorsFilterA: +4590
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM0 IqmCntCmdErrorsFilterB: +4590
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM0 IrppCntCmdErrorsFilterA: +4590
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM0 IrppCntCmdErrorsFilterB: +4590
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM1 IqmCntCmdErrorsFilterA: +4590
[fia:FIA Statistics Rack: 0, Slot: 2, instance: 0] IQM1 IqmCntCmdErrorsFilterB: +4590


show controller fia diagshell all "diag counter nZ" location:
[fia:R/S/I: 0/2/0] IPS0 IpsFsmrqDelayCounter: +9
[fia:R/S/I: 0/2/0] IPS1 IpsFsmrqDelayCounter: +7
[fia:R/S/I: 0/2/1] IPS0 IpsFsmrqDelayCounter: +10
[fia:R/S/I: 0/2/1] IPS1 IpsFsmrqDelayCounter: +7


show interfaces:
[Interface:HundredGigE0/2/0/28] input errors: +113
```

show controllers npu stats counters-all

To display the various statistics for the NPU, use the **show controllers npu stats counters-all** command in the XR EXEC mode.

show controller npu stats counters-all { **detail instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

detail instance *instance-id*	Displays detailed information about a given instance.
detail instance *all*	Displays detailed information about all instances.
instance *instance-id*	Displays information about a given instance.
instance *all*	Displays information about all instances.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **| begin interface**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **| exclude interface**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read

Task ID	Operations
filesystem	read, write
cisco-support	read

Examples

The **show controllers npu stats counters-all** command displays the NPU statistics for all instance and all locations.

```
Router# show controller npu stats counters-all instance all location all

FIA Statistics Rack: 0, Slot: 0, Asic instance: 0

Per Block Statistics:

Ingress:

NBI RX:
  RX_TOTAL_BYTE_COUNTER          = 161392268790033002
  RX_TOTAL_PKT_COUNTER           = 164628460653364

IRE:
  CPU_PACKET_COUNTER             = 0
  NIF_PACKET_COUNTER             = 164628460651867
  OAMP_PACKET_COUNTER            = 32771143
  OLP_PACKET_COUNTER             = 4787508
  RCY_PACKET_COUNTER             = 67452938
  IRE_FDT_INTRFACE_CNT           = 192

IDR:
  MMU_IDR_PACKET_COUNTER         = 697231761913
  IDR_OCB_PACKET_COUNTER         = 1

IQM:
  ENQUEUE_PKT_CNT                = 164640311902277
  DEQUEUE_PKT_CNT                = 164640311902198
  DELETED_PKT_CNT                = 0
  ENQ_DISCARDED_PACKET_COUNTER   = 90015441
```

show controllers npu stats traps-all

To display all the trap events statistics within the NPU, use the **show controllers npu stats traps-all** command in the XR EXEC mode.

show controller npu stats traps-all { **detail instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **latest instance** *instance-id* **location** { *node-id* | *path* | *all* } | **nonzero instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

detail instance *instance-id*	Displays detailed information about a given instance.
detail instance *all*	Displays detailed information about all instances.
instance *instance-id*	Displays NPU information about a given instance.
instance *all*	Displays NPU information about all instances.
latest instance *instance-id*	Displays the most recent hardware statistics about a given instance.
nonzero instance *instance-id*	Displays information about a given instance by excluding traps with both zero packets accepted and zero packets dropped.
nonzero instance *all*	Displays information about all instances by excluding traps with zero packets accepted and zero packets dropped.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **`| begin interface`**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **`| exclude interface`**.

output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.
output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **| file filename vrf vrfname**. You can save the content in the following locations: • *WORD* - Save the output to a specified filename. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default None

Command Modes XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
filesystem	read, write
cisco-support	read

Examples

The **show controllers npu stats traps-all** command displays packets that are locally processed and packets that are dropped by the CPU.

```
Router# show controllers npu stats traps-all instance all location 0/RP0/CPU0

Trap Type                                       NPU  Trap TrapStats   Policer Packet    Packet

                                                ID    ID      ID              Accepted  Dropped
=============================================================================================
RxTrapMimSaMove(CFM_DOWM_MEP_DMM)                0    6    0x6         32037   0         0

RxTrapMimSaUnknown(RCY_CFM_DOWN_MEP_DMM)         0    7    0x7         32037   0         0

RxTrapAuthSaLookupFail (IPMC default)            0    8    0x8         32033   0         0

RxTrapSaMulticast                                0    11   0xb         32018   0         0

RxTrapArpMyIp                                    0    13   0xd         32001   0         0

RxTrapArp                                        0    14   0xe         32001   11        0

RxTrapDhcpv4Server                               0    18   0x12        32022   0         0

RxTrapDhcpv4Client                               0    19   0x13        32022   0         0

RxTrapDhcpv6Server                               0    20   0x14        32022   0         0

RxTrapDhcpv6Client                               0    21   0x15        32022   0         0

RxTrapL2Cache_LACP                               0    23   0x17        32003   0         0

RxTrapL2Cache_LLDP1                              0    24   0x18        32004   0         0

RxTrapL2Cache_LLDP2                              0    25   0x19        32004   1205548   0

RxTrapL2Cache_LLDP3                              0    26   0x1a        32004   0         0
```

The above sample displays only a part of the actual output; the actual output displays more details.

show controllers npu stats voq

To display statistics related to the Virtual Output Queues (VOQs) on the NPU, use the **show controllers npu stats voq** command in the XR EXEC mode.

show controller npu stats voq { **base** *voq-base number* { **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **src-slice** *slice-id* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } } | **ingress interface** { *voq-Interface-handle-number* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **CEM** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **EH** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Fi** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Fo** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **FH** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Gi** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Hu** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Mg** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **PTP** *R/S/I/P* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **Te** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **TF** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **TH** *R/S/I/P/B* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | *all* **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } } } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

base *voq-base number*	Specifies the voq-base number.
src-slice *slice-id* **instance**	Specifies the slice id.
ingress interface <*voq-Interface handle number*>	Specifies voq-Interface handle number.
ingress interface *CEM*	Specifies circuit emulation interface.
ingress interface *EH*	Specifies 800 Gigabit ethernet interface type.
ingress interface *Fi*	Specifies 50 Gigabit ethernet interface type.
ingress interface *Fo*	Specifies 40 Gigabit ethernet interface type.
ingress interface *FH*	Specifies 400 Gigabit ethernet interface type.
ingress interface *Gi*	Specifies Gigabit ethernet interface type.
ingress interface *Hu*	Specifies 100 Gigabit ethernet interface type.
ingress interface *Mg*	Specifies ethernet interface type.
ingress interface *PTP*	Specifies ethernet interface type.
ingress interface *Te*	Specifies 10 Gigabit ethernet interface type.

ingress interface *TF*	Specifies 25 Gigabit ethernet interface type.
ingress interface *TH*	Specifies 200 Gigabit ethernet interface type.
ingress interface *all*	Specifies all interface type.
R/S/I/P/B	Specifies the Rack/Slot/Instance/Port/Breakout of the voq.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **| begin interface**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **| exclude interface**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read

Task ID	Operations
filesystem	read, write
cisco-support	read

Examples

The **show controllers npu stats voq** command displays packets that are processed on the NPU and dropped in the interface VoQs.

```
Router# show controllers npu stats voq ingress interface hundredGigE 0/0/0/16 instance all
 location 0/RP0/CPU0

Interface Name    =   Hu0/0/0/16
Interface Handle  =      f0001b0
Location          =   0/RP0/CPU0
Asic Instance     =            0
VOQ Base          =        10288
Port Speed(kbps)  =    100000000
Local Port        =        local
VOQ Mode          =            8
Shared Counter Mode =          2
       ReceivedPkts    ReceivedBytes   DroppedPkts     DroppedBytes
-------------------------------------------------------------------------
TC_{0,1} = 114023724       39908275541     113945980       39881093000
TC_{2,3} = 194969733       68239406550     196612981       68814543350
TC_{4,5} = 139949276       69388697075     139811376       67907466750
TC_{6,7} = 194988538       68242491778     196612926       68814524100
```

show fwd statistics

To display the forwarder driver statistics information, use the **show fwd statistics** command in the XR EXEC mode.

show fwd statistics { **all** { **detail location** { *node-id* | *path* } | **location** { *node-id* | *path* } | [*output-modifiers*] } | **egress** { **detail location** { *node-id* | *path* } | **location** { *node-id* | *path* } | [*output-modifiers*] } | **ingress** { **detail location** { *node-id* | *path* } | **location** { *node-id* | *path* } | [*output-modifiers*] } } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

all	Displays all packet statistics.
egress	Displays egress packet statistics.
ingress	Displays ingress packet statistics.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **| begin interface**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **| exclude interface**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Task ID	Operations
filesystem	read, write

Examples

The **show fwd statistics** command displays the forwarder driver statistics information on a particular node or location.

```
Router# Show fwd statistics all location 0/RP1/CPU0
RECEIVE STATISTICS SUMMARY:
rx_pkts: 485060
punt_pkts: 416647
ingress_total_drops: 6117
TRANSMIT STATISTICS SUMMARY:
inject_pkts: 103632
tx_pkts: 101434
tx_null_ifh_pkts: 6006
mcast_all_lccpu_pkts: 1206
lpts_all_lccpu_pkts: 0
mgmt_loopback_pkts: 0
lpts_loopback_pkts: 5788
dlrsc_rp_loopback_pkts: 0
local_node_loopback_pkts: 2198
hw_ts_offset_exceeded: 0
egress_total_drops: 0
```

show spp client

To display the client information within the Software Packet Path (SPP), use the **show spp client** command in the XR EXEC mode.

show spp client { **detail location** { *node-id* | *path* | *all* } | **location** { *node-id* | *path* | *all* } | **punt** { **queues location** { *node-id* | *path* | *all* } | **status location** { *node-id* | *path* | *all* } } | [*output-modifiers*] } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
punt queues	Specifies client punt queues.
punt status	Specifies client punt status.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **`| begin interface`**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **`| exclude interface`**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **`| include interface`**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **`| utility sort`**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
transport	read

Task ID	Operations
optical	read

Examples

The **show spp client** command displays the client information within the SPP on a particular node or location.

```
Router# show spp client detail location 0/0/CPU0
Fri Sep  6 11:58:45.157 UTC
Client connections allowed: 1
Ctx allocator: 65536 items 65531 free 0 shortages

SPP Queues
==========
    Main input queue at 0x0x3087516040
      Persistent: F, Mutex: T, Pulse: T, Blocking: T Invalid: F
      Head 1184, Tail 1184, Coalesced 0
      Cur 0, Max 2048, Enqueues 5280, High WM: 4 (14:02:40.278 Sep 05 24 UTC) Drops: 0
      elsize 8 coid 1 pid 4980 pulse_code 124 pulse_value 0 prio 10
Clients
=======
netio, JID 212 (pid 6184)
-----------------------------------------------------------
  Reconnect Pending: F, Exited: F, Keep Queues: F, Pakman Client: T
  Quota:
    Current: 0, Limit: 32768, Available: 0, Enqueued: 0, Drops 0
  Queues:
    Control Queue at 0x0x3087e62400
      Punt SF: nused 0, is not scheduled
      Persistent: F, Mutex: T, Pulse: T, Blocking: F Invalid: F
      Head 0, Tail 0, Coalesced 0
      Cur 0, Max 10, Enqueues 0, High WM: 0 (13:55:40.406 Sep 05 24 UTC) Drops: 0
      elsize 8 coid 0 pid 6184 pulse_code 0 pulse_value 0 prio 10
    Punt Queue key 0x03000041 at 0x0x3087e5d940
```

The above sample displays only a part of the actual output; the actual output displays more details.

show spp node-counters

To display the node counters for the Software Packet Path (SPP), use the **show spp node-counters** command in the XR EXEC mode.

show spp node-counters { **location** { *node-id* | *path* | *all* } | [*output-modifiers*] } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **| begin interface**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **| exclude interface**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default None

Command Modes XR EXEC mode

Command History

Release	Modification
Release 25.4.1	New counters are added. These counters will appear in the output when such condition occurs and the counters become non-zero. • **Inject (Stage2)**—The packets are temporarily queued within the client/inject node of the SPP process when congestion occurs. These packets will be dequeued and transmitted once the congestion subsides. • **mgmt tx pkt drops**—If a packet is dropped while being transmitted to the management interface. • **ptp tx pkt drops**—If a packet is dropped while being transmitted to the PTP interface. • **ce tx pkt drops**—If a packet is dropped while being transmitted to the NPU using control ethernet interface.
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
transport	read
optical	read

Examples

The **show spp node-counters** command displays the node counters for the SPP on a particular node or location.

```
Router# show spp node-counters location 0/0/CPU0
fretta/classify
 forwarded NPU packet to NetIO:              21
                     PUNT ARP:               1
                   PUNT IFIB:               20
               IFIB RAWIP4_FM:              20
------------------------------
client/inject
        pkts injected into spp:              22
  NetIO->NPU injected into spp:              22
 NetIO->NPU & NetIO->MGMT pkts:              22
```

```
               Inject (Stage2):               1
          NetIO->NPU PROTO ARP:               2
         NetIO->NPU PROTO IPV4:              20
------------------------------
socket/rx
                ether raw pkts:              21
------------------------------
socket/tx
                      ce pkts:              22
------------------------------
pkt_classrx
            LPTS: ICMPv4 to XR:              20
              Total Pkts to XR:              21
             Total Pkts to Lnx:               1
               LPTS: ARP reply:               1
      Total Pkts to both dests:               1
------------------------------
client/punt
              punted to client:              21
------------------------------
```

The above sample displays only a part of the actual output; the actual output displays more details.

show controllers fia diagshell

To debug asics, use the **show controllers fia diagshell** command in the XR EXEC mode.

show controllers fia diagshell slot *diagnostic command* **location** { *location node-id* | *all* }

Syntax Description

slot	Specifies the slot in the chassis where the FIA component is located.
diagnostic command	Enter specific commands available within the diagnostic shell to perform various checks and gather information.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
cisco-support	read

Examples

The **show controllers fia diagshell** command to display port module information from NPU slot 0 for location 0/0/CPU0.

```
Router# show controllers fia diagshell 0 "PortMod info pm" location 0/0/CPU0
Node ID: 0/0/CPU0

R/S/I: 0/0/0
 PM id |    type     |    phys    | logic ports
-------------------------------------------------
   00  | Pm4x25      | 001 - 004  |001
   01  | Pm4x25      | 005 - 008  |005
   02  | Pm4x25      | 009 - 012  |009
   03  | Pm4x25      | 013 - 016  |013
   04  | Pm4x25      | 017 - 020  |017
   05  | Pm4x25      | 021 - 024  |021
   06  | Pm4x25      | 049 - 052  |no port attached
```

```
07  | Pm4x25      | 053 - 056  |no port attached
08  | Pm4x25      | 057 - 060  |no port attached
09  | Pm4x25      | 061 - 064  |061
10  | Pm4x25      | 065 - 068  |065
11  | Pm4x25      | 069 - 072  |069
12  | Pm4x10      | 025 - 028  |no port attached
13  | Pm4x10      | 029 - 032  |no port attached
14  | Pm4x10      | 033 - 036  |no port attached
15  | Pm4x10      | 037 - 040  |no port attached
16  | Pm4x10      | 041 - 044  |253
17  | Pm4x10Q     | 041 - 044  |no port attached
18  | Pm4x10      | 045 - 048  |no port attached
19  | Pm4x10Q     | 045 - 048  |no port attached
20  | Dnx_fabric  | 192 - 195  |256 - 259
21  | Dnx_fabric  | 196 - 199  |260 - 263
22  | Dnx_fabric  | 200 - 203  |264 - 267
```

The above sample displays only a part of the actual output; the actual output displays more details.

show controllers fia statistics

To display the fabric ASIC's statistical information about drop counters, packet counters, and error counters for a specific fabric plane or for all planes, use the **show controllers fia statistics** command in the XR EXEC mode.

show controller fia statistics { **detail instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } | **instance** { *instance-id* **location** { *node-id* | *path* | *all* } | *all* **location** { *node-id* | *path* | *all* } } } [*output-modifiers* { **begin** *line* | **exclude** *line* | **file** | **include** *line* | **utility** *line* }]

Syntax Description

detail instance *instance-id*	Displays detailed information about a given instance.
detail instance *all*	Displays detailed information about all instances.
instance *instance-id*	Displays information about a given instance.
instance *all*	Displays information about all instances.
location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays the information about a specific node.
location *all*	Displays information about all nodes.
output-modifiers **begin** *line*	Displays information from the line that matches to the given content. For example, if you want to display the running configuration starting from the interface configurations, you can enter as **| begin interface**.
output-modifiers **exclude** *line*	Displays information by filtering out lines that contain the given content. For example, if you want to view a configuration but skip all lines that mention "interface", you can enter as **| exclude interface**.
output-modifiers **include** *line*	Displays information that includes the content that you have given. For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as **| include interface**.
output-modifiers **utility** *line*	Specifies various Unix command-line tools to manipulate or analyze the command's output. For example, if you want to sort the output of a command alphabetically, you can enter as **| utility sort**.

output-modifiers **file**	Saves the information to a specific file. For example, if you want to save information to a specific file, you can enter as **`| file filename vrf vrfname`**. You can save the content in the following locations: • *filename* - Save the output to a specified filename in VRF. • *append* - Add the output to the end of an existing file. • *config* - Save the output to the device's configuration. • *disk0* - Store the output on the device's disk0 storage. • *ftp* - Transfer and save the output to an FTP server. • *harddisk* - Save the output to the device's internal hard disk. • *http* - Send the output to an HTTP server. • *https* - Send the output to an HTTPS server. • *rootfs* - Save the output to the root file system of the device. • *scp* - Securely copy the output to a remote server using SCP. • *sftp* - Securely transfer the output to a remote server using SFTP. • *tftp* - Transfer the output to a TFTP server.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.5	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read

Task ID	Operations
filesystem	read, write
cisco-support	read

Examples

The **show controllers fia statistics** command displays the statistical information about drop counters, packet counter and error counter for instance 0 and location 0/1/CPU0.

```
Router# show controllers fia statistics instance 0 location 0/1/CPU0

FIA Statistics Rack: 0, Slot: 1, Asic instance: 0

FIA Rx (To Fabric) Statistics.

 -------------------------------------------------{*}*--------------------

 Input Pkt counters                                    Pkts             Bytes

    Rx pkts from pse                 :        665777182      288589641737

    Rx pkts from switch              :          5562700        2452202671

        bcast pkts from switch       :                0

        mcast pkts from switch       :          5444333

        ucast pkts from switch       :           118367

    Rx pkts enqueued(IQM)            :        665895523      293281221178

    Rx pkts dequeued(IQM)            :        665895523      293281221178

    Rx pkts sent to fabric           :        665895523


Cell counters:

    Data cells sent to fabric        :       1544969295      293281221178

    Control cells sent to fabric     :     420450857496

 Drop counters:

     Rx burst error drops(NBI)        :               0

     Rx error drops(Switch)           :               0

     Rx error drops(pse)              :               0

    Rx pkt discard drops(IQM)        :          5443758        2337309048

     Pkt crc error drops(FDT)         :               0

     Unreachable dest cell drops      :               0

    Internal Error Count             :              0

    Internal Drop Count              :              0
```

The above sample displays only a part of the actual output; the actual output displays more details.

show netio drops

To display Network Input and Output (Netio) packet drops information, use the **show netio drops** command in XR EXEC mode.

show netio drops location *node-id*

Syntax Description

location *node-id*	Specifies the node. The *node-id* argument is entered in the *rack/slot/module* notation. Displays Netio drop counters for the designated node.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
netio	show output

Examples

The **show netio drops** command displays the netio drops for location 0/RSP0/CPU0.

```
Router# show netio drops loc 0/rsp0/cpu0
Drops for interfaces on node 0/RSP0/CPU0
------------------------------------------------------------------------------
Interface: FINT0/RSP0/CPU0 (0x080000c0)
------------------------------------------------------------------------------
Interface input drops:         1008181180 pkts
Interface input errors:        47494 pkts
Interface input unknown proto: 0 pkts
Interface output drops:        255 pkts
Interface output errors:       0 pkts
```

The above sample displays only a part of the actual output; the actual output displays more details.