



# Traffic Monitoring Commands

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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*.

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# 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 occurring 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 12 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
<b>detail instance</b> <i>instance-id</i>	Displays detailed information about a given instance.
<b>detail instance</b> <i>all</i>	Displays detailed information about all instances.
<b>instance</b> <i>instance-id</i>	Displays information about a given instance.
<b>instance</b> <i>all</i>	Displays information about all instances.
<b>location</b> <i>node-id</i>	Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
<b>location</b> <i>all</i>	Displays information about all nodes.
<i>output-modifiers</i> <b>begin</b> <i>line</i>	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   <b>begin interface</b> .
<i>output-modifiers</i> <b>exclude</b> <i>line</i>	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   <b>exclude interface</b> .
<i>output-modifiers</i> <b>include</b> <i>line</i>	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   <b>include interface</b> .
<i>output-modifiers</i> <b>utility</b> <i>line</i>	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   <b>utility sort</b> .

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*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.

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<b>Command Default</b>	None	
<b>Command Modes</b>	XR EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.3.5	This command was introduced.
<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	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		
	<b>detail instance</b> <i>instance-id</i>	Displays detailed information about a given instance.
	<b>detail instance</b> <i>all</i>	Displays detailed information about all instances.
	<b>instance</b> <i>instance-id</i>	Displays NPU information about a given instance.
	<b>instance</b> <i>all</i>	Displays NPU information about all instances.
	<b>latest instance</b> <i>instance-id</i>	Displays the most recent hardware statistics about a given instance.
	<b>nonzero instance</b> <i>instance-id</i>	Displays information about a given instance by excluding traps with both zero packets accepted and zero packets dropped.
	<b>nonzero instance</b> <i>all</i>	Displays information about all instances by excluding traps with zero packets accepted and zero packets dropped.
	<b>location</b> <i>node-id</i>	Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
	<b>location</b> <i>all</i>	Displays information about all nodes.
	<i>output-modifiers</i> <b>begin line</b>	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   <b>begin interface</b> .
	<i>output-modifiers</i> <b>exclude line</b>	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   <b>exclude interface</b> .



<i>output-modifiers</i> <b>include</b> <i>line</i>	<p>Displays information that includes the content that you have given.</p> <p>For example, if you want to view lines that contain the word "interface" within a configuration, you can enter as   <b>include interface</b>.</p>
<i>output-modifiers</i> <b>utility</b> <i>line</i>	<p>Specifies various Unix command-line tools to manipulate or analyze the command's output.</p> <p>For example, if you want to sort the output of a command alphabetically, you can enter as   <b>utility sort</b>.</p>
<i>output-modifiers</i> <b>file</b>	<p>Saves the information to a specific file.</p> <p>For example, if you want to save information to a specific file, you can enter as   <b>file filename vrf vrfname</b>.</p> <p>You can save the content in the following locations:</p> <ul style="list-style-type: none"> <li>• <i>WORD</i> - Save the output to a specified filename.</li> <li>• <i>append</i> - Add the output to the end of an existing file.</li> <li>• <i>config</i> - Save the output to the device's configuration.</li> <li>• <i>disk0</i> - Store the output on the device's disk0 storage.</li> <li>• <i>ftp</i> - Transfer and save the output to an FTP server.</li> <li>• <i>harddisk</i> - Save the output to the device's internal hard disk.</li> <li>• <i>http</i> - Send the output to an HTTP server.</li> <li>• <i>https</i> - Send the output to an HTTPS server.</li> <li>• <i>rootfs</i> - Save the output to the root file system of the device.</li> <li>• <i>scp</i> - Securely copy the output to a remote server using SCP.</li> <li>• <i>sftp</i> - Securely transfer the output to a remote server using SFTP.</li> <li>• <i>tftp</i> - Transfer the output to a TFTP server.</li> </ul>

**Command Default** None

**Command Modes** XR EXEC mode

## show controllers npu stats traps-all

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 ID	Trap ID	TrapStats ID	Policer	Packet Accepted	Packet 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

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

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

**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.

<b>Command Default</b>	None
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<b>Command Modes</b>	XR EXEC mode
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.3.5	This command was introduced.

<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.
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<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	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

<b>all</b>	Displays all packet statistics.
<b>egress</b>	Displays egress packet statistics.
<b>ingress</b>	Displays ingress packet statistics.
<b>location</b> <i>node-id</i>	Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
<i>output-modifiers</i> <b>begin</b> <i>line</i>	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   <b>begin interface</b> .
<i>output-modifiers</i> <b>exclude</b> <i>line</i>	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   <b>exclude interface</b> .
<i>output-modifiers</i> <b>include</b> <i>line</i>	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   <b>include interface</b> .
<i>output-modifiers</i> <b>utility</b> <i>line</i>	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   <b>utility sort</b> .

**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.

<b>Command Default</b>	None	
<b>Command Modes</b>	XR EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.3.5	This command was introduced.
<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	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		
<b>location</b> <i>node-id</i>		Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
<b>location</b> <i>all</i>		Displays information about all nodes.
<b>punt queues</b>		Specifies client punt queues.
<b>punt status</b>		Specifies client punt status.
<i>output-modifiers</i> <b>begin line</b>		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   <b>begin interface</b> .
<i>output-modifiers</i> <b>exclude line</b>		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   <b>exclude interface</b> .
<i>output-modifiers</i> <b>include line</b>		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   <b>include interface</b> .
<i>output-modifiers</i> <b>utility line</b>		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   <b>utility sort</b> .

**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.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	XR EXEC mode
----------------------	--------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.0.1	This command was introduced.

<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.
-------------------------	--

<b>Task ID</b>	<b>Task ID Operations</b>
	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		
<b>location</b> <i>node-id</i>		Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
<b>location</b> <i>all</i>		Displays information about all nodes.
<i>output-modifiers</i> <b>begin</b> <i>line</i>		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   <b>begin interface</b> .
<i>output-modifiers</i> <b>exclude</b> <i>line</i>		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   <b>exclude interface</b> .
<i>output-modifiers</i> <b>include</b> <i>line</i>		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   <b>include interface</b> .
<i>output-modifiers</i> <b>utility</b> <i>line</i>		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   <b>utility sort</b> .

---

*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 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 to spp clients:          10006
    forwarded NPU packet to NetIO:    10006
    dropped in classify node:         22
    Fwded to CoPP sampler:            2
    PUNT ARP:                         2
    PUNT IFIB:                        10006
    IFIB IPv4_STACK:                  10000
    IFIB RAWIP6_FM:                   6
-----
client/inject
    pkts injected into spp:           10002
    NetIO->NPU injected into spp:     10002
    NetIO->NPU PROTO ARP:             2
    NetIO->NPU PROTO IPV4:           10000
-----
socket/rx
    ether raw pkts:                   10030
-----
socket/tx
    ce pkts:                          10002
-----
client/punt
    punted to client:                 10008
-----
```

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.
	<i>diagnostic command</i>	Enter specific commands available within the diagnostic shell to perform various checks and gather information.
	<b>location</b> <i>node-id</i>	Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
	<b>location</b> <i>all</i>	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		
<b>detail instance</b> <i>instance-id</i>		Displays detailed information about a given instance.
<b>detail instance</b> <i>all</i>		Displays detailed information about all instances.
<b>instance</b> <i>instance-id</i>		Displays information about a given instance.
<b>instance</b> <i>all</i>		Displays information about all instances.
<b>location</b> <i>node-id</i>		Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays the information about a specific node.
<b>location</b> <i>all</i>		Displays information about all nodes.
<i>output-modifiers</i> <b>begin line</b>		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   <b>begin interface</b> .
<i>output-modifiers</i> <b>exclude line</b>		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   <b>exclude interface</b> .
<i>output-modifiers</i> <b>include line</b>		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   <b>include interface</b> .
<i>output-modifiers</i> <b>utility line</b>		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   <b>utility sort</b> .

**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*

<b>Syntax Description</b>	<b>location</b> <i>node-id</i>	Specifies the node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. Displays Netio drop counters for the designated node.
<b>Command Default</b>	None	
<b>Command Modes</b>	XR EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.0	This command was introduced.
<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.	
<b>Task ID</b>	<b>Task</b>	<b>Operations</b>
	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.