



ASIC Driver Commands

This module describes the commands used to configure and monitor the application-specific integrated circuit (ASIC) driver on a router running Cisco IOS XR software.

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show controllers plim asic egress-channel bay

To display statistical information for the SPI4.2 transmit channel on a physical layer interface module (PLIM) ASIC, use the **show controllers plim asic egress-channel bay** command in EXEC mode.

show controllers plim asic egress-channel bay {0|1} **channel** *channel_number* [**location** *node-id*]

Syntax Description

0	Displays statistical information for the SPI4.2 transmit channel that is located in the bottom bay.
1	Displays statistical information for the SPI4.2 transmit channel that is located in the top bay.
channel <i>channel_number</i>	Identifies the transmit channel whose statistics you want to display. Replace the <i>channel_number</i> argument with the number of the channel whose statistics you want to display. Range is from 1 through 255.
location <i>node-id</i>	Identifies the location of the PLIM whose ASIC information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The show controllers plim asic tx-channel bay command was replaced by the show controllers plim asic egress-channel bay command.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following example shows sample output from the **show controllers plim ASIC egress-channel bay** command:

```
RP/0/0/CPU0:router# show controllers plim ASIC egress-channel bay 0 channel 0 location
0/4/CPU0

Host bay 0 Tx SPI4.2 channel 0 :
=====
Ifname                : DATA_PORT_0
SPI4.2 Channel state  : provisioned
Bay number             : 0
Tx SPI4.2 channel number : 0
Internal Buffer number : 0
SPI4.2 calendar entries : 1
Buffer Almost Full Threshold : 0x2c00
Tx Queuing ASIC port number : 0
```

This table describes the significant fields shown in the display.

Table 1: show controllers plim ASIC egress-channel bay Field Descriptions

Field	Description
Ifname	Identifies the primary transmit interface.
SPI4.2 Channel state	Indicates if the SPI4.2 ¹ channel is provisioned.
Bay number	Identifies the bay that hosts the specified SPI4.2 transmit channel. Can be 0 or 1.
Tx SPI4.2 channel number	Identifies the SPI4.2 channel whose information is displayed.
Internal Buffer number	Identifies the internal buffer associated with the SPI4.2 transmit channel.
SPI4.2 calendar entries	Number of entries in the SPI4.2 calendar.
Buffer Almost Full Threshold	An increment counter which indicates that the transmit buffer is almost full. The “Buffer Almost Full Threshold” is expressed in hexadecimal format.
Tx Queuing ASIC port number	Identifies the SPI4.2 transmit port.

¹ System Packet Level Interface 4.2

show controllers plim asic ingress-channel bay

To display statistical information for the SPI4.2 receive channel on a physical layer interface module (PLIM) ASIC, use the **show controllers plim asic ingress-channel bay** command in EXEC mode.

show controllers plim asic ingress-channel bay {0|1} **channel** *channel_number* [**location** *node-id*]

Syntax Description

0	Displays statistical information for the SPI4.2 receive channel that is located in the bottom bay.
1	Displays statistical information for the SPI4.2 receive channel that is located in the top bay.
channel <i>channel_number</i>	Identifies the receive channel whose statistics you want to display. Replace <i>the channel_number</i> argument with the number of the channel whose statistics you want to display. Range is from 1 through 255.
location <i>node-id</i>	Identifies the location of the PLIM whose ASIC information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The show controllers plim asic rx-channel bay command was replaced by the show controllers plim asic ingress-channel bay command.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following example shows sample output from the **show controllers plim asic ingress-channel bay** command:

```
RP/0/0/CPU0:router# show controllers plim asic ingress-channel bay 0 channel 0 location 0/4/CPU0
```

```
Host bay 0 Rx SPI4.2 channel 0 :
=====
Ifname                : DATA_PORT_0
SPI4.2 Channel state  : provisioned
Bay number            : 0
Rx SPI4.2 channel number : 0
Internal Buffer number : 0
Rx edram buffer start address : 0x0
Rx edram buffer end address : 0x31fff
Rx edram buffer size   : 0x32000
Rx length buffer start address : 0x0
Rx length buffer end address : 0x63fff
Rx length buffer size   : 0x6400
Number of calendar entries : 1
Quantum                : 209714
```

```
RxEDRAM buffer threshold settings:
```

```
=====
----- <-- Buffer Start (0x0)
|-----| <-- SPI4 AEmpty0 (0x6400)
|-----| <-- SPI4 AEmpty1 (0xc800)
|-----|
|-----| <-- SPI4 AFull 0 (0x1f400)
|-----| <-- SPI4 AFull 1 (0x25800)
|-----| <-- Buffer Full (0x2bc00)
|-----| <-- Buffer End (0x31fff)
```

```
RxLen EDRAM buffer threshold settings:
```

```
=====
----- <-- Buffer Start (0x0)
|-----| <-- SPI4 AEmpty0 (0xc80)
|-----| <-- SPI4 AEmpty1 (0x1900)
|-----|
|-----| <-- SPI4 AFull 0 (0x3e80)
|-----| <-- SPI4 AFull 1 (0x4b00)
|-----|
```

```

|-----|<-- Buffer Full  (0x5780)
|       |
|-----|<-- Buffer End   (0x63ff)

```

This table describes the significant fields shown in the display.

Table 2: show controllers plim asic ingress-channel bay Field Descriptions

Field	Description
Ifname	Identifies the primary transmit interface.
SPI4.2 Channel state	Indicates if the SPI4.2 ² channel is provisioned.
Bay number	Identifies the bay that hosts the specified SPI4.2 receive channel. Can be 0 or 1.
Rx SPI4.2 channel number	Identifies the SPI4.2 receive channel whose information is displayed.
Internal Buffer number	Identifies the internal buffer associated with the SPI4.2 receive channel.
Rx edram buffer start address	Embedded DRAM buffer start address in hexadecimal format.
Rx edram buffer end address	Embedded DRAM buffer end address in hexadecimal format.
Rx edram buffer size	Embedded DRAM buffer size in hexadecimal format.
Rx length buffer start address	Receive length buffer start address in hexadecimal format.
Rx length buffer end address	Receive length DRAM buffer end address in hexadecimal format.
Rx length buffer size	Receive length DRAM buffer size in hexadecimal format.
Number of calendar entries	Number of entries in the SPI4.2 calendar.
Quantum	Average number of bytes in the interface queue.
Buffer Almost Full Threshold	An increment counter which indicates that the transmit buffer is almost full. The "Buffer Almost Full Threshold" is expressed in hexadecimal format.
Tx Queuing ASIC port number	Identifies the SPI4.2 transmit port.
RxEDRAM buffer threshold settings	Displays embedded DRAM receive buffer threshold counter settings in hexadecimal format.

2 System Packet Level Interface 4.2

show controllers plim ASIC spa bay

To display statistical information for the SPA ASIC, use the **show controllers plim ASIC spa** command in EXEC mode.

show controllers plim ASIC spa bay *bay-number* [**location** *node-id*]

Syntax Description

<i>bay-number</i>	Displays information about the SPA in the specified bay. Range is from 1 through 3.
location <i>node-id</i>	Identifies the location of the SPA whose ASIC information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The {0 1 } keywords were replaced with the <i>bay-number</i> argument.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following sample output is from the **show controllers plim ASIC spa bay** command:

```
RP/0/0/CPU0:router# show controllers plim ASIC spa bay 0 location 0/4/CPU0
                               SPA 0 table:
                               =====
SPA OIR state                   : present
SPA state                       : enabled
```

```

SPA allocated Rx buffer size : 4MB
SPA available Rx buffer size : 0x20c000
RxSPI PLL reset             : inactive
Header Format type           : Format A
Pad bytes                    : 0
L2LA                        : 0
Strict priority mode         : active
EFC Manager                  : disabled
SPA dual wide mode           : inactive
Max SPA channels             : 10
PLIM loopback                : inactive
SPI loopback                 : inactive
DatamaxT                     : 4096
Training M                   : 16
DIP2 Match                   : 3
DIP2 Error                   : 3
Tx SClk edge                 : falling
DIP4 Match                   : 15
DIP4 Error                   : 2
Rx SClk edge                 : rising
SPI bus speed                : 350MHz
Tx Burst size                : 64 Bytes
Rx Burst size sysdb          : 80 Bytes
Rx SPI state                 : enabled
Rx SPI sync state            : inframe
Rx calendar mode             : single
Maximun RxSPI channels       : 10
Tx SPI state                 : enabled
Tx SPI sync state            : inframe
Tx calendar mode             : single
Maximun Tx SPI4.2 channels   : 5

```

This table describes the significant fields shown in the display.

Table 3: show controllers plim ASIC spa bay Field Descriptions

Field	Description
SPA OIR state	Current OIR ³ status for this SPA.
SPA state	Current state of the specified SPA. Can be enabled or disabled.
SPA allocated Rx buffer size	Number of bytes allocated for the receive buffer.
SPA available Rx buffer size	Number of bytes available in the receive buffer.
RxSPI PLL reset	SPI PLL receive timer reset value.
Header Format type	Header format used by this ASIC.
Pad bytes	Number of pad bytes allowed to fill out the packets sent on this ASIC.
L2LA	Layer 2 Length Adjust. When a length entry has been read or is being written, this bit contains the value of the L2LA field.

Field	Description
Strict priority mode	Indicates whether strict priority mode is active or inactive on this SPA. Strict priority mode ensures that the Priority Queue is serviced only when it is not empty. This provides the lowest possible delay for matching traffic.
EFC Manager	Indicates whether the EFC ⁴ manager is enabled or disabled on this SPA.
SPA dual wide mode	Indicates whether dual wide mode is active or inactive on this SPA.
Max SPA channels	Maximum channels supported on this SPA.
PLIM loopback	Indicates whether loopback is active or inactive on this SPA.
SPI loopback	Indicates whether SPI loopback is active or inactive on this SPA.
DatamaxT	Maximum data training interval. This is the maximum interval between scheduling of training sequences on the SPI ⁵ data path. If the DatamaxT field shows 0, then the core never sends periodic training.
Training M	Number of consecutive DIP2 ⁶ errors detected on the Tstat bus before the TxSPI module enters the out-of-frame state. This signal can be safely set at any time.
DIP2 Match	Total number of 2-bit DIP2 packets that met specific match clauses. Note DIP2 is a parity algorithm where a 2-bit odd parity is computed diagonally over status words.
DIP2 Error	Total number of 2-bit DIP2 errors Note DIP2 is a parity algorithm where a 2-bit odd parity is computed diagonally over status words.
Tx SClk edge	Indicates which edge of the transmit SClk to use to sample the Tstat bus. Selects rising or falling edge as the active transmit SClk edge.
DIP4 Match	Total number of 2-bit DIP4 packets that met specific match clauses.

Field	Description
Rx SClk edge	Indicates which edge of the receive SClk to use to sample the Tstat bus. Selects rising or falling edge as the active transmit SClk edge.
DIP4 Error	Total number of DIP4 errors. Note DIP4 is a parity algorithm where a 4-bit odd parity is computed diagonally over status words.
SPI bus speed	SPI bus speed in MHz ⁷ .
Tx Burst size	Committed burst size in bits for traffic transmitted on this SPA.
Rx Burst size sysdb	Committed burst size in bits for traffic received on this SPA.
Rx SPI state	Indicates whether receive SPI is enabled or disabled.
Rx SPI sync state	Indicates which parameter controls the synchronization behavior of the RXSPI module.
Rx calendar mode	Indicates which RXSPI status protocol will be used to transmit status.
Maximum RxSPI channels	Maximum number of SPI receive channels supported on this SPA.
Tx SPI state	Indicates whether transmit SPI is enabled or disabled.
Tx SPI sync state	Indicates which parameter controls the synchronization behavior of the TXSPI module.
Tx calendar mode	Indicates which TXSPI status protocol will be used to transmit status.
Maximum Tx SPI4.2 channels	Maximum number of SPI4.2 transmit channels supported on this SPA.

³ online insertion and removal

⁴ Extended Flow Control

⁵ security policy index

⁶ 2-bit Diagonal Interleaved Parity

⁷ megahertz

show controllers plim ASIC statistics

To display physical layer interface module (PLIM) ASIC statistics for a specific node or interface, use the **show controllers plim ASIC statistics** command in EXEC mode.

show controllers plim ASIC statistics {**interface** *type interface-path-id*} [**summary**] [**location** *node-id*]

Syntax Description

<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	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.
summary	Displays a summarized information for PLIM ASICs on a specified node, or for all interfaces on the router.
location <i>node-id</i>	Identifies the location of the node whose PLIM ASIC information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following example shows how to display PLIM ASIC statistics information for a POS interface:

```
RP/0/0/CPU0:router# show controllers plim ASIC statistics interface POS 0/2/0/0

Node: 0/2/CPU0
-----
POS0/2/0/0 Tx Statistics
-----
TotalOctets      : 78904040          TotalPkts        : 1622308
UnicastPkts     : 1622308           MulticastPkts    : 0
BroadcastPkts   : 0                 <64Octets       : 1610433
64Octets        : 0                 65to127Octets   : 11875
128to255Octets : 0                 256to511Octets  : 0
512to1023Octets : 0                1024to1518Octets : 0
1519to1548Octets : 0                1549to9216Octets : 0
>9216Octet     : 0                 BadCRCPkts      : 0
802.1QPkts     : 0                 Underrun        : 0
Runt            : 0                 Giant           : 0
PausePkts      : 0                 Jabbers         : 0
DeferralAbort  : 0                 LateCollision    : 0
CollisionAbort : 0                 OneCollision     : 0
MultiCollision : 0                 TotalCollisions  : 0
TotalDefer     : 0                 LateCollisionAbort : 0
LengthAbort    : 0                 TxBP count      : 0

POS0/2/0/0 Rx Statistics
-----
--More-- failed to get stats
TotalOctets      : 91010808          UnicastPkts     : 1815571
TotalPkts        : 1815571          BroadcastPkts   : 0
MulticastPkts    : 0                 65to127Octets   : 11844
64Octets         : 63846            256to511Octets  : 0
128to255Octets  : 7                 1024to1518Octets : 0
512to1023Octets : 0                 1549to9216Octets : 0
1519to1548Octets : 0                 BadCRCPkts      : 0
>9216Octets     : 0                 Runt            : 0
BadCodedPkts    : 0                 802.1QPkts     : 0
ShortPkts       : 1739874           PausePkts       : 0
Drop            : 0                 Jabbers         : 0
ControlPkts     : 0
BadPreamble     : 0

POS0/2/0/0 Drop
-----
RxFIFO Drop      : 0                 PAR Tail Drop   : 0
TxFIFO Drop      : 0
```

This table describes the significant fields shown in the display.

Table 4: show controllers plim ASIC statistics Field Descriptions

Field	Description
TotalOctets	Number of octets received or transmitted on the interface.
TotalPkts	Number of total packets received or transmitted on the interface.
UnicastPkts	Number of unicast packets received or transmitted on the interface.

Field	Description
MulticastPkts	Number of multicast packets received or transmitted on the interface. Received packets were directed to the multicast address.
BroadcastPkts	Number of good broadcast packets received or transmitted. Received packets were directed to the broadcast address.
64Octets	Number of packets (including bad packets) received or transmitted that were less than 64 octets in length (excluding framing bits but including FCS octets).
64Octets	Number of packets (including bad packets) received or transmitted that were 64 octets in length (excluding framing bits but including FCS octets).
65to127Octets	Number of packets (including bad packets) received or transmitted that were between 65 and 127 octets in length inclusive (excluding framing bits but including FCS octets).
128to255Octets	Number of packets (including bad packets) received or transmitted that were between 128 and 255 octets in length inclusive (excluding framing bits but including FCS octets).
256to511Octets	Number of packets (including bad packets) received or transmitted that were between 256 and 511 octets in length inclusive (excluding framing bits but including FCS octets).
512to1023Octets	Number of packets (including bad packets) received or transmitted that were between 512 and 1023 octets in length inclusive (excluding framing bits but including FCS octets).
1024to1518Octets	Number of packets (including bad packets) received or transmitted that were between 1024 and 1518 octets in length inclusive (excluding framing bits but including FCS octets).
1519to1548Octets	Number of packets (including bad packets) received or transmitted that were between 1519 and 1548 octets in length inclusive (excluding framing bits but including FCS octets).

Field	Description
1549to9216Octets	Number of packets (including bad packets) received or transmitted that were between 1549 and 9216 octets in length inclusive (excluding framing bits but including FCS octets).
>9216Octet	Number of packets (including bad packets) received or transmitted that were greater than 9216 octets in length (excluding framing bits but including FCS octets).
BadCRCPkts	Number of packets received or transmitted that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS error) or a bad FCS with a non integral number of octets (alignment error).
802.1QPkts	Number of 802.1QPkts received or transmitted on the interface.
Underrun	Number of packets that were not retrieved quickly enough from shared memory to be transmitted or received.
Runt	Number of packets received or transmitted that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.
Giant	Number of packets received or transmitted that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.
PausePkts	Number of pause packets transmitted/received on the interface. Pause packets that tell remote devices to delay sending more packets for a specified period of time.
Jabbers	Number of packets received or transmitted that were longer than 1518 octets (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS error) or a bad FCS with a non-integral number of octets (assigned error).
DeferralAbort	Number of deferral aborts that occurred on this segment.

Field	Description
LateCollision	Number of late collisions on this segment
CollisionAbort	Number of collisions that were aborted.
OneCollision	Number of single collisions that occurred on this segment.
MultiCollision	Number multiple collisions that occurred on this segment.
TotalCollisions	Number of collisions on this segment.
TotalDefer	Number of deferrals on this segment.
LateCollisionAbort	Number of late collision aborts that occurred on this segment.
LengthAbort	Number of length aborts that occurred on this segment.
TxBP count	Number of transmit BP on this segment.
Rx Statistics	Indicates the statistics that follow were received by the interface.
TX statistics	Indicates the statistics that follow were transmitted by the interface.
RxFIFO Drop	Displays the receive FIFO drop information.
PAR Tail Drop	Displays PAR tail drop information.
TxFIFO Drop	Displays transmitted FIFO drop information.

show controllers plim asic SPAQFPBridgeCtrl

To display physical layer interface module (PLIM) asic Shared Port Adapter Quantum Flow Processor bridge control (SPAQFPBridgeCtrl) driver information, use the **show controllers plim asic SPAQFPBridgeCtrl** command in EXEC mode.

```
show controllers plim asic SPAQFPBridgeCtrl {counters| ingress-channel| egress-channel| spa}
```

Syntax Description

counters	Displays information regarding the counters.
ingress-channel	Displays information regarding the receiving SPI4.2 channel.
egress-channel	Displays information regarding the transmitting SPI4.2 channel.
spa	Displays SPA (Shared Port Adapters) information.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following example shows how to display summarized PLIM ASIC SPAQFPBridgeCtrl driver information:

```
RP/0/RP00/CPU0router# show controllers plim asic SPAQFPBridgeCtrl
1
```

show controllers plim asic summary

To display summarized physical layer interface module (PLIM) ASIC information for a specific node or interface, use the **show controllers plim asic** command in EXEC mode.

show controllers plim asic summary [*location node-id*]

Syntax Description

location <i>node-id</i>	Identifies the location of the node whose PLIM ASIC information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation.
Note	Use the show platform command to see the location of all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
root-system	read

Examples

The following example shows how to display summarized PLIM ASIC information for all locations:

```
RP/0/0/CPU0:router# show controllers plim asic summary

Node: 0/1/CPU0
-----
Instance# 0   Summary info:
-----
Name         : PLASPA   Version  : 2

Port 0
Jacket slot: 1           SPA type : SPA_NAME_UNKNOWN
Port 1
Jacket slot: 3           SPA type : SPA_NAME_UNKNOWN
Port 2
```

```

Jacket slot: 0          SPA type : 4xOC3 POS SPA

Instance# 1    Summary info:
-----
Name          : PLASPA    Version   : 2

Port 0
Jacket slot: 2          SPA type : SPA_NAME_UNKNOWN
Port 1
Jacket slot: 4          SPA type : 4xOC48 POS/RPR HHSPA
Port 2
Jacket slot: 5          SPA type : 8xGE SPA

IFName       : POS0/1/0/0
Inst#        : 0          Port       : 2
RxLPORt     : 0x80      TxLPORt   : 0x48
UIdb        : 0x2       Key        : 0x80
Hkey        : 209      Hkey idx  : 0

IFName       : POS0/1/0/1
Inst#        : 0          Port       : 2
RxLPORt     : 0x81      TxLPORt   : 0x49
UIdb        : 0x4       Key        : 0x81
Hkey        : 28       Hkey idx  : 0

IFName       : POS0/1/0/2
Inst#        : 0          Port       : 2
RxLPORt     : 0x82      TxLPORt   : 0x4a
UIdb        : 0x6       Key        : 0x82
Hkey        : 183     Hkey idx  : 0

```

This table describes the significant fields shown in the display.

Table 5: show controllers plim asic summary Field Descriptions

Field	Description
Node	Node whose information is displayed. Information is displayed for each node's SPA and its interfaces.
Instance	PLIM ASIC identifier. This is the PLIM ASIC associated with the specified location.
Summary info (for SPA)	<p>Displays the following info for all SPAs installed in the router:</p> <ul style="list-style-type: none"> • Name—Identifies the SPA whose information is displayed. • Version—Version identifier for the PLIM ASIC. • Jacket slot—Identifies the slot containing the jacket card for the specified SPA. • SPA type —Describes the SPA whose information is displayed. • Port—Port associated with the PLIM ASIC. • Inst#—SPA ASIC instance Identifier.

Field	Description
Summary info (for interfaces)	<p>Displays the following info for all interfaces associated with the specified SPA:</p> <ul style="list-style-type: none"> • Intf name—Identifies the SPA whose information is displayed. • Inst#—ASIC associated with this interface. • Port—Port associated with the PLIM ASIC. • RxLPORT—Receive port, in hexadecimal format. • TxLPORT—Transmit port, in hexadecimal format. • Uidb—UIDB⁸ assigned by the software, in hexadecimal format. • Key—AISC key, in hexadecimal format. • Hkey—ASIC registry key. • Hkey idx—ASIC registry key index.

⁸ Universal interface descriptor block

show controllers pse

To display packet switching engine (PSE) information in the egress or the ingress stage, use the **show controllers pse egress** command in EXEC mode.

```
show controllers pse {egress| ingress} {gather| precam| statistics}
```

Syntax Description

gather	Displays gather stage programming information.
precam	Displays precam stage programming information.
statistics	Displays microcode statistics.

Command Default

No default behavior or values

Command Modes

EXEC
Administrator EXEC

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to use the **show controllers pse** command:

```
RP/0/0/CPU0:router# show controllers pse egress gather
```

show controllers pse mem

To display external memory information for the packet switching engine (PSE), use the **show controllers pse mem** command in EXEC mode.

show controllers pse mem {csram| sram| plu| tlu| trace}

Syntax Description

csram	Displays the custom static random access memory (CSRAM) information.
sram	Displays the static random access memory (SRAM) information.
plu	Displays the pointer lookup (PLU) memory information.
tlu	Displays the table lookup (TLU) memory information.
trace	Displays the trace data for the external memory component.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to use the **show controllers pse mem** command:

```
RP/0/RP0/CPU0:router# show controllers pse mem
```

show controllers pse statistics

To display packet switching engine (PSE) statistics for a specific controller instance, or for a specific node, use the **show controllers pse statistics** command in EXEC mode.

```
show controllers pse statistics [all] [egress|ingress] [location node-id]
```

Syntax Description

all	(Optional) Displays all counters.
egress	(Optional) Displays statistics for the egress PSE device only. Note Follow the egress argument with the location node-id keyword and argument to restrict the command to a specific node.
ingress	(Optional) Displays statistics for the ingress PSE device only. Note Follow the ingress argument with the location node-id keyword and argument to restrict the command to a specific node.
location node-id	(Optional) Identifies the location of the node whose PSE device information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router. Note Include the egress or ingress keyword before the location node-id keyword and argument to restrict the command to a specific device instance on the specified node.

Command Default

If you do not specify the **egress** or **ingress** and **location node-id** keywords and argument, the **show controllers pse statistics** command displays statistical information for both device instances on all modular services cards.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The instance { 0 1 } keywords were replaced by the egress and ingress keywords.
Release 3.6.0	The all keyword was changed from required to optional.

Usage Guidelines

The optional **egress** or **ingress** and **location** keywords are not mutually exclusive. The **egress** and **ingress** keywords direct the command to specific PSE device, and the **location** keyword directs the command to that

device or devices on the specified modular services card. You can specify the **egress** or **ingress** and **location** options together in the same command. If you do not specify the **egress** or **ingress** and **location node-id** keywords and argument, the **show controllers pse statistics** command displays statistical information for both device instances on all modular services cards.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to display PSE statistics:

```
RP/0/0/CPU0:router# show controllers pse statistics
```

```
Node 0/0/CPU0 Ingress PSE Stats
```

```
-----
```

Punt Stats	Punted	Policed & Dropped
-----	-----	-----
L2 low priority	8383	0
L2 control	133708	0
CDP	145926	0
ARP	8389	0
Bundle Control	156877	0
IPv4 TTL expiration	39179	0
IPv4 BFD async	128348286	0
IPv4 BFD echo	6543965	0
ACL log	39142667	0
IPv6 link local	511927	0
IPv6 BFD async	1380652214	0
EOAM CFM CCM pkts	57390870	0
EOAM EFM pkts	956527	0
SPA IPC punt	2551214	0
Drop Stats	Dropped	
-----	-----	
IFIB policer drop	225	
Service lookup miss	2137	
IPv4 not enabled	1	
IPv4 interface down	5	
IPv4 MC not enabled	60380	
IPv6 not enabled	1	
EOAM EFM feature disable drop	176	
Debug Stats	Count	
-----	-----	
PPE idle counter	84330433181953	

```
Node 0/0/CPU0 Egress PSE Stats
```

```
-----
```

Punt Stats	Punted	Policed & Dropped
-----	-----	-----
IPv4 L2LI punt	1	0
ACL log	1	0
IPv6 L2LI punt	9	0
Drop Stats	Dropped	
-----	-----	
Pre-route no adjacency in PIT	8	

```

Debug Stats                               Count
-----
PPE idle counter                          84334688870964
Recirculate UIDB index                    31864

```

The following command shows how to display PSE statistics for a specific controller instance:

```
RP/0/0/CPU0:router# show controllers pse statistics instance 0
```

```

Node 0/0/CPU0 Ingress PSE Stats
-----
Punt Stats                               Punted           Policed & Dropped
-----
L2 low priority                          8383             0
L2 control                               133708           0
CDP                                       145932           0
ARP                                       8389             0
Bundle Control                           156883           0
IPv4 TTL expiration                      39182            0
IPv4 BFD async                           128354734        0
IPv4 BFD echo                             6543965          0
ACL log                                   39144634         0
IPv6 link local                          511927           0
IPv6 BFD async                           1380721157       0
EOAM CFM CCM pkts                        57393762         0
EOAM EFM pkts                            956575           0
SPA IPC punt                             2551214          0

Drop Stats                               Dropped
-----
IFIB policer drop                        225
Service lookup miss                      2137
IPv4 not enabled                          1
IPv4 interface down                       5
IPv4 MC not enabled                      60385
IPv6 not enabled                          1
EOAM EFM feature disable drop            176

Debug Stats                               Count
-----
PPE idle counter                          84334518624455

```

This table describes the significant fields shown in the display.

Table 6: show controllers pse statistics Field Descriptions

Field	Description
Node	Identifies the node whose PSE statistics are displayed. The node ID is expressed in the <i>rack/slot/module</i> notation.
PSE 0, Statistics Info	Displays all statistics maintained by the PSE.

Related Commands

Command	Description
show controllers pse summary	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse qfp statistics

To display packet switching engine (PSE) quad flat package (QFP) statistics for a specific node, use the **show controllers pse qfp statistics** command in EXEC mode.

show controllers pse qfp statistics [**drop**| **summary**] [**location** *node-id*]

Syntax Description

drop	(Optional) Displays the global drop statistics for the PSE QFP device. Note Follow the drop keyword with the location <i>node-id</i> keyword and argument to restrict the command to a specific node.
summary	(Optional) Displays the global statistics summary for the PSE QFP device. Note Follow the summary keyword with the location <i>node-id</i> keyword and argument to restrict the command to a specific node.
location <i>node-id</i>	(Optional) Identifies the location of the node whose PSE device information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Note Use the show platform command to see the location of all nodes installed in the router.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
cisco-support	read

Examples

The following command shows how to display PSE QFP statistics:

```
RP/0/0/CPU0:router# show controllers pse qfp statistics summary location 0/1/cpu0
```

```
Summary of Statistics for QFP 0
  Dropped packets: 0
  Incoming packets: 0
  Outgoing packets: 0
  Incoming IPC packets: 0
  Outgoing IPC packets: 0
  Punted packets: 0
  Injected packets: 0

Summary of Statistics for QFP 1
  Dropped packets: 0
  Incoming packets: 0
  Outgoing packets: 0
  Incoming IPC packets: 0
  Outgoing IPC packets: 0
  Punted packets: 0
  Injected packets: 0
```

show controllers pse qfp system state

To display packet switching engine (PSE) QFP HA state information for a specific node, use the **show controllers pse qfp system state** command in EXEC mode.

show controllers pse qfp system state [*location node-id*]

Syntax Description

location <i>node-id</i>	(Optional) Identifies the location of the node whose PSE device information you want to display. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation.
Note	Use the show platform command to see the location of all nodes installed in the router.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operations
interface	read
cisco-support	read

Examples

The following command shows how to run the **show controllers pse qfp system state** command:

```
RP/0/0/CPU0:router# show controllers pse qfp system state location 0/1/cpu0
```

show controllers pse uidb

To display the user interface database (UIDB) information in the packet switching engine (PSE), use the **show controllers pse uidb** command in EXEC mode.

show controllers pse uidb trace

Syntax Description	trace	Displays the trace data for the UIDB component.
--------------------	-------	---

Command Default No default behavior or values

Command Modes EXEC

Command History	Release	Modification
	Release 4.0.0	This command was introduced.

Usage Guidelines

Task ID	Task ID	Operations
	interface	read
	cisco-support	read

Examples The following command shows how to use the **show controllers pse uidb** command:

```
RP/0/RP0/CPU0:router# show controllers pse uidb trace
```

show packet-memory

To display information for packet memory, use the **show packet-memory** command in EXEC mode.

show packet-memory [**clients**| **corrupt**| **failures**| **hssd**| **ifinput**| **ifoutput**| **internal**| **inuse**| **job**| **mutex**| **old**| **reserved**| **summary**| **trace**| **watch**] [**location** *node-id*]

Syntax Description

clients	(Optional) Displays the packet manager clients.
corrupt	(Optional) Displays the information about corrupted packets.
failures	(Optional) Displays the packet buffer, header, hardware buffer allocation failures.
hssd	(Optional) Displays High Speed Small Data (HSSD).
ifinput	(Optional) Displays packets from a specific interface.
ifoutput	(Optional) Displays packets to a specific interface.
internal	(Optional) Displays the packet memory along with actual number of particles in free list.
inuse	(Optional) Displays the total number of packets in use
job	(Optional) Displays the number of packets owned by a specific process.
mutex	(Optional) Displays the pakman mutex monitoring configuration.
old	(Optional) Displays the total number of packets older than one minute.
reserved	(Optional) Displays the reserved memory information.
summary	(Optional) Displays the packet memory usage summary information.
trace	(Optional) Displays the packet-memory traces.
watch	(Optional) Displays the pakman watch configuration.
location <i>node-id</i>	(Optional) Displays detailed packet memory information for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.

Command Default

Displays information about all packet memory.

Command Modes

EXEC

Command History

Release	Modification
Release 3.0	This command was introduced.
Release 3.9.0	Included the following keywords: <ul style="list-style-type: none"> • clients • corrupt • failures • fsv • hssd • ifinput • ifoutput • internal • inuse • job • mutex • old • reserved • summary • trace • watch

Usage Guidelines

The **show packet-memory** command can be used to display the total number of packet and particle headers, along with the packet memory that is currently allocated in the system.

Task ID

Task ID	Operations
basic-services	read

Examples

The following example shows how to display packet memory information:

```
RP/0/0/CPU0:router# show packet-memory

Packet memory statistics :
=====
Packet headers
```

```

total: 32000, free: 32000, size: 448
Particle Pools(8)
Pool(0):total: 8000, free: 8000, size: 256
fallback: 0, region: 0
Pool(1):total: 4000, free: 3968, size: 512
fallback: 1, region: 0
Pool(2):total: 16, free: 16, size: 512
fallback: 2, region: 0
Pool(3):total: 8000, free: 7936, size: 768
fallback: 3, region: 0
Pool(4):total: 12800, free: 9172, size: 1648
fallback: 4, region: 0
Pool(5):total: 320, free: 320, size: 2560
fallback: 5, region: 0
Pool(6):total: 1600, free: 1088, size: 4608
fallback: 6, region: 0
Pool(7):total: 640, free: 640, size: 6240
fallback: 7, region: 0
Particle clone
total: 8000, free: 8000, size: 256
Packet Feature Specific Variable (FSV)
total: 16000, free: 16000, size: 88
Packet trace
total: 16384, free: 16384, size: 40

```

This table describes the significant fields shown in the display.

Table 7: show packet memory Field Descriptions

Field	Description
Packet headers	Data structure that defines and controls an aggregation of data structures, collectively known as a packet. Includes information about every packet in the system.
Particle Pools	Data structure that describes a particle and may be chained to other particles in a linked list. Includes information about the actual data of the packet and other particle headers in this packet if present in this packet.
Particle clone	Duplicate particle header that points to a previously allocated particle. Differs from a particle header in that a particle clone shares the particle with another particle header.
Packet Feature Specific Variable (FSV)	Scratch pad shared among the features in the packet path, listing hangs of the packet header.
Packet trace	Data associated with the packet header to help tracing a packet in the system.