Fabric Management Commands

This module describes the Cisco IOS XR software commands used to monitor and control application-specific integrated circuit (ASIC) fabric queues for line cards .

clear fabricq counters all

To clear all counters going to fabric and coming back from fabric associated with the fabric queue driver, use the **clear fabricq counters all** command in administration EXEC mode.

clear fabricq counters all location *node-id*

Syntax Description

location *node-id*	Identifies the node whose fabric counters you want to clear. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The fabric taskID was removed from this command.

Usage Guidelines

Task ID

Task ID	Operations
root-system	read

Examples

The following example shows how to clear all fabricq counters for the location 0/1/CPU0:

```
RP/0/0/CPU0:router # admin
RP/0/0/CPU0:router(admin)# clear fabricq counters all location 0/1/CPU0
```

Related Commands

Command	Description
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

clear fabricq counters frfab

To clear the from fabric queue counters that are associated with the fabric queue driver, use the **clear fabricq counters frfab** command in administration EXEC mode.

clear fabricq counters frfab [**all**| **error**| **packet**] **location** *node-id*

Syntax Description

all	(Optional) Clears all counters.
error	(Optional) Clears error counters.
packet	(Optional) Clears packet counters.
location *node-id*	Identifies the node whose fabric counters you want to clear. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

All from fabric queue driver counters are cleared for the specified location

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The fabric taskID was removed from this command.

Usage Guidelines

Task ID

Task ID	Operations
root-system	read

Examples

The following example shows how to clear the from fabric queue counters for the location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# clear fabricq counters frfab location 0/1/CPU0
```

Related Commands

Command	Description
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.

clear fabricq counters tofab

To clear the to fabric counters that are associated with the fabric queue driver, use the **clear fabricq counters tofab** command in administration EXEC mode.

clear fabricq counters tofab [**all**| **error**| **packet**] **location** *node-id*

Syntax Description

all	(Optional) Clears all counters.
error	(Optional) Clears error counters.
packet	(Optional) Clears packet counters.
location *node-id*	Identifies the node whose fabric counters you want to clear. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

All to fabric queue driver counters are cleared for the specified location

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.5.0	The fabric taskID was removed from this command.

Usage Guidelines

Task ID

Task ID	Operations
root-system	read

Examples

The following example shows how to clear all to fabric queue counters for the location 0/1/CPU0:

```
RP/0/0/CPU0:router # admin
RP/0/0/CPU0:router(admin)# clear fabricq counters tofab location 0/1/CPU0
```

Related Commands

Command	Description
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabric

To display fabric card information, use the **show controllers fabric** command in administration EXEC mode.

show controllers fabric [**clock**| **csc-fpga**| **fab-clk**| **fab-control**| **sca**| **xbar**]

Syntax Description

clock	(Optional) Displays which fabric clock each slot is synchronized to and whether the clock is redundant or not.
csc-fpga	(Optional) Displays registers associated with the csc-fpga on each fabric card (FC).
fab-clk	(Optional) Displays registers associated with the fabric clock FPGA on all route processors (RPs), line cards (LCs), and FCs.
fab-control	(Optional) Displays the state of all RPs, LCs, and FCs in the chassis from a fabric control software perspective.
sca	(Optional) Displays registers associated with Scheduler Control ASIC on the CSC cards.
xbar	(Optional) Displays registers associated with the Cross Bar (XBAR) ASIC on the clock scheduler card (CSC) and switch fabric card (SFC).

Command Default

All fabric card information is displayed

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabric** command to display various registers associated with the fabric cards and state information associated with the fabric control software.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabric clock** command:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabric clock

The Primary Clock for system is CSC_0
System Fabric Clock is Redundant

Slot #  Primary Clock   Mode

3          CSC_0        Redundant
4          CSC_0        Redundant
5          CSC_0        Redundant
11         CSC_0        Redundant
12         CSC_0        Redundant
15         CSC_0        Redundant
16         CSC_0        Redundant
17         CSC_0        Redundant
18         CSC_0        Redundant
19         CSC_0        Redundant
20         CSC_0        Redundant
```

show controllers fabricq drop

To display the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver, use the **show controllers fabricq drop** command in administration EXEC mode.

show controllers fabricq drop [detail] [**location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed statistical information.
location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information about packet drops for all route processors (RPs) on the router is displayed

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq drop** command to display statistics about packet drops. Specifying a location displays information only if that location is an RP. Use the **detail** keyword to display detailed output.

Note The **show controllers fabricq drop** command is typically used for debugging purposes.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is detailed sample output from the **show controllers fabricq drop** command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq drop detail location 0/1/CPU0

Location 0/1/0:
```

```
To Fabric dropped packets:
--------------------------
 Slot Tx-OVS Tx-NHB Tx-NPB  Tx-QF  Tx-LP  Tx-DS  Tx-MB Tx-DIS Tx-Total
Low Priority:
    0      0      0      0      0      0      0      0      0         0
    1      0      0      0      0      0      0      0      0         0
    2      0      0      0      0      0      0      0      0         0
    3      0      0      0      0      0      0      0      0         0
    4      0      0      0      0      0      0      0      0         0
    5      0      0      0      0      0      0      0      0         0
    6      0      0      0      0      0      0      0      0         0
    7      0      0      0      0      0      0      0      0         0
    8      0      0      0      0      0      0      0      0         0
    9      0      0      0      0      0      0      0      0         0
   10      0      0      0      0      0      0      0      0         0
   11      0      0      0      0      0      0      0      0         0
   12      0      0      0      0      0      0      0      0         0
   13      0      0      0      0      0      0      0      0         0
   14      0      0      0      0      0      0      0      0         0
   15      0      0      0      0      0      0      0      0         0
mcast      0      0      0      0      0      0      0      0         0
High Priority:
    0      0      0      0      0      0      0      0      0         0
    1      0      0      0      0      0      0      0      0         0
    2      0      0      0      0      0      0      0      0         0
    3      0      0      0      0      0      0      0      0         0
    4      0      0      0      0      0      0      0      0         0
    5      0      0      0      0      0      0      0      0         0
    6      0      0      0      0      0      0      0      0         0
    7      0      0      0      0      0      0      0      0         0
    8      0      0      0      0      0      0      0      0         0
    9      0      0      0      0      0      0      0      0         0
   10      0      0      0      0      0      0      0      0         0
   11      0      0      0      0      0      0      0      0         0
   12      0      0      0      0      0      0      0      0         0
   13      0      0      0      0      0      0      0      0         0
   14      0      0      0      0      0      0      0      0         0
   15      0      0      0      0      0      0      0      0         0
mcast      0      0      0      0      0      0      0      0         0
Legend:
   Tx-OVS: Drops due to oversized packets
   Tx-NHB: Drops due to missing packet header buffer
   Tx-NPB: Drops due to missing packet payload buffer
   Tx-QF:  Drops because the queue is full
   Tx-LP:  Drops because the packet is low priority
   Tx-DS:  Drops because the destination slot is dead
   Tx-MB:  Drop counter for packets transmitted over MBUS (Not supported)
   Tx-DIS: Drops because the tofab transmission is disabled

From Fabric dropped packets:
----------------------------
 Slot Rx-REF Rx-PKT Rx-DEC Rx-Total
    0      0      0      0        0
    1      0      0      0        0
    2      0      0      0        0
    3      0      0      0        0
    4      0      0      0        0
    5      0      0      0        0
    6      0      0      0        0
    7      0      0      0        0
    8      0      0      0        0
    9      0      0      0        0
   10      0      0      0        0
   11      0      0      0        0
   12      0      0      0        0
   13      0      0      0        0
   14      0      0      0        0
   15      0      0      0        0
Legend:
   Rx-REF: Drops in the FPGA reassembly
   Rx-PKT: Drops due to invalid packet
   Rx-DEC: Drops due to decoding the packet
```

This table describes the significant fields shown in the display.

Table 1: show controllers fabricq drop Field Descriptions

Field	Description
To Fabric dropped packets	Displays statistics about the transmitted packets that were dropped.
Slot	Slot that contains the fabric card whose statistics are displayed.
Tx-OVS[1]	Number of transmitted packets that were dropped because they were oversized.
Tx-NHB	Number of transmitted packets that were dropped because they were missing a packet header buffer.
Tx-NPB	Number of transmitted packets that were dropped because they were missing a packet payload buffer.
Tx-QF	Number of transmitted packets that were dropped because the queue is full.
Tx-LP	Number of transmitted packets that were dropped because they were low priority.
Tx-DS	Number of transmitted packets that were dropped because the destination slot is dead.
Tx-MB	Number of dropped transmitted packets that were sent over the Mbus.
Tx-DIS	Number of transmitted packets that were dropped because the tofab transmission is disabled.
Tx-Total	Total number of packets transmitted.
From Fabric dropped packets	Displays statistics about the received packets that were dropped.
Slot	Slot that contains the fabric card whose statistics are displayed.
Rx-REF	Number of received packets that were dropped in the FPGA reassembly.
Rx-PKT	Number of received packets that were dropped because they were invalid.

Field	Description
Rx-DEC	Number of received packets that were dropped due to decoding.
Rx-Total	Total number of received packets that were dropped.

[1] Optimized Voice Service

Related Commands

Command	Description
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq errors

To display the count of hardware errors associated with the fabric queue driver, use the **show controllers fabricq errors**command in administration EXEC mode.

show controllers fabricq errors [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information about errors for all route processors (RPs) on the router is displayed

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq errors** command to display statistics about hardware errors. Specifying a location displays information only if that location is a RP.

The **show controllers fabricq errors**command is intended for use while performing debugging procedures.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabricq errors**command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq errors location 0/1/CPU0

Location 0/1/0:

ToFab Errors:
Error Type      Error Count Max Rate Rate Exceeded Count
-----------------------------------------------------------
SRAM Parity               0        2                   0
DMA Address               0      100                   0
DMA Size                  0      100                   0
Fusilli Parity            0        2                   0
PCI TRANS64               0        2                   0
```

```
PCI Address                0        2                   0
```

This table describes the significant fields shown in the display.

Table 2: show controllers fabricq errors Field Descriptions

Field	Description
Error Count	Number of errors of each type.
Max Rate	Maximum number of errors of that type that can be received per second.
Rate Exceeded Count	Number of times that error has exceeded the Max Rate. When the rate is exceeded, the software may try to restart the fabric queue driver and associated ASICs or FPGAs to correct the problem.

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq frfab

To display output from the fabric statistics associated with the fabric queue driver, use the **show controllers fabricq frfab**command in administration EXEC mode.

show controllers fabricq frfab [**detail**| **trace** *options*] [**location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed statistical information.
trace *options*	(Optional) Displays detailed fabric queue driver trace information for a specific node. Replace the *options* argument with one or more of the following keywords or keyword arguments to specify the type and format of trace information displayed: • **error—**Includes tofab error trace information in the command output. • **file** *word* **original—**Displays trace information for a specific file. • **hexdump—**Displays trace information in hexadecimal format. • **last** *entries* **—**Displays trace information for a specific number of entries. Replace *the entries argument* with the number of entries you want to display. For example, if you enter **5** , the display shows the last 5 entries in the trace data. • **packet—**Includes packet trace information in the command output. • **payload—**Includes payload trace information in the command output. • **reverse —**Displays the latest traces first. • **stats—**Includes trace statistics in the command output. • **tailf—**Includes new traces as they are added in the command output. • **unique—**Includes unique trace entries with counts in the command output. • **verbose—**Includes internal debugging information in the command output. • **wrapping—**Includes wrapping entries in the command output.
location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

From fabric statistics are displayed for all route processors (RPs) on the router

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.6.0	The **trace** keyword and *options* argument were added.

Usage Guidelines

Use the **show controllers fabricq frfab**command to display from fabric statistics. Specifying a location displays information only if that location is an RP. Use the **detail** keyword to display detailed output.

Note The **show controllers fabricq frfab**command is typically used for debugging purposes.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabricq frfab**command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq frfab location 0/1/CPU0

Location 0/1/0:

From Fabric Stats:
-------------------
Slot   Rx-pkts    Rx-TH-pkts Rx-dropped
1      0          3928       0
2      0          37309      0
3      0          43306      0
4      0          42681      0
5      0          35063      0

From Fabric Packet per Queue Stats:
-----------------------------------
Packets received in queue 0 - 0
Packets received in queue 1 - 3928
Packets received in queue 2 - 150069
Packets received in queue 3 - 8290

From Fabric Error Stats:
------------------------
Bigger than MTU pkts       - 0
Corrupted pkts             - 0
SPD pkt count              - 0
No IDB drops               - 0
IDB queue tail drops       - 0
Chan corrupted pkts        - 0
First/Last err pkts        - 0
Sequence err pkts          - 0
Unknown Rx type            - 0
Output queue 0 full drops  - 0
Output queue 1 full drops  - 0
```

```
Output queue 2 full drops  - 0
Output queue 3 full drops  - 0
Output queue unmatch drops - 0
OQ 0 drops because FQ below threshold - 0
OQ 1 drops because FQ below threshold - 0
OQ 2 drops because FQ below threshold - 0
OQ 3 drops because FQ below threshold - 0

From Fabric Error Events:
-------------------------
Fusilli parity errors- 0
Fusilli interface errors - 0
Free queue drop threshold events - 0
Free queue empty events - 0
Bad descriptors events - 0
Output queue 0 almost empty events - 0
Output queue 1 almost empty events - 0
Output queue 2 almost empty events - 0
Output queue 3 almost empty events - 0
OQ 0 drops because of ptr - 0 (Not implemented)
OQ 1 drops because of ptr - 0 (Not implemented)
OQ 2 drops because of ptr - 0 (Not implemented)
OQ 3 drops because of ptr - 0 (Not implemented)
Interrupt throttle events - 0
Spurious interrupt events - 0

Assembler memory statistics:
----------------------------
Bufs enqueued to free queue    - 163311
Bufs rxed from OQ              - 162287
Bufs copied to public pool     - 0 (Not implemented)
Bufs returned to the pool      - 162287
Bufs returned by driver        - 0 (Not implemented)
Bufs from driver to OS         - 0 (Not implemented)
```

This table describes the significant fields shown in the display.

Table 3: show controllers fabricq frfab Field Descriptions

Field	Description
Rx-pkts	Number of packets received from the fabric.
Rx-TH-pkts	Number of “think hard” packets received from the fabric.
Rx-dropped	Number of packets received from the fabric that had to be dropped.

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.

Command	Description
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq output

To display the fabric output service statistics associated with the fabric queue driver, use the **show controllers fabricq output** command in administration EXEC mode.

show controllers fabricq output [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information is displayed for all route processors (RPs) on the router..

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq output** command to display to fabric output service statistics. Specifying a location displays information only if that location is an RP.

The service time is the time from when the RP CPU has made the packet ready to be sent to the slot to when the Field-Programmable Gate Array (FPGA) has put the packet on the queue to that particular slot.

Note The **show controllers fabricq output** command is typically used for debugging purposes.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabricq output** command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq output location 0/1/CPU0

Location 0/1/0:

To Fabric servicing time statistics:
```

```
-------------------------------------
  Slot    Minimum    Maximum    Average   Timeouts
Low Priority:
     0          0          0          0          0
     1          0          0          0          0
     2          0         10          0          0
     3          0         21          0          0
     4          0          0          0          0
     5          0          0          0          0
     6          0          0          0          0
     7          0          0          0          0
     8          0          0          0          0
     9          0          0          0          0
    10          0          0          0          0
    11          0          0          0          0
    12          0          0          0          0
    13          0          0          0          0
    14          0          0          0          0
    15          0          0          0          0
 mcast          0          0          0          0
High Priority:
     0          0          0          0          0
     1          0         22          0          0
     2          0         96          0          0
     3          0         13          0          0
     4          0         12          0          0
     5          0         14          0          0
     6          0          0          0          0
     7          0          0          0          0
     8          0          0          0          0
     9          0          0          0          0
    10          0          0          0          0
    11          0          0          0          0
    12          0          0          0          0
    13          0          0          0          0
    14          0          0          0          0
    15          0          0          0          0
 mcast          0          6          0          0
```

This table describes the significant fields shown in the display.

Table 4: show controllers fabricq output Field Descriptions

Field	Description
Slot	Slot to which the packets are sent.
Minimum	Lowest service time of all the packets sent to that slot.
Maximum	Highest service time of all the packets sent to that slot.
Average	Average service time of all the packets sent to that slot.
Timeouts	Number of times a packet's service time has exceeded a threshold of 200 milliseconds (the packet is dropped).

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq queue

To display information about the hardware queues of the performance route processor chopper and assembler FPGAs, use the **show controllers fabricq queue** command in administration EXEC mode.

show controllers fabricq queue [detail] [**location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed statistical information.
location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information for all performance route processors on the router is displayed

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq queue** command to display information about packet queues. Specifying a location displays information only if that location is an RP.

This command is intended for use while performing debugging procedures.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is detailed sample output from the **show controllers fabricq queue** command for the location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq queue detail location 0/1/CPU0

Location 0/1/0:

To Fabric Queue Stats:
----------------------
  Slot   EnQueued   DeQueued Cur-Entrys Max-Entrys    Blocked   BP count
Low Priority:
```

```
     0          0          0          0          0         No          0
     1          0          0          0          0         No          0
     2        300        300          0          2         No          0
     3       8428       8428          0         12         No          0
     4          0          0          0          0         No          0
     5          0          0          0          0         No          0
     6          0          0          0          0         No          0
     7          0          0          0          0         No          0
     8          0          0          0          0         No          0
     9          0          0          0          0         No          0
    10          0          0          0          0         No          0
    11          0          0          0          0         No          0
    12          0          0          0          0         No          0
    13          0          0          0          0         No          0
    14          0          0          0          0         No          0
    15          0          0          0          0         No          0
 mcast          0          0          0          0         No          0
High Priority:
     0          0          0          0          0         No          0
     1       7882       7882          0          2         No          0
     2      62330      62330          0         36         No          0
     3      60752      60752          0        100         No          0
     4      72588      72588          0         36         No          0
     5      60876      60876          0        100         No          0
     6          0          0          0          0         No          0
     7          0          0          0          0         No          0
     8          0          0          0          0         No          0
     9          0          0          0          0         No          0
    10          0          0          0          0         No          0
    11          0          0          0          0         No          0
    12          0          0          0          0         No          0
    13          0          0          0          0         No          0
    14          0          0          0          0         No          0
    15          0          0          0          0         No          0
 mcast      19562      19562          0        200         No          0
Free packet header buffers 7680
From Fabric Queue Stats:
-----------------------
 Queue  Allocated       Free
     0          0        512
     1          0        512
     2          0        512
     3          0        512
   F/Q         87        937
```

Examples

This table describes the significant fields shown in the display.

Table 5: show controllers fabricq queue Field Descriptions

Field	Description
Slot	Slot or queue to which the packets are sent.
EnQueued	Number of entries enqueued for that queue.
DeQueued	Number of entries dequeued for that queue.
Cur-Entrys	Number of entries currently for that queue.
Max-Entrys	Highest number of entries for that queue.
Blocked	Yes or No if that queue is blocked.

Field	Description
BP count	Back-pressure count, which is the number of times the queue got full.
Queue	Priority queues receiving packets; 0 is the highest priority. The F/Q entry is the software free packet queue.
Allocated	Number of packets in that queue.
Free	Number of packets available for that queue.

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq registers

To display the hardware registers of the chopper and assembler FPGAs, use the **show controllers fabricq registers** command in administration EXEC mode.

show controllers fabricq registers [detail] [**location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed statistical information.
location *node-id*	(Optional) Displays statistical information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information for all route processors (RPs) on the router is displayed

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq registers** command to display the hardware registers of the chopper and assembler FPGAs. Specifying a location displays information only if that location is an RP.

This command is intended for use while performing debugging procedures.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabricq registers** command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq registers location 0/1/CPU0

Location 0/1/0:

Chopper Registers:
------------------
FPGA Version                            00020012
HP Descriptor fetch enable              00010000
Descriptor array size                   000003FF
```

```
Interrupt cause                          00000000
Interrupt mask                           FC01FFFF
LP Descriptor fetch enable               00000008
HP Interrupt desc afull                  00000000
LP Interrupt desc afull                  00000000
Discovery low control reg base address   F1000840
Discovery next desc reg base address     F1000830
Chopper PCI base address                 F0000000
HP Descriptor queue empty status         0001FFFF
HP Descriptor queue almost full          00000000
Data queue empty status                  0001FFFF
Data queue almost full                   00000000
LP Descriptor queue empty status         0001FFFF
LP Descriptor queue almost full          00000000
SRAM Descriptor threshold                000003F0
SRAM Data threshold                      000007F0
DMA Control                              000000DD
Back pressure status                     00000000
Fusilli Tx Enable                        0001FFFF
Cell count                               0030CDA1
Reset VOQ                                00000000
DMA Busy Status                          00000000
DMA Done Status                          000000DD
HP Descriptor start addr for queue  0    0B448000
HP Descriptor start addr for queue  1    0B44A000
HP Descriptor start addr for queue  2    0B44C000
HP Descriptor start addr for queue  3    0B44E000
HP Descriptor start addr for queue  4    0B450000
HP Descriptor start addr for queue  5    0B452000
HP Descriptor start addr for queue  6    0B454000
HP Descriptor start addr for queue  7    0B456000
HP Descriptor start addr for queue  8    0B458000
HP Descriptor start addr for queue  9    0B45A000
HP Descriptor start addr for queue  10   0B45C000
HP Descriptor start addr for queue  11   0B45E000
HP Descriptor start addr for queue  12   0B460000
HP Descriptor start addr for queue  13   0B462000
HP Descriptor start addr for queue  14   0B464000
HP Descriptor start addr for queue  15   0B466000
HP Descriptor start addr for queue  16   0B468000
LP Descriptor start addr for queue  0    0B426000
LP Descriptor start addr for queue  1    0B428000
LP Descriptor start addr for queue  2    0B42A000
LP Descriptor start addr for queue  3    0B42C000
LP Descriptor start addr for queue  4    0B42E000
LP Descriptor start addr for queue  5    0B430000
LP Descriptor start addr for queue  6    0B432000
LP Descriptor start addr for queue  7    0B434000
LP Descriptor start addr for queue  8    0B436000
LP Descriptor start addr for queue  9    0B438000
LP Descriptor start addr for queue  10   0B43A000
LP Descriptor start addr for queue  11   0B43C000
LP Descriptor start addr for queue  12   0B43E000
LP Descriptor start addr for queue  13   0B440000
LP Descriptor start addr for queue  14   0B442000
LP Descriptor start addr for queue  15   0B444000
LP Descriptor start addr for queue  16   0B446000

Assembler Registers:
-------------------
Version                    0002000D
Chip Config                0000000F
Int Mask                   00000000
Output Queue Threshold     00000033
Low Pri Req level          00000030
High Pri Req level         00000060
Free Queue Size            00001000
Free Queue Base            0B3A6000
Free Queue Rd Pointer      0B3A6380
Free Queue Wr Pointer      0B3A61C0
Output Queue Size          00001000
Output Queue 0 Base Addr   0B3A8000
Output Queue 0 Write Addr  0B3A8000
```

```
Output Queue 0 Read Addr   0B3A8000
Output Queue 0 Match       C0000200
Output Queue 0 Mask        00003E00
Output Queue 1 Base Addr   0B3AA000
Output Queue 1 Write Addr  0B3AAB58
Output Queue 1 Read Addr   0B3AAB58
Output Queue 1 Match       C0000C00
Output Queue 1 Mask        00003E00
Output Queue 2 Base Addr   0B3AC000
Output Queue 2 Write Addr  0B3AC4D0
Output Queue 2 Read Addr   0B3AC4D0
Output Queue 2 Match       C0000400
Output Queue 2 Mask        00003C00
Output Queue 3 Base Addr   0B3AE000
Output Queue 3 Write Addr  0B3AE360
Output Queue 3 Read Addr   0B3AE360
Output Queue 3 Match       C0000000
Output Queue 3 Mask        00000000
Discard Buffer Addr        0A1AC700
REFIM config               00000000
REFIM Max Packet Len       000000C1
```

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq tofab, on page 28	Displays to fabric statistics associated with the fabric queue driver.

show controllers fabricq tofab

To display to fabric statistics associated with the fabric queue driver, use the **show controllers fabricq tofab** command in administration EXEC mode.

show controllers fabricq tofab [**detail** [**location** *node-id*]| **trace** *options* **location** *node-id*]

Syntax Description

detail	(Optional) Displays detailed statistical information.
trace *options*	(Optional) Displays detailed fabric queue driver trace information for a specific node. Replace the *options* argument with one or more of the following keywords or keywords and arguments to specify the type and format of trace information displayed: • **error—**Includes tofab error trace information in the command output. • **file** *word* **original—**Displays trace information for a specific file. • **header—**Includes tofab header trace information in the command output. • **hexdump—**Display trace information in hexadecimal format. • **last** *entries* **—**Display trace information for a specific number of entries. Replace the *entries* argument with the number of entries you want to display. For example, if you enter **5**, the display will show the last 5 entries in the trace data. • **payload—**Includes payload trace information in the command output. • **reverse—**Displays the latest traces first. • **stats—**Includes trace statistics in the command output. • **tailf—**Includes new traces as they are added in the command output. • **unique—**Includes unique trace entries with counts in the command output. • **verbose—**Includes internal debugging information in the command output. • **wrapping—**Includes wrapping entries in the command output.
location *node-id*	(Optional) Displays statistical or trace information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Statistical information is displayed for all route processors (RPs) on the router

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabricq tofab** command to display to fabric statistics. Specifying a location displays information only if that location is an RP.

The **show controllers fabricq tofab**command is intended for use while performing debugging procedures.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabricq tofab**command for location 0/1/CPU0:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show controllers fabricq tofab location 0/1/CPU0

Location 0/1/0:

To Fabric Stats:
---------------
Slot   Tx-pkts    Tx-TH-pkts Tx-dropped Tx-DMA
Low Priority:
3      0          446        0          446
High Priority:
1      0          248        0          248
2      0          13696      0          13696
3      0          14347      0          14347
4      0          15889      0          15889
5      0          14351      0          14351
mcast  0          2182       0          2182

To Fabric Errors:
----------------
Failed sends because of no header bufs - 0
Failed sends because of no payload bufs - 0
SRAM parity errors - 0
DMA errors - 0
Fusilli Parity errors - 0
```

This table describes the significant fields shown in the display.

Table 6: show controllers fabricq tofab Field Descriptions

Field	Description
Tx-pkts	Number of packets sent to that slot.
Tx-TH-pkts	Number of “think hard” packets sent to that slot.

Field	Description
Tx-dropped	Number of dropped packets sent to that slot.
Tx-DMA	Number of direct memory accesses (DMA) to send the packet to that slot.

Related Commands

Command	Description
show controllers fabricq drop, on page 9	Displays the number of packets dropped to the fabric or from the fabric on a per-slot basis in the fabric queue driver.
show controllers fabricq errors, on page 13	Displays the count of hardware errors associated with the fabric queue driver.
show controllers fabricq frfab, on page 15	Displays output from the fabric statistics associated with the fabric queue driver.
show controllers fabricq output, on page 19	Displays the fabric output service statistics associated with the fabric queue driver.
show controllers fabricq queue, on page 22	Displays information about the hardware queues of the performance route processor chopper and assembler FPGAs.
show controllers fabricq registers, on page 25	Displays the hardware registers of the chopper and assembler FPGAs.